

Population Estimates for Utah

Methods Documentation

April 2010

Population **2009** Estimates for Utah

**Demographic and Economic Analysis
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Overview

Utah's population reached 2,800,089 in 2009, according to the Utah Population Estimates Committee (UPEC). This 1.5% increase from 2008 represents an increase of 42,310, comparable to adding approximately the population of Draper to the State. With the national population increasing by an estimated 0.9% during 2009, the pace of population growth in Utah continues to be greater than the nation. Utah's total population ranks 34th, as it has for almost two decades. In 2009 the Census Bureau ranked Utah as the nation's second fastest growing state, closely behind Wyoming.¹ Compared to the rest of the country, Utah's population growth is characterized by a high birth rate and low death rate.

Utah's growth in 2009 continued the trend of a large number of births compared to relatively few deaths. In 2009, the number of births did not surpass the record of 55,357 set in 2008, however the 54,548 births led to a strong natural increase of 40,763. Deaths within the state totaled 13,785 in 2009. Natural increase accounted for 96.3% of total population growth. Indicators such as employment, wages, income, and sales demonstrated the effect of Utah's economic recession on population growth during 2009. Other demographic indicators such as school enrollment, LDS Church member-

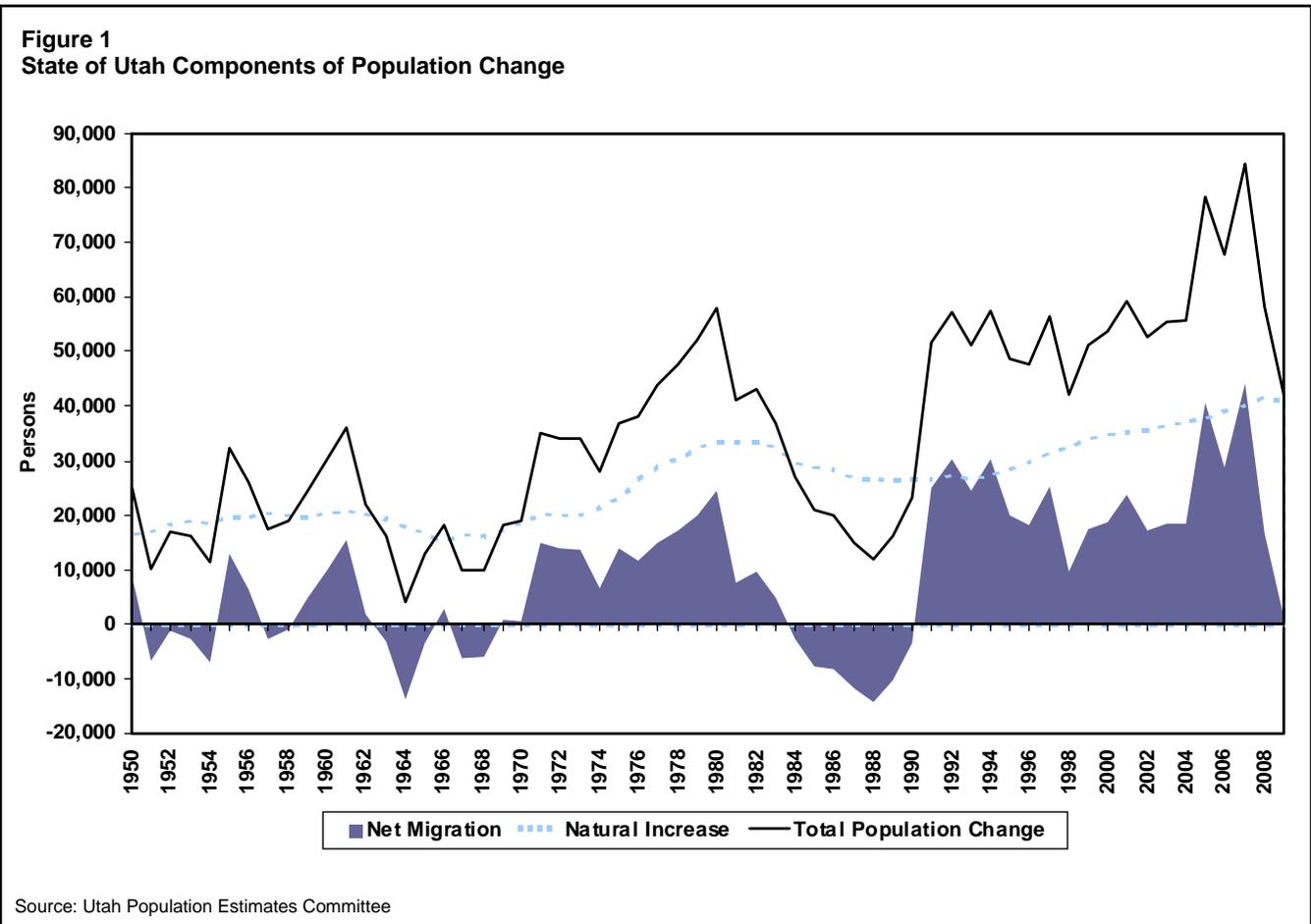
ship, tax exemptions, building permits, and utility connections confirm the prime role of natural increase in Utah's strong population growth.

This paper presents the official population estimate for the state, multi-county districts (MCDs) and counties, and discusses the method used to develop the estimates. The 2009 estimates and the historical context of Utah's population growth are discussed. Details are provided on the components of population change, as well as the methods used to prepare these estimates. The final section describes the methods used by the U.S. Census Bureau and the resulting estimates.

2009 Estimates

As Table 1 and Figure 1 show, Utah has now experienced 19 consecutive years of net in-migration. During this period, the number of people moving into the state is estimated to exceed the number moving out by over 428,892, which is about 100,000 fewer people than live in Utah County. Even with this large net in-migration, over 60% of Utah's population

¹ This is based on U.S. Census Bureau national and state population estimates, online: <http://www.census.gov/popest/states/states.html>.



**Table 1
Utah Population Estimates and Components of Population Change**

Year	July 1st Population	Percent Change	Increase	Net Migration as a Percent of		Natural Increase	Fiscal Year Births	Fiscal Year Deaths
				Net Migration	Previous Year's Population			
1960	900,000	3.5%	30,100	10,047	1.2%	20,053	26,011	5,958
1961	936,000	4.0%	36,000	15,371	1.7%	20,629	26,560	5,931
1962	958,000	2.4%	22,000	1,817	0.2%	20,183	26,431	6,248
1963	974,000	1.7%	16,000	-3,317	-0.3%	19,317	25,648	6,331
1964	978,000	0.4%	4,000	-13,863	-1.4%	17,863	24,461	6,598
1965	991,000	1.3%	13,000	-3,553	-0.4%	16,553	23,082	6,529
1966	1,009,000	1.8%	18,000	2,810	0.3%	15,190	21,953	6,763
1967	1,019,000	1.0%	10,000	-6,350	-0.6%	16,350	23,030	6,680
1968	1,029,000	1.0%	10,000	-6,029	-0.6%	16,029	22,743	6,714
1969	1,047,000	1.7%	18,000	798	0.1%	17,202	24,033	6,831
1970	1,066,000	1.8%	19,000	612	0.1%	18,388	25,281	6,893
1971	1,101,150	3.3%	35,150	14,966	1.4%	20,184	27,400	7,216
1972	1,135,100	3.1%	33,950	14,046	1.3%	19,904	27,146	7,242
1973	1,168,950	3.0%	33,850	13,810	1.2%	20,040	27,562	7,522
1974	1,196,950	2.4%	28,000	6,621	0.6%	21,379	28,876	7,497
1975	1,233,900	3.1%	36,950	13,897	1.2%	23,053	30,566	7,513
1976	1,272,050	3.1%	38,150	11,761	1.0%	26,389	33,773	7,384
1977	1,315,950	3.5%	43,900	14,824	1.2%	29,076	36,707	7,631
1978	1,363,750	3.6%	47,800	17,220	1.3%	30,580	38,289	7,709
1979	1,415,950	3.8%	52,200	19,868	1.5%	32,332	40,216	7,884
1980	1,474,000	4.1%	58,050	24,536	1.7%	33,514	41,645	8,131
1981	1,515,000	2.8%	41,000	7,612	0.5%	33,388	41,509	8,121
1982	1,558,000	2.8%	43,000	9,662	0.6%	33,338	41,773	8,435
1983	1,595,000	2.4%	37,000	4,914	0.3%	32,086	40,555	8,469
1984	1,622,000	1.7%	27,000	-2,793	-0.2%	29,793	38,643	8,850
1985	1,643,000	1.3%	21,000	-7,714	-0.5%	28,714	37,664	8,950
1986	1,663,000	1.2%	20,000	-8,408	-0.5%	28,408	37,309	8,901
1987	1,678,000	0.9%	15,000	-11,713	-0.7%	26,713	35,631	8,918
1988	1,690,000	0.7%	12,000	-14,557	-0.9%	26,557	35,809	9,252
1989	1,706,000	0.9%	16,000	-10,355	-0.6%	26,355	35,439	9,084
1990	1,729,227	1.4%	23,227	-3,480	-0.2%	26,707	35,830	9,123
1991	1,780,870	3.0%	51,643	24,878	1.4%	26,765	36,194	9,429
1992	1,838,149	3.2%	57,279	30,042	1.7%	27,237	36,796	9,559
1993	1,889,393	2.8%	51,244	24,561	1.3%	26,683	36,738	10,055
1994	1,946,721	3.0%	57,328	30,116	1.6%	27,212	37,623	10,411
1995	1,995,228	2.5%	48,507	20,024	1.0%	28,483	39,064	10,581
1996	2,042,893	2.4%	47,665	18,171	0.9%	29,494	40,495	11,001
1997	2,099,409	2.8%	56,516	25,253	1.2%	31,263	42,512	11,249
1998	2,141,632	2.0%	42,223	9,745	0.5%	32,478	44,126	11,648
1999	2,193,014	2.4%	51,382	17,584	0.8%	33,798	45,434	11,636
2000	2,246,553	2.4%	53,539	18,612	0.8%	34,927	46,880	11,953
2001	2,305,652	2.6%	59,099	23,848	1.1%	35,251	47,688	12,437
2002	2,358,330	2.3%	52,678	17,299	0.8%	35,379	48,041	12,662
2003	2,413,618	2.3%	55,288	18,568	0.8%	36,720	49,518	12,798
2004	2,469,230	2.3%	55,612	18,367	0.8%	37,245	50,527	13,282
2005	2,547,389	3.2%	78,159	40,647	1.6%	37,512	50,431	12,919
2006	2,615,129	2.7%	67,740	28,730	1.1%	39,010	52,368	13,358
2007	2,699,554	3.2%	84,425	44,252	1.7%	40,173	53,953	13,780
2008	2,757,779	2.2%	58,225	16,648	0.6%	41,577	55,357	13,780
2009	2,800,089	1.5%	42,310	1,547	0.1%	40,763	54,548	13,785

