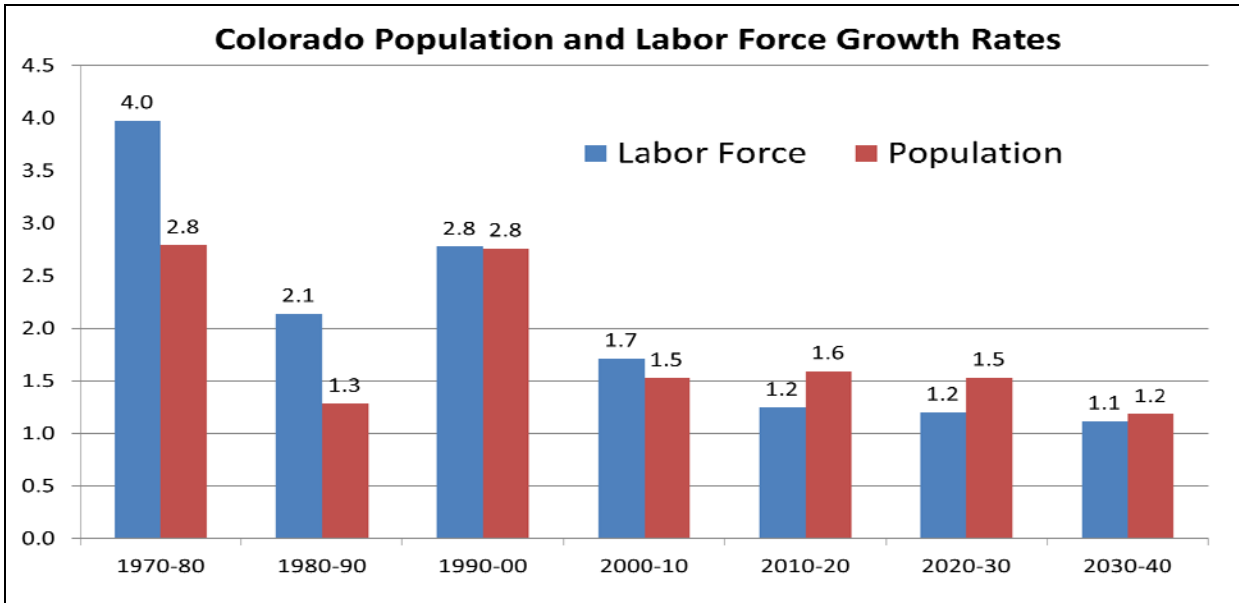# Colorado Labor Force

Introduction

Colorado's labor force, the number of people working or looking for work, has undergone significant changes over the last several decades. Driven, in large part, by the changing age distribution of Colorado, growth rates of the labor force are expected to slow significantly over the forecast horizon of 2040 as compared to historical growth. We are currently nearing the middle of a decade during which Colorado's older population will rapidly become a larger share of its total population. In the long run, the trend of growth in the labor force for Colorado will reflect the aging of the post-World War II baby boomers as well as the migrants that have and will continue to relocate to Colorado for jobs. The labor force in 2040 will look considerably different from today's labor force. The labor force in 2040 will be much larger in number, it will be older, and it will include a larger share of females. Additionally, the labor force will be smaller relative to the total population it supports. Impacts include increased competition for the pool of skilled workers available, the potential slowing of housing development, and downward pressure on income. This report describes the changing age distribution of Colorado, its impacts on the labor force, as well as the potential impacts of the changes in the labor force. The data for this report are based on the 2008-2010 American Community Survey, the 2010 Current Population Survey, and the 2012 National BLS forecasts for labor force participation by age group.
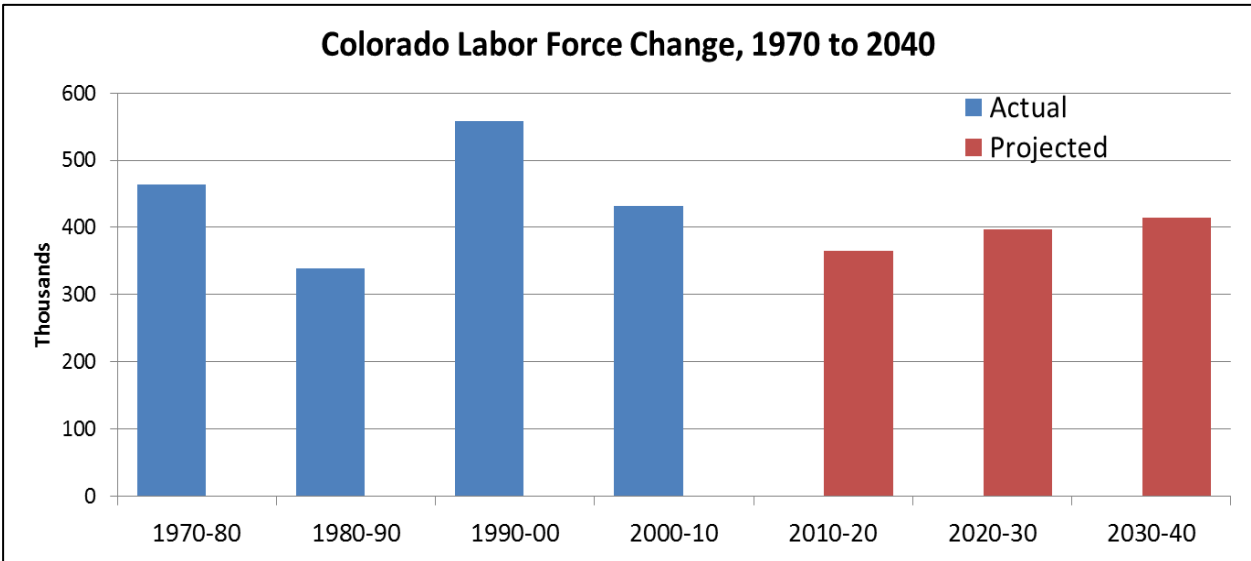
Labor Force Growth

During the 1970's the annual growth rate of the Colorado labor force peaked at close to 4%. The high growth rate was caused by the entrance of the large baby boom generation into the labor force and the steep rise in the participation rate of women. The labor force continued to grow faster than the population last decade.

