

# benchmarking

## THE CREATIVE CLASS AT THE LOCAL LEVEL

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In Rosslyn, Virginia, public art exemplifies the integration between traditional creativity and new technology.

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**I**NTRODUCTION

Richard Florida's book, *The Rise of the Creative Class*, has gained substantial attention among the economic development community as a new paradigm for economic growth.<sup>1</sup> Building on regional growth theories focused on knowledge-based, cluster-oriented, and technology-led job growth, Florida correlates job growth in technology centers

with specific demographic characteristics. He theorizes that communities with a high degree of diversity attract young, educated, and creative people that contribute directly to economic growth. Conversely, the lack of diversity, tolerance, and a knowledge-based business base leads to a "brain drain" of this population to more attractive Creative Class communities. Such seemingly unrelated cities as Tampa, Providence, Memphis, and Pittsburgh have based their economic development strategies, at least partly, on building amenity-rich communities attractive to the Creative Class worker.

The Washington, DC Metropolitan Area is ranked first by Florida among metros of one million or more in the percentage of Creative Class population and eighth on his Creativity Index.<sup>2</sup> This article benchmarks the jurisdictions within the Washington region as Creative Class communities as a case study. The purpose of this case study is to provide a simplified methodology to benchmark sub-regional localities against those attributes associated with the Creative Class. The methodology is easily replicable and provides a relatively quick and simple basis of comparison since the data is derived from readily available federal online sources.

### ECONOMIC GROWTH THEORIES

Michael Porter popularized the cluster-based theory of economic growth a decade ago, and the economic development community has nearly universally embraced his approach.<sup>3</sup> Porter suggested that innovation is derived from specialization and dense networks of interrelated firms and workers.

### A CASE STUDY OF THE WASHINGTON, DC METROPOLITAN AREA

A case study of the creative economy of the Washington, DC region provides a simple methodology for comparing regions, counties, and cities across the nation, benchmarking them against the criteria that Richard Florida uses in his book, *The Rise of the Creative Class*. Florida's complex indices are condensed into eight easily calculable measures that use readily accessible secondary data available at the local level. Economic developers can compute how their community stacks up against competitors and national exemplars on the characteristics of the Creative Class and the ideal creative economies.

The workers may be related by industry, occupation, age or education. Economists suggest that agglomeration economies, essentially efficiencies of scale and comparative advantage, occur when firms cluster in geographic space. Saxenian and Fukuyama advance a cultural element to the theory to explain the dissemination or dispersion of innovation within clusters.<sup>4</sup> Clusters build on their increasing specialization and rapid and constant innovation to increase their global competitiveness.

Richard Florida adds to this the notion that job growth in the new information economy is strongly correlated with labor force characteristics that match up to the requirements of technology-based employment. Education is especially important as the second of his three "T's" of economic growth – technology, talent, and tolerance. The third "T", tolerance, is a reflection of high levels of acceptance of ethnic and lifestyle differences. These, in turn, are a function of diversity, age, and education among other factors. Florida's analysis correlates these factors with economic growth and suggests that communities that have these demographic, community, and economic characteristics are more likely to be economically successful.

Florida has used statistical techniques to create a series of indexes that are highly correlated with economic growth. He then combines these into an overall Creativity Index to describe a new social class - the Creative Class. He writes that "as with other classes, the defining basis of this class is economic. Because creativity is the driving force of economic growth, in terms of influence, the Creative Class has become the dominant class in society."<sup>5</sup> What, more precisely, is the Creative Class?

Florida's indexes that describe the Creative Class are somewhat complex to explain and replicate. Essentially, his overall Creativity Index is based on four factors:

1. The Creative Class share of the workforce, based largely on occupational characteristics;
2. Innovation, as measured by patent activity;
3. The high technology share of the economic base; and
4. Diversity, based on indexes related to sexual orientation, bohemianism (counter culture or cutting edge arts and culture), and diversity (foreign born population).

In combination, the component indexes add up to an overall index and ranking.

## METHODOLOGY

This article does not purely replicate all of the measures used by Florida, but substitutes some relatively simple measures that are consistent with the premises of the Creative Class theory. Eight measures are selected to reflect the attributes of the Creative Class. Mobility and affordability have been added to Florida's construct since they can affect

policies directed at change. No overall composite index is derived. Each of the individual measures reflects an important attribute of the Creative Class:

1. The proportion of the population aged 25 to 34 represents the mobile, educated, and creative heart of the Creative Class;
2. The foreign born proportion of the population reflects cultural and ethnic diversity;
3. The proportion of the adult population with a bachelors degree or higher level of education is the source of innovation and creativity;
4. The proportion of the population in "super creative core" occupations – scientists, artists, designers, architects, engineers, writers, etc. – are the Creative Class as defined by their work;
5. The concentration of employment in technology sectors measures high tech economic activity;
6. Patent activity per capita over a ten-year period measures innovation;
7. The percentage of the population moving within the past five years measures mobility; and
8. The percentage of renters spending less than 35 percent of their income for housing costs indicates relative housing affordability.