Note: In 1996, the Utah Population Estimates Committee changed its convention on rounded estimates so that it now publishes unrounded estimates. Accordingly, the revised estimates for 1990 and thereafter are not rounded.

Source: Utah Population Estimates Committee

growth since 1990 has resulted from natural increase. Since 1990 natural increase is almost 642,000, while total population growth is almost 1,071,000.

As is shown in Table 2 and Figure 2, the most rapid growth in Utah occurred in counties within or adjacent to the northern metropolitan region and in counties in the eastern portion of the state.

Expanding Urban Area

This year, the most rapid regional growth rates occurred in counties along the Wasatch Back and in the Uintah Basin area of the State, as well as in counties adjacent to larger population centers. The populations in Duchesne, Morgan, San Juan, and Wasatch counties are all expanding faster than the state average. Washington County has shifted from the fastest growing county in the state in 2005 with a growth rate of 8.4% to the second slowest in 2009 with an increase of 0.5%. Carbon County was the only county to have a population decline, with a loss of 0.4%.

County Highlights

Utah County. Utah County had the largest amount of population growth, nearly 12,000. Since Utah County is half the size of Salt Lake County, it is remarkable that its growth is larger than its neighbor to the north. The county's high birth rate resulted in natural increase of more than 10,500. Almost 1,272 more people moved in than moved out, ranking it first among the counties in net migration. Utah County has ranked first in net migration in 13 of the past 20 years.

Washington County. Washington County has averaged over 6% population growth for four decades. Until 2007, its growth rate was 5.8% or greater every year after 2000. In 2007, however, the recent boom decelerated, with population growing 4.5%. In 2008, growth in Washington County of 2.7% was higher than the state average, but down significantly from the peak this decade of 8.4%. In 2009, Washington County had the second lowest growth rate in the state, 0.5%, and had

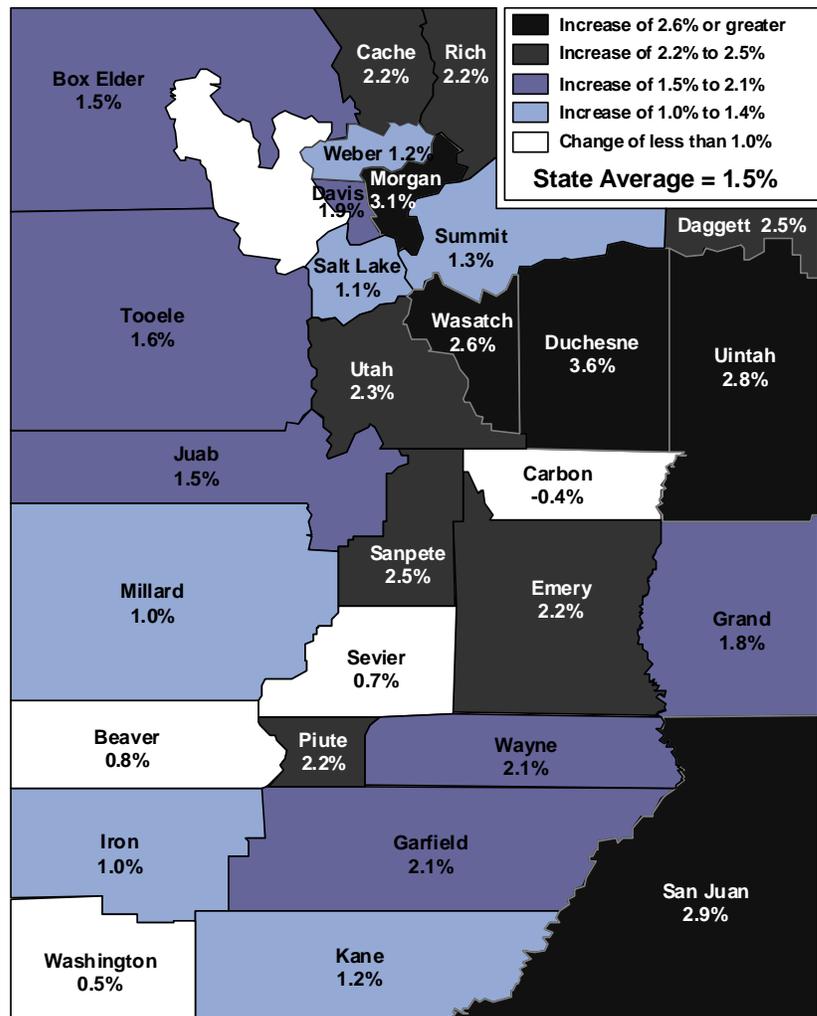
net out-migration of almost 1,000, the first time more people have moved out of the county than in since the mid-1960s.

Salt Lake County. Salt Lake County's population passed 1 million in 2007. Almost 38% of the states' population resides in the county. With a weakened construction industry, net out-migration was approximately -2,200, continuing a trend from 2008. Natural increase of 13,800 gave Salt Lake County the second largest amount of growth after Utah County (over 11,600 new residents).

Historical Context

Utah's population reached 1 million during 1966 and doubled within 30 years, reaching 2 million during 1996. Table 4 presents the population estimates for the state, the MCD, and the counties since 1940 for selected years. During this period, the state's fastest growth occurred during the 1970s, when the population increased at a 3.3% average annual rate.

Figure 2
Utah Population Growth Rates by County: 2007 to 2008



Source: Utah Population Estimates Committee

Percent Change		Numeric Change	
Duchesne	3.6%	Utah	11,810
Morgan	3.1%	Salt Lake	11,606
San Juan	2.9%	Davis	5,741
Uintah	2.8%	Weber	2,723
Wasatch	2.6%	Cache	2,435

Source: Utah Population Estimates Committee

Table 3
Components of Population Change in Utah by County and Multi-County District

