Supply and demand analysis of single-family residential units in Carroll County, Georgia

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ABSTRACT

The real estate/housing market crisis is considered one of the major factors leading to America' most recent economic recession. An integral part of resolving the issues within the real estate market is an accurate analysis of supply and demand. This study performed a demand and supply analysis on the housing market in Carroll County, Georgia, in order to provide a descriptive analysis about its current state as well as to examine future trends. The analysis required the gathering of data on single family residential units and vacant land lots within the county. Of these, only those located in subdivisions were analyzed. Approximately seventy percent (70%) of single-family homes and lots were estimated to be located within subdivisions, based on sample information retrieved from Georgia Multiple Listing Service (GAMLS). The results revealed that there existed a significant oversupply of single-family units and residential land lots in Carroll County which would take an estimated nine (9) years to absorb if supply was halted. These findings do not provide a very optimistic outlook for the real estate market in this county, and, to some extent, could be indicative of the housing sector in similar counties within the state of Georgia.

Keywords: housing supply, housing demand, Carroll County, absorption rates, residential units.

INTRODUCTION

Since the latter half of 2007 the US housing market has been on a steep downward spiral. Financial irregularities and misrepresentations in the secondary housing market were one of the leading causes of the current US recession. Government policies which were intended to encourage home ownership among lower income buyers were instead mismanaged by some financial institutions and used as a means to rapidly increase their bottom line. These policies facilitated the issuance of subprime mortgages which were often packaged with better quality mortgages to hide their default risks and sold as safe investment vehicles to unsuspecting investors. When the true risks of these packaged mortgages inevitably surfaced, it served to undermine the integrity of the entire secondary housing market. A subprime mortgage is defined as "a type of mortgage that is normally made out to borrowers with lower credit ratings. As a result of the borrower's lowered credit rating, a conventional mortgage is not offered because the lender views the borrower as having a larger-than-average risk of defaulting on the loan. Lending institutions often charge interest on subprime mortgages at a rate that is higher than a conventional mortgage in order to compensate them for carrying more risk" (Investopedia.com, 2010). Delinquencies and foreclosures of these risky mortgages have steadily increased over time, contributing greatly to the economic recession.

These delinquencies and foreclosures vastly increased supply in the housing market and resulted in a collapse in prices. To create a resolution to this situation, equilibrium must once again be attained within this market. To achieve this, supply, and more importantly the demand of real estate must be analyzed so the most appropriate legislative and planning policies can be implemented. This research project sought to address these issues with a focus on Carroll County, Georgia. The goals of this project were to first develop an accurate picture of the current housing market in the county by collecting and analyzing data to provide estimates of supply and demand for single-family residences in the county; and second, to estimate the number of years it will take for demand to absorb current supply of residential vacant lots and single family houses for sale. It is hoped that the findings of this research project will present pertinent real estate information that could help city planners as well as real estate and mortgage firms in Carroll County.

DATA COLLECTION AND ANALYSIS

The first step was to locate every single family residential subdivision in the Carroll County. This was done using the Carroll County Tax Assessors' website. A total of one hundred and fifty- two (152) subdivisions were located. Real estate students from a local university were then recruited to visit and document information about each subdivision. This information included the number of vacant homes and vacant lots, and the number of houses for sale. Additional details about these properties (lots and houses for sale) were then ascertained through a local realtor. These details included information such as asking price and days on the market. A total of seven hundred and twenty three (723) single-family homes were found to be for sale or vacant in all the subdivisions in the county (Carroll County , 2010).

The next step was to gather information on the demographics in this county. Carroll County's population was estimated to be about one hundred and fourteen thousand (114,000) as of 2009, with annual growth of two thousand, eight hundred (2,800) people (www.stdb.com). There are also estimated to be about one thousand and eighty-nine (1,089) new households

moving into the county per year. Using a renters to owners ratio of thirty to seventy (30:70), an estimated seventy percent (70%) of those households will be expected to purchase a home, which comes to about seven hundred and sixty-two (762). The county's house hold median income was stated to be forty-eight thousand; four hundred and thirty-eight dollars ($48,438) compared to the state of Georgia's house hold median income of fifty-six thousand, seven hundred and sixty-one dollars ($56,761). (www.stbd.com, 2010)

Unemployment data retrieved from the Bureau of Labor statistics reveals that the the unemployment trend over the last few years and monthly in 2009 in Carroll County historically hovers slightly above the employment rates of the Atlanta MSA (Metropolitan Study Area, 2010), the state of Georgia, and the U.S. As indicated in Graph 1 and 2 (Appendix).

