## Projections of Educational Attainment of the Labor Force Aged Population in Texas

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### Educational Attainment and Demographic Trends in Texas

Population growth in Texas has been among that greatest and the fastest in the United States over the past decade. Texas is currently the second largest state in terms of population (only California has more population) and second in land area (only Alaska is larger). During Between 2000 and 2010, Texas' numeric growth exceeded all other states with almost 4.3 million additional residents.

As the resident population of the state of Texas has continued to grow, the proportion with high school and college degrees have increased over the last few decades. In 1940, the median years of school completed was 8.5 years for persons 25 years of age or older; it was only in 1980 that the median years of education exceeded 12 years. (U.S. Census Bureau, decennial census reports 1962-2003)

While high school completion may have improved dramatically since 1940, Texas is tied at last (with California and Mississippi) among all states for persons with a high school education or higher (2011 American Community Survey). With 81.1 percent of persons aged 25 or older currently holding a high school degree or higher, this indicates that 18.9 percent are not completing a high school education. Among persons in Texas aged 25 years and greater, 26.4 percent held a bachelor's degree or higher in Texas, ranking 29th among other states. (ACS 2011). From 1940 to 2000 the percent earning a high school education or higher increased 50.1 percent, while those earning a college degree or higher increased 18.8 percent (citation).

The Hispanic population in Texas has been growing rapidly. Between 2000 and 2010, the Hispanic population contributed 65% of the population growth in the State and the Hispanic population is generally younger than the non-Hispanic White population. Among youth aged 19 years and younger, 97% of the population growth between 2000 and 2010 can be attributed to growth of the Hispanic population.

The Hispanic population also tends to have lower educational attainment than other race/ethnic groups. While Hispanics composed 38% of Texas' population, among adults without a high school degree, they account for 71% . Thus, educational attainment among Hispanics is a significant concern for Texas as the Hispanic population continues to grow and becomes a majority race/ethnic group. Without continued improvements of educational attainment among Hispanics, Texas is looking at either an overall decline in educational attainment or perhaps a situation where the education of the labor force aged population

is no improving much. Optimistically, educational attainment among Hispanics has been improving, and the projections presented here reflect this trend.

This report provides projections of educational attainment for Texas adults within labor force specific ages. The Office of the State Demographer works collaboratively with the Texas Population Estimates and Projections Program in the Texas State Data Center, to develop these specialized population figures.

**Methods**

To project future educational attainment of the Texas population, we first project the rates of educational attainment for each race, age and sex group. The projected rates are then applied to the Texas State Data Center population projections produced in 2012 (using 2010 Census Counts as the base population). Using two migration scenarios from these projections of population and different assumptions of trends in educational attainment, these projections of the educational attainment composition of the labor force were created and reviewed.

**Population Projections**

Population projections are produced biennially by the Texas State Data Center and the Office of the State Demographer. The most recent set of projections created by the Population Estimates and Projections Program for Texas were released in 2012. The 2010 Census Count is the most current enumeration of residents in the state and provides the base figures used for the projection. This product provides state and county level population projections for 40 years beyond the most recent Census, and also includes age, sex and race/ethnicity detail for that population. For the purposes of this study, only the state level projections are used to explore the projected educational attainment of the Texas labor force in coming years.

**Migration scenarios**

The population projections produced for Texas provide three projection scenarios which produce three alternative sets of population values for the State are presented in these projections. Alternative scenarios are necessary since it is highly unlikely that all areas of the state will experience population change at the same rate. These scenarios assume the same set of mortality and fertility assumptions in each scenario but differ in their assumptions relative to net migration. So the three migration scenarios include one with no migration (0.0 scenarios), the second with the one-half (0.5 scenario) the migration rates from 2000-2010 and a third with the migration rates of 2000-2010 (1.0 scenario). Education attainment projections are not produced for the 0.0 scenario.

**Educational Attainment: Data Sources and Categories**

The data for educational attainment used in this analysis are from the American Community Survey. The American Community Survey (ACS) is an ongoing survey conducted by the U.S. Census Bureau; by sampling a small portion of the population each year, this survey provides estimates for some of the same data that was once gathered by the Long Form of the census. The strength of the ACS data is that information is collected every year (instead of once each decade), but since the sample surveyed is very small, the estimates are less reliable for smaller geographic areas. For additional information on the ACS, please see <www.census.gov/acs/www/>.

