GO Virginia Regional Baseline Measures

Data Dictionary

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About the GO Virginia Regional Baseline Measures

This document complements the GO Virginia baseline indicators by describing what each indicator shows, and its relevance to the regional economy. Overall, the baseline indicators will inform each GO Virginia region's respective Economic Growth and Diversification plan. The GO Virginia Board will also use these measures to track progress, examine medium- and longer-term trends, and help assist GO Virginia's effectiveness in stimulating regional growth and diversification. The indicators described below provide insight into broad trends relating to population, income and wealth, employment, regional economic structure, labor force, firm growth, and cost of local government. In addition to preparing indicators for the 9 GO Virginia regions, we have also compiled these indicators for the Commonwealth of Virginia and 10 comparator states, as well as Virginia's 16 regional development organizations.

Most indicators include some kind of comparison to Virginia and the US, so that regional stakeholders are able to answer the important, "Compared to What?" question when considering, for instance, the pace of their region's population or employment growth. Each indicator is presented graphically for every region and, where possible, we have also included tables that show related indicators for the individual jurisdictions in each region. The graphics are compiled in a region-specific PowerPoint file so that regional stakeholders can use them in presentations. The Excel files detailing each individual indicator are also available for download.

Where possible, the indicators go back two decades in order to view longer-term trends. Given the uniqueness of the GO Virginia regions these indicators were constructed from the bottom up using county-level data. It is also important to note that all the indicators rely upon publicly-available data sources. As a result, we have also identified the data sources (including many with hyperlinks) and provided basic information about the regularity of their release (to allow regional stakeholders to update these indicators in the future at minimal cost).

Population

Population trends

The pace at which regions gain or lose population is an important indicator of the region's overall economic health. If a region grows faster than the state or the nation, it likely possesses sufficient economic opportunity to draw people to the region. Strong population growth also indicates greater potential availability of workers. Relatively slow population growth or population decline may point to a slowing or struggling economy that might force workers to find employment opportunities outside the region.

We displayed population trends graphically as an index, with the region, state and nation's population in the year 2000 set to 100 (although population data from 1996-2016 are included). This index enables more effective regional comparisons to other places with significantly larger populations (e.g., the US and VA), and helps answer the important "compared to what?" question. Therefore, these indices show

the extent to which the region's population grew faster, slower, or kept pace with the nation and the state. Data tables provide population counts and annualized growth rates for the individual jurisdictions within each region to allow for intra-regional comparisons.

Source: US Census Bureau, Population Estimates Program

Update schedule: County population estimates are released annually in March.

Components of population change

Three factors drive population change—international migration, domestic migration and natural increase (births minus deaths). These basic factors provide insight into the demographic trends shaping the region. Positive migration (international or domestic) shows that the region can attract new residents, by creating attractive employment opportunities and/or providing an attractive quality of life. Net out-migration may indicate that a region is not creating sufficient numbers of high-quality job opportunities to attract new residents, or that other regions may appear more attractive to mobile workers.

Natural increase is often driven, in part, by a region's age profile. For instance, areas with more people of prime child bearing years will likely experience greater natural increase than places with relatively older populations. There are many other factors influencing natural increase including, but not limited to, health and life expectancy and the region's cost of living.

The charts provided show annual population change by component dating back to 2010-2011.

Source: US Census Bureau, Population Estimates Program

Update schedule: County level components of population change are updated annually, and released in March.

Income and wealth

Per Capita Income

Per Capita Income (PCI) represents total personal income divided by the total number of residents. PCI measures enable regional comparisons of wealth to the nation, state, or other regions. Changes in PCI can show whether a regional economy is strengthening or weakening over time. Rising income levels often reflect a strengthening economy, particularly if they are rising faster than the state or nation. Greater regional wealth allows residents to buy homes or spend money in retail establishments. This increased spending creates jobs in other industry sectors, as well as contributes to the region's tax base through increased sales or property tax receipts.

Personal income includes all forms of income including: wages and salaries, proprietor incomes, ownership of financial assets, and government transfer payments among others. The US Bureau of Economic Analysis, which publishes these data, measures income pre-tax. The accompanying charts show PCI over time, adjusted for inflation (data are presented in 2015 dollars—the most recent data

available); the tables show PCI and PCI growth to enable comparisons between regions and individual jurisdictions.

