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Business Analytics

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Executive Summary

Donna Mayo Ph.D.

Welcome to the inaugural edition of *Business Analytics!* The School of Business, accredited by the Association to Advance Collegiate Schools of Business (AACSB), is proud to provide you with this publication that will focus on various business topics. This first issue of *Business Analytics* focuses on what occurred in Catoosa, Gordon, Murray, Walker, and Whitfield counties in the run-up to and during the Great Recession. The Center for Economic Research and Entrepreneurship will use future issues to provide regional economic and business research to the surrounding communities.

The five-county region surrounding Dalton State College has certainly suffered in the last five years. Notably unemployment remains high, incomes are stagnating, house prices continue to fall and home sales still lag. But the seemingly dreary picture painted by this inaugural issue of *Business Analytics* does not need to reflect the future.

Instead this particular northwest region of Georgia has a unique opportunity to flourish and grow once again.

Prior to the Great Recession, the counties surrounding DSC grew by leaps and bounds. Unemployment was amongst the lowest in the state and strong economic growth, particularly in the housing sector, aided the complementary industries centered in Dalton. This was evidence that the region can succeed and thrive. Now that the recession is over, it can happen again.

Each issue of *Business Analytics* will provide analysis of particular events and policies that interest the readers and businesses in the area. As the DSC five-county region looks forward, we hope to provide the surrounding communities with pertinent information and expert analysis. We hope you enjoy reading this inaugural issue and that you will continue to follow us into the future.

Overview of the DSC Five-County Region

Larry Johnson Ph.D.

Population

Dalton State College's regional presence includes primarily five northwest Georgia counties: Catoosa, Gordon, Murray, Walker, and Whitfield. Whitfield County had the largest population in 2010 at 102,599 and Murray the lowest at 39,628. The county populations of Catoosa, Walker, and Gordon range from

55,000-69,000. The 2010 population estimate for the five county region of 330,111 is 4.5% of Georgia's 9,687,653 population.

The age of citizens closely matches those of Georgia and the United States. Twenty-five percent of the citizens are 18 and under, 12%

are 65 and older, and 49% are female. The DSC region varies significantly from Georgia and the U.S in regards to race. Eighty-six percent identify themselves as white and not Hispanic compared to 58% for Georgia and 72% for the U.S. African Americans comprise only 3% of the DSC region as compared to 30% for the state of Georgia and 13% for the U.S. The Hispanic population at 15% is higher than Georgia at 9% but lower than the U.S. at 16%.

Households

The DSC region's home ownership rate is higher at 72% than Georgia and the U.S., both at 67% respectively. Far fewer live in multi-unit structures. In the DSC five-county region 12% live in multi-unit buildings whereas 21% and 26% of people live in these structures for the state of Georgia and the U.S. respectively. Educational attainment is lower with only 73% completing high school as compared to 84% for Georgia and 85% for the U.S. Far fewer have a bachelor's degree.

In the DSC region the proportion of the population with a bachelor's degree is 14% compared to 27% in Georgia and 28% in the U.S. While educational levels are lower than in Georgia and the U.S, they are increasing. The proportion of people with a high school degree has increased by 6% since 2000 in the DSC region, compared to 5% increases for Georgia and the U.S. Those with bachelor's degrees have increased 2% from 2000, which is consistent with Georgia. Countrywide those with bachelor's degrees increased by 3% since 2000.

The lower level of education is likely reflected in the lower level of income for the DSC region. Median household and per capita incomes in the DSC region are \$41,351 and \$19,656 as compared to \$49,347 and \$25,134 for Georgia and \$51,914 and \$27,334 for the U.S. Yet even with lower income levels, the poverty rate in the DSC region is equivalent to the state's poverty rate at 16%, whereas nationwide the poverty rate is 14%.

Economics

The DSC region has 5,453 private non-farm establishments that employ 95,886. Manufacturer's shipments were \$14.2 billion in 2002, which was 10% of all manufacturing in Georgia.