> *The Colorado labor force will continue to grow, but at a much slower rate than historical growth.*

However, the beginning of this decade marked the 65th birthday of the oldest of the baby boomers and the beginning of a decline in the growth rate of Colorado's labor force with the continued shift of population to older age groups with lower participation rates, albeit higher rates than previous generations. The declines are expected to continue throughout the forecast horizon with the sharpest declines occurring this decade as the majority of baby boomers reach traditional retirement ages.

Colorado Population and Labor Force Growth Rates

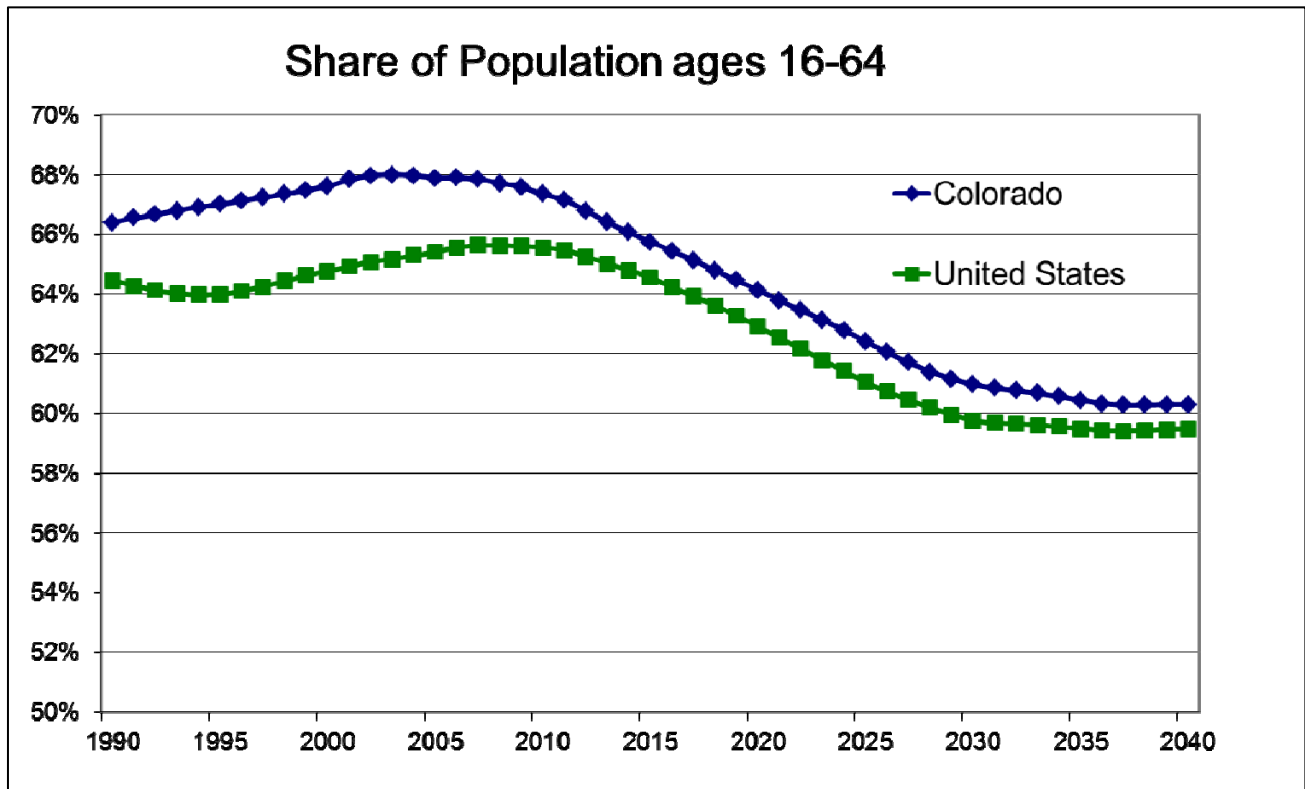| Decade	Labor Force	Population
1970-80	4.0	2.8
1980-90	2.1	1.3
1990-00	2.8	2.8
2000-10	1.7	1.5
2010-20	1.2	1.6
2020-30	1.2	1.5
2030-40	1.1	1.2

The absolute growth in the labor force in Colorado is expected to slow to 365,000 from 2010 to 2020 from an average of 450,000 per decade since 1970 and will hover near 400,000 each following decade throughout 2040.

Colorado Labor Force Change, 1970 to 2040

(Thousands)

Decade	Actual	Projected
1970-80	~463	
1980-90	~337	
1990-00	~560	
2000-10	~430	
2010-20		~364
2020-30		~395
2030-40		~413

Labor force changes may be cyclical or structural. Bounces experienced in Colorado and the Nation's labor force participation rates this last decade due to the Great Recession are cyclical changes in the participation rates in response to business cycles and are short term. The forecasts presented here are independent of business cycles and include only structural and demographic change in participation rates which have longer term impacts.

Colorado's Demographic Dividend

The following chart compares the share of the working age population in both Colorado and the Nation. For the past several decades, Colorado has enjoyed what has been referred to as a 'demographic dividend', a majority of its population in working age groups and many within their peak labor force participation and peak earning years.


Share of Population ages 16-64

By the end of this decade, the share of the working age population will be nearly the same for both Colorado and the Nation. Given the expected age structure of the population and the current forecast of labor force participation rates, the labor force will decline as a share of Colorado's total population (55% in 2010 vs. 50% in 2040) resulting in more residents being dependent on each member of the labor force.

The trend of growth in the labor force for Colorado will reflect the aging of the post-World War II baby boomers.