Source: US Bureau of Economic Analysis, Regional Economic Accounts

Update schedule: Local Area Personal Income data are released annually in November.

Poverty

Regional poverty rates reflect how well the economy works for the entire population. High poverty rates mean that many residents are unable to meet their basic needs. This may be due to insufficient employment opportunities for some populations, or large segments of the population being—for a wide array of reasons—unprepared or ill-equipped to take advantage of the available opportunities. Poverty is often structural in nature. As a result, poverty rates tend to be relatively consistent over time. The poverty rate also provides some indication about the extent to which communities must invest in various public assistance programs, or their eligibility for state and federal assistance.

Poverty data are available through the US Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program, which produces model-based estimates for states, counties and school districts. The accompanying charts show poverty rates comparing regions to the Commonwealth and nation for 2006, 2011, and 2015 (the most recent year available). Regional tables show poverty rates for the individual jurisdictions within the region.

Source: US Census Bureau, Small Area Income and Poverty Estimates.

Update schedule: Annual estimates are released in December.

Employment

Total employment trends

The pace of employment growth provides a key indicator of regional economic vitality. Regions that add jobs faster than the state or the nation have relatively strong economies. The relationship between job growth and population growth also provides insight into the region's economic dynamics. Regions that grow their employment base faster than their population base often attract new residents because those employment opportunities attract new residents. If the population grows faster than employment growth, the region may be creating new jobs but not enough attractive jobs attractive to bring significant numbers of new residents to the region.

Much like the population trends described above, we present the employment data as an index with employment in the year 2000 is set to 100 (employment data from 1996-2016 are included). We have also juxtaposed employment growth against the index of population trends discussed above to allow for easier comparisons to the population trends. Regional tables show employment counts and growth rates for the region's individual jurisdictions.

These employment data are drawn from the US Bureau of Labor Statistics, Local Area Unemployment Statistics (LAUS) program. These data are updated monthly, but for this indicator we utilized the annual averages to eliminate seasonality.

Source: US Bureau of Labor Statistics, Local Area Unemployment Statistics

Update schedule: These data are updated monthly.

Unemployment

Unemployment is another common measure of a regional economy's relative strength, and specifically the strength of its labor market. Low unemployment rates indicate that most workers seeking work can find work. By contrast, regions with higher unemployment rates show that employment opportunities may be more limited in number and workers may experience greater difficulty finding work. When examined over time and compared to other places, the unemployment rate shows how closely the region aligns with, or diverges, from broader national and state economic cycles.

The accompanying charts show monthly unemployment from 1996 to the present. The underlying data were drawn from the US Bureau of Labor Statistics, Local Area Unemployment Statistics (LAUS) program—use the most common measure of unemployment (U3).[1] It measures the total unemployed as a percent of the civilian workforce. It basically includes all people who either have work, or are actively seeking work. It does not include discouraged workers who have fallen out of the workforce. It is important to note that this measure of unemployment rates does not include longer-term unemployed (or discouraged workers) that have fallen out of the labor market.

Source: US Bureau of Labor Statistics, Local Area Unemployment Statistics

Update schedule: These data are updated monthly.

Economic Sectors

Employment trends by industry sector

Employment by economic sectors provides some basic insight into a region's economic structure. For each region, we provide annual employment for the 10 "super sectors" defined by the US Bureau of Labor Statistics. These super sectors are broad industry groups, such as professional and business services or education and health services. The chart and tables show super sector employment within the region, and the charts show how sector employment has changed since 1996. As a result, these data provide some indication about the regional economy's changing structure.

Growing sectors indicate increased demand within the regional economy, while declining sectors show potential sources of displaced or underemployed workers. For instance, the regional data may show

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[1] There are other, broader measures of unemployment. For instance, the U-6 is a broader measure of unemployment that includes discouraged workers and includes some workers working part time for economic reasons (working periodically but who cannot find full-time work).More information is available from the US Bureau of Labor Statistics.

growing demand in healthcare and education, but the manufacturing sector might be a source of displaced or underemployed workers. As a result, policy makers need to both prepare future workers to meet the demand of growing sectors, while at the same time identifying ways to transition workers in declining sectors to emerging job opportunities. These data can help regional stakeholders begin to focus their efforts, but they are often best complemented by more detailed industry and regional analysis.

