

Quarterly Economic Indicators Report



Quarter Ended March 31, 2019

Introduction

The attached Table I provides a general indication of the state of Albemarle County's economy in the quarter for which the most recent data is available. For comparative purposes, each line in Table I reveals data for Q2 FY 19 or Q1 of FY 19 depending on how recently the relevant information was available. Each line in Table I also reveals corresponding historical figures from FY 18, FY 17, FY 16, and FY 15.

The data in Table I consists of three broad categories. The first category pertains to general economic activity in the County, as revealed by the following local tax revenue streams: Sales Tax, Food and Beverage Tax, Transient Occupancy Tax, Inspection Fees, and Other Development Fees. Staff has determined that these revenue streams collectively reflect the overall health of the County's economy since they relate directly to a number of important industries including retail, tourism, and construction. These revenue streams, also, collectively have shadowed movements in the Charlottesville Metropolitan Statistical Area's Gross Domestic Product (GDP) during the course of the past eleven years. This set of data pertains to Q2 FY 19 and Q2 of previous fiscal years.

The second group of data reveals the County's unemployment rate. Corresponding information is presented for the state and U.S. unemployment rates. These figures pertain to Q2 FY 19 and Q2 of the previous fiscal years. The third data group in Table I includes information about the total number of jobs in the County. Note that this data covers Q1 FY 19, and Q1 of each previous fiscal year, due to the Virginia Employment Commission's (VEC's) ongoing two quarter reporting lag. In addition to total jobs data, Table I breaks down the information by private sector vs. public sector jobs; federal government, state government, and local government jobs; and jobs by two-digit North American Industry Classification System (NAICS) code. The fourth and fifth data groups in Table I contain information about the inflation-adjusted average weekly wage in the County and the inflation-adjusted Federal Housing Finance Agency's House Price Index for the Charlottesville Metropolitan Statistical Area. These two groups of data attempt to capture changes in income and net worth in Albemarle County. The average weekly wage data pertains to Q1 FY 19 and Q1 of prior fiscal years. The Home Price Index numbers cover Q2 of FY 19 and Q2 of the previous fiscal years. Table I presents the quarterly data in such a way that changes over time become readily apparent.

Results

General Economic Activity – One Year

[Note that complete data for Q3 of FY 19 was *not* available as of the time of publication]. Between Q2 FY 18 and Q2 FY 19, the tax revenue streams shown in Table I generally were flat. Note however that, unlike annual data, which tends to be relatively smooth, quarterly data from one fiscal year can swing widely from corresponding quarterly figures in other fiscal years. This phenomenon can come about as the result of differences in the timing of the receipt of revenues, as well as unusual differences in economic conditions that might exist between any