Retail sales were \$3.5 billion, resulting in \$10,475 in retail sales per capita. Wholesale trade was \$1.62 billion and money spent on accommodations and foodservice was \$333 million. The region received \$1.7 billion in federal spending in 2008. The region is largely rural, with 139 persons per square mile but is only slightly less than the state of Georgia at 168 persons per square mile and significantly higher than the U.S at 87 persons per square mile.

County Comparisons

While this five-county region in Northwest Georgia varies significantly in many ways as compared to Georgia and the U.S., there are several differences between the counties. The northern-most counties of Walker and Catoosa are part of the Chattanooga Tennessee Metropolitan Statistical Area. While these counties have a number of local establishments, a high percentage of the population works in Hamilton County, Tenn.

Whitfield and Murray counties are in the middle of the region and have their own Metropolitan Area and Gordon County to the south borders on the Atlanta Metropolitan Area. A number of residents in Walker and Catoosa counties work in the service area of Chattanooga and consequently have higher levels of educational attainment. Employment in Whitfield, Murray, and Gordon is heavily concentrated in manufacturing, especially the flooring industry. Additionally, while Gordon is heavily dependent on manufacturing in flooring, some residents commute to the Atlanta Metropolitan area for employment.

Employment in the DSC five-county region has declined in all counties except Catoosa. However, the region enjoyed significant increases in population growth from 2000 to 2010. Whitfield County not only has the largest population in the area, but it employs the most workers. Whitfield County also has the largest Hispanic population in the region at 32% while Walker and Catoosa counties have only a 2% Hispanic population. Whitfield also has the largest number of foreign-born persons at 19%. Catoosa, Walker and Gordon counties are similar with comparable populations and other demographics. Murray County is the smallest of the five counties but compares demographically with Catoosa, Walker, and Gordon counties. See the appendix on page 6 for a chart containing all of the statistics mentioned above.

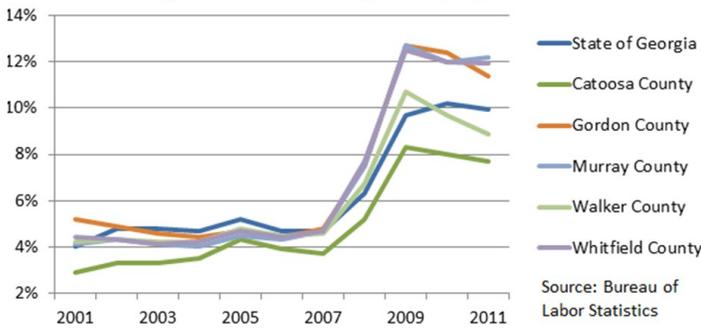
Labor Market: In the Wake of the Great Recession

Benjamin Artz Ph.D.

No one would doubt that the economies of the five counties surrounding Dalton State College in the Northwest Georgia region have suffered in recent years, but it is important to note that these counties, including Catoosa, Walker, Whitfield, Murray, and Gordon, began the last decade performing better than the state of Georgia, at least in terms of unemployment. Figure 1 depicts the average annual unemployment rates of each county and also the state of Georgia for the 11 years from 2001 – 2011.

It is important to note that the state of Georgia numbers here and throughout this article include the Atlanta metropolitan area, which is often times a better economic performer than the rest of the state. Prior to the start of the Great Recession, unemployment rates in the DSC five-county region were lower than in the state as a whole. Unemployment rates after 2007 have behaved differently, depending on the county. There are likely many reasons for these differences, but two in particular are highly suggestive.

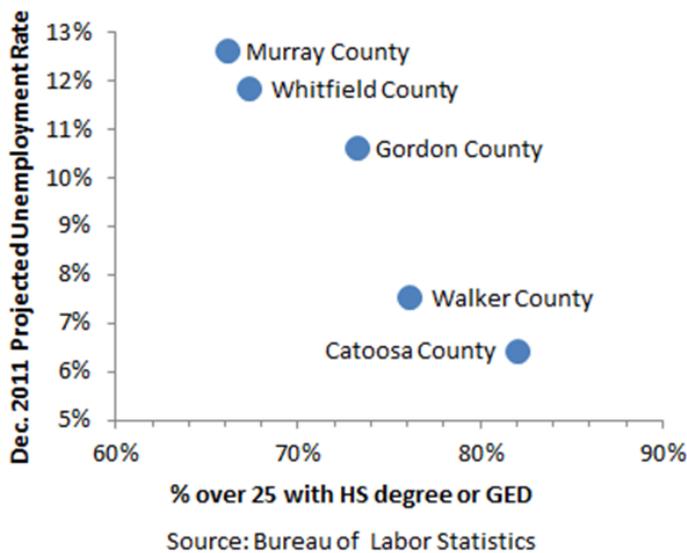
Figure 1 - Annual Average Unemployment Rates