These regional data were constructed using county-level employment data from the US Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW). That data are derived from the administrative records used in the Unemployment Insurance program.[2] It is important note that BLS is often required to suppress employment data if those data can potentially reveal an individual employer's identity. This is most often the case when much of the employment in a given industry or sector, and in a specific locality, can be attributed to one large employer. For instance, the employment for James Madison University (which is classified as state government because it is a state institution) does not appear in the Region 8 data because it accounts for the vast majority of state government employment in Harrisonburg City. As a result, users should be mindful of these considerations when looking at these data.[3]

Where data suppression issues pose challenges, users might reference the community profiles produced regularly by the Virginia Employment Commission (VEC). Given that VEC has access to the raw employment data they can produce regional employment that minimizes the number of data suppressions. VEC does not produce regional profiles that align perfectly with the GO Virginia regional boundaries, but they do have profiles that cover planning regions, workforce board regions, and metropolitan statistical areas that will likely cover the majority of your region and serve as a useful point of comparison.

Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Update schedule: QCEW data are released quarterly, with final annual data released in September.

Relative concentration (Location Quotients) by sector

Location quotients (LQs) provide a measure of relative concentration, by measuring the relative share of the region's sector or industry employment, as compared with that sector's national employment share. Sectors with LQs greater than 1.0 indicate that the region has a larger relative concentration of employment within those sectors, than the overall national economy. Furthermore, if a sector's LQ grows over time, then that sector's is becoming more regionally concentrated. This suggests an improvement in the region's relative competitiveness in that sector.

The table shows changes in location quotients from 2005 and 2015, however additional data are available in the accompanying spreadsheet for the years: 1996, 2000, 2005, 2010, and 2015. The

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[2] More information about QCEW is available here: https://www.bls.gov/cew/cewfaq.htm

[3] Information about data suppression and disclosure can be found on the BLS website.

location quotients were calculated using the BLS QCEW. As a result, the issues pertaining to data suppression discussed above are also relevant with this indicator.

Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Update schedule: QCEW data are released quarterly, with final annual data released in September.

Sector wages

The goal of GO Virginia is not just to create jobs, but rather to create jobs that pay higher than average wages. The data presented here show the regional average wages (total wages divided by employment) for each regional super sector. When examined with sectoral growth and relative concentration data discussed above, the wage data provide a starting point for identifying the sectors with the greatest potential for future growth of high-quality jobs. It is important to note that some lower paying sectors may have some higher paying industries or group of employers and therefore might provide development opportunities, just as the converse is also true. As a result, more detailed analysis will be required to identify and target specific industries for development.

Much like the sector trends and relative concentration indicators, the average sector wages are drawn from the BLS QCEW. As a result, some of the caveats mentioned above also apply to these indicators as well. For instance, these are the average wages of just workers in wage and salary jobs and do not include the self-employed or sole proprietors.

Sector wages are depicted graphically for the years: 1996, 2000, 2005, 2010, and 2015. All of these charts have been adjusted for 2015 dollars (the most recent available complete year).

Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Update schedule: QCEW data are released quarterly, with final annual data released in September.

Labor force

Labor force participation

The labor force participation rate shows the percentage of working-age adults (defined as those aged 16 years and over) participating in the labor force. Currently employed workers and unemployed workers actively seeking employment are considered part of the labor force. The labor force participation rate has grown dramatically over the past 40 years, due in large part to greater numbers of women entering the workforce. More recently, however, it has begun to decline somewhat as the baby boom generation retires and leaves the labor force. A number of demographic trends play a key role in influencing labor force participation. For instance, younger, more educated and more expensive places tend to have higher labor force participation rates. Low labor force participation rates may reflect a relatively older population, or large numbers of discouraged or disabled workers who have fallen out of the workforce and stopped actively looking for work.

The data presented made use of the 2006-2010 and 2011-2015 American Community Surveys. Many of the Commonwealth's jurisdictions do not meet the population threshold (65,000) to be included in the 1-year ACS estimates. As a result, we had to use the 5-year surveys to create regional estimates because they include estimates for all Virginia jurisdictions. The accompanying tables show labor force participation rates for these two time periods for the individual jurisdictions in each region.