County	July 1 Population		Population Change 2008-09		Components of Change 2007-08			
	2008	2009	Numerical	Percent	Births	Deaths	Natural Increase	Net Migration
Utah	519,632	531,442	11,810	2.3%	12,382	1,844	10,538	1,272
Salt Lake	1,030,519	1,042,125	11,606	1.1%	19,105	5,317	13,788	-2,182
Davis	301,915	307,656	5,741	1.9%	6,142	1,364	4,778	963
Weber	224,536	227,259	2,723	1.2%	4,302	1,437	2,865	-142
Cache	111,841	114,276	2,435	2.2%	2,503	434	2,069	366
Tooele	58,214	59,117	903	1.6%	1,032	243	789	114
Uintah	30,446	31,291	845	2.8%	703	180	523	322
Washington	144,710	145,466	756	0.5%	2,599	892	1,707	-951
Box Elder	48,712	49,421	709	1.5%	935	281	654	55
Sanpete	26,960	27,646	686	2.5%	407	170	237	449
Duchesne	16,765	17,368	603	3.6%	426	110	316	287
Wasatch	22,845	23,428	583	2.6%	400	108	292	291
Summit	39,951	40,451	500	1.3%	539	124	415	85
Iron	46,341	46,825	484	1.0%	916	229	687	-203
San Juan	15,206	15,643	437	2.9%	196	83	113	324
Morgan	9,645	9,947	302	3.1%	168	43	125	177
Emery	10,610	10,848	238	2.2%	178	85	93	145
Grand	9,326	9,493	167	1.8%	120	71	49	118
Sevier	20,619	20,773	154	0.7%	356	174	182	-28
Juab	10,039	10,191	152	1.5%	221	87	134	18
Millard	13,550	13,702	152	1.1%	203	85	118	34
Garfield	5,044	5,149	105	2.1%	60	41	19	86
Kane	6,663	6,740	77	1.2%	100	52	48	29
Wayne	2,637	2,692	55	2.1%	36	25	11	44
Beaver	6,523	6,576	53	0.8%	120	64	56	-3
Rich	2,278	2,329	51	2.2%	38	16	22	29
Piute	1,447	1,479	32	2.2%	15	16	-1	33
Daggett	964	988	24	2.5%	11	5	6	18
Carbon	19,841	19,768	-73	-0.4%	335	205	130	-203
MCD								
Bear River	1,343,044	1,360,629	17,585	1.3%	25,425	6,766	18,659	-1,074
Five County	626,507	640,161	13,654	2.2%	14,297	2,375	11,922	1,732
Mountainland	13,845	14,054	209	1.5%	218	121	97	112
Six County	103,384	105,081	1,697	1.6%	1,919	557	1,362	335
Southeast	416,825	421,144	4,319	1.0%	7,664	2,673	4,991	-672
Uintah Basin	144,924	148,259	3,335	2.3%	3,242	639	2,603	732
Wasatch Front	109,250	110,761	1,511	1.4%	1,783	654	1,129	382
State of Utah	2,757,779	2,800,089	42,310	1.5%	54,548	13,785	40,763	1,547

Source: Utah Population Estimates Committee

During the 1940s and 1950s, the state's population increased about 2.5% per year, which contrasts with the 1960s and 1980s, when the population increased less than 2.0% per year. At 2.7% per year, the 1990s growth rates represent a return to the relatively high rates of growth seen during the 1940s and 1950s, although they are still substantially below the growth of the 1970s. With growth averaging 2.5% per year, the growth during the 2000s will be similar to the growth of the 1990s.

Salt Lake County's growth pattern most closely mirrors the state, reflecting the fact that 38% of Utah's population lives in the county. As with the state as a whole, Salt Lake County experienced fairly rapid growth during the 1940s, (2.7% per year), even more rapid growth during the 1950s, (3.3%), a slowdown in the 1960s, (1.8%), rapid growth during the 1970s, (3.1%), another slowdown in the 1980s, (1.5%), and an increase in growth during the 1990s, (2.2%). Salt Lake County deviated slightly from the state in that the growth of the 1950s was relatively more rapid compared to other periods.

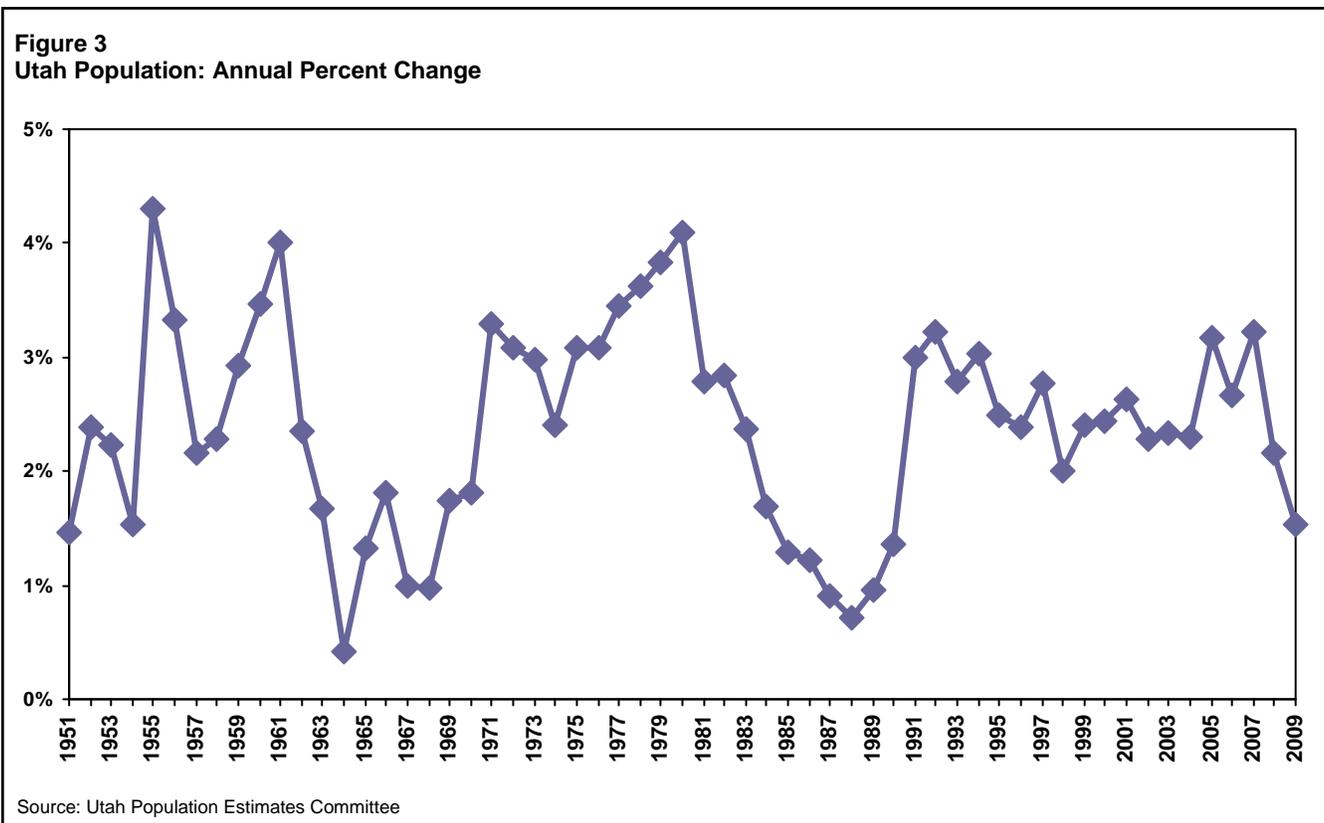
A number of counties have had growth patterns substantially different from the state's. While Utah's population grew very strongly in both the 1940s and the 1950s, 12 counties populations declined in both decades. Juab County's population had the greatest percentage decline during this period, about 2.5% per year, from 7,400 in 1940 to 4,500 in 1960. During 1996, Juab's population finally surpassed the 1940 level. In con-

trast, the current populations in Garfield and Piute Counties continue to be lower than in 1940. Although the 1960s and 1980s were slow growth periods for the state as a whole, some counties still grew extremely rapidly during these two decades. During the 1960s, Davis and Morgan Counties grew at more than twice the state average, 4.3% and 3.8% per year, respectively, while Washington and Summit counties grew at more than twice the state average during the 1980s, 6.4% and 4.2% per year, respectively.

Components of Population Change

Population change is comprised of two components: natural increase and net migration. In turn, both of these have two components. Natural increase is the number of births less the number of deaths. Net migration is in-migration less out-migration, or the number of people moving into a place less the number of people moving out. Table 1 and Figure 1 present the components of Utah's population change from 1960 to 2009 and from 1950 to 2009, respectively, as of July 1 each year. Table 3 presents the components of population change from 2008 to 2009 for the counties and MCDs.

Natural Increase. Natural increase is computed from records maintained by the Utah Department of Health. As presented in Table 1, Utah had 54,548 births in 2009, below the record number in 2008 of 55,357. Deaths in 2009 set a record totaling 13,785. The resulting natural increase of 40,763 persons marks the third time natural increase in Utah has exceeded 40,000. Natural increase accounted for 96.3%