Colorado Aging Forecast

The following chart displays the numbers of Coloradans by single year of age in 1980. The baby boomers were born starting in 1946, right after the end of WWII, through 1964. The generation that fought and won WWII and later gave birth to the baby boomers, the greatest generation, includes persons born before 1928. Sandwiched between the Boomers and the greatest generation is the silent generation, born 1928-45. This generation included the children of the Great Depression and WWII. These events were both marked by years of unusually low fertility rates. As a result, there are fewer of this generation in Colorado and in the nation as compared to other generations. Following the baby boomers is Generation X, born 1965-1980. This

generation is also known as the baby bust because of the declining birth rate that started in 1965, officially ending the baby boom.
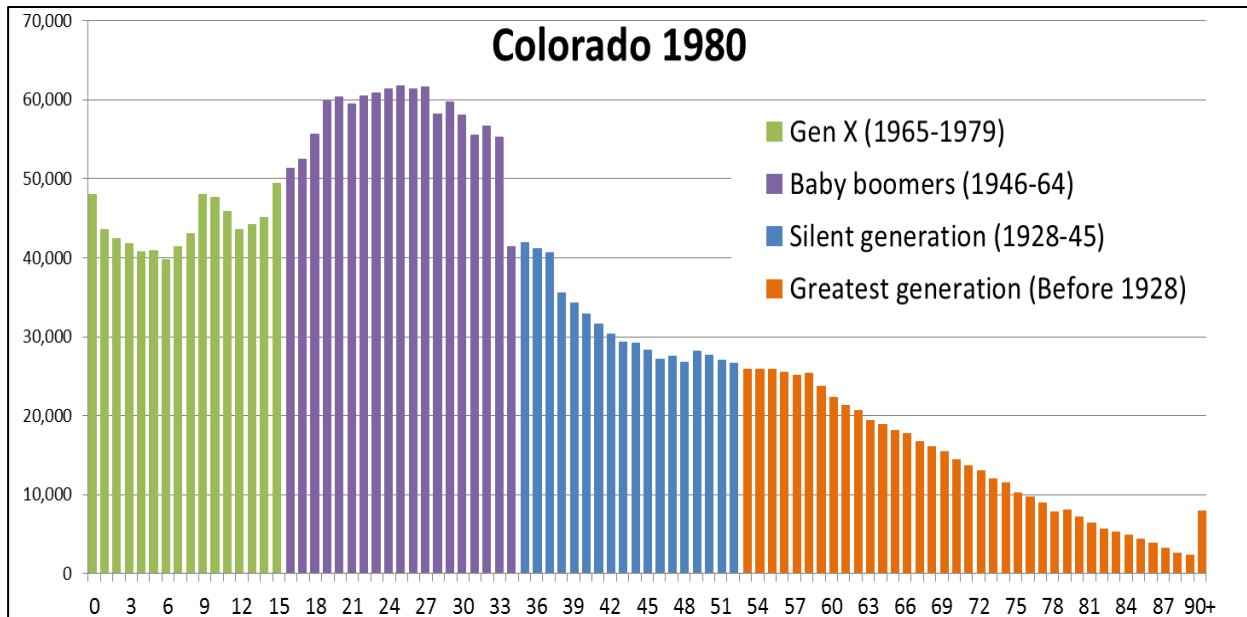
Colorado 1980

By 1980, nearly 40% of Colorado's total population was a baby boomer. Colorado had a disproportionate share of Baby Boomers relative to the Nation, 38% vs. 33% fueled by Colorado's attractiveness in the 70's to baby boomers at their most mobile age. The largest share of net migration ("in movers" minus "out movers") to Colorado, historically as well as currently, is between the ages of 23-35.

By the year 2000, the baby boomers were within peak labor force participation age groups and shared top billing as largest generation in Colorado with their own children, the Millennials, with each generation having a 30% share of the total population.
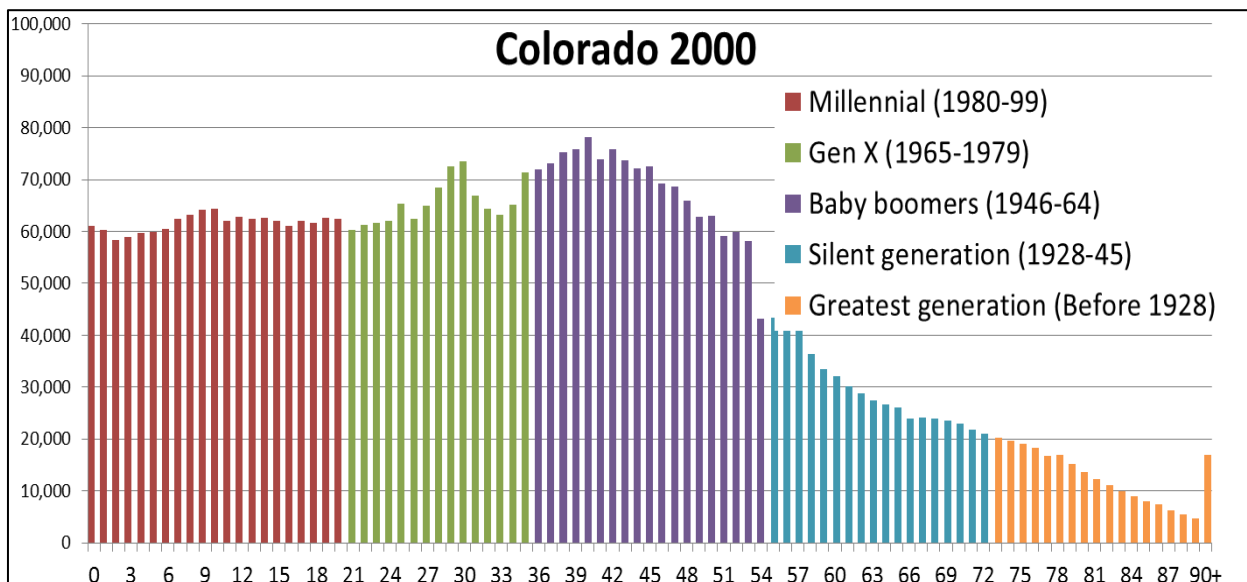
Colorado 2000