Next, in order to better analyze the demand, the typical "House Affordability" of the population of Carroll County was calculated. "House Affordability" simply refers to the highest value of home the median income earner in the county would be able to afford. To perform this analysis there were several assumptions that had to be made. These assumptions were made taking into consideration the typical and current financing and housing terms offered. The first assumption was the Debt-Service Ratio of twenty-five percent (25%). This is the maximum percentage limit of one's income that the lenders allow to be allocated to servicing a home mortgage. Secondly monthly Insurance and Taxes were estimated at two hundred dollars ($200) monthly. Thirdly, an average down payment of twelve and a half percent (12.5%) was assumed on the loan, with a thirty (30) year term, and a fixed interest rate of six percent (6%).

With these assumptions established Carroll County's median House Affordability was calculated as follows. The reported annual median income of the county was divided by twelve (12) to determine monthly median income. The twenty-five percent (25%) of that amount was calculated to service the mortgage debt. Of that amount taxes and insurance were deducted leaving the amount available for principle and interest on the mortgage. Using that amount the maximum loan amount possible was calculated using the stated financing terms. As indicated in Table 1 (Appendix), the calculated loan amount only reflected the amount borrowed so the total amount available to purchase a home, including the down payment was calculated to be about one hundred and fifty-four thousand dollars ($154,000) rounded. The reported median home value was significantly less than the calculate amount, only ninety-six thousand seven hundred and fifty-four dollars ($96,754), which implies that the average person house is valued way below the maximum valued home they could afford.

A similar analysis was then performed for the county's four main cities, Carrollton, Villa Rica, Temple, and Bowdon and is summarized in Table 2 (Appendix). This showed that each individual city revealed a similar conclusion as the county. The house affordability was higher than the stated median home values.

The analysis continued with the calculations of absorption rates for Carroll County and the individual study areas. Absorption rates are defined as the rate at which housing and/or vacant lots are sold. After obtaining the absorption rate it is usual to report supply as a particular number of years' worth of supply. This is calculated by dividing the supply by the absorption rate. For this project, the absorption rates of houses and lots were calculated separately first and then combined. It was assumed that homes would be absorbed, and exhausted, before vacant lots began being sold. As stated previously a total of seven hundred and twenty three (723) single-family homes were found to be for sale or vacant in all the subdivisions in the county. Using a random sample of one hundred and twenty-two (122) single-family houses for sale from Georgia Multiple Listing Service (GAMLS, 2010), eighty-eight (88) of these where found to be in

subdivisions. It was then estimated that approximately seventy-two (72%) of single-family homes were in subdivisions. Before being able to calculate the absorption, the demographics had to be further analyzed. It was found that approximately one thousand and eighty-nine (1089) households per year moved into Carroll County. Of these new households, about seven hundred and sixty-two (762) were expected to actually purchase a home as opposed to rent one. This was determined using the owner/renter ratio (70/30). Of that seventy percent (70%) of home buyers, seventy-two (72%) would be expected to move to a single-family home in a subdivision. Therefore, an estimated five hundred and forty-nine (549) new single-family unit owners per year were expected to buy a home inside a subdivision in Carroll County.

The absorption of single family residential for the overall county as well as each of the four cities within the county, Carrollton, Villa Rica, Temple, and Bowdon was then determined. Plus, similar calculations were also applied to a fifth area Fairfield Subdivision. This was added and analyzed separately because it is a huge gated subdivision which is like a city by itself, with over one thousand five hundred (1500) homes. The subdivision encompasses a fishing and swimming lake, and an eighteen (18) - hole golf course. Results in graph 3 (Appendix).