Educational attainment is classified into six mutually exclusive categories:

- Less than High School
- High School Graduate or Equivalent
- Some College or Associate Degree
- Bachelor's Degree
- Master's Degree
- Ph.D. or Professional Degree

Population is grouped into four mutually exclusive race/ethnicity categories: Non-Hispanic White, Non-Hispanic Black, Hispanic (of any race), and Non-Hispanic Other. The age range selected for this analysis includes persons 18 to 64 years of age; these ages are grouped into three categories: 18-24, 25-34 and 35-64. Though data for the labor force often begins with persons 16 and over, younger individuals would not have the opportunity to complete even a high schools education. Likewise, educational attainment studies typically target populations 25 and over, but in an attempt to be more inclusive, this study has included the 18-24 ages though many may still be pursuing their education.

**Assumptions of Trends in Educational Attainment**

We made two assumptions about trends in education attainment in Texas. The first assumption regarding educational attainment is that the compositional rates of will stay at the current (constant) level in the future. These current rates were derived from the 2011 ACS one-year PUMS data, which supplied baseline age, sex and race/ethnicity by educational level. The second assumption takes into consideration the improvement in educational attainment observed in the past ten years in Texas. To account for these trends, the ACS one-year PUMS data from 2001-2011 were used to build a multinomial model to predict the educational attainment level of an individual based on their age, sex and race/ethnicity.

After obtaining the two sets of educational attainment rates based on the two assumptions discussed above, these rates were applied to the population projections produced by the Texas State Data Center using the 0.5 and 1.0 migration scenarios. This produced four sets of Educational Attainment projections for the population 18 to 64 years of age by race/ethnicity. The results are presented below.

**Results**

While projections were produced for six levels of educational attainment, the results provided in this report have been aggregated for simplicity and clarity. To better focus on labor force supplies and implications, projections are provided for 'High-school Graduates or Higher' and persons with a 'Bachelor's Degree or Higher'. More detailed projections for all education levels are available from the authors.

Figure 1 provides the percent of the population aged 18-64 with an educational attainment of High-school Graduates or Higher for 2010, and projected to 2030 and 2050. The chart includes four alternative scenarios of projections and education assumptions. According to ACS 2010 PUMS data, persons with a High-school Graduate Education or Higher accounted for 81.9% of the Texas population. If we assume that the age/sex/race-ethnicity specific rates will remain unchanged in the future, the rate of high school graduates will drop to 78.5% in 2030 and 76% in 2050 under the 0.5 migration scenario, and to 78% in 2030 and 78.4% in 2050 under the 1.0 migration scenario. However, if the trend of educational improvement experienced in Texas during the past decade continues in the future, percentage with a high-school degree or higher will increase to 87.7% in 2030 and 92.6% in the 2050 under the 0.5 migration scenario, and 87.3% in 2030 and 92.3% in 2050 under the 1.0 migration scenario.

Figure 2 displays the percent of population 18 through 64 years of age with an educational level of Bachelor's Degree or Higher for 2010 and projected to 2030 and 2050. Similarly, under both migration scenarios, the rates will drop if we assume constant rates but increase if the education trend holds true. Assuming constant rates, people with Bachelor's degree or higher will drop from 23.6% in 2010 to 19.8% in 2050 under the 0.5 migration scenario, or to 22.7% in 2050 under the 1.0 scenario. On the other hand, the rates of people with Bachelor's degree or higher will increase to 30.5% (0.5 scenario) or 31.6% (1.0 scenario) in 2050 if education keeps improving as we have seen in the past decade.