Source: US Census Bureau, American Community Survey

Update schedule: The 5-year ACS estimates are released in December. The next estimates will be released in December 2017 and will cover the years 2012-2016.

Commuting

Commuting data show the extent to which workers work and live in the same region. This metric can provide some indication of a region's ability to create sufficient job opportunities, and its ability to connect its existing workforce to those opportunities. Commuting patterns can demonstrate how well an administrative region (e.g., GO Virginia region, planning and development organization region, workforce development board service area, etc.) covers the natural economic region. For instance, GO Virginia regions with a high proportion of workers that work and live in the region tend to cover the majority of their natural economic region. At the regional level, the extent to which workers work and live in the same region tends to be relatively stable over time. However, there are exceptions such as when a region borders a fast growing—and expanding—region (e.g. Region 6 where many Fredericksburg City and Stafford County residents work in Northern Virginia).

These data are drawn from the Longitudinal Employer-Household Dynamics (LEHD) program, which is a partnership of the US Census Bureau and the Virginia Employment Commission (and other state Labor Market Information Agencies). Specifically, we used the LEHD program's OnTheMap application. This application uses both firm- and person-level data, so that it can link workers to their employers. These data are available annually from 2002 to 2014.

Source: US Census Bureau, OnTheMap

Update schedule: These data are typically updated annually in December or January (Data development issues have slowed the 2015 release).

Educational Attainment

The educational attainment data presented here show the highest level of education completed by adults aged 25 and older (educational attainment is more fluid for people younger than 25). These data show the relative intellectual capacity of the region's adult population, and as a result it is a common indicator of the quality of the regional workforce.

These data can help regional stakeholders prioritize workforce development efforts. Areas with relatively low levels of educational attainment (e.g., disproportionate shares of adults with High School degrees or less) can raise them in two ways. They can either attract more educated residents, often by creating more knowledge-intensive jobs. Alternatively, they can strengthen the existing talent base by creating more opportunities to advance their education by getting people without high school degrees

to complete GEDs, or helping high school graduates to complete 2-year degrees or certificates, or connecting community college graduates to 4-years institutions.

Much like the labor force participation indicators described above, educational attainment indicators also utilize the US Census Bureau's American Community Survey. Similarly, the data presented here also used the 5-year estimates [4] that cover the years, 2006-2010 and 2011-2015. The accompanying tables also show educational attainment rates for these two time periods for the individual jurisdictions in each region.

Source: US Census Bureau, American Community Survey

Update schedule: The 5-year ACS estimates are released in December. The next estimates will be released in December 2017 and will cover the years 2012-2016.

Educational awards

The number of educational awards reflects the region's capacity to provide post-secondary education, and how that has changed over time. The data presented here include completer data for certifications, associates, bachelors, and graduate degrees. Many of the certification and 2-year degree completers will likely come from, and remain in, the region. However, many students completing 4-year and graduate degrees at regional institutions will ultimately live and work outside of the region. Similarly, regions will attract degree completers from institutions outside the region. If building and strengthening the regional talent pool is a regional goal, these data provide an estimate of the number of people who have completed degrees, are familiar with the region, and may ultimately be interested in remaining in the region provided they can find quality job opportunities.

We drew these data from the US Department of Education's Integrated Post-secondary Education Data System (IPEDS). Post-secondary institutions are required to complete surveys that include a wide range of questions, including the number of people completing their degree programs. The charts show the number of degrees, by type (e.g., certification, associates, bachelors, graduate), awarded dating back to 1996. The accompanying tables include educational awards by jurisdictions, as well as educational awards by regional institutions.

Source: US Department of Education, National Center for Education Statistics, Integrated Post-secondary Education Data System (IPEDS)

Update schedule: These data are updated annually.

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[4] The 5-year estimates were required to create regional indicators because of the small size of so many jurisdictions. The first 5-year estimates covered the years 2005-2009. We selected the 2006-2010 and 2011-2015 surveys so that we had the two most recent, non-overlapping surveys.