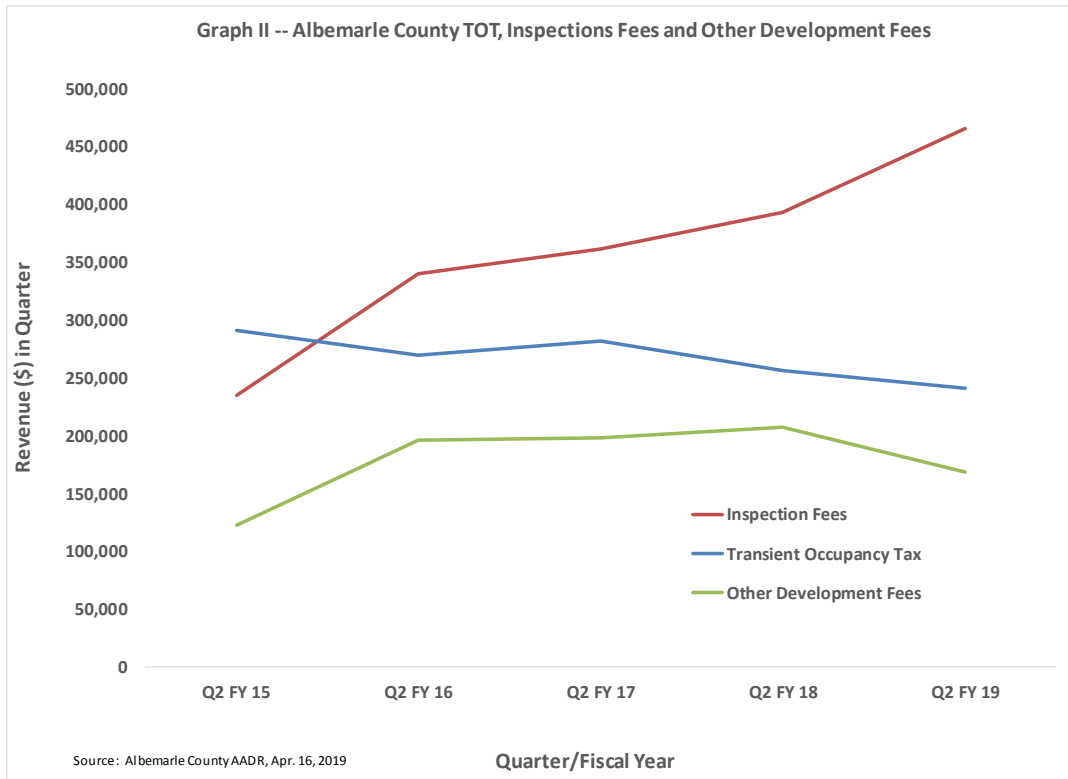
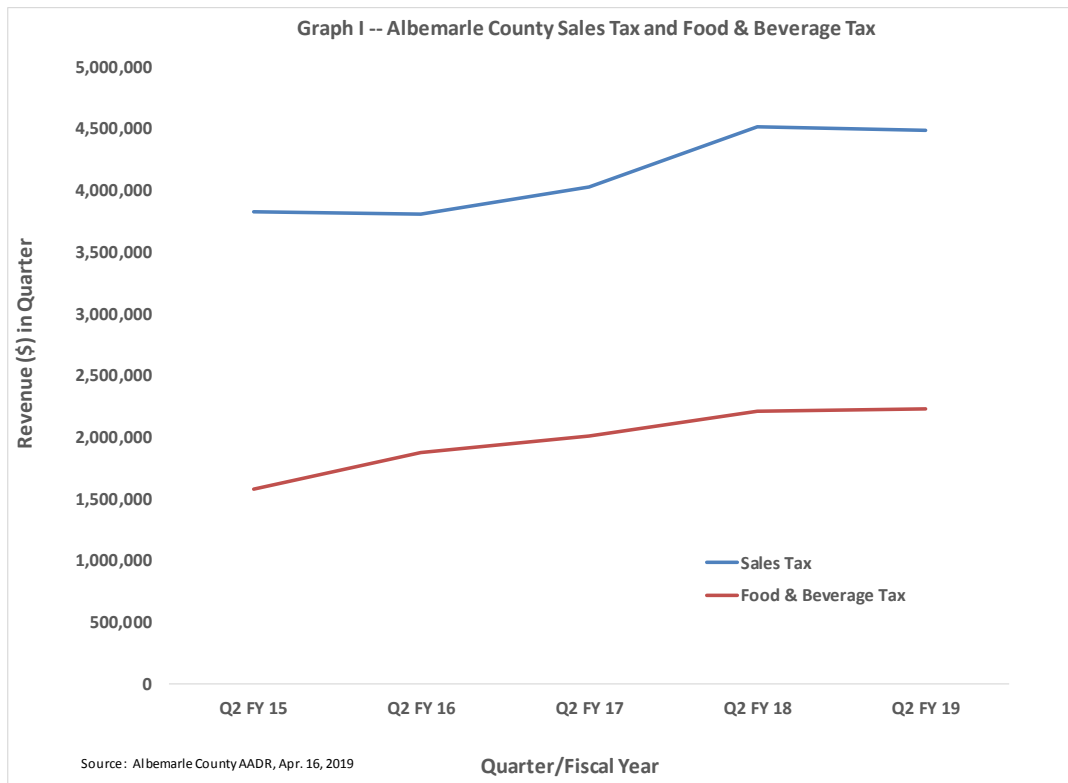
two particular corresponding quarters. An example of this latter situation would be the impact of harsh weather conditions on, say, sales tax revenue. With this caveat in mind, a comparison of Q2 FY 18 and final numbers for Q2 FY 19 Sales Tax revenue reveals that sales activity was essentially flat (-0.58%). This performance is surprising, given the strength of the local jobs market (see discussion below) but, if replicated in subsequent quarters, might indicate the beginning of a slowdown in Albemarle's economy.

Numbers for Food and Beverage tax revenue likewise were flat between Q2 FY 18 and Q2 FY 19 (+0.57%). This performance, again if replicated in subsequent quarters, might indicate the beginning of a slowdown in the County's economy. The figure for Transient Occupancy Tax (TOT), meanwhile, indicates an apparent tumble between Q2 FY 18 and Q2 FY 19. Staff thinks that the large increase in the supply of hotel/motel rooms in the City, relative to the County in recent years, might be having a moderating effect on lodging revenue in Albemarle.

The numbers shown on Table I indicate that Inspections Fees jumped by 18% between Q2 FY 18 and Q2 FY 19, while Other Development Fees apparently plunged by 19% during this time. This situation would be consistent with extensive construction activity in the County, as reflected in the Inspections Fees figure, but a slowing in *plans* for new development, indicated by the number for Other Development Fees.

General Economic Activity – Multiyear

As shown on the attached Table I, between Q2 FY 15 and Q2 FY 19 quarterly Sales Tax revenue grew by about 17%. This increase came about, at least partially, from the "filling in" of a major shopping center along the 29 North corridor. Food & Beverage tax revenue grew by about 41% during this time. This latter result is consistent with the opening of a number of high-volume restaurants in the County in recent years. Transient Occupancy Tax (TOT) declined by about 17% during this time period; this situation likely is due to the differential in new hotel space that has opened in the City vs. the County in recent years. Quarterly Inspections Fees, meanwhile, jumped by around 98%, while quarterly Other Development Fees grew by approximately 37%. The growth in these two revenue streams reflect the rebound in development activity that has taken place since the end of the "Great Recession" but also reflects changes, that began in FY 16, in the fees that the Department of Community Development charges for services. Graphs I and II, on the next page, show visually the changes in the revenue streams listed on Table I.

