Quarterly Economic Indicators Report

Quarter Ended December 31, 2017

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 18, Q1 of FY 18, or Q4 of FY 17, depending on how recently the relevant information was available. Each line in Table I also reveals corresponding historical figures from FY 17, FY 16, FY 15, and FY 14.

The data in Table I consists of three broad categories. The first category pertains to general economic activity in the County, as reveled 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 18 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 Q1 FY 18 and Q1 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 Q4 FY 17, and Q4 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 Q4 FY 17 and Q4 of prior fiscal years. The Home Price Index numbers cover Q1 of FY 18 and Q1 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

Between Q2 FY 17 and Q2 FY 18, the tax revenue streams shown in Table I generally exhibited moderate-to-strong growth. 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

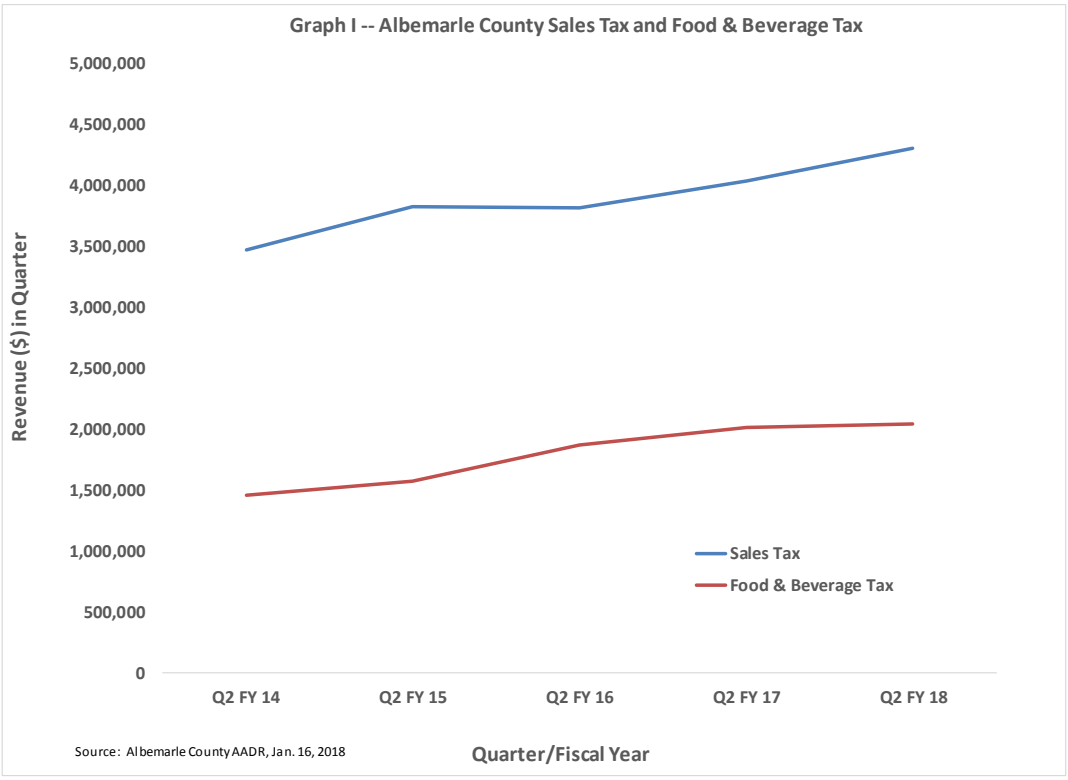
this latter situation would be the impact of harsh weather conditions on, say, sales tax revenue. With this caveat in mind, a comparison of Q2 FY 17 and Q2 FY 18 Sales Tax revenue reveals growth of about 7%. This performance is due in large part to the ongoing expansion of a major shopping center south of Charlottesville during FY 18, as well as the increased popularity of a relatively new shopping center along the 29 North corridor.