The attractiveness of Colorado during the high growth decade of the 90's increased the total population within the generations following the baby boomers such that, by 2000, Colorado no longer had a disproportionate share of Baby Boomers relative to the Nation.
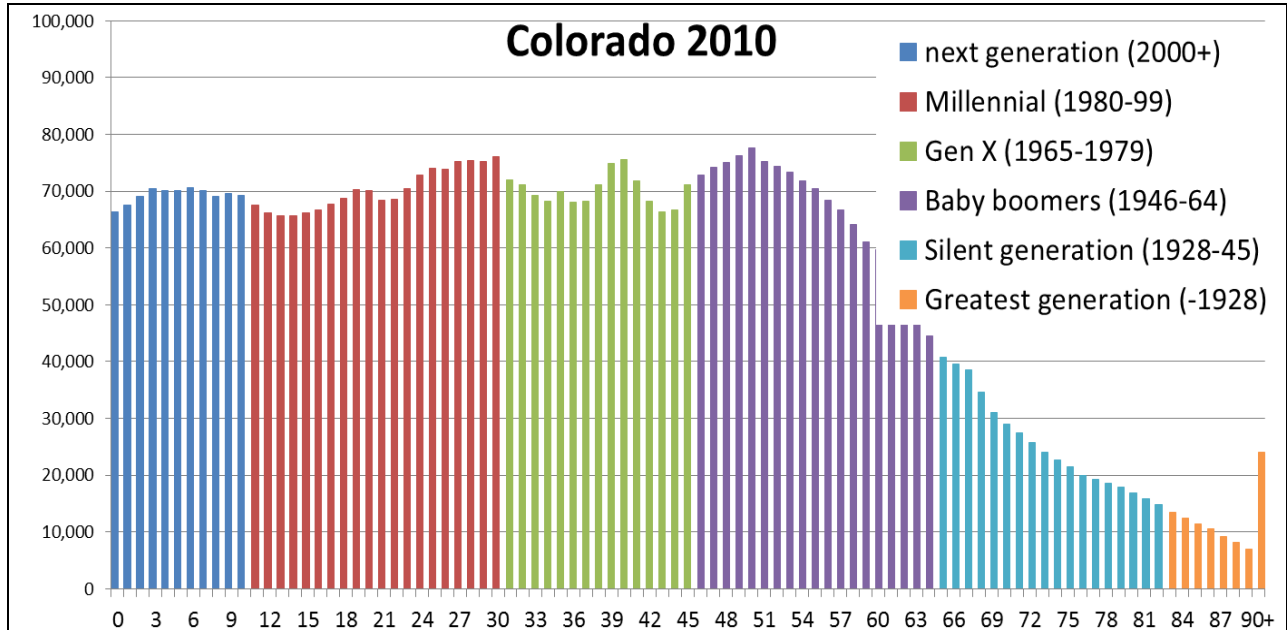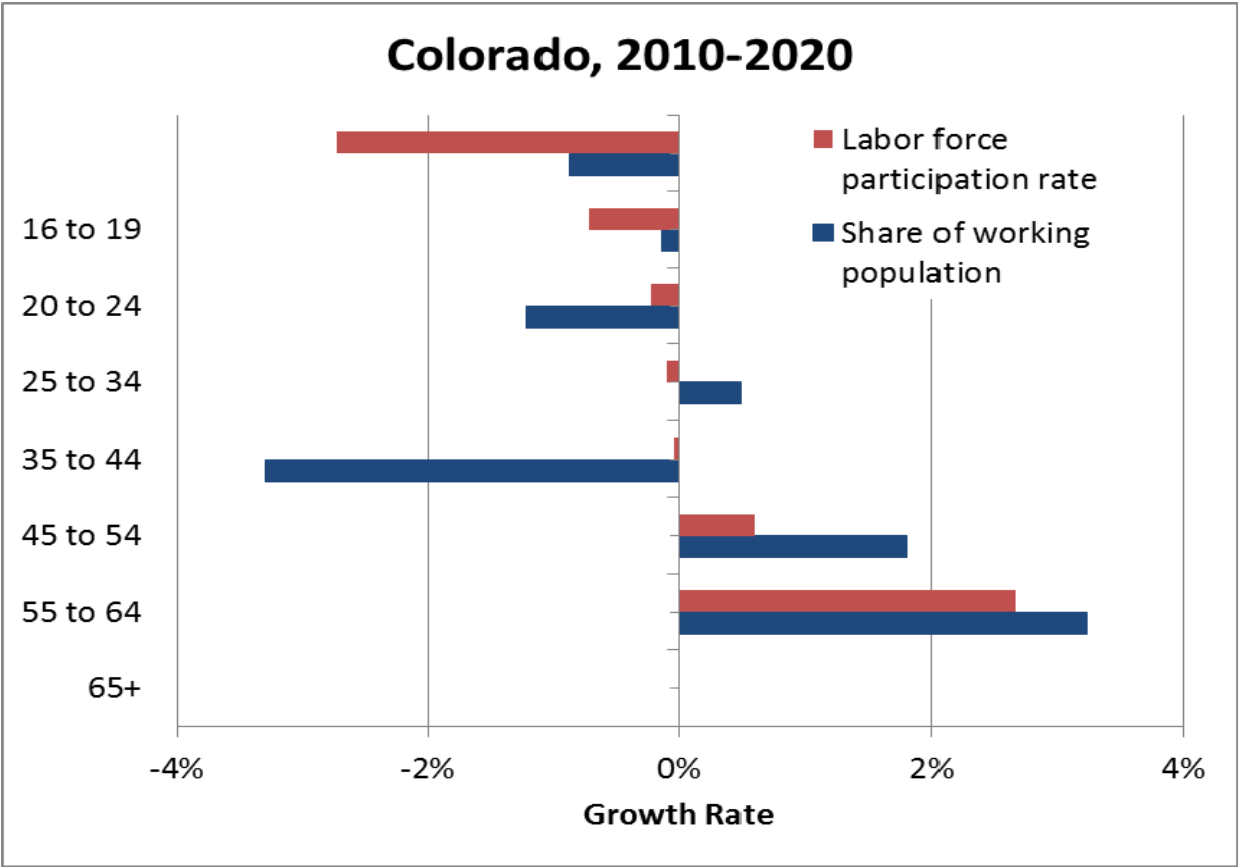

Since the majority of the migrants to Colorado are young, Colorado had and continues to have a relatively small share of its population over age 65. As a result, Colorado has been among the youngest states in the country. In 2010, Colorado ranked 4th youngest among all states.

With the aging of the baby boomers, Colorado's age distribution is changing rapidly and is quickly becoming more like that of the Nation.

Labor Force Participation Rates by Age
As mentioned earlier, participation of older age groups are on the rise. Beginning with the year 2000 the normal retirement age for receiving Social Security benefits increased beyond 65 years and will continue to increase for all persons born after 1960, for who a normal retirement age will be 67 years. This combined with the fact that adults are also living longer healthier lives, creating the need for relatively more retirement funds than earlier generations, is encouraging workers to continue working later in life. However, the increasing share of the working population in older age groups will lower the overall labor force participation rate due to the steep decline in participation after age 55 and the declines in the share of the working population within the historical peak labor force participation years of ages 25 to 34.