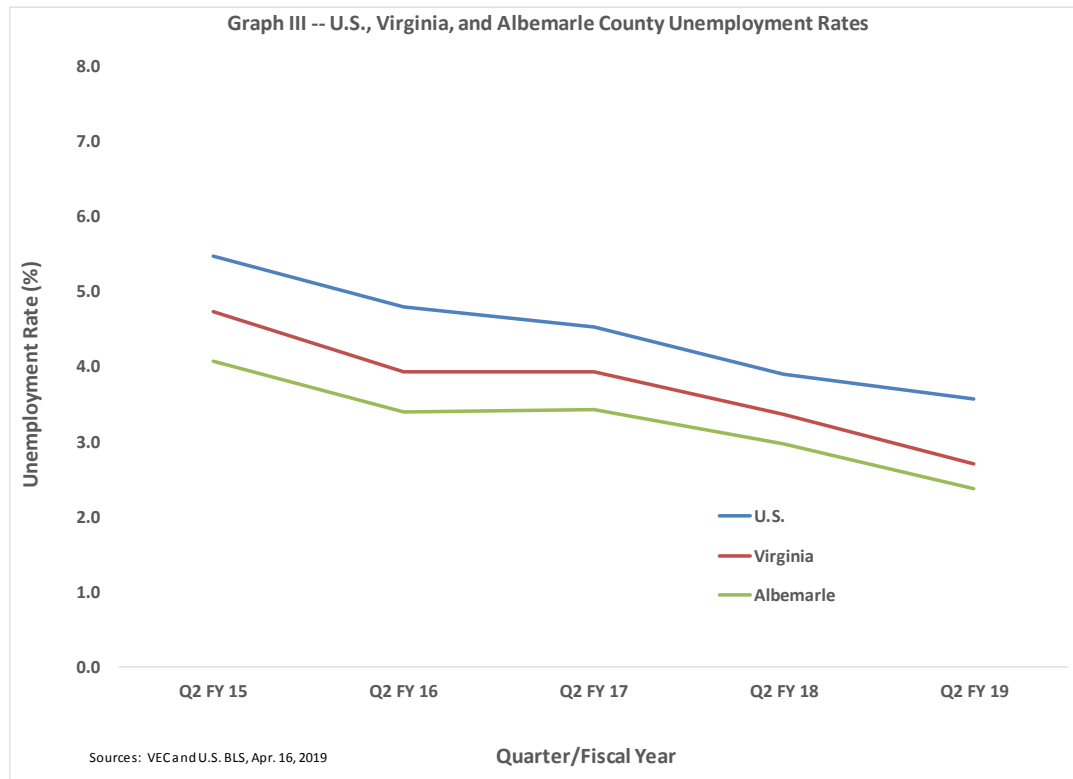


Unemployment Rate – One Year

Albemarle’s average monthly unemployment rate fell from a VEC-revised rate of 2.97% in Q2 FY 18 to 2.37% in Q2 FY 19. This decline of 0.60 percentage points (pp) was smaller than the pp decline experienced at the state level but larger than the drop at the national level. The County’s 2.37% rate is *well below* what many economists would consider to be the “frictional” or “full employment” rate of unemployment. Staff thinks that, based on the past twenty years of unemployment rate data, Albemarle’s frictional employment rate likely is *in the vicinity* of 3.5%. This extremely low level of unemployment historically would suggest upward pressure on wages although, as discussed below, this upward pressure does *not* seem to have resulted in any increase in the average weekly wage. Note that the unemployment rate applies only to people who are in the labor force. The number does not capture people who might have become discouraged looking for employment and have dropped out of the labor force.

Unemployment Rate – Multiyear

Between Q2 FY 15 and Q2 FY 19, Albemarle’s unemployment rate fell from 4.07% to 2.37%, or by 1.70 pp. The decline in the County’s rate was not quite as large as the corresponding drop in the Virginia unemployment rate (2.03 pp) or the U.S. rate (1.90 pp) but, as shown in Table I, and in Graph III, below, the County’s rate historically has been well below the U.S. and Virginia rates of unemployment.



Employment – One Year

Note that the jobs numbers for Albemarle come from the Virginia Employment Commission's Quarterly Census of Employment and Wages (QCEW) report; are reported by place of employment; and include both part-time and full-time positions, as well as both temporary and permanent positions. The nature of this data is such that the numbers can swing substantially from quarter to quarter during any particular year and, additionally, can vary widely between the same quarter of different years. Changes in the numbers sometimes can be misleading if, for example, employers in the County replace many part-time jobs with full-time positions. The VEC's jobs numbers, nonetheless, are used as the gauge of the number of positions in the County since no other comprehensive set of jobs data for Albemarle is readily available.

As shown on Table I, the average monthly total number of jobs in the County appears to have grown from 55,871 in Q1 FY 18 to 56,103 in Q1 FY 19, or by 232 positions (0.42%). This result is surprisingly low, given the very strong expansion in Albemarle County's jobs base between Q1 FY 16 and Q1 FY 17 (+3.11%) and between Q1 FY 17 and Q1 FY 18 (+4.37%). The question is whether this apparent slowdown in the rate of growth between Q1 FY 18 and Q1 FY 19 represents some fundamental change in the strength of the County's labor market, or if the apparent slowdown simply reflects a statistical illusion, due to the issues, mentioned above, in what the data is reporting. Note that the Q1 FY 19 results shown in Table I might change if the VEC publishes any revisions to the data in coming months. The apparently weak growth in jobs, in other words, might turn out to be illusory.

Table I reveals that the private sector lost 275 positions between Q1 FY 18 and Q1 FY 19, and that the private sector's share of the total number of jobs in the County dropped by about 1.12%, moving to 67.99% of the jobs base in Q1 FY 19 from 68.76% in Q1 FY 18. During this time, the public sector experienced a net gain of 508 jobs, with most of the gain (444 positions) coming from the State Government sector. It is important to keep in mind that the figures presented in Table I reflect *monthly averages for the three months of the quarter*, and do *not* necessarily reveal changes in full-time, permanent positions.