Data is drawn from the Bureau of the Census ([www.census.gov](http://www.census.gov)) and the U.S. Patent and Trademark Office ([www.uspto.gov](http://www.uspto.gov)). All indicators are expressed as location quotients, which are generally used to measure economic specialization, but are equally suitable as a measure of concentrations of all sorts.<sup>6</sup>

### Age 25-34 Population

The proportion of the population aged 25 to 34 is of primary importance in any analysis of the Creative Class. A study prepared for Tampa, FL, found that "statistically, 25-34 year-olds are the hardest working segment of the population. In their mid-20s, they are also at the peak of their mobility and more likely to move across state lines than at any times in their lives. In the time between their 25th and 34th birthdays, these young adults not only start careers, but find mates, start families, and put down roots. Once rooted in place, the likelihood of their moving to another state or metropolitan area will decline precipitously."<sup>7</sup> The Tampa study describes this group as "the gold standard in the knowledge-based economy" because they are critical to long term economic health of their communities.

Over the past decade, the nation lost some 3 million 25-34 year-olds as the size of this cohort diminished. In many communities, out-migration resulted in a further loss of this young, educated, and talented population, representing a "brain drain" as this highly mobile group relocated. To many economic developers, the recruitment or capture of mobile 25-34 year-olds is as important as corporate recruitment was a decade ago.

Alexandria City and Arlington County have the highest proportions of 25-34 year-olds within the metropolitan area with location quotients of 1.79 and 1.78 respectively (see Table). Within the region, young people are more likely to live in the most urban environments. These two communities, plus Loudoun County, are the only ones to experience an increase in this age group, in spite of the substantial increase of the overall population in most suburban jurisdictions. The increases in Loudoun County were largely due to the rapid and substantial growth of population overall. Unfortunately, in spite of an above average percentage of young adults, the Washington Metropolitan Area lost more than 60,000 persons in the 25 to 34 age group in the 1990s even with an overall population increase of 536,000.

### Foreign-Born Population

Florida places a great deal of importance on diversity. He points out that "diversity is something that they (the Creative Class) value in all its manifestations...I take it to be a fundamental marker of Creative Class values."<sup>8</sup> Nationwide, about 40 percent of population growth has been the result of international

immigration. The proportion of foreign born population is a simple, but important, measure of cultural diversity.

According to the Census Bureau, Arlington County has the highest percentage of foreign-born population among local jurisdictions. Arlington has a location quotient of 2.52, with some 27.8 percent of all Arlingtonians born outside of the United States, more than twice the national average. Several other area jurisdictions also have relatively high percentages of foreign-born population, including Montgomery County, Alexandria City, and Fairfax County. Each of these communities had percentages of foreign-born population significantly above the District of Columbia, which was about 16 percent above the national average.

According to Audrey Singer of the Brookings Institution, Washington's foreign-born population itself is highly diverse, with no one country comprising more than 10 percent of the total.<sup>9</sup> Singer also found that, if not for the foreign-born immigrants, the Washington region would have lost population over the past decade, as both domestic migration and natural population growth was negative over that period. Further, the foreign-born are dispersed, with 90 percent of the new immigrants locating in the



Diversity and quality of life are two significant attributes of the Creative Class.

suburbs, especially Fairfax County. While the inner suburbs of Arlington County, Montgomery County, and Alexandria City have the highest percentage of foreign-born population, the outer suburban jurisdictions of Loudoun and Prince William Counties are experiencing the greatest percentage growth in this population segment.

### Educational Levels

Educational levels are generally highly correlated with creativity, innovation, and economic growth. While Florida did not use education as a single variable, it is however, imbedded in a number of his indexes. Education is fundamental to the human capital theory on which the Creative Class is based. The highest ranking Creative Class communities all have levels of educational attainment well above the national average.

Arlington County has the highest education level in the region, with more than 60 percent of the adult population holding a Bachelors or advanced degree, yielding a location quotient of 2.47. All Metropolitan Washington area jurisdictions,

**Table 1**

### High Tech Sector Location Quotients 2001 Washington, D.C. Metropolitan Area

Jurisdictions	NAICS Codes (4-digit)					
	5112	5415	5416	5417	5413	5142
Alexandria	0.05	5.24	4.86	8.54	4.32	0.05
Arlington County	1.85	6.58	5.64	10.58	6.06	1.85
District of Columbia	0.68	1.48	4.11	7.04	1.27	0.68
Fairfax County	3.39	11.84	6.46	8.36	3.34	3.39
Loudoun County	0.05	5.06	1.31	2.46	1.72	0.05
Montgomery County	1.57	5.45	2.99	7.35	2.72	1.57
Prince George's County	1.43	3.91	1.40	3.02	2.14	1.43
Prince William County	0.29	1.24	0.62	0.38	1.27	0.29