Colorado, 2010-2020

Legend:
- Labor force participation rate
- Share of working population

Age groups: 16 to 19, 20 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65+

Growth Rate axis: -4%, -2%, 0%, 2%, 4%

As Colorado ages, the labor force in Colorado will continue to grow older with the fastest growth in labor force participation and the share of working population occurring for persons over 55 years of age. In 1990, 11% of Colorado's labor force was over age 55. By 2030, 23% of the labor force will be over age 55. The median age of Colorado's labor force is forecast to peak between 2015 and 2020 with a median age of 42.2 compared to a median age of 39.4 in 2000.

1990

- 55+ 11%
- < 24 15%
- 25-34 30%
- 35-44 28%
- 45-54 16%

2010

- 55+ 19%
- < 24 14%
- 25-34 22%
- 35-44 22%
- 45-54 23%

2030

- 55+ 23%
- < 24 13%
- 25-34 22%
- 35-44 22%
- 45-54 20%
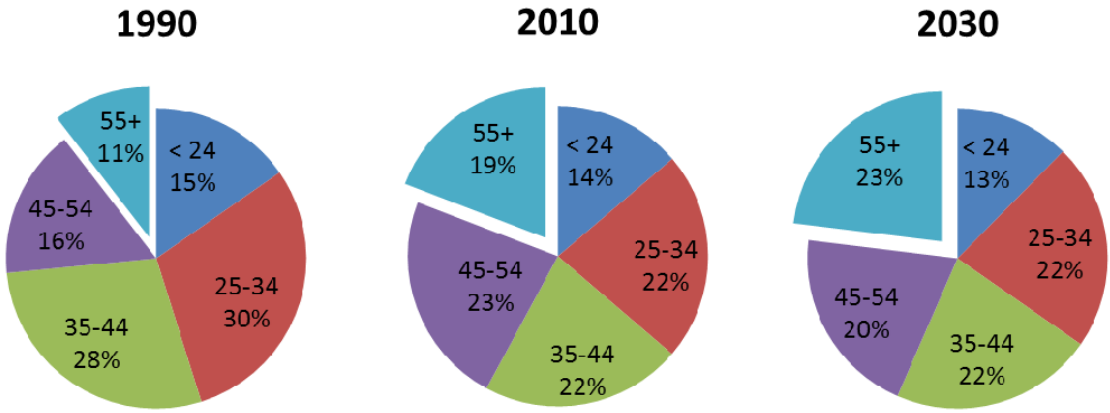
The aging of Colorado's labor force is both the result of the aging of the baby boomers as well as an increased age at which people are leaving the labor force. The median age of persons leaving the labor force between 2000 and 2010 was 66.8. The median age of persons leaving the labor force is expected to continue to increase to 69.5 for persons leaving the labor force between 2035 and 2040.

Labor Force Dynamics

The dynamics of the labor force can be viewed as consisting of three different components: the entrants, the leavers, and the stayers. The entrants are those persons who will be in the labor force in the five year period but are not in the labor force today. The leavers are those persons who will leave the labor force after today but during the five year period on the chart. The stayers are those persons who are in the labor force today and will continue to participate in the labor force through the end year. The labor force of any year consists of the stayers minus the leavers plus the entrants.
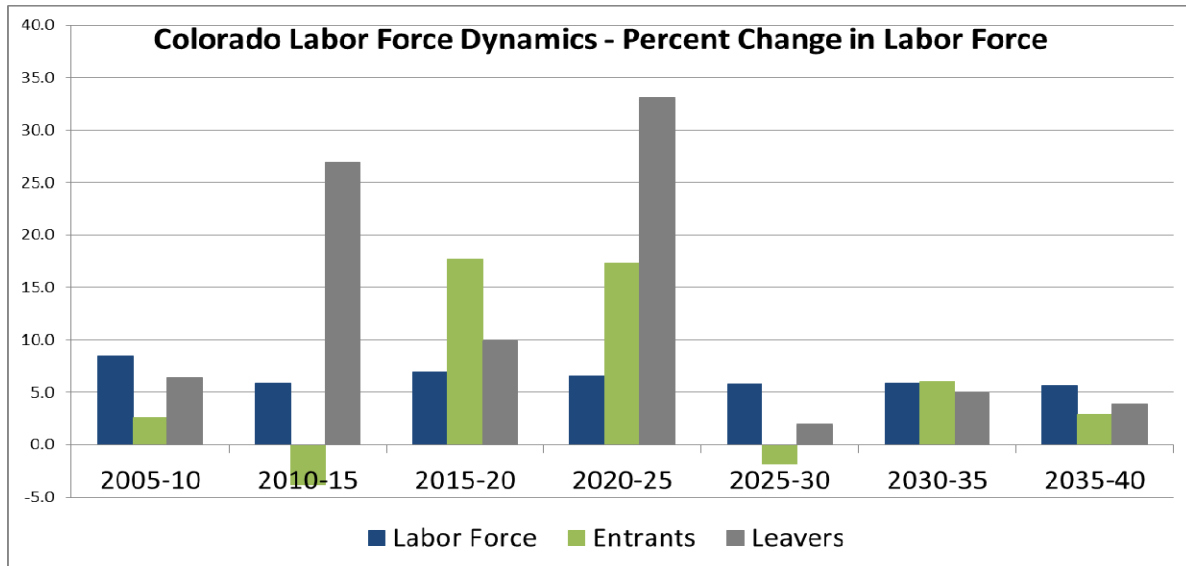
The rate of persons leaving the labor force in Colorado will reach its peak during the 2020 to 2025 period when the number of persons leaving the labor force will increase 33% over the number of leavers between 2015 and 2020, the result of baby boomers retirements and aging into lower participation rate age groups. The labor force will, however, continue to grow with over 200,000 persons entering during the same time period.

The Colorado labor force was 2,760,000 in 2010, the result of 368,000 entrants to the labor force and 153,000 persons leaving since 2005. By 2015, the labor force will increase to just shy of 3,000,000.