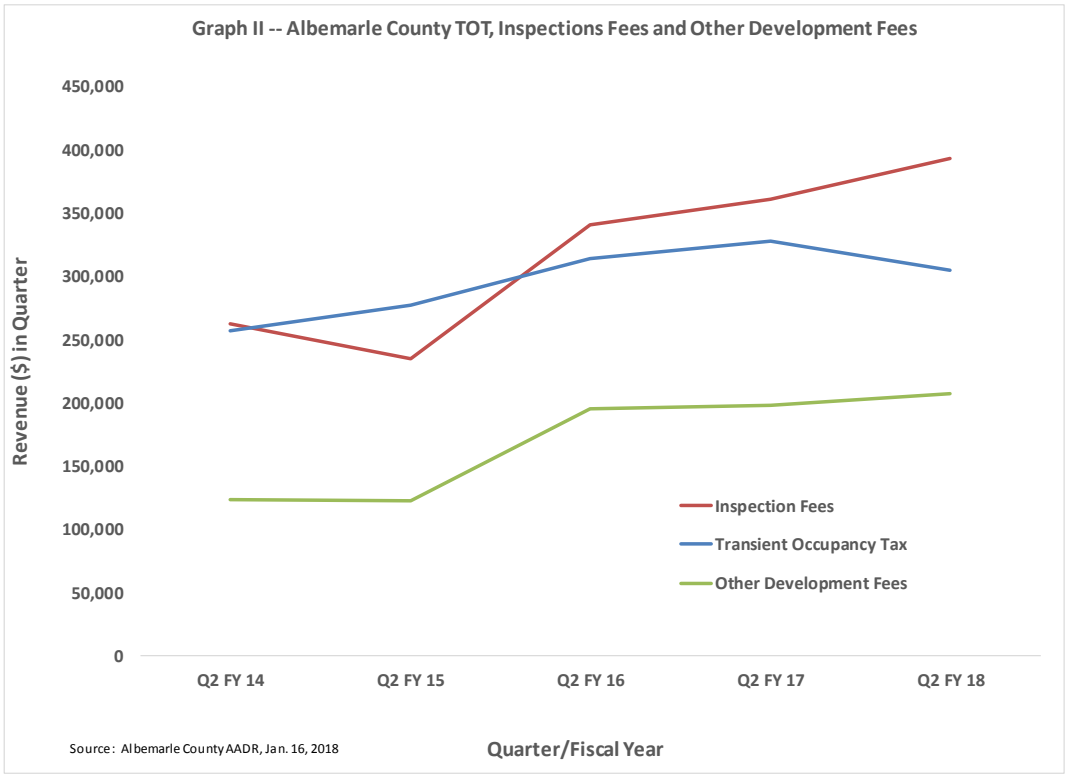
Food and Beverage tax revenue grew only modestly, by 1.75%, between Q2 FY 17 and Q2 FY 18. This tepid performance might be illusory. Transient Occupancy Tax (TOT), meanwhile, appears to have decreased by about 7% between Q2 FY 17 and Q2 FY 18. A word of caution in interpreting this result, however, is in order. Comparisons between the same quarter of different fiscal years can reveal increases in revenue or, alternately, substantial drops but these changes frequently prove to be fleeting in nature and, oftentimes, can be misleading. Staff thinks, nonetheless, that the large increase in the supply of hotel/motel rooms in the City, relative to the County in recent years, might be rendering a "cannibalization" effect on lodgings in Albemarle. This phenomenon, additionally, might become worse in the next year or two since a substantial number of new hotel/motel rooms will open in the City, while no major increase in hotel/motel space is expected in the County until FY 20. This situation likely will continue to put downward pressure on future growth in Albemarle's TOT revenue stream.

Table I indicates that Inspections Fees jumped by 9% between Q2 FY 17 and Q2 FY 18, while Other Development Fees grew by about 5% during this time. The underlying pace of new development that generated these gains, however, likely will decline somewhat in the remainder of FY 18, according to the County's Director of Community Development. These two revenue streams are expected to come in below budget in FY 18 but also are expected to stabilize and increase again slightly beginning in FY 19 as the development market readjusts.