Firm growth

Job creation by firm age

Stakeholders must understand both the types of industries—and the types of firms—creating jobs in their region. Firm age is one lens for better understanding how different types of firm contribute to regional job creation. The baseline indicators here show job creation by firm age—for firms less than 5 years old and firms 10 years or older—in both absolute and relative terms. In an absolute sense, the data show the average quarterly job creation in a given year. Quarterly averages were used to eliminate the seasonality of job creation (job creation tends to spike in the 2nd quarter of every year). It also shows these data as a percentage of total job creation. Accompanying tables show average quarterly job creation and percent of total job creation for individual jurisdictions for the years 2000, 2010 and 2015.

If younger firms contribute a growing share of regional job creation, then the region might consider developing initiatives that support newer firms by helping them overcome barriers to growth, whether it is technical assistance, finding key workers, access to capital, etc. If older firms account for a growing share of new job creation, then regions will want to ensure that their business retention and expansion programs meet those needs.

These data are drawn from the Longitudinal Employer-Household Dynamics (LEHD) program—a partnership between the US Census Bureau and the Virginia Employment Commission (and other state Labor Market Information Agencies). Specifically, these data are drawn from the Quarterly Workforce Indicators dataset that uses both firm- and person-level data, so that it can link workers to their employers. As a result, it provides unique insight into local workforce dynamics.

Source: US Census Bureau, Quarterly Workforce Indicators

Update schedule: These data are updated quarterly

Job creation by firm size

Job creation by firm size is another lens for understanding regional job creation. The data provided show job growth for firms with less than 20 employees, in both absolute and relative terms. If small firms are becoming a growing share of job creation, then regions might want to ensure that their entrepreneurial or small business assistance programs effectively meet the needs of its small firms. They might also want to further identify the smaller firms that have aspirations to become bigger firms and then consider focusing their efforts on those firms.

These data are also drawn from the Quarterly Workforce Indicators described above. The charts show average quarterly job creation and percent of total job creation for small firms since 1999. The accompanying tables show average quarterly job creation and percent of total job creation for individual jurisdictions for the years 2000, 2010 and 2015.

Source: US Census Bureau, Quarterly Workforce Indicators

Update schedule: These data are updated quarterly

Sole proprietorships

This indicators show the proportion of workers that generate income from self-employment or proprietorships. The proportion of sole proprietorships within the total workforce allows us to gauge the number of individuals participating in some kind of entrepreneurial or wealth generating activity. This indicator is a broad measure of entrepreneurship. It includes workers who are traditional entrepreneurs or lone wolfs, as well as people who have a regular wage and salary job but earn money on the side – for example, as a real estate agent, consultant, or handyman.

This indicator also reflects the willingness of area workers to take some of the risks associated with self-employment. Rural counties often have the greatest relative proportion of sole proprietors. An insufficient number of wage and salary jobs often lead workers to create their own jobs. As a result, they are engaging in entrepreneurship out of necessity, more so than innovation. In both urban and rural counties, workers in relatively low paying wage and salary jobs may need to generate a second source of income to meet their needs.

The charts show sole proprietorships as a percent of regional, state, and national employment from 1996 to 2015 (the most recent year available). The accompanying tables show the number of proprietors and growth in proprietorships for the individual jurisdictions.

Source: US Bureau of Economic Analysis, Regional Economic Accounts

Update schedule: Local Area Personal Income data (which includes data on sole proprietorships) are released annually in November.

Local government costs

Average cost of government services

The cost of government services speaks to the demands placed on local governments to meet the needs of their communities. Larger regional spending on government services may show that the region's population is willing to spend more on publicly-provided amenities (e.g., parks, public spaces) and services (e.g., recycling, recreation programs) that contribute to overall quality of life—an increasingly important determinant of site location. The average cost of government, however, also reflects the burden placed on local residents and businesses to pay for those amenities and services. More populous regions (e.g., Northern Virginia) often pay more because there is more infrastructure to maintain or more services to provide.

The data provided here show government expenditures on a per capita basis. This information was provided by the *Local Government Comparative Reports* prepared by the Commonwealth of Virginia's Auditor of Public Accounts. These are based on the maintenance and operations expenditures for every county and independent city in the Commonwealth of Virginia. The weighted averages of each region's per capita government expenditures are shown graphically for each region since 2006 (the oldest year data are available), and are compared to the state average of all jurisdictions. The accompanying tables

show per capita local government expenses for the individual jurisdictions for 2006, 2011 and 2016. All figures have been adjusted to 2016 dollars.