First there is a somewhat large difference in basic educational attainment between Catoosa/Walker counties and Whitfield/Murray/Gordon counties. Figure 2 highlights the negative relationship between persons aged 25 and older with high school degrees or their equivalent and the projected unemployment rate in December of 2011. Over 75% of Catoosa and Walker County residents have at least high school diplomas or their equivalent while less than 70% of Whitfield and Murray County residents have the same educational attainment.

While educational attainment and employment opportunities are positively correlated, this does not entirely explain the difference between the counties. After all Whitfield and Murray counties enjoyed very low unemployment rates prior to the recession. Possibly the biggest reason why the county unemployment rates diverged after the Great Recession has to do with the industrial diversification of the region in which their residents are employed.

Figure 2 - Unemployment vs. Educational Attainment



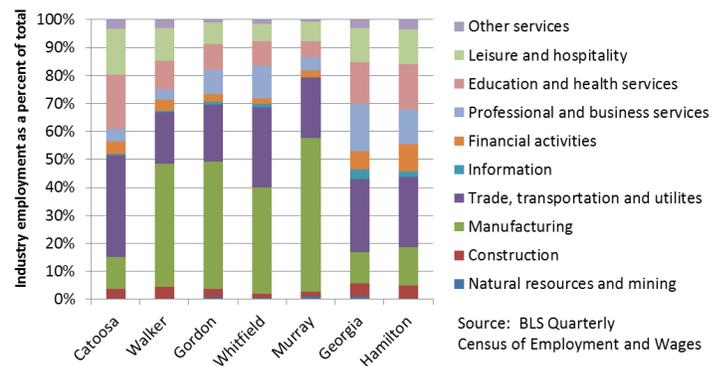
Catoosa and Walker counties, situated within the Metropolitan Statistical Area of Chattanooga, Tenn., enjoy the close proximity of the adjacent labor markets of the Chattanooga region.

According to the Georgia Department of Labor, 46.1% of Catoosa County residents and 33.4% of Walker County residents worked in Hamilton County, Tenn., in 2000 while only 2.1% of Whitfield County residents, 2.0% of Murray County residents and a negligible percentage of Gordon County residents worked there. This implies that Hamilton County's employment opportunities must not have suffered post-2007 as much as employment opportunities in Whitfield, Murray, and Gordon counties.

According to the Bureau of Labor Statistics Quarterly Census of Employment and Wages, employment in all private sector industries shrank by less than 6% between 2001 and 2010 in Hamilton County compared to more than 8% in Gordon County, 13% in Whitfield County, and 22.5% in Murray County. In fact, the performance in Hamilton County is similar to that of the state of Georgia, in which employment only shrank by 5.6% in the same 10-year period. The Atlanta metropolitan area in particular performed better than the rest of the state, and since it is included in the Georgia statistics it biases the state's employment statistics. For comparison purposes, Georgia employment excluding the Atlanta metropolitan area shrank by 8%, which is still notably less than Whitfield and Murray counties.