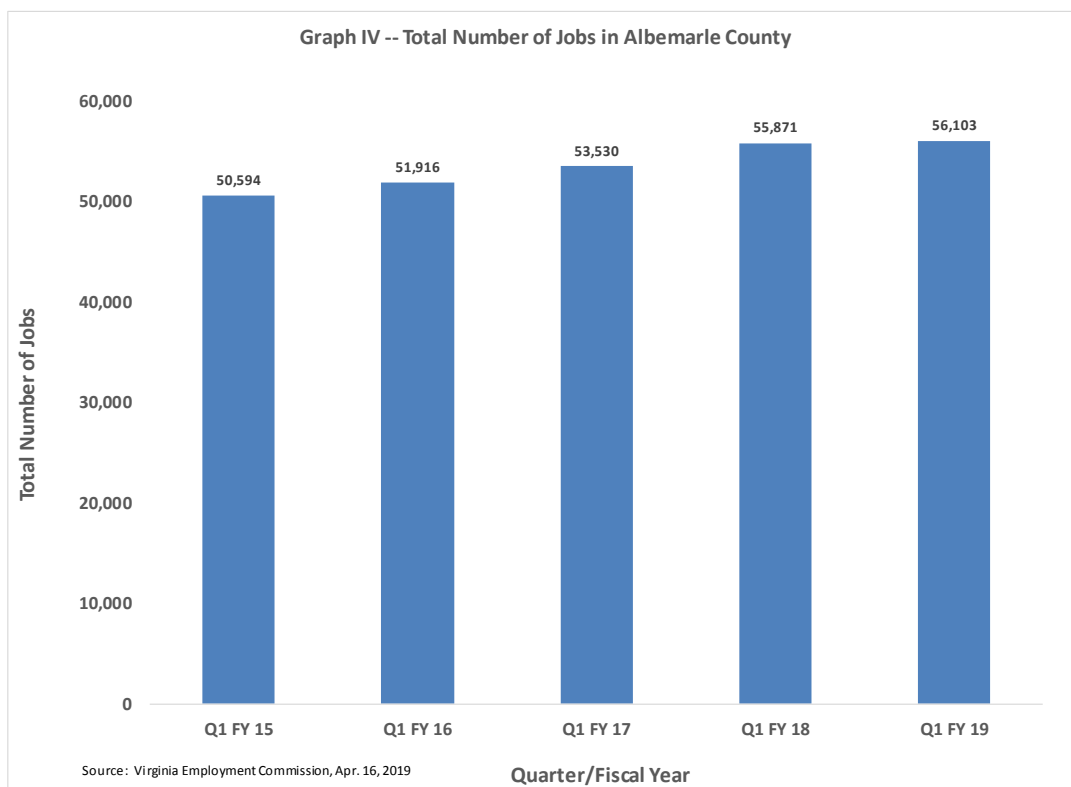
Employment sectors that experienced the largest increases in numbers between Q1 FY 18 and Q1 FY 19 include Educational Services (+444 jobs), Accommodation and Food Services (+146 jobs); and Transportation and Warehousing (+78 jobs). Sectors that endured the greatest losses, again in terms of numbers, include Health Care and Social Assistance (-183 jobs); Admin. and Support (-156 positions); and Professional, Technical, and Scientific Services (-145 jobs).

Employment – Multiyear

During the course of the Q1 FY 15 to Q1 FY 19 time period, the total number of jobs grew by 5,509 positions, or 10.89%. The private sector accounted for 3,735 of these jobs, or about 67.8% of the total growth. Note that the private sector's share of the jobs base was essentially flat, going from 68.01% in Q1 FY 15 to 67.99% in Q1 FY 19. With regard to the public sector,

growth in jobs during this time period was relatively small. The number of public sector positions in Albemarle increased by 1,775 between these years. This growth appears to have resulted overwhelmingly from an increase in State-level employment (+1,610 jobs), a situation which was in sharp contrast to the change in Federal Government positions (+36) and Local Government jobs (+129).

The NAICS sectors that experienced the largest increase in jobs between Q1 FY 15 and Q1 FY 19 included Educational Services (+1,271 jobs), Retail Trade (+930 jobs); and Health Care and Social Assistance (+917 positions). The three sectors that experienced the largest declines in employment numbers included Admin. and Support (-350 jobs); Management of Companies (-224 positions); and Manufacturing (-95 jobs). The performance of the County's jobs base during the course of the Q1 FY 15 to Q1 FY 19 time period is shown on Graph IV, below.