Colorado									
				Number					
Year	Labor Force			Entrants			Leavers		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
2000	2,330,314	1,276,002	1,054,312						
2005	2,546,348	1,385,150	1,161,199	359,709	189,344	170,366	(143,675)	(80,196)	(63,479)
2010	2,762,383	1,494,297	1,268,085	368,880	186,442	182,438	(152,846)	(77,294)	(75,551)
2015	2,923,222	1,575,555	1,347,667	354,903	193,896	161,006	(194,064)	(112,639)	(81,424)
2020	3,127,562	1,681,817	1,445,745	417,728	231,074	186,654	(213,388)	(124,812)	(88,576)
2025	3,333,430	1,797,677	1,535,753	489,888	267,642	222,246	(284,020)	(151,783)	(132,238)
2030	3,524,886	1,905,632	1,619,254	480,919	256,036	224,883	(289,463)	(148,081)	(141,382)
2035	3,730,846	2,016,821	1,714,025	509,699	275,354	234,345	(303,739)	(164,165)	(139,574)
2040	3,939,548	2,128,357	1,811,191	524,358	286,090	238,268	(315,655)	(174,554)	(141,101)
				percent change over previous five year period					
Year	Labor Force			Entrants			Leavers		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
2000-05	9.3	8.6	10.1						
2005-10	8.5	7.9	9.2	2.5	-1.5	7.1	6.4	-3.6	19.0
2010-15	5.8	5.4	6.3	-3.8	4.0	-11.7	27.0	45.7	7.8
2015-20	7.0	6.7	7.3	17.7	19.2	15.9	10.0	10.8	8.8
2020-25	6.6	6.9	6.2	17.3	15.8	19.1	33.1	21.6	49.3
2025-30	5.7	6.0	5.4	-1.8	-4.3	1.2	1.9	-2.4	6.9
2030-35	5.8	5.8	5.9	6.0	7.5	4.2	4.9	10.9	-1.3
2035-40	5.6	5.5	5.7	2.9	3.9	1.7	3.9	6.3	1.1
				Median Age					
Year	Labor Force			Entrants			Leavers		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
2000	39.4	39.3	39.6	24.5	24.6	24.3	66.8	67.1	66.4
2010	41.4	41.2	41.5	22.3	21.9	22.8	66.6	66.6	66.5
2020	42.2	41.9	42.6	23.3	23.2	23.5	67.6	67.3	67.8
2030	41.9	41.7	42.2	24.0	23.9	24.1	68.7	68.7	68.7
2040	41.9	41.7	42.6	23.4	23.3	23.5	69.5	69.6	69.5

Labor Force by Sex

Historically males have had the largest share of the entrants to the labor force and this trend is expected to continue. However females, who have historically had the highest growth rates in entrants to the labor force, are expected to slow in the rate of entrants to the labor force as total female labor force participation reached a peak near 2000. The ratio of males to females in the Colorado labor force would change from 120 males to 100 females in 2000 to 116 males to 100 females in 2020. After 2020, the ratio is expected to remain somewhat stable throughout the forecast period resulting in a growth in the share of women in the labor force from 37% in 1970 to 46% by 2010 through 2040.
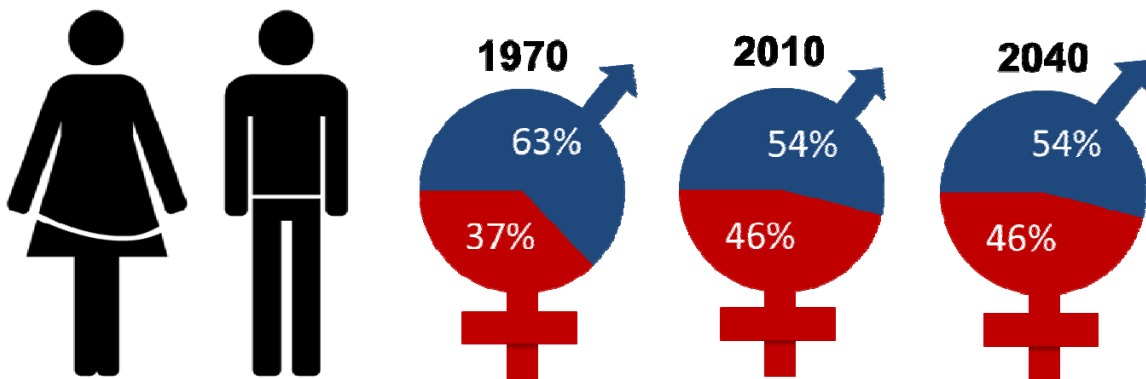
Labor Force Participation Rates
It is important to note that Colorado is a sum of its counties and the state labor force participation is in large part a reflection of the Front Range labor force participation as more than three quarters of Colorado's total labor force resides along the Front Range. While labor force participation will decline the fastest along the Front Range, The resort areas of the Western Slope will also experience rapid decline in participation. These two areas will also be experiencing the fastest growth in the share of their population over age 65. However, sixteen Colorado Counties will have increases in labor force participation. Most of the counties expected to see increases are located in western and southern parts of the state.