Fairfield Subdivision was observed to have the highest number of years of housing supply, at 4 years. Following this was Carrollton at about two (2) years of supply and then Temple at just under two (2) years. Carroll County had a supply of just about one (1) years.

The analysis of the vacant lots in Carroll County then followed. There were a total of four thousand one hundred and ninety-eight (4,198) vacant lots in the county's subdivisions based on our physical count. It was determined that these vacant lots would be absorbed either by, a new owner purchasing and building on the lot, or by a builder purchasing the lots, building houses and then selling these houses. The years of supply of vacant lots determined by our analysis is summarized in the Graph 4 (Appendix).

Fairfield was somewhat of an anomaly being that it had sixty-eight (68) years of vacant lots supply which was about three (3) times as much as the second highest supply, Temple's, which was about twenty-three (23) years. A map of these raeas with years of supply is presented in Graph 5 (Appendix).

The absorption of single-family residences and that of vacant lots were then combined and revealed that Carroll County had enough single-family residential supply to last approximately nine (9) years. Fairfield heavily skewed this number, so for observation sake, it was deemed relevant to calculate the supply in years excluding the Fairfield subdivision. The calculations then yielded an estimated six (6) years of supply in the county with the Fairfield exclusion.

CONCLUSION

This research study therefore did not paint a very optimistic picture for the future of the housing market in this county. The only bright spots were that the house affordability was higher than the stated median home values in all of the areas analyzed. Showing that there may be some hope for the 'trade-up' market. Besides this, the hope would be that the county experiences higher than projected population growth over the next few years. There is some possibility of this happening with the University of West Georgia located in Carrollton, planning for fairly rapid expansion, and the chamber of commerce expanding their business development efforts.

In order to double check the data to the extent possible, it was compared it to online data available from a market intelligence firm, Metrostudy. This firm physically inspects new

subdivision lots each quarter. Only part of the data they had collected was available online without charge, since there is normally a substantial fee for all the information that they collect. They reported that as of the 4th quarter of 2009, Carroll County contained four thousand, four hundred and eleven (4,411) vacant developed lots, which was fairly close to our estimates.

Some limitations of this research project might include - counting errors that were possible in the supply count, errors made in determining which houses were vacant, and the assumption that supply is fixed until all houses for sale and all vacant lots have been sold. Other limitations might include the fact that the single-family unit count only included homes in subdivisions; the fact that most owners of houses that are for sale will help absorb some supply by buying another house; uncertainty of future economic conditions regarding foreclosures and unemployment; high income earners who chose to rent; accuracy of the demographic data; and the fact that household numbers were forecasted for only 5 years.

Suggestions for further research would be to separate demand and supply by income and corresponding house affordability ranges, include single-family residential outside of subdivision in the analysis, find the subdivision and renter/ owner ratios for each study area instead of just Carroll County, and/or estimate and forecast future supply to be added.

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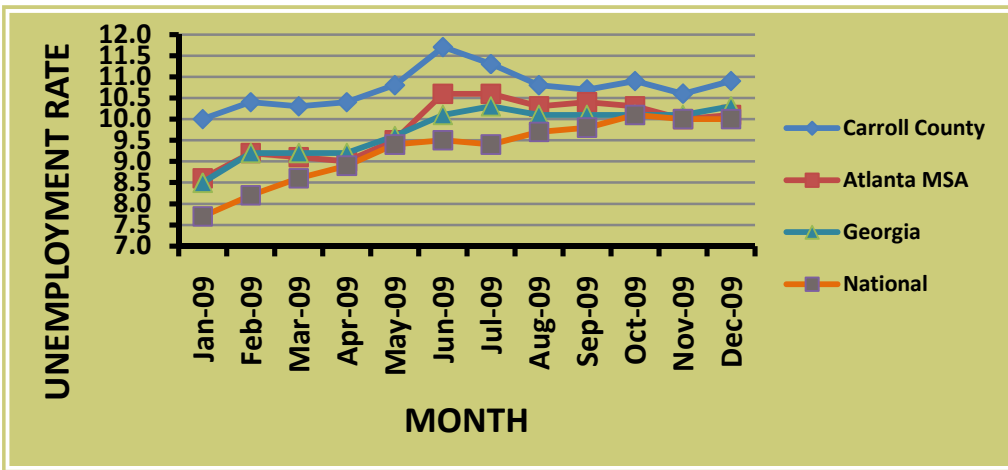
APPENDIX