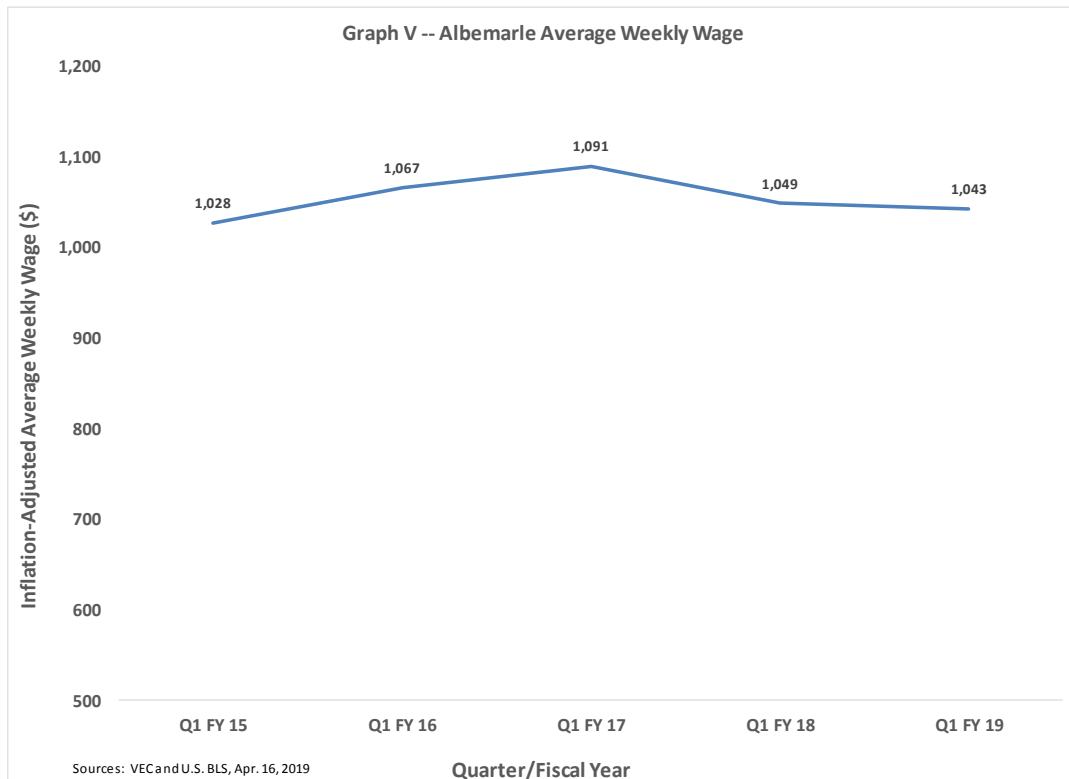
Average Weekly Wage – One Year

The average weekly wage reveals the general wage level in Albemarle County's employment base. The data comes from the Virginia Employment Commission, and is weighted by the relative number of positions in each of the NAICS employment sectors shown in Table I. The average weekly wage is included in this report in an attempt to gauge the direction and pace at which *income* is changing in the County. Note that the average weekly wage can be influenced by sharp changes in the number of jobs in any particular sector, as well as any sudden changes

in the wages paid in that sector or other sectors. For these reasons, caution should be exercised in interpreting changes in the average weekly wage, particularly between the same quarter of two consecutive fiscal years. This metric, nonetheless, can give us an idea about the performance of income in Albemarle County over time. The data from the VEC, unfortunately, is stated in nominal terms, i.e., does *not* take inflation into account so, for the purposes of this report, the VEC data is adjusted for inflation, using the Consumer Price Index for all Urban Consumers (CPI-U), from the U.S. Department of Labor's Bureau of Labor Statistics. The inflation-adjusted figures presented in Table I, in other words, reveal changes in the *real* average weekly wage. Figures are stated in Q1 FY 19 dollars. As shown in the table, between Q1 FY 15 and Q1 FY 19, the real average weekly wage apparently decreased from \$1,049 to \$1,043 (-\$6 or -0.57%). This result means that, after taking inflation into account, the "average" job in Albemarle paid 0.57% *less* in Q1 FY 19 than it did in Q1 FY 18 although, again, this result should be viewed with caution.

Average Weekly Wage – Multiyear

As shown on Table I, the inflation-adjusted average weekly wage appears to have been essentially flat, changing from \$1,028 in Q1 FY 15 to \$1,043 in Q1 FY 19. This small increase of \$15 (or 1.49%) is similar to the subdued wage growth that has existed in the United States since the end of the "Great Recession." Graph V, below, shows visually the performance of the inflation-adjusted average weekly wage in Albemarle County between Q1 FY 15 and Q1 FY 19.



Housing Price Index – One Year

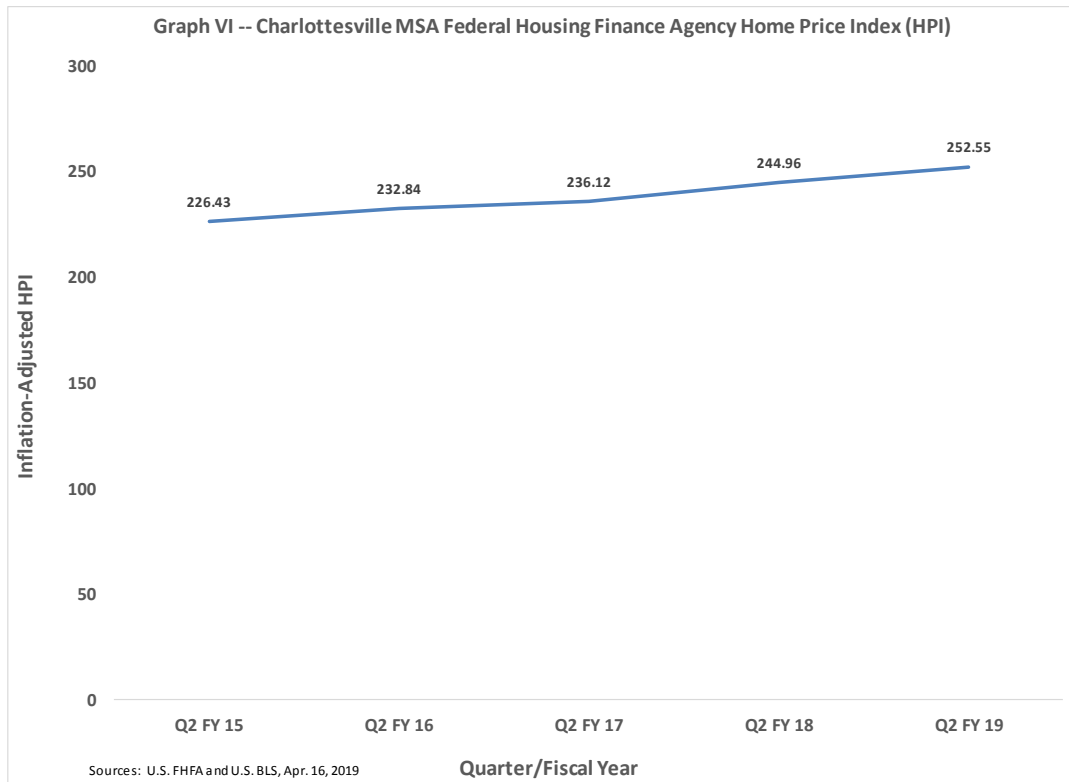
Each quarter, the U.S. Federal Housing Finance Agency (FHFA) publishes an index number for housing values in each Metropolitan Statistical Area (MSA) of the United States. This House Price Index (HPI) figure is based on a “repeat sales” methodology and generally is thought to offer one of the most accurate measures of housing price levels within a metropolitan area. The FHFA data cited in this report reflects “all transactions” (sales as well as refinancings) and is not seasonally-adjusted. Note that, despite the “all transactions” designation, only data from sales or refinancings that involve “conforming” mortgages are included in the HPI.¹ Note, also, that the HPI data is *not* broken down by cities or counties within each MSA so, for the Charlottesville MSA, information is not available separately for the County of Albemarle. Despite these limitations, the FHFA house price index offers a good measure by which to compare changes in the value of housing in Albemarle over time, since the County represents a substantial portion of the Charlottesville area’s housing stock. As was the case with the average weekly wage, the figures cited in this report have been adjusted for inflation, with Q2 FY 19 serving as the reference point.

