WICHITA STATE
UNIVERSITY
W. FRANK BARTON
SCHOOL OF BUSINESS
Center for Economic Development
and Business Research

Using Population Data: METROPOLITAN AREA and AGE
Wichita MSA Population Forecast 2010 to 2040

The Center for Economic Development and Business Research, W. Frank Barton School of Business at Wichita State University, recently released online population projections by age cohort from 2010 through 2040 for all Kansas counties. Two sets of population projections were completed to account for the unreliability of migration patterns. Migration patterns can change rapidly due to economic conditions, government policy or natural disasters. The first projection set is based on the continuation of migration patterns (domestic and international) as experienced in each county from 2000 through 2009. The second set of projections assumes a net migration rate of zero throughout the forecast period.

This report is the first in a series of reports aimed at identifying ways to use population projection data. This report initially analyzes the population projections by county for the Wichita MSA, which is comprised of Butler, Harvey, Sedgwick and Sumner Counties. Additionally, CEDBR has analyzed population projections by age group for the Wichita MSA using the migration projections.

Wichita MSA Population

The total population of the Wichita MSA is expected to grow by 128,373 individuals, or 20.7 percent, from 2010 to 2040, for an average annual growth rate of 0.7 percent. Initially, total population is expected to increase 0.9 percent annually. Growth rates are expected to slow to an average annual rate of 0.4 percent by 2040. The slowing growth rate can be attributed to a decline in the birth rate over the analysis period. Approximately 80 percent of babies are born to mothers between 20 and 34 years of age in Kansas. This portion of the population is expected to decrease, as a portion of total population, over time, which will lower the birth rate. Also, in general, birth rates have declined over time in industrialized nations.

Additional points of interest:
- Sedgwick County contains 80 percent of the Wichita MSA population; Butler contains 10.6 percent, Harvey 5.5 percent and Sumner 3.9 percent.
- Growth in the Wichita MSA will be driven by Sedgwick County. The county is expected to contribute to 86.6 percent of the increase in population, while 14.8 percent of the total growth will come from Butler County and 4 percent from Harvey County. Sumner County is projected to decline and is expected to reduce the size of the population by 6,881 people over the 30-year analysis period.

- Butler County is expected to experience the most rapid growth rate, 28.9 percent or nearly 1 percent annually, between 2010 and 2040. Sedgwick County is expected to increase its population by 22.4 percent, or 0.7 percent annually, between 2010 and 2040. Harvey County will grow at an average annual rate of 0.5 percent in the same time period. As mentioned, Sumner County population is expected to decline by approximately 1 percent annually, or decline 28.8 percent over the 30-year analysis period.

Wichita Metropolitan Statistical Area, by County								
	2010	2015	2020	2025	2030	2035	2040	Change 2010 to 2040
Butler	65,463	68,431	71,934	75,442	79,020	82,130	84,406	18,943
Average Annual % Change		*0.9%*	*1.0%*	*1.0%*	*0.9%*	*0.8%*	*0.6%*	*1.0%*
Harvey	34,218	35,314	36,319	37,194	38,092	38,883	39,409	5,191
Average Annual % Change		*0.6%*	*0.6%*	*0.5%*	*0.5%*	*0.4%*	*0.3%*	*0.5%*
Sedgwick	495,632	519,652	543,794	562,115	579,025	593,910	606,752	111,120
Average Annual % Change		*1.0%*	*0.9%*	*0.7%*	*0.6%*	*0.5%*	*0.4%*	*0.7%*
Sumner	23,878	22,907	21,788	20,605	19,485	18,295	16,997	-6,881
Average Annual % Change		*-0.8%*	*-1.0%*	*-1.1%*	*-1.1%*	*-1.2%*	*-1.4%*	*-1.0%*
Wichita MSA	*619,191*	*646,303*	*673,834*	*695,356*	*715,622*	*733,218*	*747,564*	*128,373*
Average Annual % Change		*0.9%*	*0.9%*	*0.6%*	*0.6%*	*0.5%*	*0.4%*	*0.7%*

Age

Total population can be broken into age groups. For ease, age groups have also been classified by generation. Definitions and general descriptions of each generation have been provided in the next section of this report.

There are currently six generations alive in the Wichita MSA. The table below illustrates how these generations move through the population over time. In 2010, the G.I. Generation surpassed their average life expectancy. Because of this, the generation is not expected to be a primary population component in 2015. In 2025, a new generation will enter the Wichita MSA. This generation is yet to be named and official dates have yet to be determined. CEDBR estimated dates based on generations being approximately 22 years long.