Graph 1 - 1990-2009 Unemployment Rates
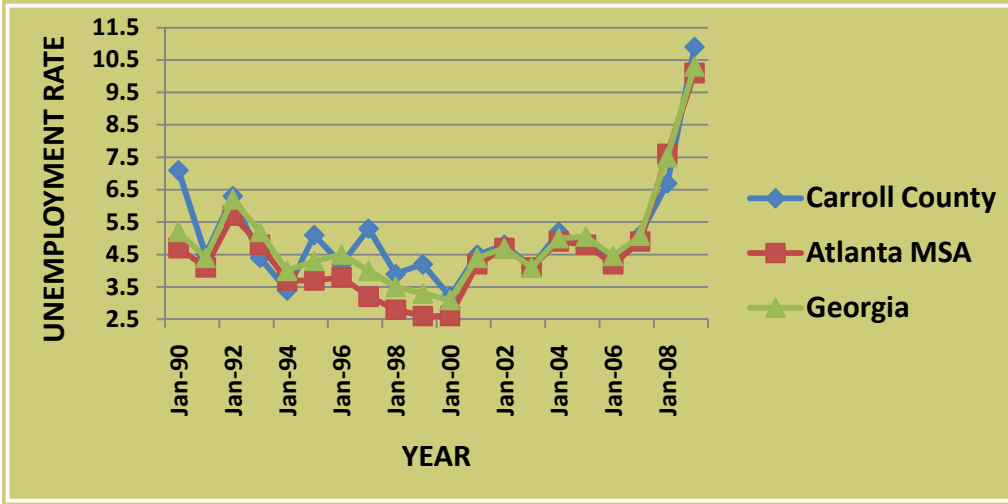
Data from the Bureau of Labor Statistics
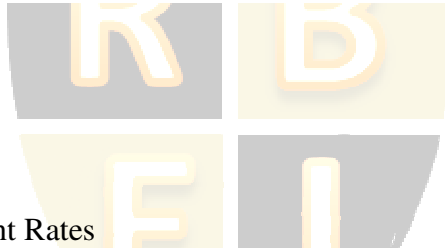
Graph 2 - 2009 Unemployment Rates


Data from the Bureau of Labor Statistics

Table 1 - House Affordability

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Yearly Median Income	**$48,438**
Monthly Income	$4,037
	(x) 25%
Housing Cost	$ 1,009
Monthly Insurance & Taxes	($200)
Principle & Interest	$ 809
Loan Amount	**$134,943**
	(/) 87.50%
House Affordability	**$154,221**
Median Home Value	**$96,754**

Table 2- House Affordability Summary

	House Affordability	Median Home Value
Carrollton	$111,000	$103,000
Villa Rica	$126,000	$100,000
Temple	$157,000	$90,000
Bowdon	$116,000	$78,000
Fairfield	$249,000	$149,000