The reason why the HPI is an important piece of data is that changes in the index can serve as a *rough proxy* for changes in residents’ *net worth* over time since, in the United States, primary residences represent most households’ single biggest asset by dollar value.² As shown on Table I, between Q2 FY 18 and Q2 FY 19, the Charlottesville MSA’s FHFA HPI rose from 244.96 to 252.55 (an increase of 7.59 points, or 3.10%). This result suggests that, if all else were held constant, the net worth of many Albemarle residents increased between the two years.

The County should expect to see continuing residential real estate price appreciation in the remainder of FY 19. This statement is based upon the most recent supply and demand data for the residential market. On the supply side, in Q3 FY 19 the inventory of residential real estate in Albemarle remained relatively low.³ On the demand side of the market, U.S. mortgage rates in Q3 FY 19 were at a level roughly equal to the level at which they existed in the same quarter of FY 18, while U.S. equity markets remained at essentially the same level as in Q3 FY 18, and the County’s labor market, as previously discussed, has displayed resiliency in the past year.⁴ These demand side conditions indicate that borrowing costs have not changed much in the past twelve months; the “wealth effect” from the stock market, notwithstanding the drop in equity values that the market experienced in Q2 FY 19, has rebounded to a level comparable to the “wealth effect” that existed a year ago; and the County’s jobs base does not appear to have contracted, at least not according to the most recently available jobs numbers from the VEC.

Housing Price Index – Multiyear

Between Q2 FY 15 and Q2 FY 19, the Charlottesville area’s HPI rose from 226.43 to 252.55 (a rise of 26.12 points, or 11.53%). Again, if all else were held constant, this result would suggest that the net worth of many Albemarle residents increased during the course of the time period. Graph VI, on page 9, shows visually the performance of the Charlottesville MSA’s HPI between Q2 FY 15 and Q2 FY 19.



Conclusions

The data presented on Table I indicates that the County's economy, as represented by the *collective* performance of selected revenue streams, grew between Q2 FY 18 and Q2 FY 19. Ongoing weakness in TOT revenue, however, is expected throughout the rest of FY 19, relative to FY 18, as the supply of new hotel rooms in the City has a moderating impact on revenues from lodging establishments in the County. Relative weakness is anticipated also in Other Development Fees in the coming quarters of FY 19 due to an anticipated drop in the planning of new development during the remainder of this fiscal year, although construction activity related to previously-approved development projects is anticipated to continue. The 0.60 pp decline in Albemarle's unemployment rate between Q2 FY 18 and Q2 FY 19 suggests that the County's economy continued to grow this past year. The Q2 FY 19 rate of 2.37% appears to be at least nominally consistent with a labor shortage. The flat performance in the inflation-adjusted average weekly wage between Q1 FY 18 and Q1 FY 19, however, does *not* seem consistent with a labor shortage, but the tradeoff between unemployment rates and wage growth, sometimes referred to as the "Phillips Curve" might not be as strong as was the case in previous recoveries.⁵ A notably small increase in Albemarle's jobs base between Q1 FY 18 and Q1 FY 19 (+232 positions, or +0.42%) implies that economic conditions were reasonably good in Q1 FY 19, but not nearly as robust as were conditions in Q1 FY 17 and Q1 FY 18. This piece of information, if confirmed in subsequent quarters, might suggest a slowdown in the rate of

growth in the County's economy. The rise in the inflation-adjusted FHFA HPI for the Charlottesville area seems to reinforce the notion that the County's economy has experienced fundamental strength in the past year and represents good news for homeowners. When coupled with the data about the inflation-adjusted average weekly wage, however, the increase in housing prices suggests a general decline in the County's housing affordability.