**Table 4
Population Estimates for Utah by County and Multi-County District**

County	July 1 Population Estimates										Average Annual Growth Rates for the Period									
	1940	1950	1960	1970	1980	1990	2000	2007	2008	2009	1940s	1950s	1960s	1970s	1980s	1990s	2000-09	2008-09		
Beaver	4,900	4,800	4,300	3,850	4,400	4,800	6,023	6,466	6,523	6,576	-0.2%	-1.1%	-1.1%	1.3%	0.9%	2.3%	1.0%	0.8%		
Box Elder	18,900	19,800	25,500	28,150	33,500	36,500	42,860	47,491	48,712	49,421	0.5%	2.6%	1.0%	1.8%	0.9%	1.6%	1.6%	1.5%		
Cache	29,900	33,600	36,100	42,550	57,700	70,500	91,897	109,022	111,841	114,276	1.2%	0.7%	1.7%	3.1%	2.0%	2.7%	2.5%	2.2%		
Carbon	18,700	24,800	21,200	15,750	22,400	20,200	20,396	19,730	19,841	19,768	2.9%	-1.6%	-2.9%	3.6%	-1.0%	0.1%	-0.3%	-0.4%		
Daggett	600	400	1,200	650	750	700	933	969	964	988	-4.0%	11.6%	-5.9%	1.4%	0.4%	2.9%	0.6%	2.5%		
Davis	15,500	31,200	65,600	99,600	148,000	188,000	240,200	296,029	301,915	307,656	7.2%	7.7%	4.3%	4.0%	2.4%	2.5%	2.8%	1.9%		
Duchesne	8,700	8,100	7,200	7,400	12,700	12,600	14,397	16,163	16,765	17,368	-0.7%	-1.2%	0.3%	5.5%	-0.1%	1.3%	2.1%	3.6%		
Emery	7,000	6,300	5,500	5,150	11,600	10,300	10,782	10,461	10,610	10,848	-1.0%	-1.3%	-0.7%	8.5%	-1.2%	0.5%	0.1%	2.2%		
Garfield	5,300	4,100	3,500	3,150	3,700	3,950	4,763	4,872	5,044	5,149	-2.5%	-1.6%	-1.0%	1.6%	0.7%	1.9%	0.9%	2.1%		
Grand	2,200	1,900	6,400	6,600	8,250	6,600	8,537	9,125	9,326	9,493	-1.9%	12.9%	0.3%	2.3%	-2.2%	2.6%	1.2%	1.8%		
Iron	8,400	9,700	10,900	12,300	17,500	20,900	34,079	44,813	46,341	46,825	1.4%	1.2%	1.2%	3.6%	1.8%	5.0%	3.6%	1.0%		
Juab	7,400	5,900	4,500	4,600	5,550	5,800	8,310	9,654	10,039	10,191	-2.2%	-2.7%	0.2%	1.9%	0.4%	3.7%	2.3%	1.5%		
Kane	2,600	2,300	2,700	2,450	4,050	5,150	6,037	6,440	6,663	6,740	-1.2%	1.6%	-1.0%	5.2%	2.4%	1.6%	1.2%	1.2%		
Millard	9,700	9,300	7,900	7,050	9,050	11,300	12,461	13,414	13,550	13,702	-0.4%	-1.6%	-1.1%	2.5%	2.2%	1.0%	1.1%	1.1%		
Morgan	2,600	2,500	2,800	4,050	4,950	5,550	7,181	9,265	9,645	9,947	-0.4%	1.1%	3.8%	2.0%	1.2%	2.6%	3.7%	3.1%		
Plute	2,200	1,900	1,400	1,150	1,350	1,250	1,436	1,385	1,447	1,479	-1.5%	-3.0%	-1.9%	1.6%	-0.8%	1.4%	0.3%	2.2%		
Rich	2,000	1,700	1,700	1,600	2,150	1,750	1,955	2,162	2,278	2,329	-1.6%	0.0%	-0.6%	3.0%	-2.0%	1.1%	2.0%	2.2%		
Salt Lake	213,700	279,000	387,800	461,500	625,000	728,000	902,777	1,018,904	1,030,519	1,042,125	2.7%	3.3%	1.8%	3.1%	1.5%	2.2%	1.6%	1.1%		
San Juan	4,600	5,300	8,900	9,700	12,400	12,600	14,360	14,807	15,206	15,643	1.4%	5.3%	0.9%	2.5%	0.2%	1.3%	1.0%	2.9%		
Sanpete	15,900	13,800	11,100	11,000	14,800	16,300	22,846	26,464	26,960	27,646	-1.4%	-2.2%	-0.1%	3.0%	1.0%	3.4%	2.1%	2.5%		
Sevier	12,300	12,000	10,600	10,150	14,900	15,400	18,938	20,442	20,619	20,773	-0.2%	-1.2%	-0.4%	3.9%	0.3%	2.1%	1.0%	0.7%		
Summit	8,600	6,700	5,700	5,900	10,400	15,700	30,048	38,412	39,951	40,451	-2.5%	-1.6%	0.3%	5.8%	4.2%	6.7%	3.4%	1.3%		
Tooele	8,800	15,000	18,000	21,600	26,200	26,700	41,549	56,536	58,214	59,117	5.5%	1.8%	1.8%	1.9%	0.2%	4.5%	4.0%	1.6%		
Uintah	10,000	10,300	11,700	12,800	20,700	22,200	25,297	28,806	30,446	31,291	0.3%	1.3%	0.9%	4.9%	0.7%	1.3%	2.4%	2.8%		
Utah	56,900	83,000	108,300	139,300	220,000	266,000	371,894	501,447	519,632	531,442	3.8%	2.7%	2.5%	4.7%	1.9%	3.4%	4.0%	2.3%		
Wasatch	5,800	5,500	5,300	5,950	8,650	10,100	15,433	21,951	22,845	23,428	-0.5%	-0.4%	1.2%	3.8%	1.6%	4.3%	4.7%	2.6%		
Washington	9,200	9,800	10,400	13,900	26,400	49,100	91,104	140,908	144,710	145,466	0.6%	0.6%	2.9%	6.6%	6.4%	6.4%	5.3%	0.5%		
Wayne	2,300	2,200	1,700	1,450	1,950	2,150	2,515	2,635	2,637	2,692	-0.4%	-2.5%	-1.6%	3.0%	1.0%	1.6%	0.8%	2.1%		
Weber	57,100	85,000	112,100	126,700	145,000	159,000	197,541	220,781	224,536	227,259	4.1%	2.8%	1.2%	1.4%	0.9%	2.2%	1.6%	1.2%		
MCD																				
Bear River	50,800	55,100	63,300	72,300	93,350	108,750	136,712	158,675	162,831	166,026	0.8%	1.4%	1.3%	2.6%	1.5%	2.3%	2.2%	2.0%		
Five County	30,400	30,700	31,800	35,650	56,050	83,900	142,006	203,499	209,281	210,756	0.1%	0.4%	1.1%	4.6%	4.1%	5.4%	4.5%	0.7%		
Mountainland	71,300	95,200	119,300	151,150	239,050	291,800	417,375	561,810	582,428	595,321	2.9%	2.3%	2.4%	4.7%	2.0%	3.6%	4.0%	2.2%		
Six County	49,800	45,100	37,200	35,400	47,600	52,200	66,506	73,994	75,252	76,483	-1.0%	-1.9%	-0.5%	3.0%	0.9%	2.5%	1.6%	1.6%		
Southeast	32,500	38,300	42,000	37,200	54,650	49,700	54,075	54,123	54,983	55,752	1.7%	0.9%	-1.2%	3.9%	-0.9%	0.8%	0.3%	1.4%		
Uintah Basin	19,300	18,800	20,100	20,850	34,150	35,500	40,627	45,938	48,175	49,647	-0.3%	0.7%	0.4%	5.1%	0.4%	1.4%	2.3%	3.1%		
Wasatch Front	297,700	412,700	586,300	713,450	949,150	1,107,250	1,389,252	1,601,515	1,624,829	1,646,104	3.3%	3.6%	2.0%	2.9%	1.6%	2.3%	1.9%	1.3%		
State of Utah	552,000	696,000	900,000	1,066,000	1,474,000	1,729,000	2,246,553	2,699,554	2,757,779	2,800,089	2.3%	2.6%	1.7%	3.3%	1.6%	2.7%	2.5%	1.5%		

Notes:

1. Before 1995, the Utah Population Estimates Committee rounded its population estimates
2. The average annual growth rate for a period is based on a discrete compounding formula which is available from The Governor's Office of Planning and Budget

Source: Utah Population Estimates Committee

of Utah's population growth in 2009. This is an increase from the previous year's share of 71.4% and higher than the ten-year average of 64.6%. The number of births will vary as fertility changes and as the number of women in their child-bearing years changes. The number of deaths, however, tends to increase slowly and steadily.

Net Migration. Net migration is positive when in-migration exceeds out-migration and negative when out-migration exceeds in-migration. When net migration is positive, net in-migration has occurred and when net migration is negative, net out-migration has occurred. In the population estimates developed by the Utah Population Estimates Committee, net migration is not estimated directly. Rather, net migration is computed as the implied difference between estimated population change and natural increase as computed from the records maintained by the Department of Health. In addition, no attempt is made to estimate the components of net migration, in-migration and out-migration.

Thus far, the 2000s have been a period of sustained net in-migration. While this has been a period of high absolute in-migration, migration rates (net migration as a percent of the base or previous year population), were higher during the 1970s, as well as a few years in the 1950s and 1960s. During 2009 net migration was 1,547 down from 2008 net migration of 16,648.

Though it is not known for sure where the recent migrants came from, IRS tax return data on county to county address changes highlights some interesting points. California dominates the flow of interstate migration to and from Utah. The

extended Salt Lake area has strong migration ties with the major metropolitan areas south and or west of Utah, such as Los Angeles, Phoenix, Portland, Seattle and Las Vegas.

The slowing of in-migration to Utah can be explained by the slowdown in the economy. School records suggest a strong Latino, possibly foreign born, element to the recent migration wave. As depicted in Figure 4, the Latino share of enrollment, increased from 8.8% in 2000 to 14.4% in 2009.