5112 Software Publishing

5415 Computer Systems Design and Related Services

5416 Management, Scientific, and Technical Services

5417 Scientific Research and Development Services

5413 Architectural, Engineering, and Related Services

5142 Data Processing Services

Source: [www.census.gov](http://www.census.gov) Quick Tables-American FactFinder

including the District of Columbia, rank above the national average in educational attainment. This is especially significant in that Arlington County, and the region as a whole, has a high level of foreign immigrant population which is often associated with lower levels of education. The presence of the international diplomatic corps and H1B visa-holders could be reasons why Washington's foreign-born population may have higher levels of education than those nationwide.

The Washington region ranks highest in educational attainment among the top nine Creative Class large regions, with a location quotient of 1.71. Somewhat surprisingly, Washington scores well above such major educational centers as Boston, Austin, and San Francisco.

### **Creative Occupations**

Florida uses the percentage of the employed population in those occupations considered part of the "super creative core," such as scientists, writers, artists, educators, architects, engineers, athletes, entertainers, etc., as the principal measure of the Creative Class.<sup>10</sup> Florida credits Jane Jacobs with making the connection between a city's ability to attract creative people and economic growth.<sup>11</sup>

Arlington County leads the region on this measure with a location quotient nearly four times the national average. All of the Washington region jurisdictions have location quotients of 2.46 or higher, well over twice the percentage nationally. The regional economy is largely service based and is dominated by the federal government as both an employer and purchaser of services. This high concentration of "super creative core" workers led to Florida's ranking of the Washington, DC Metropolitan Area as the top large Creative Class region. Approximately 25 percent of those employed in the Washington area are in "super creative core" occupations.

### **Technology Base**

Much of Florida's thesis involves the emergence of the information age, the increase in the number of knowledge workers, and the growth of technology clusters. Technology is one of four indexes he used to compute an overall Creativity Index. This article measures the technology base with location quotients for an aggregate of six specific technology industry clusters as shown in Table 1.

Within the Washington Metropolitan Area, Fairfax County ranks first and Arlington County second for the aggregate of six technology sectors used in the comparison, with location quotients of 6.8 and 5.9 respectively. Within the individual technologies, Fairfax County has the greatest concentration in computer systems design with a location quotient of 11.8, while Arlington has a location quotient of 10.6 in scientific research. Both Fairfax and Alexandria also had high concentrations of



*Performing artists are only one of many occupations in the Creative Class.*

employment in scientific research. The region as a whole has a location quotient for technology-based employment of 4.1. If government employment were excluded from the base (there are many scientists and technology workers in government agencies which are not counted using this particular measure), this overall technology concentration would be much higher.

### **Innovation**

Florida used patents per capita over the 1990-1999 period as his measure of innovation. This measure was one of four (along with the Creative Class share of the workforce, high-tech industry, and diversity) that he used to develop his "Creativity Index" which was itself a measure of the ability of regions to "translate that underlying advantage into creative economic outcomes in the form of new ideas, high-tech businesses and regional growth."<sup>12</sup>

Using the same measure as Florida, only Montgomery County and Alexandria City have location quotients significantly above the national average. The biotechnology sector represents most of the patent activity in Montgomery County, most of which results from National Institute of Health funded research.

Much of the \$4.5 billion spent by federal agencies on research and development in the region, especially the Department of Defense, led to local patent filings which were not reported publicly for security reasons. Therefore, the Washington Metropolitan Area has an artificially low location quotient for innovation of only 0.91 and significantly trails tech centers such as Austin, Minneapolis, Boston, and Raleigh-Durham, each of which exceeds 2.0 on this measure.

### **Mobility**

Much of the interest in the Creative Class is focused on the potential for "brain drain" due to the relatively high mobility of the 25 to 34 year old

demographic cohort. Florida found that “the migratory patterns of the Creative Class cut across the lines of race, nationality and sexual orientation. People of varied backgrounds are all migrating to the same kinds of cities. Members of the Creative Class are moving away from places that ... do not reflect their interests in favor of those that validate their identities in the very structure of daily life.”<sup>13</sup> The Creative Class is highly mobile.

Mobility, as defined here, is the percentage of the population over the age of five that moved from another county within the 1995 to 2000 period. It does not measure intra-county moves, but does count moves from within the metro area. High levels of mobility can be associated with either high levels of population growth or rapid population

### Housing Affordability

While *The Rise of the Creative Class* did not address the cost and affordability of housing, it is a significant issue for the highly mobile Creative Class population. Housing costs clearly affect the attractiveness of a community, especially for those in their early earning years.