Graph 3 - House Absorption
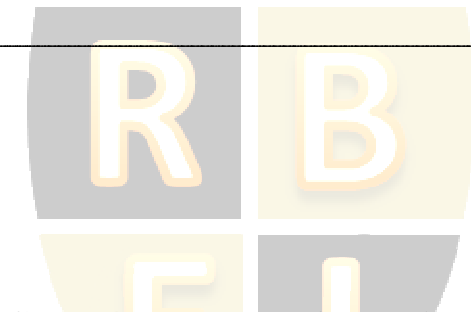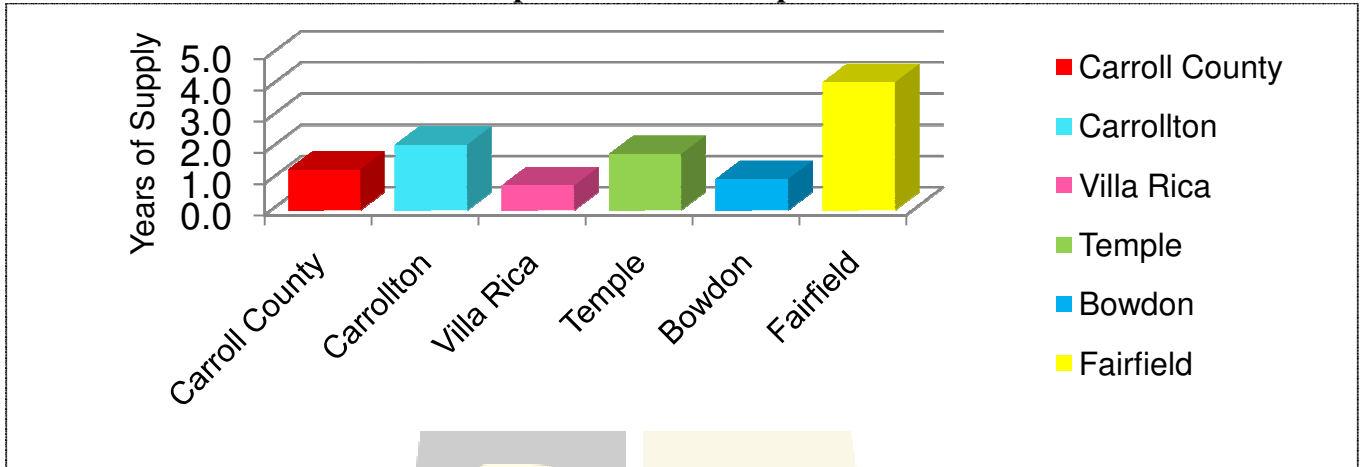
Graph 4 - Vacant Lot Absorption:
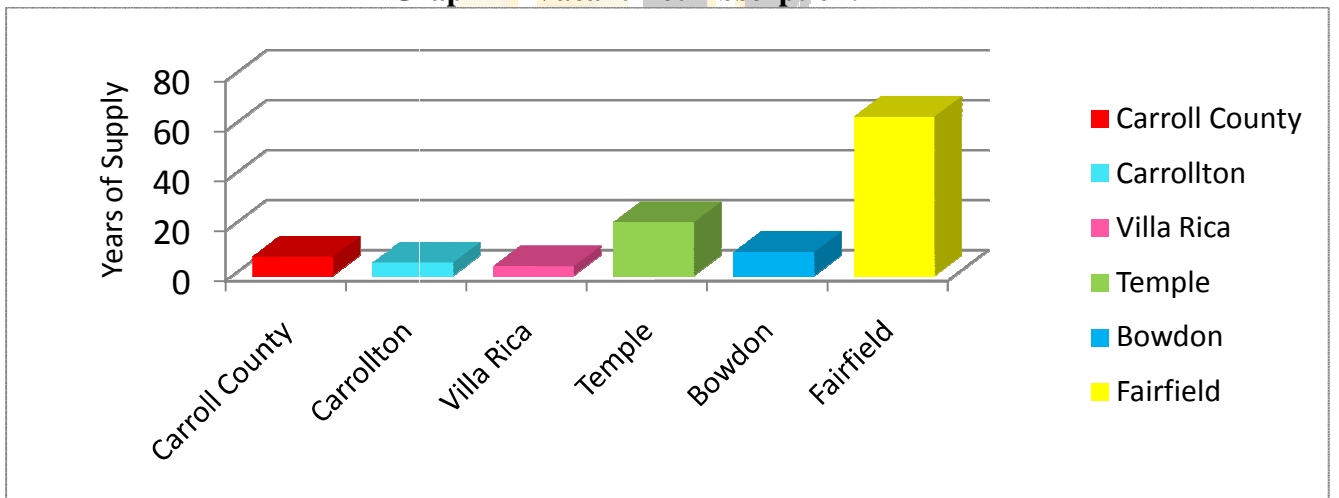
Graph 5 - Map showing supply in years over the study areas