County	Total labor force participation rate				County	Total labor force participation rate			
	2010	2020	2030	2040		2010	2020	2030	2040
Colorado	**71.5**	**68.1**	**65.9**	**65.5**	**Colorado**	**71.5**	**68.1**	**65.9**	**65.5**
Adams	72.8	69.2	66.9	65.4	Kit Carson	71.3	70.2	67.7	67.3
Alamosa	71.4	67.6	66.8	68.5	Lake	64.3	62.4	61.9	60.6
Arapahoe	72.7	68.9	65.9	64.8	La Plata	72.7	68.3	66.2	66.1
Archuleta	62.7	59.6	60.7	62.8	Larimer	73.5	70.2	68.3	68.5
Baca	55.9	57.2	57.1	58.6	Las Animas	67.8	66.2	65.8	67.5
Bent	65.3	62.1	59.8	60.3	Lincoln	65.1	66.4	66.0	67.9
Boulder	73.6	68.8	65.7	64.6	Logan	72.0	70.9	69.7	71.5
Broomfield	72.2	69.0	66.4	63.7	Mesa	69.2	66.1	64.9	66.0
Chaffee	59.8	58.8	59.1	60.2	Mineral	55.9	54.0	55.0	58.4
Cheyenne	66.8	66.8	65.5	66.1	Moffat	78.9	74.2	72.7	73.4
Clear Creek	73.9	68.9	67.7	69.3	Montezuma	65.9	62.8	62.5	64.1
Conejos	62.6	61.2	60.4	60.9	Montrose	64.4	62.9	63.7	64.8
Costilla	48.4	48.5	49.1	51.1	Morgan	71.7	70.7	69.0	69.4
Crowley	52.7	51.2	49.6	49.3	Otero	63.5	63.4	62.5	63.2
Custer	55.0	54.2	56.6	59.8	Ouray	73.1	72.5	71.9	73.2
Delta	66.3	65.8	67.1	68.8	Park	67.6	64.4	64.6	65.0
Denver	72.8	70.7	68.1	67.3	Phillips	70.8	70.4	69.1	69.9
Dolores	63.5	63.7	65.6	67.0	Pitkin	74.6	72.1	70.7	71.2
Douglas	76.8	71.4	68.6	66.1	Prowers	71.5	69.7	68.3	68.7
Eagle	73.4	68.9	65.1	63.7	Pueblo	61.7	59.1	58.8	59.4
Elbert	71.5	68.9	67.6	68.2	Rio Blanco	82.5	81.3	79.9	80.7
El Paso	70.1	66.7	64.8	65.5	Rio Grande	68.0	66.4	65.6	66.3
Fremont	59.0	57.5	56.9	58.1	Routt	75.7	72.4	71.3	71.6
Garfield	78.3	74.8	72.1	71.1	Saguache	68.5	65.0	64.9	66.6
Gilpin	77.7	71.4	69.3	70.5	San Juan	68.8	63.2	61.9	63.2
Grand	72.7	68.3	65.9	66.1	San Miguel	84.3	79.9	78.0	77.4
Gunnison	72.3	67.6	66.4	65.5	Sedgwick	63.7	64.4	64.3	66.2
Hinsdale	73.2	71.5	72.9	75.0	Summit	69.7	65.8	62.4	61.2
Huerfano	59.4	57.5	58.5	62.5	Teller	66.3	62.5	62.1	64.6
Jackson	72.6	72.1	71.6	73.0	Washington	72.6	69.8	66.4	67.7
Jefferson	71.4	67.0	63.0	62.6	Weld	70.1	67.0	66.3	66.1
Kiowa	57.0	57.9	56.9	59.0	Yuma	69.1	68.2	66.8	66.5

Projected average annual labor force change for Colorado Counties

Nearly all Colorado Counties will experience an increase in their total labor force between now and 2040. Thirteen counties will have average annual growth rates exceeding 2% between now and 2020 including the Metropolitan counties of Douglas, Broomfield, Weld, and Elbert. However, Weld and Elbert are the only metropolitan counties expected to grow above 2% after 2020.

County	Labor force				average annual percent change		
	2010	2020	2030	2040	2010-20	2020-30	2030-40
Colorado	**2,762,383**	**3,127,562**	**3,524,886**	**3,939,548**	1.2	1.2	1.1
Adams	235,407	272,421	311,902	346,190	1.5	1.4	1.0
Alamosa	8,561	9,289	10,991	13,265	0.8	1.7	1.9
Arapahoe	319,054	357,704	391,825	423,984	1.2	0.9	0.8
Archuleta	6,238	8,179	11,592	15,538	2.7	3.5	3.0
Baca	1,673	1,762	1,822	1,930	0.5	0.3	0.6
Bent	2,582	2,485	2,414	2,395	-0.4	-0.3	-0.1
Boulder	175,420	190,293	200,708	207,807	0.8	0.5	0.3
Broomfield	30,887	39,134	43,859	44,141	2.4	1.1	0.1
Chaffee	8,456	10,297	12,459	14,120	2.0	1.9	1.3
Cheyenne	935	1,094	1,177	1,254	1.6	0.7	0.6
Clear Creek	5,683	5,555	6,362	7,518	-0.2	1.4	1.7
Conejos	3,895	4,211	4,532	4,866	0.8	0.7	0.7
Costilla	1,415	1,561	1,669	1,821	1.0	0.7	0.9
Crowley	1,796	1,988	2,240	2,563	1.0	1.2	1.4
Custer	1,998	2,624	3,439	4,358	2.8	2.7	2.4
Delta	16,260	20,426	26,501	32,021	2.3	2.6	1.9
Denver	351,576	380,784	399,879	428,087	0.8	0.5	0.7
Dolores	1,062	1,200	1,452	1,730	1.2	1.9	1.8
Douglas	160,223	198,556	229,379	249,865	2.2	1.5	0.9
Eagle	29,724	36,153	41,598	50,197	2.0	1.4	1.9
Elbert	12,908	19,697	27,126	34,327	4.3	3.3	2.4
El Paso	302,033	348,712	401,025	467,259	1.4	1.4	1.5
Fremont	20,092	22,918	25,685	28,915	1.3	1.1	1.2
Garfield	33,061	40,663	49,700	57,920	2.1	2.0	1.5
Gilpin	3,572	3,762	4,190	4,768	0.5	1.1	1.3
Grand	8,803	10,111	12,458	14,984	1.4	2.1	1.9
Gunnison	9,239	9,974	10,985	11,762	0.8	1.0	0.7
Hinsdale	488	568	689	813	1.5	1.9	1.7
Huerfano	3,288	3,390	3,809	4,446	0.3	1.2	1.6
Jackson	855	906	941	1,012	0.6	0.4	0.7
Jefferson	305,316	312,482	312,373	318,687	0.2	0.0	0.2
Kiowa	642	713	751	842	1.1	0.5	1.1
Kit Carson	4,716	4,826	4,942	5,079	0.2	0.2	0.3
Lake	3,640	4,537	5,599	5,999	2.2	2.1	0.7
La Plata	30,580	36,482	43,197	49,815	1.8	1.7	1.4
Larimer	178,171	204,142	235,054	269,144	1.4	1.4	1.4