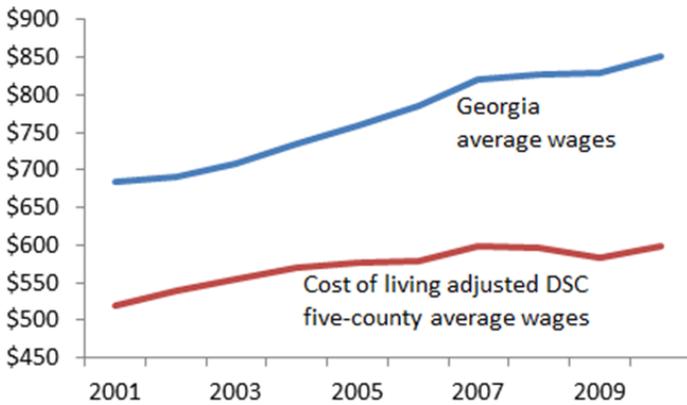
What the labor markets of Georgia and Hamilton County, Tenn., have in common are the diversities of their industries, relative to Whitfield and Murray counties in particular. Figure 3 shows the proportion of all private sector employment devoted to each industry category in each county, the state of Georgia and Hamilton County, Tenn. in 2010. Manufacturing controls the largest proportion of employment in Northwest Georgia, except for Catoosa County. The manufacturing sector, particularly the flooring industry centered in Dalton, GA, enjoyed remarkable success during the housing boom prior to the start of the Great Recession. This held unemployment rates low until the housing sector collapsed. As depicted in Figure 3, Whitfield and Murray counties, part of the Dalton Metropolitan Statistical Area, did not have as

Figure 3 - Private Sector Industry Diversification



diversified economies as that of Georgia or Hamilton County. As a result Murray County unemployment for December 2011 was projected to remain well above 12% while Whitfield County's unemployment rate was projected to be 11.8%. At the same time Georgia's unemployment rate had fallen to a projected 9.4% in December 2011 and the rate in Hamilton County was a relatively low 7.2%.

Figure 4 - Average Weekly Wages



Source: BLS Quarterly Census of Employment and Wages

sustained high unemployment rates but also lagging wages. According to the Bureau of Labor Statistics and displayed in Figure 4, cost-of-living adjusted average weekly wages in the DSC five-county region increased by only 15% between 2001 and 2010 while average weekly wages increased in the state of Georgia by 25%. As a result, the gap between Georgia wages and cost-of-living adjusted DSC five-county region wages grew from a 31.4% difference to a 42.4% difference. This is, in part, due to a rising price index for the DSC five-county region and a falling price index for Atlanta, which is used as a proxy for the state of Georgia. Even without the cost-of-living adjustment, the five-county weekly average wage is roughly 35% less than it is in the state of Georgia.

Again this can be attributed to both industrial diversification or lack thereof and educational attainment. Figure 3 shows that Georgia's industries are quite diversified, with no industry making up more than 26% of total employment. By contrast the ailing manufacturing industry makes up at least 38% of employment in Whitfield County. Georgia's educational attainment is far superior as well, boasting 84.3% of residents over 25 with at least a high school degree and 27.3% of residents with at least a bachelor's degree. The five-county average percentage of residents with high school degrees is only 73.04% and those with at least a bachelor's degree make up only 12.92% of the population.

Both educational attainment and industrial diversity are crucial in maintaining low unemployment rates in the aftermath of a lengthy recession, and the counties surrounding Dalton, GA in particular are lagging in both categories. The decline and stagnation of the DSC five-county region has not only contributed

to the high unemployment rates but also lagging wages. It is clear that, in order to succeed in the new economy that arose in the wake of the Great Recession, the DSC five-county region must at minimum focus on industry diversification and educational attainment. If it does so, the next decade may not be as devastating as the last.

Housing Market: Signs Point to Hope and Trouble

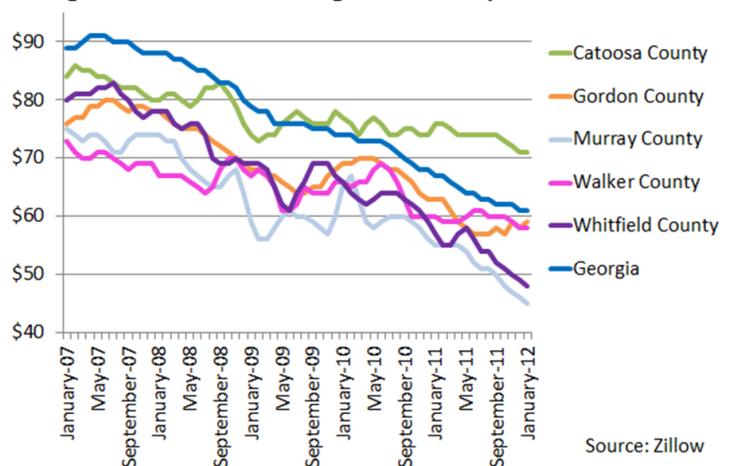
Robert Culp Ph.D.