General Economic Activity – Multiyear

As shown on the attached Table I, between Q2 FY 14 and Q2 FY 18 quarterly Sales Tax revenue grew by about 24%, while quarterly TOT revenue rose by about 18%. These increases came about, at least partially, from the "filling in" of a major shopping center along the 29 North corridor since FY 13, and the opening of a new hotel near this shopping center in FY 14. Quarterly Food & Beverage tax revenue grew by about 40% during this time. This latter result is consistent with the opening of a number of high volume restaurants in the County in recent years. Quarterly Inspections Fees, meanwhile, jumped by around 50%, while quarterly Other Development Fees leaped by approximately 68%. 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.


Graph I -- Albemarle County Sales Tax and Food & Beverage Tax
5,000,000
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
Revenue ($) in Quarter
Sales Tax
Food & Beverage Tax
Q2 FY 14
Q2 FY 15
Q2 FY 16
Q2 FY 17
Q2 FY 18
Source: Albemarle County AADR, Jan. 16, 2018
Quarter/Fiscal Year

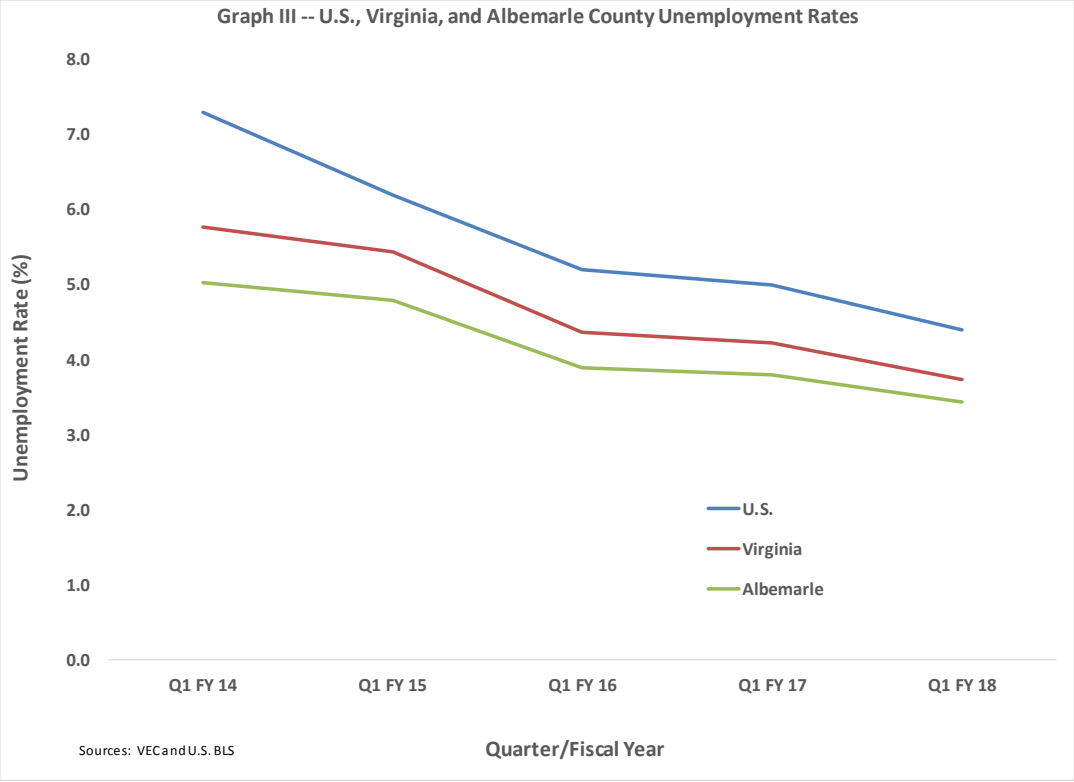

Graph II -- Albemarle County TOT, Inspections Fees and Other Development Fees
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Revenue ($) in Quarter
Inspection Fees
Transient Occupancy Tax
Other Development Fees
Q2 FY 14
Q2 FY 15
Q2 FY 16
Q2 FY 17
Q2 FY 18
Source: Albemarle County AADR, Jan. 16, 2018
Quarter/Fiscal Year