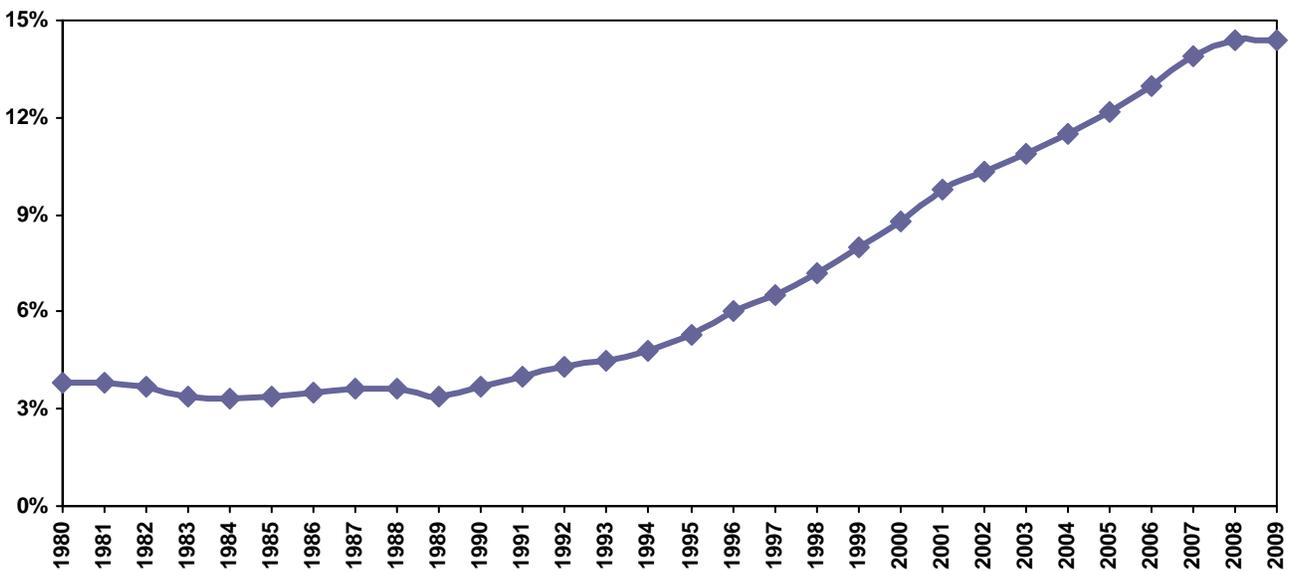
Utah Population Estimates Committee

The Utah Population Estimates Committee (UPEC) develops the official population estimates for Utah and the 29 counties in the state. Coordination and staffing of the Committee is the responsibility of the Demographic and Economic Analysis Section of the Governor's Office of Planning and Budget (GOPB). Membership includes representatives from state government, universities, and other organizations with knowledge of the data used in making population estimates. A list of members is at the back of this report.

The Committee has been preparing estimates for over a half century.² During most of this time, UPEC operated as an interagency committee, with select members included from outside state government. Governor Leavitt officially sanctioned the Committee and clarified its purposes and responsi-

² For more information on the history and methods of the Utah Population Estimates Committee, see Governor's Office of Planning and Budget, Population Estimates: The Utah Experience (Salt Lake City, Natalie Gochnour, Chair, Utah Population Estimates Committee, September 1999).

**Figure 4
Latino School Enrollment: Percent of Total**



Source: Utah State Office of Education

bilities in 1997 by issuing an executive order. The Committee is also recognized in state statute as the source for population estimates used in state funding formulas when U.S. Census Bureau estimates are unavailable.

In addition to staffing UPEC, GOPB represents the state in the Federal-State Cooperative for Population Estimates. This program, administered by the U.S. Census Bureau, facilitates the exchange of data used in making population estimates. The program also provides a forum for dialog that can improve the quality of state and county estimates made by both parties. Census Bureau population estimates by county are discussed later in this article.

Methods

Over the years, the various methods and data used by the Committee share many similarities with national standards of the time, but also included some differences. UPEC, like the Census Bureau, has always relied heavily on the component method of population estimation. For example, in one widely used version of the component method, migration is estimated by comparing the actual and expected school-age population and relating this difference to the total population and total migration.³ In Utah, this is known as the school enrollment method and is a slightly modified version of what is commonly referred to in the literature as the component II method.⁴

UPEC develops population estimates using a combination of the component II or school enrollment method, a method based on membership in the Church of Jesus Christ of Latter-day Saints (LDS), a method based on tax return data from the Internal Revenue Service (IRS), and a method based on housing units. Table 4 presents the population estimates and implied net migration resulting from each method. For the 2009 population estimate, the methods ranked:

1. School: 2,817,053
2. LDS: 2,795,615
3. Housing: 2,787,691
4. IRS: 2,762,466

School Enrollment Method

The school enrollment method uses changes in school enrollment as an indicator of net migration. This method compares a county's survived enrollment (calculated by applying a survival rate of 99.98% to the enrollment count), in grades 1 to 8 for the year prior to the estimate year, to enrollment in grades 2 to 9 for the estimate year. The difference between these two enrollment totals is taken to be net student migration for the county. Total net migration from the school enrollment method for the county is then derived by multiplying the county's student migration estimate by the county-specific total population to student ratio. This ratio is defined as the total population estimate of the county for the prior year divided by the same year's enrollment in grades 1 to 8.

Utah's implementation of the component II method is strengthened by the quality of the state's school enrollment data. Utah's public school system is unique in that it serves an unusually high percentage of the total kindergarten through 12th grade enrollment. During 2004, for instance, 96.9% of total enrollment in Utah was public, second highest among states, compared with 90.4% nationwide.⁵ In addition, the public school system encompasses a large percentage of the total population. Utah ranks first among the states with 21.2% of its population ages 5-17, compared to 17.4% nationwide in 2009. Moreover, the public school system receives independent audits of enrollment data due to the state's equalized education funding mechanism.

LDS Membership Method

The Committee's second method is called the LDS membership method. This method simply applies the growth rate in LDS membership in a particular county to the previous year's population estimate for the county. The growth in LDS membership, then, is an indicator of population growth. The membership records of the Church of Jesus Christ of Latter-day Saints (frequently called LDS or Mormons) are a data source uniquely relevant to Utah. The LDS Church graciously provides these data in aggregate form enabling a count of members by county. Individual member information such as names and addresses are not provided.

The Committee is very fortunate to have access to the LDS membership data for estimating purposes. About 60% of Utah's population is included in the membership counts of the LDS Church. These counts include every member of record, including children. The counts are not limited to those who attend church regularly. Rather, they include any member of record assigned to a local unit (church or ward) regardless of his or her involvement with the organization.

In addition to the broad coverage, the utility of the data is strengthened by its timeliness and quality. The originating file is a current file and an extract can be taken at any time. For estimation purposes, this means that there is essentially no

3 The Census Bureau currently uses a component method based on administrative records such as birth and death records, tax returns, and Medicare enrollment.

4 The fundamental characteristic of the component II method is that migration of the total population is estimated based on (1) a comparison of the actual and the expected (survived) school-age population; and, (2) the historical relationship between school-age migration and total migration. There are many varieties of this fundamental method, including detailed estimation for subgroups of the population such as the population under age 65, population age 65 and over, and special military and institutional population groups. Utah's method is modified in the sense that it employs a level of detail (i.e. components) and input data (i.e. target grades and survival rate) that reflect Committee input.

5 Calculated from data provided by the U.S. Department of Education, Institute of Education Sciences. These calculations were published in *State Rankings 2007*, Morgan Quinto Press.

**Table 5
Utah Population Estimates by County and Multi-County District: An Average of Three Methods with Judgment in Selected Counties**