Table 1, provides the projected rates of High-School Graduates or higher by race/ethnicity under the four education trend assumptions and migration scenarios. According to ACS PUMS data, in 2010 the Non-Hispanic White population in Texas had the highest rate of high school graduates (93%), while only 64.3% of Hispanics graduated from high school, ranking the lowest among race/ethnicity groups. In 2010, 88 % of Non-Hispanic Blacks and 88.7% of Non-Hispanic Others completed a high school degree or

higher. Projections of those achieving a high school graduation or higher, using the constant rate assumption, indicates all the major race/ethnic groups will experience little or negative change from 2010 to 2030 and from 2010 to 2050. Under the trend assumption, however, all race/ethnic groups will see some increase in the proportion of high school graduates among them. The Hispanics will see the greatest change, increasing by about 24 percent in 2030 and by about 63 percentage points in 2050, under both migration scenarios.

The projected rates for persons with Bachelor's degrees or higher are reported on Table 2 for all race/ethnicity groups. In 2010, the Non-Hispanic Other group had the highest percent with Bachelor's degrees or higher (47.6%), followed by Non-Hispanic Whites (32.7%), Non-Hispanic Blacks (17.9%) and Hispanics (10.4%). These rates are expected to show little change in the future under the constant rate assumption with both of the migration scenarios. However, if more recent trends in education are continued, all of the race/ethnicity groups will experience increases in their rates for earning a Bachelor's degrees and higher in the future. The group that will see the biggest increase is the Non-Hispanic Others. As a result, more than half of the Non-Hispanic Other population will have at least a bachelor's degree in 2030 (about 53%) and in 2050 (about 67%), under both migration scenarios. The Hispanics will see a slower increase and by 2050, they will continue to be the group with the lowest percent of bachelor's degrees, accounting for only 19.4% of the population.

**Conclusions**

The recent 2000-2010 decade has seen great improvements in educational attainment across all race/ethnic and age groups in Texas. If these trends continue, we will have a much better educated population in the decades to come. Under this assumption, we expect to see increases in the rates of high-school graduates and people with Bachelor's degrees among the total population and all race/ethnic and age groups. The increase in high school graduates will be fastest among the Hispanics although they will continue to be the least educated. On the other hand, increase in the rates of Bachelor's degree will be fastest among the Other group, followed by the Blacks. However, if the trends stall at the current 2011 level and we remain at our current education rate, Texas will experience a higher percent with less than High-school education, driven by future demographic changes.

Continued improvement in is needed to provide a well educated population for the future of Texas. Employers use information on the educational attainment of local labor forces when locating new businesses that can stimulate economic growth. Likewise a better educated labor force will have higher earnings and contribute more to the state economy. Residents who do not complete a basic education typically contribute less to the financial well-being of the economy and require more support within

their communities.

As the population of Texas continues to grow, the education system must grow in order to keep pace with increased enrollment within the public school system. Improving high school completion rates will require continued efforts, equal to or greater than those seen in the last decade. The challenge is then to provide affordable options for higher education and/or technical training to provide a better life for our citizens and a better economy for the state as a whole.