Looking forward to the remainder of FY 19, the County's economic prospects appear to be generally good, despite some potential headwinds. Assuming that, in the fourth quarter of FY 19, U.S. Gross Domestic Product (GDP) grows at the 2.1% average annualized rate forecasted by economists in the April 2019 *Wall Street Journal* survey, staff expects the County's unemployment rate will remain around 2.5%, and that the jobs base will grow by about 1% over the final FY 18 level, recent flat performance notwithstanding.⁶ This outlook for the County's economy is tempered, however, by potential headwinds. If the global macroeconomic picture were to take a turn for the worse, this situation obviously could have a negative effect on the U.S. economy and, by extension, the economy of Albemarle County. Economists have identified several foreseeable issues which could induce a turn in the global macroeconomic picture. Among these items are the ongoing U.S. – China trade dispute; the relatively high level of corporate debt in the U.S.; a potential slowdown in the European economy; and the U.S. Treasuries yield curve. The remainder of this report focuses on the yield curve.

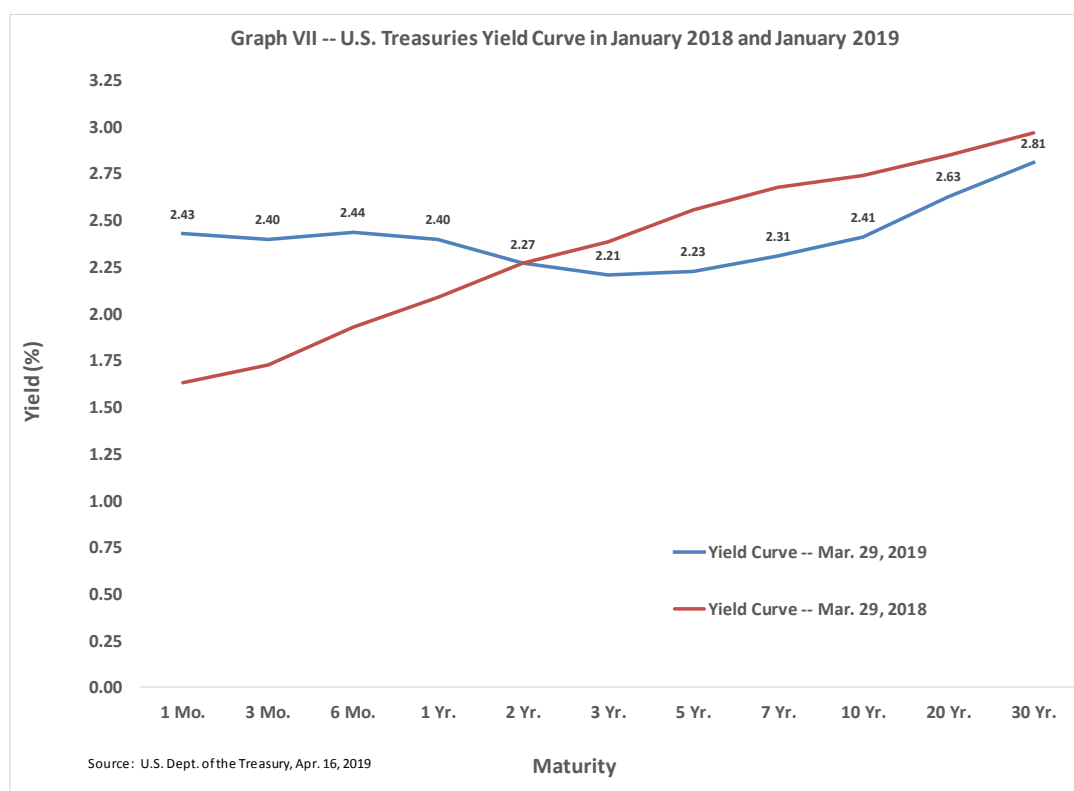
The Yield Curve

The yield curve for U.S. Treasuries has been flattening during the course of the past year, as shown on Graph VII on the next page. Along the yield curve, the two maturities which generate the most interest, at least in terms of the curve's flattening, are the 3 month and 10 year maturities. Note that, if the annualized rate of interest on the 3 month Treasury bill goes higher than annualized rate of interest on the ten year bond, this situation is known as an "inversion" and is thought either to predict, or possibly induce, an economic slowdown or outright recession.⁷ Interestingly, the 3 Mo./10 Yr. yields did slightly invert anywhere from 2 to 5 basis points for each of the five business days from March 22, 2019 to March 28, 2019 but since that time the yield on the 3 month Treasury has gone back to being just *below* the yield on the 10 year bond, i.e., the curve "un-inverted," for these two specific maturities.

Whether or not the 3 Mo./10 Yr. maturities of the yield curve invert again and remain substantially inverted for any significant length of time, however, remains an important question. For the sake of historical comparison, before the 2007-09 "Great Recession" the 3 Mo./10Yr. points on the yield curve were inverted anywhere from 20 to 64 basis points every business day from September 19, 2006 through May 11, 2007. The average daily inversion came to about 39 basis points during that time. The recession began in December 2007 and lasted until June 2009. Likewise, before the 2001 recession, the 3 Mo./10 Year points on the yield curve inverted anywhere from 23 to 95 basis points every business day from August 1, 2000 through January 4, 2001. The average daily inversion equaled 54 basis points during that time. The recession began in March 2001 and lasted until November 2001.⁸ Note that a general rule of thumb among economists is that recessions begin, on average, about eighteen

months after the yield curve inverts; the short lag time between the respective inversions and beginnings of the 2001 and 2007-09 recessions clearly was exceptional but this type of short interval, nonetheless, could occur again in the future.