Wichita Metropolitan Statistical Area							
	2010	2015	2020	2025	2030	2035	2040
0-4	47,648	48,249	49,796	51,180	52,331	53,425	54,390
5-9	46,742	47,551	48,148	49,660	51,056	52,211	53,307
10-14	46,152	46,887	47,706	48,284	49,816	51,227	52,392
15-19	44,709	46,297	47,037	47,847	48,424	49,974	51,400
20-24	41,943	44,575	46,170	46,837	47,664	48,242	49,803
25-29	44,334	42,232	44,906	46,407	47,081	47,933	48,503
30-34	40,146	44,529	42,494	45,118	46,625	47,297	48,156
35-39	38,153	40,151	44,573	42,462	45,102	46,606	47,274
40-44	38,264	38,079	40,093	44,434	42,366	45,019	46,519
45-49	43,898	38,189	38,014	39,955	44,298	42,271	44,937
50-54	45,529	43,185	37,510	37,221	39,125	43,382	41,415
55-59	39,425	44,815	42,495	36,762	36,480	38,348	42,522
60-64	31,093	38,050	43,376	40,637	35,158	34,888	36,677
65-69	21,530	29,718	36,572	40,957	38,382	33,212	32,957
70-74	16,437	19,701	27,623	32,806	36,736	34,428	29,790
75-79	14,423	14,607	17,729	23,882	28,367	31,761	29,768
80-84	11,348	11,281	11,449	13,183	17,740	21,075	23,590
85+	7,417	8,205	8,143	7,725	8,874	11,919	14,165
TOTAL ALL AGES	619,191	646,303	673,834	695,356	715,622	733,218	747,564

Born			Generation Name
2021*	-	….	Un-named
2001	-	2020*	Generation Z (New Silent Generation)
1980	-	2000	Generation Y (Millennials)
1965	-	1979	Generation X
1946	-	1964	Baby Boomers
1925	-	1945	Silent Generation
1900	-	1924	G.I. Generation

*Dates have yet to be officially determined.
CEDBR estimate

A location quotient was calculated to determine whether the Wichita MSA was more or less concentrated in various age groups when compared to Kansas. Values less than one indicate an age group has fewer members in the Wichita MSA, as a portion of the total population, when compared to Kansas. Values greater than one indicate an age group has more members in the Wichita MSA, as a portion of the total population, when compared to Kansas.

The Wichita MSA has a higher concentration of young people relative to Kansas. In addition, the Wichita MSA tends to have a lower concentration of older people. This would indicate that individuals leave the MSA as they age, or younger people are drawn to the MSA. Within the MSA, Harvey and Sumner Counties have larger proportions of the Silent Generation and the G.I. Generation. Butler and Sedgwick Counties tend to have larger proportions of Generation X. Sedgwick County has the highest concentration of Millennial and the New Silent Generation. Surprisingly, Sumner County, which is expected to experience declining population, has the highest proportion of Baby Boomers and is forecasted to have the highest proportion of the new, un-named generation by 2040.

Wichita MSA Generations Compared to Kansas							
	2010	2015	2020	2025	2030	2035	2040
Un-named	N/A	N/A	N/A	1.07	1.07	1.07	1.06
Generation Z (New Silent Generation)	1.06	1.06	1.06	1.03	1.01	0.99	0.99
Generation Y (Millennials)	1.01	1.00	1.00	1.01	1.02	1.01	1.00
Generation X	1.01	1.01	1.00	0.99	0.99	0.98	0.97
Baby Boomers	0.99	0.98	0.98	0.96	0.95	0.92	0.91
Silent Generation	0.92	0.89	0.86	0.82	0.79	N/A	N/A
G.I. Generation	0.89	N/A	N/A	N/A	N/A	N/A	N/A

Wichita MSA County Generations Compared to Kansas							
Butler County	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Un-named	N/A	N/A	N/A	1.04	1.06	1.05	1.02
Generation Z (New Silent Generation)	0.98	0.95	0.94	0.92	0.91	0.91	0.93
Generation Y (Millennials)	0.97	0.99	1.02	1.06	1.07	1.07	1.07
Generation X	1.00	1.02	1.02	1.01	1.00	0.99	0.98
Baby Boomers	1.06	1.06	1.05	1.04	1.01	0.99	1.00
Silent Generation	0.96	0.94	0.91	0.87	0.83	N/A	N/A
G.I. Generation	0.97	N/A	N/A	N/A	N/A	N/A	N/A
Harvey County	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Un-named	N/A	N/A	N/A	1.00	1.01	1.02	1.01
Generation Z (New Silent Generation)	0.98	0.98	0.99	0.95	0.93	0.91	0.90
Generation Y (Millennials)	0.93	0.93	0.93	0.97	1.00	1.01	1.01
Generation X	0.91	0.93	0.95	0.96	0.97	0.98	0.99
Baby Boomers	1.01	1.03	1.04	1.06	1.09	1.16	1.21
Silent Generation	1.26	1.32	1.33	1.38	1.44	N/A	N/A
G.I. Generation	1.39	N/A	N/A	N/A	N/A	N/A	N/A
Sedgwick County	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Un-named	N/A	N/A	N/A	1.08	1.07	1.07	1.07
Generation Z (New Silent Generation)	1.08	1.09	1.08	1.05	1.03	1.01	1.00
Generation Y (Millennials)	1.02	1.01	1.01	1.02	1.02	1.01	1.00
Generation X	1.03	1.02	1.01	1.00	0.99	0.98	0.97
Baby Boomers	0.97	0.96	0.95	0.93	0.91	0.88	0.86
Silent Generation	0.88	0.84	0.81	0.76	0.71	N/A	N/A
G.I. Generation	0.84	N/A	N/A	N/A	N/A	N/A	N/A
Sumner County	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Un-named	N/A	N/A	N/A	1.04	1.08	1.11	1.13
Generation Z (New Silent Generation)	0.98	0.99	0.99	0.99	0.95	0.89	0.85
Generation Y (Millennials)	0.88	0.83	0.79	0.75	0.72	0.72	0.73
Generation X	0.91	0.90	0.90	0.92	0.96	1.01	1.08
Baby Boomers	1.13	1.18	1.24	1.31	1.38	1.48	1.59
Silent Generation	1.18	1.25	1.30	1.39	1.49	N/A	N/A
G.I. Generation	1.15	N/A	N/A	N/A	N/A	N/A	N/A