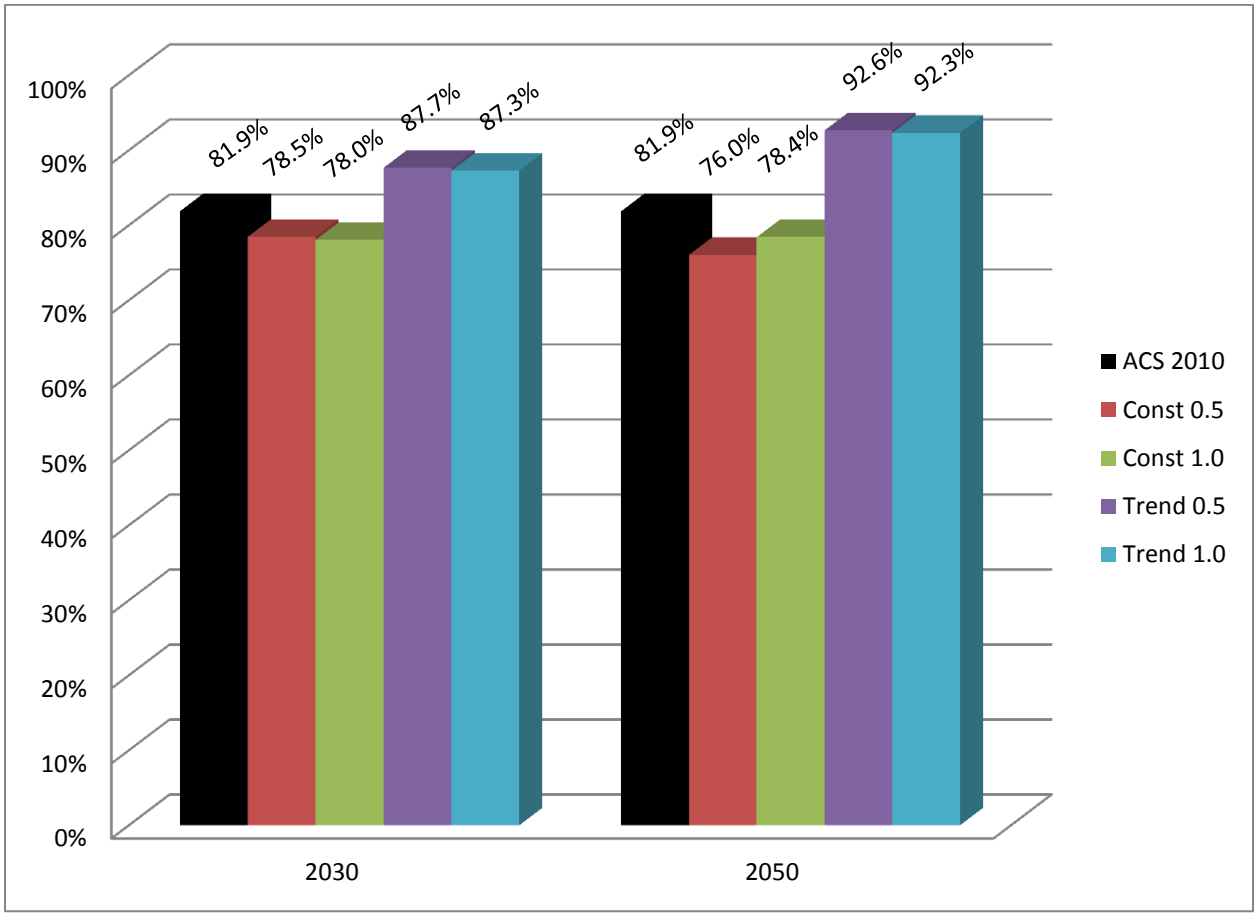


**Figure 1 Projected Percent of Texas Adult Population with High School Degrees or Higher**

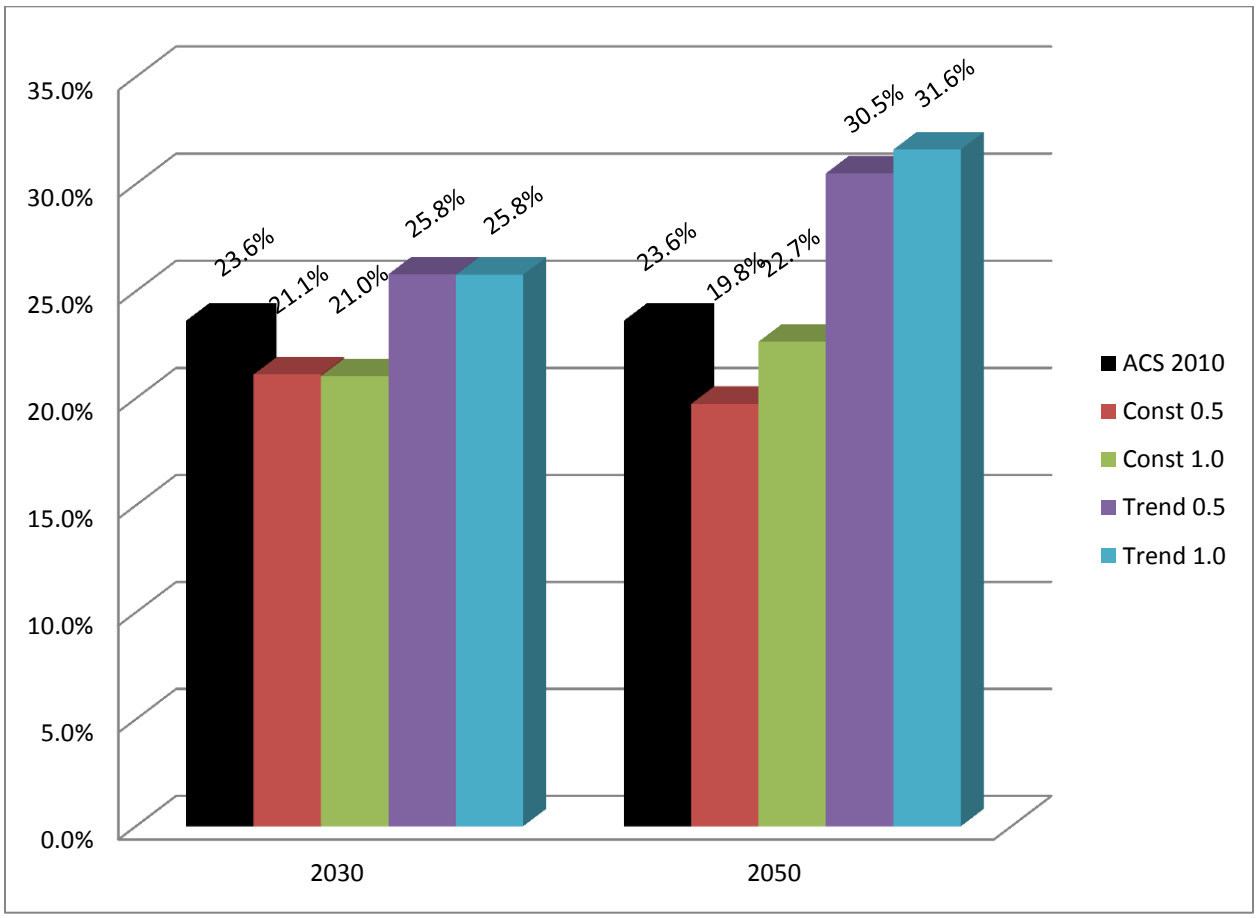


**Figure 2 Projected Percent of the Texas Population with Bachelor's Degrees or Higher**

**Table 1 Percent of Texas Population with Bachelor's Degree or Higher, by Race/Ethnicity, 2010, 2030 and 2050**

| Population Characteristics | Population Projections, 0.5 Migration Scenario | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Constant Rate | | | | | Trend Assumption | | | | |
| Year | 2010 | 2030 | Change | 2050 | Change | 2010 | 2030 | Change | 2050 | Change |
| White | 32.7% | 33.1% | 0.3 | 33.1% | 0.4 | 32.7% | 36.5% | 3.8 | 42.0% | 9.3 |
| Black | 17.9% | 17.9% | 0.1 | 18.0% | 0.2 | 17.9% | 20.3% | 2.5 | 29.3% | 11.5 |
| Hispanics | 10.4% | 10.6% | 0.2 | 10.6% | 0.3 | 10.4% | 14.8% | 4.4 | 19.4% | 9.0 |
| Other | 47.6% | 46.6% | -1.0 | 47.1% | -0.5 | 47.6% | 53.2% | 5.6 | 66.9% | 19.2 |
| Population Characteristics | Population Projections, 1.0 Migration Scenario | | | | | | | | | |
| | Constant Rate | | | | | Trend Assumption | | | | |
| Year | 2010 | 2030 | Change | 2050 | Change | 2010 | 2030 | Change | 2050 | Change |
| White | 32.7% | 33.1% | 0.4 | 33.1% | 0.4 | 32.7% | 36.5% | 3.8 | 42.0% | 9.3 |
| Black | 17.9% | 17.9% | 0.0 | 18.0% | 0.1 | 17.9% | 20.3% | 2.5 | 29.3% | 11.5 |
| Hispanics | 10.4% | 10.6% | 0.2 | 10.6% | 0.3 | 10.4% | 14.8% | 4.4 | 19.4% | 9.1 |
| Other | 47.6% | 46.5% | -1.1 | 47.2% | -0.4 | 47.6% | 52.9% | 5.3 | 66.9% | 19.3 |