It has been five years since the housing market reached its peak in 2007. The Dalton State College five-county region, like Georgia and much of the nation, has seen dramatic drops in home values and home sales over the past five years. In the state of Georgia, according to Zillow, the median home price per square foot has fallen from over \$90 in 2007 to little over \$60 today. This drop is reflective of the downturn in the Georgia and DSC five-county economies. While low interest rates are causing home ownership to become more attractive, it is yet to be seen whether a turn-around in the market is forth-coming. In order to more closely analyze the trend in the housing market, we must turn to four particular housing market indicators: home prices, home sales, migration, and area income.

Home prices

Home prices in Catoosa County are particularly hopeful. While prices per square foot have continued to fall in the rest of Georgia, the median price per square foot home in Catoosa

Figure 1 - Median Housing Prices Per Square Foot



Source: Zillow

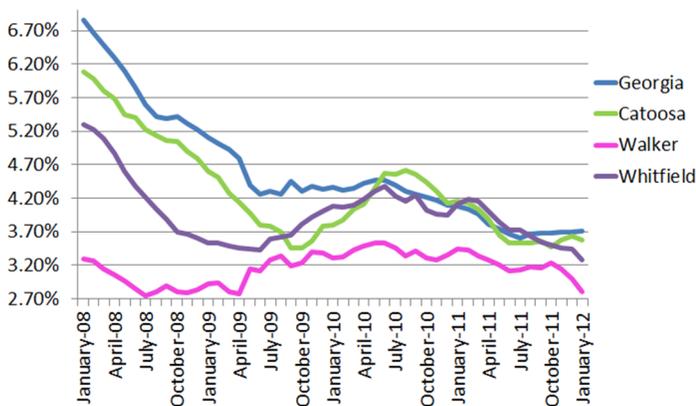
County now exceeds Georgia's (See Figure 1). Catoosa County is likely showing more strength than other parts of the DSC five-county region because of its proximity to Chattanooga. Unlike other counties in the DSC region that depend heavily on manufacturing, the Chattanooga Metropolitan Statistical Area has a diversity of employment opportunities. In addition to the new Volkswagen plant, the area already is home to financial, insurance, and distribution companies. In addition, Amazon's planned distribution center has provided a boost to Chattanooga and Catoosa's economy and its housing market.

While home prices seem to be promising in Catoosa County, home prices in Gordon and Walker Counties are mixed. Prices in these counties seem to have stabilized and now are just under the Georgia median. However, the housing markets in Whitfield County and Murray County remain weak. Prices per square foot have dropped to a 16 year low in Whitfield County of \$46 per square foot, last reached in March of 1996. The decline in home prices is likely the result of banks clearing out their inventory of troubled properties. These properties may be selling at a significant discount because of the quickness of their sale. In addition these properties tend to suffer damage from a lack of proper maintenance, which further depresses their market value.

Home Sales

The volume of home sales is also an indicator of real estate market strength. While interest rates have dropped, brokers report that many people are having difficulty qualifying for loans. Home sales, as measured by the percent of homes sold, also indicate a market struggling to recover. Home sales, both in Georgia and in the five-county DSC region, have been weak. Home sales in this region have tended to track below that of the rest of the state and while this gap has been reduced, overall home sales throughout the state are much lower than in 2007. Since 2008, home sales as a percentage of all homes have fallen state-wide from over 6.5% to below 4%. In normal economic