Generation Definitions

It is important to recognize there are generational differences, but each generation is also diversified within itself. It should be noted that exact definitions of each generation are debatable. Variations exist among generational definitions such as what birth years are included in each generational sub group. Therefore, all definitions are used solely for the purpose of this report and may not correspond to other research.

The oldest generation alive in 2010 is known as the GI Generation. They are often called "The Greatest Generation" as coined by Tom Brokaw. This generation came of age during the Great Depression and World War II, having been born between 1900 and 1924.

The Silent Generation is sometimes referred to as the "Traditionalists", having been born between 1925 and 1945. This is a relatively small generation due to low birth rates during the Great Depression and World War II. They were born too late to be part of World War II and too early to be considered part of the hippie generation. That being said, this generation witnessed social change at unprecedented levels. By and large, the people of this generation have an established order to their everyday lives, value authority and have typically remained dedicated to one employer throughout their careers.

The Baby Boomers are defined for the purpose of this study as those born between 1946 and 1964. This generation is known for pushing the limit on social norms and values. In addition, the Baby Boomers have been a population of interest for nearly 65 years due to their influence and magnitude in the economy. On October 17, 2007, the first Baby Boomer registered to receive Social Security benefits[1]. By 2030 all of the Baby Boomers will reach the prime retirement age of 65 and will be able to receive Social Security.

In this report, Generation X (Gen X) will be defined as those born between 1965 and 1979. This generation grew up with the first wave of technology that has brought us to the advancements of today. According to Rebecca Ryan in *live first, work second*, Gen X is the first latch-key generation; therefore, they are self-reliant and skeptical of authority. Most importantly, Gen X does not appear to have work place loyalty and is not afraid to relocate. This generation often chooses where to live and then looks for a job that exhibits an importance equal to the quality of life within the community.

Generation Y (Gen Y), for the purpose of this study, is defined as anyone born between 1980 and 2000. This generation is described as diverse. This generation is comfortable with technology and advanced communication and is often described as tech savvy. Generation Y is also viewed as having a sense of entitlement and has been shielded due to overcompensating parents. In recent years, many have described this generation as the "boomerang" generation. This is due to the impact the Great Recession had on their entry into adulthood. Many GenYers have moved back into their parents homes and continue to live under their parent's finances due to the difficult job market and lack of affordable living opportunities.

Generation Z is defined, for the purpose of this study, as those born between 2001 and 2020. This relatively new generation is defined as those that won't remember the 9/11 attacks on America and will be influenced by the constant connection to technology.

The final generation in this report has yet to be named, described, or even dated. CEDBR will define the generation as those born after 2021.

Population Projection Methodology

The CEDBR prepared population forecasts for Kansas counties using the conventional cohort survival model. For each of 36 age/sex cohort groups, population was forecasted using individual cohort projections of survival rates, birth rates and migration. The starting point for the projections was the Census Bureau's 2010 Demographic Profile Data. The cohort survival model can be summarized mathematically as:

---

[1] ABC News Internet Ventures. ABC News. 15 October 2007. Accessed on June 1, 2008
<http://abcnews.go.com/WN/LifeStages/Story?id=3732745&page=1>

$$T = \sum_{X=1}^{36} p_{x1}$$

Where   T   = Population at the end of the period for all age/sex cohort groups

                   p_{x1} = Population at the end of the period for cohort group x

   and

$$p_{x1} = p_{x0} + b_x - d_x + nm_x$$

     where p_{x1} = Population at the end of the period for cohort group x

                   p_{x0} = Population at the beginning of the period for cohort group x

                   b_x = Births during the period for cohort x

                   d_x = Deaths during the period for cohort x

                   nm_x = Net migration during the period for cohort x

                   x   = cohort group