Unemployment Rate – One Year

Albemarle's average monthly unemployment rate fell from a VEC-revised rate of 3.80% Q1 FY 17 to 3.43% in Q1 FY 18. This decline of 0.37 percentage points (pp) was smaller the pp declines experienced at the state and national levels. The County's 3.43% rate is *below* what many economists would consider to be the "frictional" or "full employment" rate of unemployment. Staff thinks, however, that based on the past twenty years of unemployment rate data, Albemarle's frictional employment rate likely is *in the vicinity* of 3.5%. The County's unemployment rate has diminished slowly in the past several years since the end of the 2007-09 recession. 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 Q1 FY 14 and Q1 FY 18, Albemarle's unemployment rate fell from 5.03% to 3.43%, or by 1.60 pp. The decline in the County's rate was not quite as large as the corresponding drop in the Virginia unemployment rate (2.04 pp) or the U.S. rate (2.90 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 jumped substantially from 54,798 in Q4 FY 16 to 57,666 in Q4 FY 17, or by 2,868 positions (5.23%). This result is encouraging and speaks to an apparently robust labor market in Albemarle County. The Q4 FY 17 results shown in Table I might change, however, if the VEC publishes any revisions to the data in coming months. The apparently strong growth in jobs, in other words, might turn out to be illusory; however this strong performance has appeared in several recent editions of the Quarterly Financial Report. Given this situation, staff thinks that growth in the County's jobs base during the course of the past several quarters likely is not a statistical fluke.

Table I reveals that the private sector gained 2,008 positions between Q4 FY 16 and Q4 FY 17, and that the private sector's share of the total number of jobs in the County essentially remained flat, moving to 66.34% of the jobs base in Q4 FY 16 from 66.53% in Q4 FY 17. During this time, the public sector experienced a net gain of 932 jobs, with nearly all of the gain (922 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.

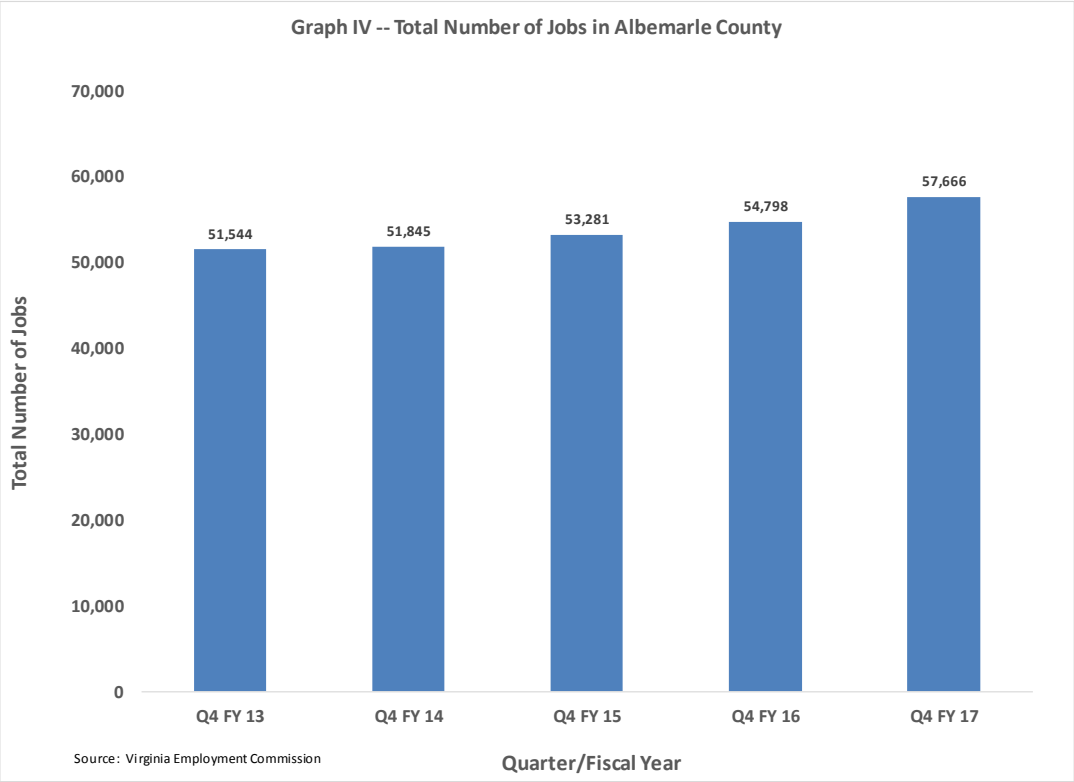
Employment sectors that experienced the largest increases in numbers between Q4 FY 16 and Q4 FY 17 include Educational Services (+814 jobs), Accommodation and Food Services (+723 jobs); and Retail Trade (+442 jobs). Sectors that endured the greatest losses, again in terms of numbers, include Arts, Entertainment, and Recreation (-67 jobs); Finance and Insurance (-39 positions); and Management of Companies (-36 jobs).