County	Labor force				average annual percent change		
	2010	2020	2030	2040	2010-20	2020-30	2030-40
Las Animas	8,152	9,476	11,162	13,002	1.5	1.7	1.5
Lincoln	2,294	2,513	2,990	3,570	0.9	1.8	1.8
Logan	11,359	11,958	13,704	16,237	0.5	1.4	1.7
Mesa	79,853	86,708	100,286	117,206	0.8	1.5	1.6
Mineral	356	391	429	471	0.9	0.9	0.9
Moffat	8,237	8,285	9,342	10,363	0.1	1.2	1.0
Montezuma	13,277	15,046	17,867	21,158	1.3	1.7	1.7
Montrose	20,624	24,817	32,119	38,486	1.9	2.6	1.8
Morgan	15,069	16,673	19,210	22,500	1.0	1.4	1.6
Otero	9,292	9,992	10,289	10,690	0.7	0.3	0.4
Ouray	2,762	3,323	3,408	3,587	1.9	0.3	0.5
Park	9,161	11,591	15,589	17,317	2.4	3.0	1.1
Phillips	2,426	2,343	2,353	2,447	-0.3	0.0	0.4
Pitkin	10,844	12,105	14,413	17,174	1.1	1.8	1.8
Prowers	6,713	7,072	7,515	7,971	0.5	0.6	0.6
Pueblo	75,966	84,879	97,559	108,501	1.1	1.4	1.1
Rio Blanco	4,243	4,702	5,767	6,413	1.0	2.1	1.1
Rio Grande	6,283	6,968	7,662	8,259	1.0	1.0	0.8
Routt	14,496	16,520	20,462	25,257	1.3	2.2	2.1
Saguache	3,325	3,775	4,322	4,853	1.3	1.4	1.2
San Juan	408	386	395	415	-0.5	0.2	0.5
San Miguel	5,108	6,571	8,352	10,052	2.6	2.4	1.9
Sedgwick	1,256	1,331	1,421	1,541	0.6	0.7	0.8
Summit	16,522	19,601	23,780	27,720	1.7	2.0	1.5
Teller	12,747	13,760	15,465	18,253	0.8	1.2	1.7
Washington	2,804	2,476	2,289	2,289	-1.2	-0.8	0.0
Weld	133,302	169,021	226,356	288,037	2.4	3.0	2.4
Yuma	5,253	5,678	6,056	6,354	0.8	0.6	0.5

Implications - Colorado's Competitive Advantage
Colorado is not unique in its expectation for slowing labor force growth. The result of which will include increased competition for the pool of skilled workers available. Colorado will be competing nationally as well as internationally. According to the Stanford Center on Longevity, among the large economies, only the US and the UK will see growth in working-age population between 2010 and 2050, while Japan and Germany face steep declines[1]. Understanding Colorado's slowing labor force and increased demands for workers gives us an opportunity to plan as a prepared and skilled labor force will be critical to maintain Colorado's competitive edge. Colorado had this structural advantage over the nation as a whole, but as we age to look more like the nation we need to plan for the new reality practically and consider the impact of a smaller labor force relative to the total population.

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[1] [http://longevity3.stanford.edu/wp-content/uploads/2012/10/Pop-Age-Shifts_Work-Force_April-2010_v2_FINALWEB_0.pdf].

Housing Market
The decline in the growth rate of the labor force is also likely to impact the housing market. Research completed by Fannie Mae Economic and Strategic Research highlights the positive correlation between new housing production and the labor force growth rate. Given the positive correlation between housing production and labor force growth, Colorado's current forecast for much slower growth in the labor force would imply much slower housing production, "historical data covering the last five decades show that…the correlation of new housing unit production with the labor force growth rate (0.64) is roughly comparable to the correlation with household growth rate (0.58) and the pace of growth in total nonfarm payroll employment (0.52), but much stronger than the correlation with population growth rate (0.10)."[2]

Tax Structure
A slowing labor force and housing market would also have significant impacts on the tax structure. Aging and a slower growth of the labor force places downward pressure on per-capita and household income as the number of earners relative to the number of non-earners declines. Colorado reached a peak in the share of its population participating in the labor force in 2010.
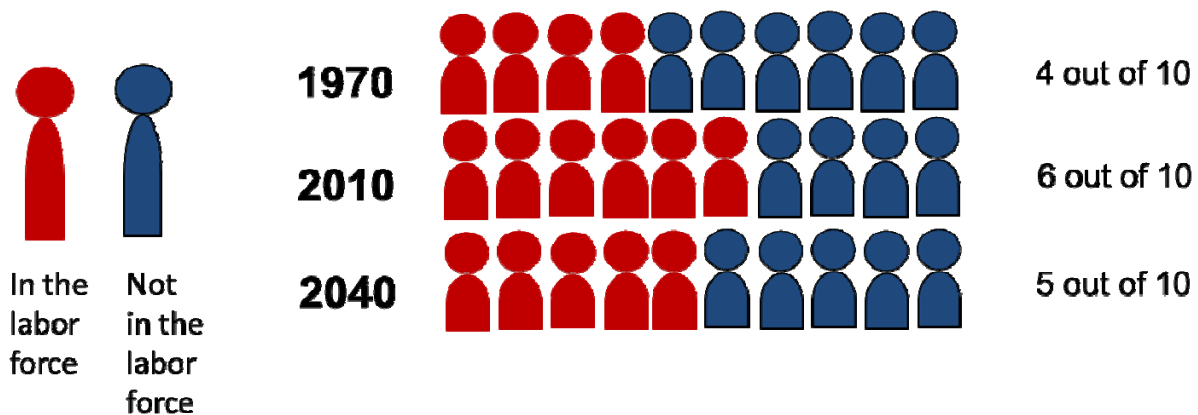
In addition to relatively fewer labor force participants, the aging of Colorado will also exert downward pressure on per capita and household income. According to the Consumer Expenditure Survey (CES), average income taxes paid and taxable expenditures decline by age after peaking in the 45-54 year old age cohort. This makes sense as typically incomes decline after retirement. Taxable expenditures also decline with age lower expenditures and a larger share of expenditures in health services. The CES also reports that property taxes paid also decline by age – again peaking in the 45-54 year old age group. Estimated market value of owned homes decline for the population over 65, primarily for the 75+ population where they may have downsized. The lower-valued homes generate lower property taxes. Additionally, Colorado's Homestead Act provides property tax abatements for several 65+ households resulting in lower property tax revenues to counties. For more information on tax structure changes related to the aging of the population see Aging in Colorado (July 2012), at http://www.colorado.gov/cs/Satellite/DOLA-Main/CBON/1251593240528.

For additional Colorado demographic and economic data please visit the State Demography Office website at www.colorado.gov/demography or contact our office at 303-864-7720.

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[2] [http://www.fanniemae.com/resources/file/research/datanotes/pdf/housing-insights-081513.pdf]