County	July 1, 2008			School Enrollment			LDS			IRS			Housing			Average of Four Methods			Estimate Based on Judgment in Selected Counties				
	Population	Natural Increase	Net Migration	July 1, 2009	Population	Net Migration	Implied	July 1, 2009	Population	Net Migration	Implied	July 1, 2009	Population	Net Migration	Implied	July 1, 2009	Population	Net Migration	Implied	July 1, 2009	Population	Net Migration	Implied
				Population	Migration	Migration	Migration	Population	Migration	Migration	Population	Migration	Population	Migration	Population	Migration	Population	Migration	Population	Migration	Population	Migration	Population
Beaver	6,523	56	-7	6,576	-3	124	6,703	6,580	1	6,613	34	6,576	34	6,576	34	6,576	34	6,576	34	6,576	34	6,576	-3
Box Elder	48,712	654	318	49,112	-254	-459	48,907	49,468	102	49,266	-100	49,421	-100	49,421	-100	49,421	-100	49,421	-100	49,421	-100	49,421	55
Cache	111,841	2,069	507	114,981	1,071	763	114,673	113,431	-479	113,259	-651	114,276	-651	114,276	-651	114,276	-651	114,276	-651	114,276	-651	114,276	366
Carbon	19,841	130	-384	19,759	-212	-129	19,842	19,959	-12	19,841	-130	19,768	-130	19,768	-130	19,768	-130	19,768	-130	19,768	-130	19,768	-203
Daeggett	964	6	0	1,021	51	16	986	973	3	979	9	988	9	988	9	988	9	988	9	988	9	988	18
Davis	301,915	4,778	2,938	308,229	1,536	-958	305,735	305,108	-1,585	304,196	-2,497	307,656	-2,497	307,656	-2,497	307,656	-2,497	307,656	-2,497	307,656	-2,497	307,656	963
Duchesne	16,765	316	270	17,653	572	815	17,896	17,101	20	16,982	-99	17,368	-99	17,368	-99	17,368	-99	17,368	-99	17,368	-99	17,368	287
Emery	10,610	93	367	10,874	58	171	10,874	10,714	11	10,707	4	10,848	4	10,848	4	10,848	4	10,848	4	10,848	4	10,848	145
Garfield	5,044	19	104	5,034	-29	49	5,112	5,131	68	5,044	-19	5,149	-19	5,149	-19	5,149	-19	5,149	-19	5,149	-19	5,149	86
Grand	9,326	49	132	9,514	139	165	9,540	9,458	83	9,490	115	9,493	115	9,493	115	9,493	115	9,493	115	9,493	115	9,493	118
Iron	46,341	687	-155	46,766	-262	-923	46,105	46,837	-191	46,736	-292	46,825	-292	46,825	-292	46,825	-292	46,825	-292	46,825	-292	46,825	-203
Juab	10,039	134	10,404	10,071	-102	-118	10,055	10,097	-76	10,039	-135	10,191	-135	10,191	-135	10,191	-135	10,191	-135	10,191	-135	10,191	18
Kane	6,663	48	28	6,600	-111	-59	6,619	6,740	29	6,663	-49	6,740	-49	6,740	-49	6,740	-49	6,740	-49	6,740	-49	6,740	29
Millard	13,550	118	119	13,665	119	84	13,609	13,655	-13	13,667	-1	13,702	-1	13,702	-1	13,702	-1	13,702	-1	13,702	-1	13,702	34
Morgan	9,645	125	402	9,879	109	231	9,533	9,791	21	9,645	-125	9,947	-125	9,947	-125	9,947	-125	9,947	-125	9,947	-125	9,947	177
Plute	1,447	(1)	15	1,530	84	-30	1,416	1,447	1	1,447	1	1,479	1	1,479	1	1,479	1	1,479	1	1,479	1	1,479	33
Rich	2,278	22	44	2,670	44	2,288	2,288	2,288	13	2,186	-114	2,329	-114	2,329	-114	2,329	-114	2,329	-114	2,329	-114	2,329	29
Salt Lake	1,030,519	13,788	6,467	1,035,085	-9,222	-31,289	1,013,018	1,040,515	-3,792	1,040,633	-3,674	1,042,125	-3,674	1,042,125	-3,674	1,042,125	-3,674	1,042,125	-3,674	1,042,125	-3,674	1,042,125	-2,182
San Juan	15,206	113	995	15,257	-62	-15	15,304	15,359	40	15,451	132	15,643	132	15,643	132	15,643	132	15,643	132	15,643	132	15,643	324
Sanpete	26,960	237	663	27,650	463	-83	27,114	27,428	231	27,263	66	27,646	66	27,646	66	27,646	66	27,646	66	27,646	66	27,646	449
Sevier	20,619	182	-102	20,699	-102	-352	20,449	20,919	118	20,920	119	20,773	119	20,773	119	20,773	119	20,773	119	20,773	119	20,773	-28
Summit	39,951	415	828	39,852	-514	1,337	41,703	40,307	-59	39,552	-815	40,451	-815	40,451	-815	40,451	-815	40,451	-815	40,451	-815	40,451	85
Tooele	58,214	789	478	58,951	-52	-371	58,632	58,920	-83	58,707	-296	59,117	-296	59,117	-296	59,117	-296	59,117	-296	59,117	-296	59,117	114
Utah	30,446	523	-640	31,585	616	3,535	32,834	31,958	989	30,446	-523	31,291	-523	31,291	-523	31,291	-523	31,291	-523	31,291	-523	31,291	322
Wasatch	519,632	10,538	5,819	533,705	3,535	3,542	526,628	524,633	-5,537	524,693	-5,477	531,442	-5,477	531,442	-5,477	531,442	-5,477	531,442	-5,477	531,442	-5,477	531,442	1,272
Washington	22,845	292	488	23,376	239	285	23,422	23,283	146	22,845	-292	23,428	-292	23,428	-292	23,428	-292	23,428	-292	23,428	-292	23,428	291
Wayne	144,710	1,707	-1,991	145,546	-871	-1,364	145,053	146,427	10	144,710	-1,707	145,466	-1,707	145,466	-1,707	145,466	-1,707	145,466	-1,707	145,466	-1,707	145,466	-951
Weber	2,637	11	73	2,677	29	-18	2,630	2,678	30	2,637	-11	2,692	-11	2,692	-11	2,692	-11	2,692	-11	2,692	-11	2,692	44
WCD	224,536	2,865	503	227,411	10	-1,615	225,786	226,461	-940	226,764	-637	227,259	-637	227,259	-637	227,259	-637	227,259	-637	227,259	-637	227,259	-142
Bear River	162,831	2,745	869	166,763	1,187	292	165,868	165,212	-364	164,711	-865	166,026	-865	166,026	-865	166,026	-865	166,026	-865	166,026	-865	166,026	450
Five County	209,281	2,517	-2,021	210,522	-1,276	-2,206	209,592	211,715	-83	209,765	-2,033	210,756	-2,033	210,756	-2,033	210,756	-2,033	210,756	-2,033	210,756	-2,033	210,756	-1,042
Mountainland	582,428	11,245	7,135	596,933	3,260	-1,920	591,753	588,223	-5,450	587,089	-6,584	595,321	-6,584	595,321	-6,584	595,321	-6,584	595,321	-6,584	595,321	-6,584	595,321	1,648
Six County	75,252	681	999	76,292	359	-660	75,273	76,224	291	75,973	40	76,483	40	76,483	40	76,483	40	76,483	40	76,483	40	76,483	550
Southeast	54,983	385	1,110	55,291	-77	192	55,560	55,490	122	55,489	121	55,752	121	55,752	121	55,752	121	55,752	121	55,752	121	55,752	384
Utah Basin	48,175	845	-370	50,259	1,239	2,696	51,716	50,032	-1,012	48,407	-613	49,647	-613	49,647	-613	49,647	-613	49,647	-613	49,647	-613	49,647	627
Wasatch Front	1,624,829	22,345	10,788	1,639,555	-7,619	-34,470	1,612,704	1,640,795	-6,379	1,639,946	-7,228	1,646,104	-7,228	1,646,104	-7,228	1,646,104	-7,228	1,646,104	-7,228	1,646,104	-7,228	1,646,104	-1,070
State of Utah	2,757,779	40,763	18,510	2,795,615	-2,927	-36,076	2,762,466	2,787,691	-10,851	2,781,379	-17,163	2,800,089	-17,163	2,800,089	-17,163	2,800,089	-17,163	2,800,089	-17,163	2,800,089	-17,163	2,800,089	1,547

Note: In most counties, the estimate is the average of the estimates produced from each of the four methods. Table 6 details the procedure used to develop the estimate when the average of the four methods was not used.

Source: Utah Population Estimates Committee

delay or lag time between when the data are released and the reporting period. The accuracy of the data is ensured by the careful record keeping of church officials. Within the LDS faith, leaders from each local unit have ecclesiastical responsibility for the individuals assigned. Hence, there is a religious stewardship that accompanies each membership record. This improves the accuracy of the aggregate data.

Internal Revenue Service Tax Exemption Method

Since 1996, the Committee has used the Internal Revenue Service tax exemption method. This method uses the growth in exemptions as reported on tax returns filed with the IRS as an indicator of population change. The growth rate in exemptions for the previous calendar year is applied to the previous fiscal year population to estimate the current fiscal year population. The Committee developed the method in the mid-1990s after realizing that the School Enrollment and LDS Membership Methods were yielding unrealistically low population estimates during a time of significant economic expansion. Committee members felt that the estimates would be more accurate by incorporating a more economically sensitive methodology. This method is relatively accurate as long as the tax code is stable and the percent of the population filing tax returns does not vary dramatically from year to year. A change in tax laws, for example, affected returns filed during 2003. Therefore, the Committee did not use the IRS method in making its 2004 estimates. Despite its limitations, adding the IRS method significantly increased UPEC's estimates during the 1990s, thereby improving their accuracy. Indeed, if UPEC had relied solely on the IRS method during the 1990s, it would have been just 12,000 people below the 2000 decennial census enumeration, as compared to the 82,000 it was actually under.

The IRS method was not used in the 2009 estimate after a committee vote. In 2008, a number of people who normally would not file for a tax return did so because of the economic stimulus checks. This resulted in a 10% increase in tax exemptions. In 2009, there was a 3% decline in tax exemptions as not all who filed in 2008 needed to file in 2009. The biases in these years make the process to isolate correct data difficult.