Employment – Multiyear

During the course of the Q4 FY 13 to Q4 FY 17 time period, the total number of jobs grew by 6,122 positions, or 11.88%. The private sector accounted for 4,538 of these jobs, or about 74% of the total growth. Note that the private sector's share of the jobs base was essentially flat, going from 65.62% in Q4 FY 13 to 66.53% in Q4 FY 17. 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 1,654 between these years. This growth appears to have resulted

overwhelmingly from an increase in State-level employment (+1,609 jobs), a situation which was in sharp contrast to the change in Federal Government positions (+29) and Local Government jobs (+16).

The NAICS sectors that experienced the largest increase in jobs between Q4 FY 13 and Q4 FY 17 included Educational Services (+1,231 jobs), Accommodation and Food Services (+1,046 positions); and Health Care & Social Assistance (+935 jobs). The three sectors that experienced the largest declines in employment numbers included Management of Companies (-181 jobs); Wholesale Trade (-30 positions); and Manufacturing (-18 jobs). The performance of the County's jobs base during the course of the Q4 FY 13 to F4 FY 17 time period is shown on Graph IV, below.



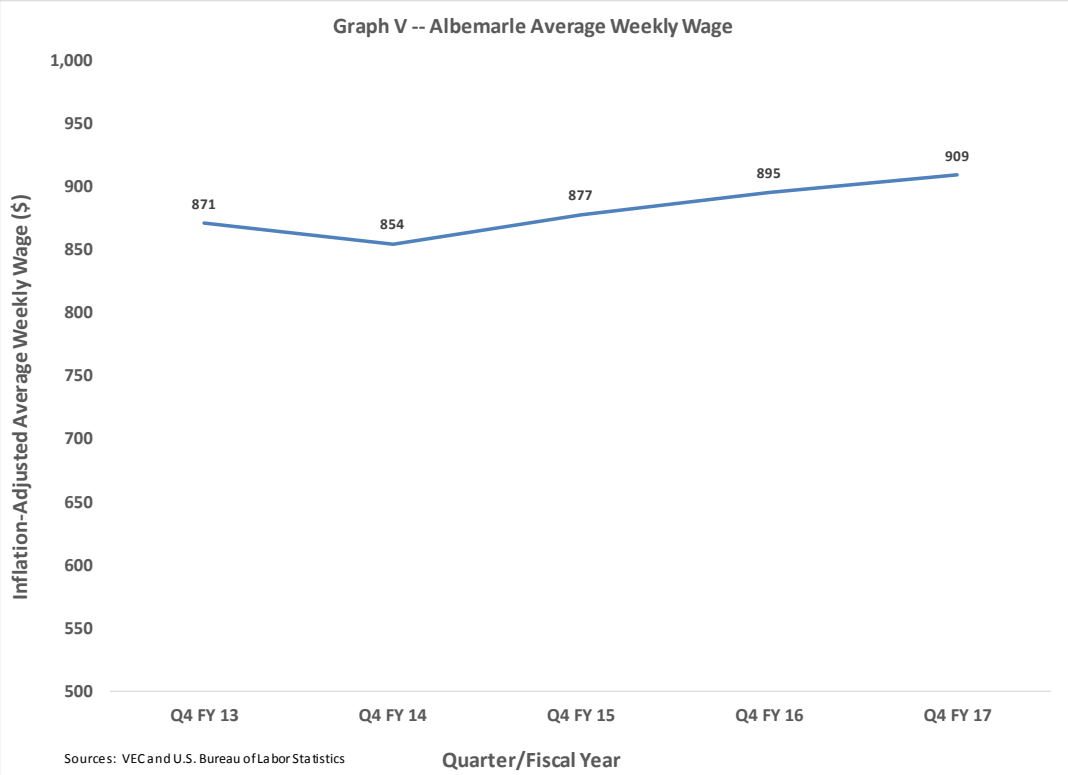
Average Weekly Wage – One Year

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. As shown in the table, between Q4 FY 16 and Q4 FY 17, the real average weekly wage increased from $895 to $909 (a small increase of $14 or 1.51%). This result means that, after taking inflation into account, the "average" job in Albemarle paid 1.51% more in Q4 FY 17 than it did in Q4 FY 16.

Average Weekly Wage – Multiyear

As shown on Table I, the inflation-adjusted average weekly wage grew modestly from $871 in Q4 FY 13 to $909 in Q4 FY 17. This small increase of $38 (or 4.36%) 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 Q4 FY 13 and Q4 FY 17.



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 Home 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 home 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.

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 Q1 FY 14 and Q1 FY 18, the Charlottesville MSA's FHFA HPI rose from 218.41 to 228.19 (an increase of 9.79 points, or 4.48%). This result suggests that, if all else were held constant, the net worth of many Albemarle residents increased between the two years.