Figure 2 - Percent of Homes Sold



Source: Zillow

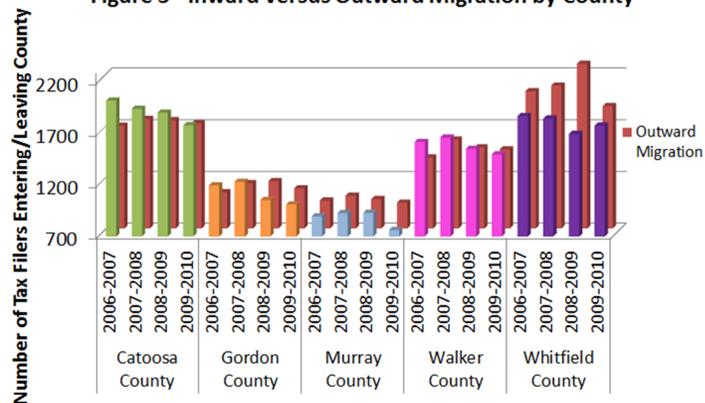
times, Whitfield County has an average home sale percentage of 4.6%; in January of 2012 it was only 3.3%. Unfortunately data on Murray and Gordon County home sales is not available.

A more troubling sign is that while Catoosa County has continued to track the average of Georgia sales, Whitfield and Walker counties have significantly diverged from the state-wide average since the last quarter of 2010. However, not all the news is bleak. According to Michael Maret of Coldwell Banker—Kinard Realty, home showings in Whitfield County, an indicator of future home sales, have increased significantly with the new year. Moreover, market conditions as a whole are better than last year. Maret also believes that homeowners recognize that, while their selling price is lower, the buying price is lower as well, making it a very good time to upgrade. Still, increased lender scrutiny has made obtaining credit more difficult and time-consuming, discouraging some homeowners from upgrading.

Migration

Housing markets are also driven by whether there is a net inward or outward migration from the area. While the census provides estimates of population once every decade, another measure is done each year by the IRS. The IRS compiles information of filers who relocate from their previous year's filing location. This information is available for every county in the U.S. (See Figure 3 for the five DSC region counties).

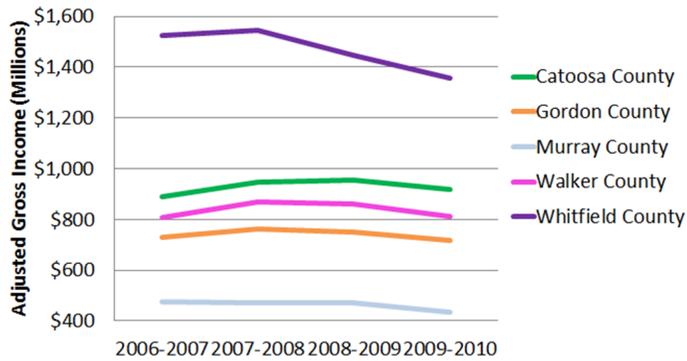
Figure 3 - Inward Versus Outward Migration by County



Source: IRS County Data

Between 2007 and 2011, Catoosa County saw a net increase of 708 tax filers migrating into the area from other parts of the state or country. Gordon and Walker Counties held slight increases of 50 and 421 respectively; Murray County experienced a drop of 408 filers and Whitfield County had a net outward migration of 1,112 tax filers. The number of people that each of these filers represent is not exactly known; however, if the total number of exemptions claimed in each county is any indication, Catoosa has gained 2,106, Gordon gained 67, Walker gained 1,427, and Murray lost 1,089 while Whitfield lost 2,603 between 2007 and 2011.

Figure 4 - Adjusted Gross Income



Source: IRS County Data

Declining population (See Figure 3) is likely one reason Whitfield County has diverged from the state-wide home price per square foot average, and the change in population presented here may underestimate the actual changes in population for two reasons. First, the data presented here does not include the latter half of 2011. Second, IRS data only tracks filers rather than all people. This means that those people living in the region or those

people that may have previously lived in the region but did not file taxes are not counted.

Area Income

Area income is also a strong indicator of potential housing market strength or weakness. Each county in the DSC five-county region experienced a decline in Adjusted Gross Income as reported by annual county by county income reports. Between 2007 and 2011, Adjusted Gross Income, from its peak in 2007, declined by 3% in Catoosa County, 6% in Gordon County, 8% in Murray County, 7% in Walker County, and a staggering 12% in Whitfield County (see Figure 4).