Housing Unit Method

In 2004, the Committee added the housing unit method, which it had been testing on an experimental basis since the late 1990s. The main reason was to supplement the estimate with a viable method given the IRS method would be flawed in years with significant tax changes. Building permits have been collected from local governments by the Bureau of Economic and Business Research at the University of Utah for decades. As with LDS membership and IRS tax exemptions, housing growth is used as an indicator of population growth. The method starts with the April 1, 2000 housing enumeration from the Census and updates the estimate with building permit data. The housing stock is estimated for July 1, using the previous calendar year's permit data. This allows a six

month lag for the completion of permitted housing units. A factor of 0.98 is applied to the permit data to account for units that are permitted but not completed, and to account for units that are demolished. The growth rate in the housing stock is applied to the previous year's July 1 estimate to develop the current year July 1 estimate.

Identifying Outliers with the Q-Statistic

UPEC has traditionally identified outliers among its various methods in a given county during a given estimate year and excluded the method from its consideration. Until the 1990s outliers were identified in an informal manner during Committee deliberations. Various formal techniques were used during the 1990s, but none worked well and at one point UPEC dispensed with formal outlier analysis altogether. In 2005, the Committee began using what is known as the Q-statistic or Dixon's Q.⁶ Most simply, Q is the ratio of the range of methods with the outlier excluded to the initial range based on all methods. While Q can be applied as a hypothesis test assuming a probability distribution, UPEC has used it less rigidly as a means to reduce the range of the methods in a given county. Using a critical value of 0.5, UPEC has decided that identifying a specific method as an outlier among the four methods must reduce the range in the remaining three methods by 50% of the initial four methods. Q had a significant impact on the estimates in 2005 and 2007. In 2007, the school enrollment method in Utah County was identified as a high outlier using Q. Excluding this method lowered the estimate in Utah County by about 3,000. In 2007, the LDS method was identified as a low outlier in Salt Lake County. Excluding LDS raised the estimate in Salt Lake County by over 6,000. For the most part, however, UPEC uses Q in the smaller counties to reduce the likelihood unrepresentative data will unduly influence the estimate.

For the 2009 estimates, UPEC's approach to considering the combination of the school enrollment, IRS, LDS, and housing methods are presented in Table 6. The Committee decided not to include the estimate generated with a particular method based on the reliability of the data and the Q-statistic. As presented in Table 6, UPEC used the average of the three methods in 26 of Utah's 29 counties. In the remaining three counties, the estimate was the average of two methods. The net effect of the outlier analysis was to increase the state total estimate by 9,415 people above the average of the four methods. The particular methods used in the counties where an outlier was identified are:

The IRS method—was determined not to be a reliable data point for the 2009 estimates and not used for any counties.

6 A thorough discussion of the Q-statistic is in Rorabacher, "Statistical Treatment for Rejection of Deviant Values: Critical Values of Dixon's 'Q' Parameter and Related Subrange Ratios at the 95% Confidence Level," *Analytical Chemistry*, 1991, volume 63, pages 139-146.

The LDS method—was determined to be an outlier and was not used in Garfield, Kane, and Rich Counties. The school and housing methods were used to determine the estimate.

U.S. Census Bureau Population Estimates

The U.S. Census Bureau, Population Estimates Branch, prepares post-2000 census population estimates for states, counties and sub-county areas. These estimates use different methods and, in some cases, different base data from UPEC. Since estimates prepared by the Committee generally include more recent data, consider a variety of methods and information sources, and incorporate the informed judgment of local people who are familiar with local indicators of population growth, they are widely used in Utah.

Estimates prepared by the Census Bureau, however, may be preferred in applications that require comparisons with other

states or when state statute or federal grant applications require their use. Utah statute explicitly states that U.S. Census Bureau estimates be used in calculating the state spending limit and allocating local option sales taxes and class B and C road monies. Census Bureau estimates are also used by other federal data agencies and are currently the only statewide source of city estimates.

The estimates prepared by the Census Bureau and UPEC have been diverging as the time since the 2000 Census increases. During 2009, the Census estimate for Utah's population, 2,784,572, was about 15,517, or 0.6% less than UPEC's. The main differences in the two estimates are the timing of input data and method. UPEC uses more current birth and death data, and draws from local data sources on school enrollment, LDS membership, and housing unit permits. The Census Bureau methods rely heavily on IRS tax return data as

**Table 6
Utah Population Estimates by County and Multi-County District: Outlier Analysis of Estimates Produced with Four Methods**

County	July 1, 2008 Population	Natural Increase	July 1, 2009 Population Estimate				Outlier Analysis				Estimate Based on Judgement in Select Counties	
			School	LDS	IRS	Housing	School	LDS	IRS	Housing	July 1, 2009 Population	Implied Net Migration
Beaver	6,523	56	6,572	6,576	6,703	6,580	6,572	6,576		6,580	6,576	-3
Box Elder	48,712	654	49,684	49,112	48,907	49,468	49,684	49,112		49,468	49,421	55
Cache	111,841	2,069	114,417	114,981	114,673	113,431	114,417	114,981		113,431	114,276	366
Carbon	19,841	130	19,587	19,759	19,842	19,959	19,587	19,759		19,959	19,768	-203
Daggett	964	6	970	1,021	986	973	970	1,021		973	988	18
Davis	301,915	4,778	309,631	308,229	305,735	305,108	309,631	308,229		305,108	307,656	963
Duchesne	16,765	316	17,351	17,653	17,896	17,101	17,351	17,653		17,101	17,368	287
Emery	10,610	93	11,070	10,761	10,874	10,714	11,070	10,761		10,714	10,848	145
Garfield	5,044	19	5,167	5,034	5,112	5,131	5,167	Low		5,131	5,149	86
Grand	9,326	49	9,507	9,514	9,540	9,458	9,507	9,514		9,458	9,493	118
Iron	46,341	687	46,873	46,766	46,105	46,837	46,873	46,766		46,837	46,825	-203
Juab	10,039	134	10,404	10,071	10,055	10,097	10,404	10,071		10,097	10,191	18
Kane	6,663	48	6,739	6,600	6,619	6,740	6,739	Low		6,740	6,740	29
Millard	13,550	118	13,787	13,665	13,609	13,655	13,787	13,665		13,655	13,702	34
Morgan	9,645	125	10,172	9,879	9,533	9,791	10,172	9,879		9,791	9,947	177
Piute	1,447	-1	1,461	1,530	1,416	1,447	1,461	1,530		1,447	1,479	33
Rich	2,278	22	2,344	2,670	2,288	2,313	2,344	High		2,313	2,329	29
Salt Lake	1,030,519	13,788	1,050,774	1,035,085	1,013,018	1,040,515	1,050,774	1,035,085		1,040,515	1,042,125	-2,182
San Juan	15,206	113	16,314	15,257	15,304	15,359	16,314	15,257		15,359	15,643	324
Sanpete	26,960	237	27,860	27,650	27,114	27,428	27,860	27,650		27,428	27,646	449
Sevier	20,619	182	20,700	20,699	20,449	20,919	20,700	20,699		20,919	20,773	-28
Summit	39,951	415	41,194	39,852	41,703	40,307	41,194	39,852		40,307	40,451	85
Tooele	58,214	789	59,481	58,951	58,632	58,920	59,481	58,951		58,920	59,117	114
Uintah	30,446	523	30,329	31,585	32,834	31,958	30,329	31,585		31,958	31,291	322
Utah	519,632	10,538	535,989	533,705	526,628	524,633	535,989	533,705		524,633	531,442	1,272
Wasatch	22,845	292	23,625	23,376	23,422	23,283	23,625	23,376		23,283	23,428	291
Washington	144,710	1,707	144,426	145,546	145,053	146,427	144,426	145,546		146,427	145,466	-951
Wayne	2,637	11	2,721	2,677	2,630	2,678	2,721	2,677		2,678	2,692	44
Weber	224,536	2,865	227,904	227,411	225,786	226,461	227,904	227,411		226,461	227,259	-142
Total	2,757,779	40,763	2,817,053	2,795,615	2,762,466	2,787,691	2,817,053	2,781,311		2,787,691	2,800,089	1,547

Note: An estimate was classified as an outlier based on the value of the Q-statistic, described in text, and the judgment of the Utah Population Estimates Committee.

Source: Utah Population Estimates Committee

an indicator of domestic migration, American Community Survey results to indicate international migration, and Medicare and group quarters data.⁷

There is a fairly significant difference in the estimation process of the Census Bureau and UPEC. The Census Bureau first develops a total U.S. population estimate using national vital records and migration estimates. The national population estimate includes detail by single year of age, sex, and race. Separately from the national estimate, an estimate for each county in the nation is developed. (The Census Bureau county estimate methodology is described in more detail below.) In a typical estimate year, in a typical county, estimates at the county level are developed for the population under age 65 and 65 and over. The totals of the 3,000 plus individual county population estimates for these two age groups are used to develop control factors. These control factors are then applied to each county estimate so the total of the controlled estimates equals the national population estimates for the two age groups. The process of controlling county population estimates to a separately determined national population estimate can introduce error to the estimating process.