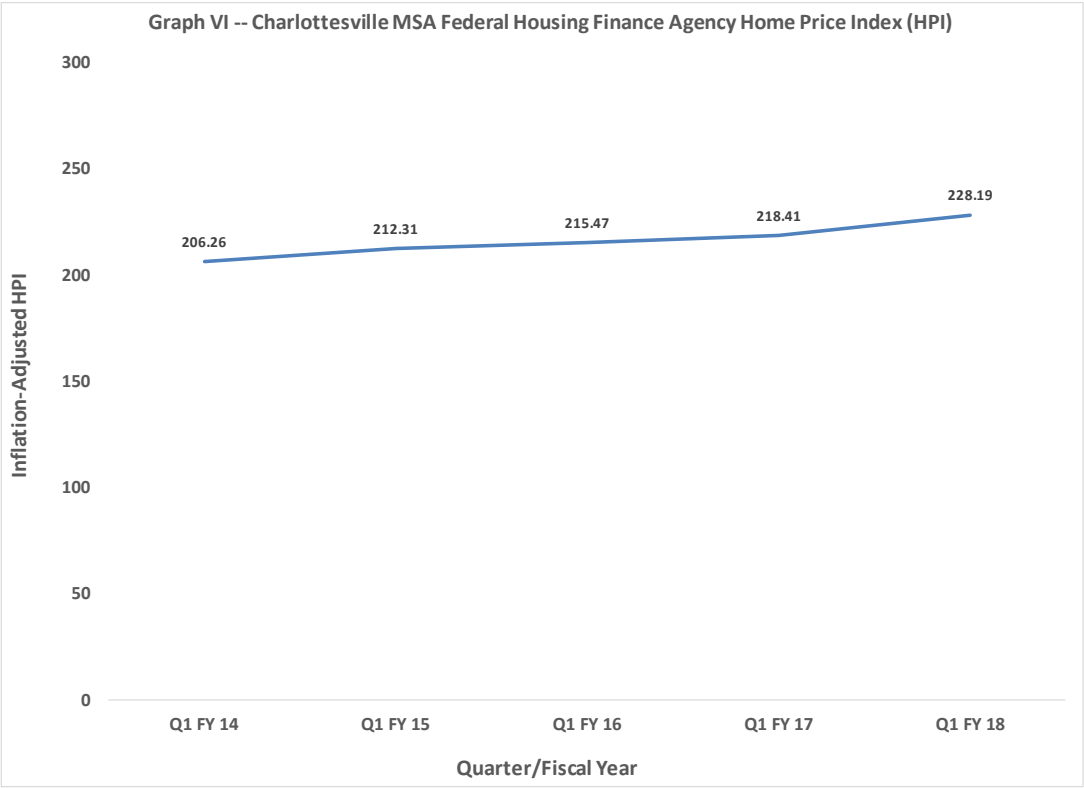
Housing Price Index – Multiyear

Between Q1 FY 14 and Q1 FY 18, the Charlottesville area's HPI rose from 206.26 to 228.19 (a rise of 21.93 points, or 10.63%). 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 the next page, shows visually the performance of the Charlottesville MSA's HPI between Q1 FY 14 and Q1 FY 18.

Conclusions

The data presented on Table I indicates that the County's economy, as represented by the *collective* performance of selected revenue streams, grew at a fairly strong pace between Q2 FY 17 and Q2 FY 18. Ongoing weakness in TOT revenue, however, is expected throughout the rest of FY 18, relative to FY 17, as the supply of new hotel rooms in the City draws business away from lodging establishments in the County. Relative weakness is anticipated also in Inspection Fees and Other Development Fees in the coming quarters of FY 18 due to an anticipated drop in new development during the remainder of this fiscal year.

The 0.37 pp decline in Albemarle's unemployment rate between Q1 FY 17 and Q1 FY 18 suggests that the County's economy continued to grow this past year. The Q1 FY 18 rate of 3.43% appears to be at least nominally consistent with full employment. A substantial increase

