

# **Regional Drivers of Economic Growth: Benchmarking Richmond**

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## **Introduction**

The purpose of this report is to discuss the economic performance of the Richmond metropolitan area and to explore some of the drivers of regional growth. The Richmond metropolitan area is compared to a peer group of metropolitan areas of similar size based on population in 2010. In addition, a second exercise for benchmarking Richmond focused on other state capitals. Although this summary does not discuss the state capitals data in detail, all of the information is provided in Tables 7-12.

The goal of this report is to provide an understanding of how Richmond compares with other metropolitan areas on key economic measures and to explore some of the potential drivers of growth that could be considered for more in-depth study.

The outline of the document is as follows:

- Section I – Review the baseline comparison of Richmond against the peer group of metropolitan areas by population, employment, per capita income, and gross domestic product. Compare growth in these measures over the past two decades.
- Section II – Briefly review some of the economic literature on the drivers of regional growth, particularly as it relates to urban areas.
- Section III – Describe how Richmond compares along potential drivers of economic growth, specifically focusing on measures of human capital.

## **I. Benchmarking Richmond**

### **Baseline Comparisons – Table 1:**

We compare Richmond against a peer group of nine other metropolitan areas that were selected because they are similar in size to Richmond. Specifically, based on 2010 population estimates, the selected metropolitan areas are roughly within 150,000 people in either direction, or 12% above or below Richmond's population.<sup>1</sup> As an exception to the population criteria, one metropolitan area was added to bring the total to eleven for the peer group (including Richmond). Austin, TX was included because of the April 2011 visit to the region by the Greater Richmond Chamber of Commerce (Intercity Visit 2011). Aside from population, we examine

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<sup>1</sup> In practice, we excluded New Orleans because it is still rebuilding from Hurricane Katrina's devastation.

the baseline level of total employment, real gross domestic product<sup>2</sup>, per capita personal income, and median home prices.

Within this peer group, Richmond ranks fifth by population, but third by total employment and second by per capita personal income. It is encouraging to see that Richmond ranks favorably in employment and per capita income and that these measures align closely with its population ranking. Likewise, the value of output produced by the metropolitan area firms, as measured by gross domestic product, aligned with the population rank at fifth place. As a proxy for cost of living, we look at the median sales price for a single-family home. Setting aside potential differences in housing quality, Richmond ranks third in housing cost, behind Hartford, CT, Salt Lake City, UT, and Raleigh-Cary, NC.

### **Economic Growth Comparisons – Tables 2a and 2b:**

We review two recent decades of growth in our baseline economic measures to compare the path of the Richmond economy relative to the peer group of metropolitan areas. Richmond's average annual population growth decelerated slightly from the 1990-2000 period to the 2000-2010 period, registering 1.5 percent and 1.4 percent, respectively. Relative to the peer metropolitan areas, this growth keeps Richmond in fifth place and, in fact, there was little movement within the rankings by population growth from one decade to the next. Richmond's 1.8 percent employment growth in the 1990s, at less than one-third of the 5.6 percent growth rate of the top contender, was a disappointing ninth place ranking, putting Richmond ahead of only Hartford, CT and Buffalo, NY. Richmond ranked in the middle of the pack from 2000-2010, with negligible employment growth of just 0.2 percent. Undoubtedly, the low employment growth in the recent period was due to the recession that began in December, 2007 and ran through mid-2009, although other metropolitan areas also experienced the impact of the recession.

Richmond seems to be making some progress in per capita income growth, with a 3.0 percent average annual growth rate from 2000 to 2010, placing the metro area in the middle of the peer group in terms of ranking. Ironically, although the growth rate in per capita personal income was higher from 1990 to 2000, at 3.9 percent, Richmond placed next to last among its peers during that period and only barely edged out Buffalo, NY. While all of the metropolitan areas in the peer group experienced a deceleration in per capita income growth from one decade to the next, Richmond lost less ground relative to most of the other areas.

Now we turn to a more puzzling result. Although Richmond ranked in reasonable position (fifth place) in terms of the level of real gross domestic product (GDP) in 2010, the average annual growth from 2001 to 2010 was only 0.8 percent and placed Richmond near the bottom of the group. There are differences in the measurement of real GDP and per capita personal income that

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<sup>2</sup> The Bureau of Economic Analysis started publishing Gross Domestic Product by metropolitan area in 2007, but private researchers have also estimated this measure, frequently referring to it as "gross regional product".

may account for the lower ranking by real GDP growth relative to the higher per capita income growth ranking. For example, real GDP includes corporate income and measures earnings by place of work, whereas per capita personal income does not include corporate income and reports all income by place of residence. Changing commuting patterns among neighboring metropolitan areas can account for differences in real GDP and personal income growth.

## **II. Economic Drivers of Urban Economic Growth – Background**

The growth and structure of urban areas has generated much interest and academic research in economics, urban planning, geography, and regional science. From an economic point of view, the importance of *agglomeration economies* is what drives much of the research on the evolution of metropolitan areas. Agglomeration economies refer to the decline in average cost as more production occurs within a specified geographic area. Agglomeration effects can occur across industries as increased urbanization provides firms with the concentration and variety of business services and ease of finding specialized labor (matching) that improve productivity. Similarly, and perhaps better known, are the economies of agglomeration that arise from the close proximity of firms within the same and closely related industries, from knowledge spillovers, access to a common specialized labor pool, or economies of scale in producing intermediate goods [Anas, Arnott, and Small, 1998].