Given this historical background information, the recent inversion in the 3 Mo./10 Yr. yields does not appear to have been large enough, and does not seem to have lasted long enough, to signal a coming recession. It is important to keep in mind, however, that the inversion among these two Treasury yields in March 2019 was not unlike similar small and brief inversion and “un-inversion” episodes that took place not long before the major, lengthy inversions of 2000-01 and 2006-07. Staff will continue to monitor the performance of the yield curve in coming months in order to ascertain the likelihood of a coming recession.



1. Conforming mortgages include only mortgages that are eligible to for purchase by Fannie Mae or Freddie Mac. Generally, these mortgages must be under a certain dollar value, which varies by metropolitan area.

2. See Table 3, p. 18 of the *Federal Reserve Bulletin*, September 2017 (Vol. 103, No. 3). This table, which contains data from the 2016 *Survey of Consumer Finance*, reveals that, at the time of the survey, 63.7% of respondents owned their primary residence and the median value of

this owned asset was \$185,000. This amount was greater than the conditional median value of any other owned asset class.

3. According to p. 14 of the Charlottesville Area Association of Realtors (CAAR) Report for the quarter ended March 2019, Albemarle County had an overall 4.6 month supply of unsold housing inventory. This figure was slightly higher than the 3.9 month supply for the same quarter of the previous fiscal year but, nonetheless, remained well below the six month supply figure that real estate professionals sometimes cite as representing a “balanced” market. The rule of thumb is that an inventory number much greater than six months represents a surplus of inventory (suggesting that prices either will moderate in their growth, or even turn negative in the near-term) while an inventory number much less than six months represents a shortage of inventory (indicating that prices either will not decline, or perhaps appreciate above the longer-term trendline). For the Q1 CY 19 / Q3 FY 19 CAAR report, please see:

http://charlottesville.stats.showingtime.com/docs/qmi/2019-01/x/AlbemarleCounty?src=page&_cldee=YmlsbGllMTlyNUBnbWFpbC5jb20%3d&recipientid=c0ntact-49a8d72050d24a58b9cf38c11ddf0ae0-84424cfa2d1d44a9acaabe263655d50b&esid=8b35365b-905b-e911-9c32-00155d08080f

4. For analytical purposes, quarterly mortgage rates are defined as the average weekly 30-Year fixed rate mortgage, not taking points into account, during the course of the quarter. In Q3 FY 19, the figure came to 4.37% while, in Q3 FY 18, the number equaled 4.28%. For historical mortgage rate data from Freddie Mac (the Federal Home Loan Corporation), please see:

<http://www.freddiemac.com/pmms/archive.html>

In terms of U.S. equity markets, the S&P 500 Index serves as a proxy for the entire stock market. The quarterly unit of observation is defined as the average daily closing value of the S&P 500 Index for all trading days in the quarter. In Q3 FY 19 the S&P 500 Index was 2,721 whereas, in Q3 FY 18, the figure stood at 2,733. For S&P 500 Index historical data please access:

https://finance.yahoo.com/quote/%5EGSPC/history?p=%5EGSPC&guccounter=1&guce_referrer=aHR0cHM6Ly9maW5hbmNlLnIhaG9vLmNvbS9xdW90ZS8lNUVHU1BDP3A9JTVFR1NQWw&guc_e_referrer_sig=AQAAAKOIIDVG57G2zWsWJbsy3m-tl1XP0KkcTxVeUWsN1xGlozT0JxaKRWDby-5RfhdKBspZ-5h6uZNSyauO1aM-kPilzlebQQmxHHliPvgiBJYd_0gixZUFKTNO7h_vfNpQOYhDP1uGQJ_FoWFg5989m7rwGuCAdNFCGhBfKfGk6

5. See the article on the Bloomberg.com website, “RIP Phillips Curve? The Fed’s Wonky Guidestar May be Dimming.”

<https://www.bloomberg.com/news/articles/2019-01-31/rip-phillips-curve-the-fed-s-wonky-guidestar-may-be-dimming?srnd=premium>

6. For details about the survey, see the *Wall Street Journal* website:

<http://projects.wsj.com/econforecast/#ind=gdp&r=20>

7. The theoretical reason why an inverted yield curve likely would induce a slowdown, or perhaps a recession, is that lending institutions tend to borrow funds for relatively short terms, but lend funds to consumers and businesses for relatively long terms. If the interest rate on short-term funds were to rise above the rate on long-term funds, the result would be that lending institutions would experience a squeeze on their profit margins and, holding everything else equal, would choose to cut back on lending. Credit tends to be the lifeblood of the economy, so the drop in lending activity ultimately would result in a slowdown or outright drop in economic activity. Based on empirical evidence, this theory seems to have some validity: Since 1955, an inverted yield curve has preceded all recessions and, additionally, an inverted yield curve on only one occasion has erroneously predicted a recession. (In this last case, however, the inverted yield curve *did* foreshadow a *slowdown*). For more information about the inverted yield curve phenomenon, please see, “Monetary Cycles, Financial Cycles, and the Business Cycle,” (Federal Reserve Bank of New York, Staff Report No. 421, January 2010). This paper examines the relationship between changes in the slope of the yield curve and changes in real economic activity. The paper is available at the following link:

https://www.newyorkfed.org/research/staff_reports/sr421.html

8. Yield data is derived from the U.S. Dept. of the Treasury’s “Daily Treasury Yield Curve Rates” webpage:

<https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield>

Recession beginning and ending dates are taken from the National Bureau of Economic Research’s (NBER’s) “U.S. Business Cycle Expansions and Contractions” webpage:

<https://www.nber.org/cycles.html>