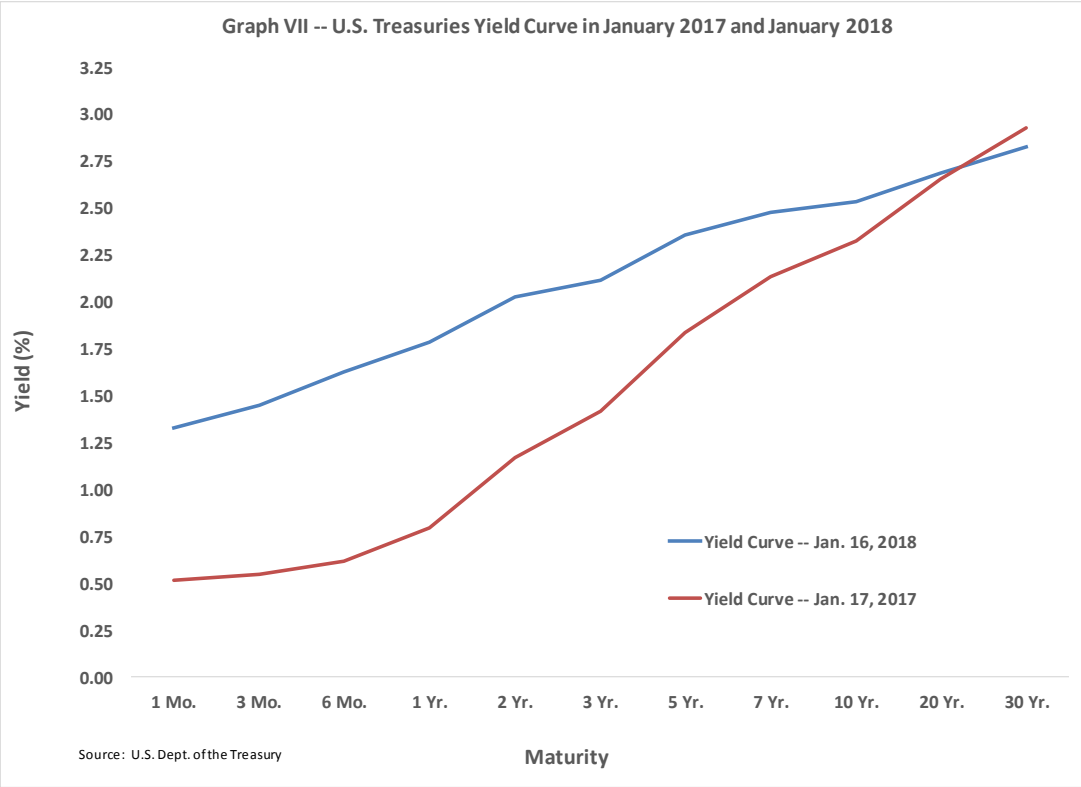


in Albemarle's jobs base between Q4 FY 16 and Q4 FY 17 (+2,688 positions, or +5.23%) implies that economic conditions were robust between these quarters. This piece of information, along with the recent decline in the County's unemployment rate, reinforces the relatively healthy picture of Albemarle's economy suggested by the revenue stream data in Table I. Growth in the inflation-adjusted average weekly wage, as well as a rise in the inflation-adjusted FHFA HPI for the Charlottesville area, further reinforces the notion that the County's economy has experienced fundamental strength in the past year.

Looking forward to the rest of FY 18, the County's economic prospects appear to be good. Assuming that, in each of the remaining two quarters of FY 18, U.S. Gross Domestic Product (GDP) grows at the 2.7% average annualized rate forecasted by economists in the January 2018 *Wall Street Journal* survey, staff expects the County's unemployment rate will remain around 3.5%, and that the jobs base will grow by about 2% over the final FY 2017 level.[3]

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 some foreseeable scenarios which could induce a turn in the global macroeconomic picture. In one scenario, mentioned in the endnotes section of the Q1 FY 18 Quarterly Economic Indicators Report, a sudden correction in, say, global equities markets could induce a slowdown or a recession. In a second scenario, the yield curve for U.S. Treasuries, which has been flattening during the course of the past year (as shown on Graph VII