This measure is a composite of both rental costs and the income of the renter household. It measures the percentage of all households paying less than 35 percent of their income on rent. The focus is on rent, since many in the 25 – 34 year old cohort are renters and housing affordability is less of an issue for those that have already purchased a home.

Alexandria City and Arlington and Fairfax Counties all have similar location quotients of 1.12

**Table 2**

**Location Quotient of Creative Class Attributes  
Washington, D.C. Metropolitan Area**

Jurisdiction	Population 25-34	Foreign- Born Population	Super Creative Core	Tech- Based Economy	Housing Affordability
		Education	Mobility	Innovation	
Alexandria City	1.79	2.30	2.23	2.28	4.47
Arlington County	1.78	2.52	2.47	2.08	5.93
District of Columbia	1.25	1.16	1.60	1.27	2.24
Fairfax County	1.09	2.22	2.25	1.53	6.77
Loudoun County	1.25	1.02	1.93	2.08	2.52
Montgomery County	1.02	2.41	2.24	1.15	3.83
Prince George's County	1.11	1.25	1.11	1.10	2.42
Prince William County	1.14	1.04	1.29	1.72	0.92

Source: U.S. Bureau of the Census; U.S. Patent & Trademark Office

turnover. Areas with greater proportions of rental housing tend to have higher population turnover.

The communities of Alexandria City, Loudoun, and Arlington Counties each have high levels of mobility. All three have location quotients above 2.0 on this measure. In each of these communities, more than 43 percent of the 2000 population lived elsewhere in 1995. Every community in the Washington area has a level of mobility above the national average.

Both population growth and turnover affect mobility rates. While Loudoun County's mobility is largely due to growth (90 percent), Arlington County's mobility rate is reflective of a much more transient population, one where only about 11 percent of the population mobility is attributable to population increases. Arlington County's population mobility is more than twice the national average and its population turnover is well above that of any other community in the Washington region.

as affordable communities, meaning that they are relatively more affordable than housing nationwide. Housing affordability actually increased over the past decade, with the percentage of renters paying less than 35 percent of their incomes for rent increasing by 8.7 percent overall. All of the Washington area jurisdictions have location quotients above 1.0 on this factor, meaning that they are more affordable than the national average. Washington is, in fact, the most affordable of the top large Creative Class metro areas, with a location quotient of 1.06. Again, this is not indicative of low housing costs, but of the balance between rents and incomes.

### CONCLUSIONS

Washington area communities have location quotients well above the national average for most Creative Class attributes, as might be expected from the region's high ranking by Florida as shown in Table 2. Measures of the “super creative core” population, educational attainment, and foreign born

population and technology-based employment are especially high.

There is an intra-regional geographic differentiation among the local jurisdictions. The inner-ring suburbs – Alexandria City and Arlington and Montgomery Counties – have the highest scores on Creative Class attributes. The next ring comprised of Fairfax and Loudoun Counties has slightly lower scores followed by the central city – the District of Columbia. Prince William and Prince George's Counties scored slightly lower, but still above the national average on most measures.

The District of Columbia would have fared slightly better using Florida's more complex Creativity Index, with its emphasis on bohemianism and tolerance for differences in sexual orientation. The central city is still the cultural and entertainment center of the region and contains many of the "edgier" neighborhoods.

The methodology used in this analysis provides a simple and highly comparative basis for looking at differences in Creative Class attributes within a metro area. Most of this data is aggregated by city or county, making clear sub-regional distinctions possible.



#### ENDNOTES

- 1 Florida, Richard. *The Rise of the Creative Class*. Basic Books. New York, NY. 2002. All references to the "Creative Class" are derived from this text.
- 2 Florida, p.237.
- 3 Porter, Michael. 1990. *The Competitive Advantage of Nations*. The Free Press. New York, NY.
- 4 Saxonian, Annalee. 1996. *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Harvard University Press, and Fukuyama, Francis. 1996. Trust. Simon & Schuster.
- 5 Florida, p. ix.
- 6 The location quotient measures relative concentration. It is the ratio of a variable in one geographic area, expressed as a percentage, to the percentage of that variable nationwide.
- 7 *The Young and the Restless: How Tampa Bay Competes for Talent*. 2003. p.5.
- 8 Florida, p. 79.
- 9 Singer, Audrey. 2003. *At Home in the Nation's Capital: Immigrant Trends in Metropolitan Washington*. The Brookings Institution Center on Urban and Metropolitan Policy.
- 10 Occupational categories comprising the "super creative core" include computer and mathematical occupations; architecture and engineering occupations; life, physical and social science occupations; education, training and library occupations; and arts, design, entertainment, sports and media occupations.
- 11 Jacobs, Jane. 1984. *Cities and the Wealth of Nations*.
- 12 Florida, p.244.
- 13 Florida, p.242-3.



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