The dramatic drop in income in Whitfield County is the result of heavy dependence on flooring companies located in the area. These companies, like any that depend upon the housing market, suffered significant decreases in sales, hitting profits and employees very hard. The area has suffered mass layoffs and little business expansion, resulting in the highest unemployment rate in the state. While it can be hoped that housing prices will recover in Whitfield County, until its manufacturing sector recovers or new businesses locate in the area, indications are that Whitfield County's home market is years away from recovery.

Appendix: Selected Statistics for the Five-County DSC Region, Georgia, and the United States

	Catoosa	Walker	Whitfield	Murray	Gordon	Georgia	USA
Population in 2010	63,942	68,756	102,599	39,628	55,186	9,687,653	308,745,538
Change in population from April 1, 2000 to July 1, 2010	20.00%	12.60%	22.80%	8.60%	25.10%	18.30%	9.70%
Persons under 5 years old in 2010	6.40%	6.10%	7.90%	7.10%	7.40%	7.10%	6.50%
Persons under 18 years old in 2010	24.90%	23.60%	28.50%	26.90%	27.00%	25.70%	24.00%
Persons 65 years old and over in 2010	13.50%	15.00%	11.20%	10.80%	11.60%	10.70%	13.00%
Female persons in 2010	51.50%	50.90%	50.20%	50.40%	50.60%	51.20%	50.80%
White persons in 2009	93.60%	93.00%	76.60%	89.10%	85.20%	59.70%	72.40%
Persons of Hispanic or Latino origin in 2009	2.30%	1.60%	31.60%	13.00%	14.00%	8.80%	16.30%
White persons not Hispanic in 2009	92.50%	92.10%	62.20%	85.00%	79.90%	55.90%	63.70%
African American persons in 2009	2.20%	4.10%	3.70%	0.60%	3.60%	30.50%	12.60%
Persons of other origin in 2009	1.50%	0.70%	2.00%	0.70%	1.50%	3.60%	5.90%
Persons reporting two or more races in 2009	1.60%	1.60%	2.60%	1.60%	2.00%	2.10%	2.90%
Foreign born persons from 2006-2010	2.00%	1.10%	18.60%	8.10%	8.90%	9.60%	12.70%
Language other than English spoken at home from 2006-2010	3.10%	2.50%	29.90%	12.10%	13.50%	12.70%	20.10%
High school graduates, percent of persons age 25+, 2006-2010	82.10%	76.20%	67.40%	66.20%	73.30%	83.50%	85.00%
Bachelor's degree or higher, percent of persons age 25+, 2006-2010	17.30%	12.80%	15.10%	6.70%	12.70%	27.20%	27.90%
Veterans, 2006-2010	4,882	6,467	5,869	2,466	3,336	708,862	22,652,496
Mean travel time to work in minutes, workers age 16+, 2006-2010	22.8	25.7	19.5	23.8	23.7	27	25.2
Housing units in 2010	26,606	30,100	39,899	15,979	22,278	4,088,801	131,704,730
Homeownership rate, 2006-2010	75.70%	74.00%	68.30%	72.50%	69.10%	67.20%	66.60%
Housing units in multi-unit structures, 2006-2010	11.60%	9.00%	19.10%	7.30%	13.90%	20.50%	25.90%
Median value of owner-occupied housing units, 2006-2010	\$132,600	\$108,100	\$130,000	\$98,300	\$123,200	\$161,400	\$188,400
Households, 2006-2010	24,098	25,901	34,292	14,248	19,229	3,468,704	114,235,996
Persons below poverty level, 2006-2010	11.20%	15.10%	19.20%	17.10%	17.10%	15.70%	13.80%
Private nonfarm establishments in 2009	928	745	2,334	423	1,023	219,348	7,433,465
Private nonfarm employment in 2009	13,137	10,203	48,195	8,335	16,016	3,410,505	114,509,626
Change in private nonfarm employment from 2000-2009	21.50%	-38.60%	-14.20%	-23.00%	-17.90%	-2.10%	0.40%
Total number of firms in 2007	4,789	5,297	7,978	2,625	4,842	901,105	27,092,908

Source: US Census Bureau