below), might invert, i.e., short-term borrow rates might rise above the rates on longer-term borrowing, thereby helping to induce either a slowdown or an outright recession.[4]



In these two cases, the County's economic prospects could change although, given that FY 18 is now slightly more than halfway over, if either or both of the two hypothetical events described above took place in FY 18, the effects likely would not ripple through Albemarle's economy until FY 19 or perhaps later.

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

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

There is good reason to think that the optimism implied by the results of the survey is well grounded. In the first place the global "output gap" has closed for the first time in years; the U.S. appears to be at full employment; and, as a reflection of the strength in the U.S. labor market, prices appear to be accelerating, a situation that suggests that wage growth is picking up. For more information about these points, please see the following articles on Bloomberg.com and the Wall Street Journal website respectively:

"The Global Economy's Output Gap Has Closed"

https://blogs.wsj.com/economics/2018/01/09/the-global-economys-output-gap-has-closed/

"Economists Think the U.S. Economy is at or Near Full Employment"

https://blogs.wsj.com/economics/2018/01/11/economists-think-the-u-s-economy-is-at-or-near-full-employment/

"U.S. Core Inflation Accelerates"

https://www.bloomberg.com/news/articles/2018-01-12/u-s-core-inflation-accelerates-amid-increase-in-shelter-costs

4. 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