These data are released annually and provide information on the previous fiscal year.

Source: Commonwealth of Virginia's Auditor of Public Accounts, Local Government Comparative Reports

Update schedule: These data are released annually.

State-level baseline indicators

As noted earlier, we have also compiled baseline indicators for the Commonwealth of Virginia and 10 comparator states (NC, SC, GA, MD, DC, TN, WV, KY, OH, PA). These state-level baseline indicators contain all of the data described above, with a few exceptions. For instance, the average cost of local government services is only available for Virginia jurisdictions. In other instances, the comparator state data are presented slightly different graphically. The comparator state data include several two additional indicators—establishment openings and closings and the number of jobs supported by out of state revenues ('export' jobs)—that for different reasons could not be included in the regional datasets. These two indicators are described in greater detail below.

Establishment opening and closings

The establishment opening and closing data are drawn from the US Bureau of Labor Statistics' Business Employment Dynamics (BED) program, and the data are only available at the national and state level. The BED program draws upon the same underlying data (unemployment insurance records) as the BLS QCEW program (described above), and connects those records to the establishment record. The openings data show the number of establishments that had employment at the end of a quarter, but had no employment or no record of having existed in the previous quarter. Conversely, closings show the number of establishments that had no employment at the end of the quarter but had employment in the previous quarters.[5]

Tracking establishment openings and closings offers a better indication of establishment-level activity or dynamism and tells a slightly different story than just the aggregate job numbers. For instance, when closings outpace openings the state economy might be experiencing difficulty creating new firms and new sources of wealth creation. These data also show openings and closings within a state's broad economic sectors, and this provides another tool for identifying which sectors are the most dynamic within the state economy. As with some of the other indicators discussed above, these data are shown as indices where the number of establishment openings and closings in the year 2000 are set to 100. This allows for some comparison between the different state trends.

Source: US Bureau of Labor Statistics, Business Employment Dynamics

Update schedule: These data are released quarterly.

'Export' jobs (jobs supported by out of state revenues)

There is no direct data source that precisely gauges the number of jobs supported by out of state revenues. However, using some basic regional analytic techniques we can estimate the net number of jobs supported by 'exports' to other states. Location quotients (described earlier) can be used to

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[5] BED also publishes establishment births and deaths. Establishment births are those firms that had employment at the end of a quarter, when there was no record of having had any previous employment, just as deaths are those that had employment and then had no record of employment in any subsequent quarter. Births and deaths data therefore do not include seasonal businesses that are included in the opening and closings data. We elected to use the opening and closings data because it included data on openings and closing by sector, whereas the births and deaths data only had the aggregate number for the states.

determine the amount of employment necessary to meet local demand. For instance, a state whose retail sector has an LQ of 1.0 (or the same proportion of retail employment as the nation) is assumed to have the amount of retail employment necessary to meet its local needs. If the retail sector has an LQ of less than 1, then it is not meeting its local retail needs and therefore residents go outside the state for retail services. If it has an LQ greater than 1, then it has more retail jobs than might be expected. As a result that extra retail employment (the employment that pushes the LQ above 1) is bringing new money into the state and can therefore be considered 'export' jobs, rather than just locally-serving employment.

To determine the number of these 'export' jobs, we considered how different the sectoral employment would look in Virginia (and the comparator states) if they had the same proportional mix of employment as the US. This enables us to gauge the net difference between jobs in 'export' sectors (those with employment shares greater than the national average) and 'import' sectors (those with smaller employment shares than the national average). Those states with a net positive number of 'export' jobs are bringing in additional revenue to the state. These trends will change somewhat over time, and much of this will be determined by the health of a state's traded sectors (e.g., manufacturing, many professional and business services), more so than growth or decline in their locally-traded sectors (e.g., retail) whose growth is more a function of population.

Source: US Bureau of Labor Statistics, [Quarterly Census of Employment and Wages](#)

Update schedule: QCEW data are released quarterly, with final annual data released in September.