In contrast to the Census Bureau, UPEC examines data at the county level for its methods. The state estimate is then simply the sum of the independently produced county estimates.

The Census Bureau recently revised state population estimates for 2000 through 2008 and produced new estimates for 2009. A comparison of the Census Bureau estimates for 2005 through 2007 with UPEC's estimates is presented in Table 7. Among the counties in 2007, the largest percent difference between the Census and UPEC was 10.9% in Millard County, a growing rural county of over 13,000 by UPEC's estimate, but not growing by the Census Bureau estimate. According to the Census Bureau almost 18,000 or about one-third of the state-wide difference between UPEC and the Census Bureau during 2007 was in Utah County.

U.S. Census Bureau Methods

The Census Bureau "develops county population estimates with an administrative records component of population change method in which the household and group quarters population are estimated independently. State population estimates are simply the sum of all county population estimates within each state." This procedure relies on federal income tax data to estimate the net inter-county migration of the resident population under 65 years old; results from the American Community Survey to estimate net foreign migration; reported resident birth and death statistics to estimate natural change; and data on Medicare enrollees to estimate the population 65 years and older. Estimates for the population living outside of households are based on the decennial census and data provided by each state. People living outside households are known as the group quarters population. This population includes military personnel living in barracks, college students living in dormitories, inmates of correctional

facilities, persons living in nursing homes or assisted care facilities, and others.

Tax data for two successive years are used to determine the number of persons whose county of residence changed during the period. From this series a net migration rate is calculated and applied to the household population base under age 65. The resulting estimates of net migration are combined with independent estimates of the population 65 years and over, the group quarters population, and the other components of population change (resident births and deaths, international migration, and net movement of military barracks personnel to the civilian population) to yield an estimate of total population.

2010 Census

Census Day was April 1, 2010. The day is used as a point in time to reflect the count of the nation. The U.S. Census Bureau is estimated to employ around 3,000 people in Utah alone to help with the enumeration. The Governor's Office of Planning and Budget helped with the state's efforts in promoting Census 2010. In order to ensure an accurate count, GOPB was responsible for several promotional activities such as organizing a Utah Complete Count Committee, publishing a quarterly newsletter and maintaining a State of Utah Census 2010 website that included information on confidentiality, local census contacts, and a link to the sample questionnaire. The state website displayed the state logo and theme, "Every Utah Counts, It's In Our Hands."

After the 2010 Census

State counts will be delivered to the President by December 31, 2010. The Utah Population Estimates Committee plans to do two things once census counts are available:

Prepare New Intercensal Estimates—It is standard procedure once a large scale, high quality census provides a beginning point (2000) and an endpoint (2010) to revise the estimates in the intervening years. The Committee will evaluate its own estimates with the U.S. Census Bureau's intercensal estimates to agree on the state's official intercensal estimates.

Evaluate Accuracy of Methods—Each method used by UPEC will be tested for its accuracy. A procedure known as "in sample" testing will be used to assess how UPEC's methods, building from 2000 counts, fared in reaching 2010 results. Accuracy will be considered method by method, the average of methods, and county by county.

Summary

This article has provided a historical and current description of the significant features of population change in Utah.

⁷ U.S. Census Bureau group quarters data are collected from places where people live or stay other than the usual house, apartment, or mobile home and it is collected by the state and by the Bureau.

Utah's high birth rates, low death rates, and migration trends have been highlighted, as have the patterns of population change in 2009 among Utah's multi-county districts and counties. To make data users more familiar with how population estimates are developed in Utah, UPEC and its meth-

ods have been discussed. The population estimates prepared by the Census Bureau and the methods it uses have also been described, with a brief comparison of how the Bureau's population estimates differ from those prepared by UPEC.

**Table 7
Comparison of Census Bureau and Utah Population Estimates Committee**

County	Utah Population Estimates Committee			Census Bureau			Numeric Difference			Percent Difference		
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
Beaver	6,466	6,523	6,576	6,068	6,182	6,267	398	341	309	6.6%	5.5%	4.9%
Box Elder	47,491	48,712	49,421	47,863	49,059	49,902	-372	-347	-481	-0.8%	-0.7%	-1.0%
Cache	109,022	111,841	114,276	108,655	111,873	115,269	367	-32	-993	0.3%	0.0%	-0.9%
Carbon	19,730	19,841	19,768	19,666	19,605	19,989	64	236	-221	0.3%	1.2%	-1.1%
Daggett	969	964	988	904	912	941	65	52	47	7.2%	5.7%	5.0%
Davis	296,029	301,915	307,656	287,888	295,061	300,827	8,141	6,854	6,829	2.8%	2.3%	2.3%
Duchesne	16,163	16,765	17,368	16,191	16,926	17,948	-28	-161	-580	-0.2%	-1.0%	-3.2%
Emery	10,461	10,610	10,848	10,344	10,470	10,629	117	140	219	1.1%	1.3%	2.1%
Garfield	4,872	5,044	5,149	4,499	4,600	4,625	373	444	524	8.3%	9.7%	11.3%
Grand	9,125	9,326	9,493	9,422	9,598	9,660	-297	-272	-167	-3.2%	-2.8%	-1.7%
Iron	44,813	46,341	46,825	43,283	44,194	45,280	1,530	2,147	1,545	3.5%	4.9%	3.4%
Juab	9,654	10,039	10,191	9,551	9,999	10,244	103	40	-53	1.1%	0.4%	-0.5%
Kane	6,440	6,663	6,740	6,494	6,541	6,601	-54	122	139	-0.8%	1.9%	2.1%
Millard	13,414	13,550	13,702	11,886	12,095	12,276	1,528	1,455	1,426	12.9%	12.0%	11.6%
Morgan	9,265	9,645	9,947	8,438	8,744	8,908	827	901	1,039	9.8%	10.3%	11.7%
Piute	1,385	1,447	1,479	1,329	1,406	1,431	56	41	48	4.2%	2.9%	3.4%
Rich	2,162	2,278	2,329	2,053	2,141	2,160	109	137	169	5.3%	6.4%	7.8%
Salt Lake	1,018,904	1,030,519	1,042,125	1,002,425	1,018,527	1,034,989	16,479	11,992	7,136	1.6%	1.2%	0.7%
San Juan	14,807	15,206	15,643	14,378	14,868	15,049	429	338	594	3.0%	2.3%	3.9%
Sanpete	26,464	26,960	27,646	24,565	25,514	25,946	1,899	1,446	1,700	7.7%	5.7%	6.6%
Sevier	20,442	20,619	20,773	19,682	19,961	19,976	760	658	797	3.9%	3.3%	4.0%
Summit	38,412	39,951	40,451	35,449	36,208	36,969	2,963	3,743	3,482	8.4%	10.3%	9.4%
Tooele	56,536	58,214	59,117	54,720	56,865	58,335	1,816	1,349	782	3.3%	2.4%	1.3%
Uintah	28,806	30,446	31,291	28,917	29,834	31,536	-111	612	-245	-0.4%	2.1%	-0.8%
Utah	501,447	519,632	531,442	512,902	529,755	545,307	-11,455	-10,123	-13,865	-2.2%	-1.9%	-2.5%
Wasatch	21,951	22,845	23,428	20,395	20,976	21,600	1,556	1,869	1,828	7.6%	8.9%	8.5%
Washington	140,908	144,710	145,466	132,298	135,678	137,473	8,610	9,032	7,993	6.5%	6.7%	5.8%
Wayne	2,635	2,637	2,692	2,487	2,558	2,601	148	79	91	6.0%	3.1%	3.5%
Weber	220,781	224,536	227,259	221,044	227,193	231,834	-263	-2,657	-4,575	-0.1%	-1.2%	-2.0%
MCD												
Bear River	158,675	162,831	166,026	158,571	163,073	167,331	104	-242	-1,305	0.1%	-0.1%	-0.8%
Five County	203,499	209,281	210,756	192,642	197,195	200,246	10,857	12,086	10,510	5.6%	6.1%	5.2%
Mountainlands	561,810	582,428	595,321	568,746	586,939	603,876	-6,936	-4,511	-8,555	-1.2%	-0.8%	-1.4%
Six County	73,994	75,252	76,483	69,500	71,533	72,474	4,494	3,719	4,009	6.5%	5.2%	5.5%
Southeast	54,123	54,983	55,752	53,810	54,541	55,327	313	442	425	0.6%	0.8%	0.8%
Uintah Basin	45,938	48,175	49,647	46,012	47,672	50,425	-74	503	-778	-0.2%	1.1%	-1.5%
Wasatch Front	1,601,515	1,624,829	1,646,104	1,574,515	1,606,390	1,634,893	27,000	18,439	11,211	1.7%	1.1%	0.7%
State of Utah	2,699,554	2,757,779	2,800,089	2,668,925	2,736,424	2,784,572	30,629	21,355	15,517	1.1%	0.8%	0.6%

Source: Utah Population Estimates Committee and the U.S. Census Bureau

Utah Population Estimates Committee

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