These cost-saving effects are also referred to as “urbanization economies” and “localization economies” in the economic literature and have led to a debate on whether industrial diversification or specialization is the more salient feature of growth in urban areas. In fact, researchers have found support for both features of urban growth. More recently, economic research has supported the theory that urban areas are becoming more functionally specialized, with headquarters-type operations locating in urban areas and production facilities moving to more remote locations or smaller cities [Duranton and Puga, 2005]. Inherent in this functional specialization of urban areas is a rising concentration of managerial and financial or technical occupations that support headquarters.

Agglomeration economies drive growth in metropolitan areas, but what matters most in creating these economies? Fortunately, improvements in data collection and estimation methods have allowed for empirical research that clearly connects the importance of human capital and metropolitan area growth. Population growth in metropolitan areas with high educational attainment has far surpassed growth of metropolitan areas with low educational attainment:

“Between 1980 and 2000, the population of metropolitan areas where less than 10 percent of adults had college degrees in 1980, grew on average by 13 percent. Among metropolitan areas where more than 25 percent of adults had college degrees, the average population growth rate was 45 percent.” [Glaeser and Saiz, 2004]

The empirical evidence of Glaeser and Saiz suggests that skills, associated with higher education levels, work through productivity growth at the metropolitan level, thus encouraging overall economic growth. Among other channels, skills play an important role in the ability of cities to reinvent themselves and to handle any adverse shocks. Many other variables are positively correlated with metropolitan area growth, including a warmer and drier climate, but the human capital related variables have the greatest and most significant effect.

### **III. Comparison of Richmond on Human Capital Measures**

#### **Educational Attainment – Table 5:**

Surprisingly, the Richmond metropolitan area compares unfavorably against the peer group of metropolitan areas based on the percentage of population twenty-five years and older who have a high school degree or equivalent. In 2000, 82.7 percent of the population in this age group had at least a high school or equivalent degree, ranking Richmond as eighth out of the eleven peer metros. In 2010, Richmond's high school educational attainment rate rose to 86.0 percent, but the other metro areas made even more progress, and Richmond dropped to ninth place. While still above the national rate of 85.6%, clearly Richmond is not stacking up well against its peer metro areas and it has lost some ground.

The skilled workforce necessary to drive economic growth is most likely to require at least a bachelor's degree. In 2000, 29.2 percent of the population twenty-five years and older had at least a bachelor's degree, ranking Richmond as fourth out of the eleven peer metros, behind only Raleigh-Cary, NC, Austin TX, and Hartford, CT. Fortunately, Richmond has been able to maintain its relatively high ranking in 2010, with an increase in the college level educational attainment rate to 31.7%. Again, Richmond's performance is well above the national average of 28.2%. So, for the important college graduate level, Richmond compares favorably, while the relatively lower educational attainment at the high school degree level is troubling and deserves attention.

#### **Occupational Employment – Table 6:**

An examination of the concentration of select occupations within the Richmond metropolitan area provides some interesting results. To be certain, occupational employment reflects the industries that are located within the metropolitan area, but beyond the industry mix, occupations also reflect the company functions that are located within the Richmond area. Significant information technology operations are based within the Richmond location of several multi-establishment companies, and this is evident in the high concentration of computer and mathematical science workers in the region. Based on the number of jobs per thousand workers, Richmond ranks fifth among its peers in this occupation category. Not surprisingly, Richmond also ranks high in the health care practitioner and technical occupations category, with a ranking

of fifth place. The strong presence of Virginia Commonwealth University's medical complex explains the relatively high concentration of workers in this occupation category.

In contrast to the other professional categories, Richmond ranks relatively low in its presence of management occupations, although this may be explained by the loss of some of Richmond's headquarters operations. Finally, given the diversity of Richmond's economy, the low ranking for production workers simply reflects the steady decline in manufacturing sector employment relative to other sectors of the economy.

#### **IV. Conclusions**

Richmond compares favorably with its peer metropolitan areas in terms of population, employment, and per capita income growth. While the baseline level of regional output (real GDP) was relatively high, growth in real GDP was weak from 2001-2010. The industrial structure in the Richmond metropolitan area (Table 3) reveals that the region is relatively less concentrated in manufacturing and more concentrated in professional and business services and health and education services.

An important ingredient for future metropolitan growth, a skilled and educated workforce, is in place in the Richmond metropolitan area with a high share of the population (25 and older) holding a bachelor's degree or above. However, there is some concern that the pipeline of college educated workers may be at risk given that the share of high school degree holders (25 and older) is among the lowest in the metropolitan area peer group.

Finally, if functional specialization is a growing phenomenon in metropolitan areas, the Richmond area appears to be well-positioned to support and gain corporate functions that employ computer and mathematical science workers as well as health care practitioner and technical workers.

## References

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