

The Future of the Northern Virginia Economy

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September 2011

The dramatic growth in federal spending over the past three decades, especially for the procurement of goods and services from local contractors, has been responsible for the transformation of Northern Virginia from a suburban-based retail economy to a high-value added professional and business services-based economy serving local, national and global markets. The economy that has evolved from this significant infusion of direct federal procurement spending, totaling almost \$430 billion since 1980, has established the foundation for the its future growth and has also differentiated Northern Virginia's economy from that of the District of Columbia and Suburban Maryland. With the slowdown in federal spending that is already evident in the Washington metropolitan area (and nationally) and the likelihood that federal procurement outlays and even federal payroll disbursements will not increase and may decline in the out-years of the decade, raises the important question of what will drive the Northern Virginia and Washington metropolitan area economies going forward and what challenges will this "new" economy impose on the region's business and public leaders.

Northern Virginia's Long-Term Growth

Forecasts for Northern Virginia's growth over the 2010-2030 period point to the potential for continuing strong gains in population and employment with employment gains in "knowledge-based and technology-intensive" sectors and occupations leading the economy's advance. These growth trends, as shown in Table 1 below, underscore Northern Virginia's emergence as a national and global business center that also supports an expanding and vital retail and consumer services base serving the increasing market demand of its residents, a demand potential reflecting gains in population and disposable incomes, as well as growth in the hospitality sector and day-time population of non-resident workers—commuters from beyond Northern Virginia's borders.

The overall measure of Northern Virginia's economic growth over this twenty-year period is seen in its projected 94.8 percent increase in real (inflation adjusted) gross regional product (GRP), with the value of goods and services produced in Northern Virginia increasing from \$204.6 billion to \$398.6 billion (in 2010 \$s) by 2030. This potential increase in GRP will be achieved with a gain of approximately 580,000 net new jobs, or a 44.6 percent increase in the employment base.

In order for the Northern Virginia economy to grow 95 percent but only increase its employment base by 45 percent, the mix of its new jobs and the mix of its replacement jobs (the structure of the local economy will under go a substantial change due to accelerating retirements and continuing normal turnover in addition to net new job growth) will shift to higher value added occupations. This projected (potential) economic growth exceeds the 35.4 percent population growth forecast for Northern Virginia over this period.

Table 1

Northern Virginia's Economy, 2010-2030
(in billions of 2010 \$s, population and jobs in thousands)

Sectors	2030	% Change 2010-2030
Gross Regional Product	\$398.6	94.8
Population	3,578.2	35.4
Employment	1,879.8	44.6
Government	246.6	10.3
Federal	88.3	-1.6
State and Local	158.4	18.3
Services	1,303.0	74.3
Financial	77.2	24.1
Professional and Business	692.3	94.2
Education and Health	197.7	48.5
Leisure and Hospitality	143.3	19.2
Other Services*	87.4	15.9
All Other Sectors**	435.0	32.2

Sources: IHS Global Insight, GMU Center for Regional Analysis. *includes membership organizations and consumer services; **retail, wholesale, manufacturing, construction, transportation and utilities, and mining.

These differential growth rates—GRP growing faster than the employment base and the employment base outpacing the population increase—raises significant challenges. But before exploring those challenges that could undermine the realization of Northern Virginia's economic growth potentials, it is important to explore the patterns of future growth for which Northern Virginia appears to have a competitive edge.

Northern Virginia's High-Growth and High Value-Added Sectors

With Northern Virginia's future economic growth no longer being driven by increases in federal procurement spending (or federal payroll outlays), future economic growth must rely on Northern Virginia's private and not-for-profit sectors in which it has achieved a competitive advantage relative to the remainder of the Washington metropolitan area and its peer regions elsewhere in the U.S. This is not to imply that entirely new specializations cannot emerge, but in the near-term none of those would be able to achieve the scale necessary to drive Northern Virginia's GRP as can its current non-federal high-growth sectors in which there is already present a disproportional concentration of high-value added workers.

An analysis conducted in 2009 by the GMU Center for Regional Analysis of the Northern Virginia economy identified a board range of candidate sectors (4-digit NAICS codes) in which there had emerged a disproportional concentration of workers relative to other metropolitan areas, sectors that were experiencing high growth rates and ones that had achieved a sufficient scale of employment to be able to drive the economy's future expansion. These included: scientific research and development services, management and technical consulting services, computer systems design and related services, lessors of real estate and other real estate services, electronic markets and agents and brokers, support activities for air transportation, management of companies and enterprises, educational support services, amusement and recreation industries, independent artists, writers and performers, personal care services, and social advocacy organizations.

These sectors are illustrative of those in which Northern Virginia has achieved a competitive advantage over other jurisdictions and which are projected to experience above-average growth nationally over the next twenty years. Modeling these projected growth patterns for the Northern Virginia economy suggested that Northern Virginia could accelerate its economic growth performance into the future with the result that GRP would out-perform job growth and average wages would rise from their 2010 average of \$54,810 to \$122,061 in 2030 or (\$86,454 in 2010 \$s). This gain in average wages and salaries reflects the accelerating structure changes that will take place as the economy's private sector grows and the share of GRP that is associated with federal spending declines.

The Occupational and Educational Requirements of Northern Virginia's Future Workforce

Recent analysis (June 2011) of the changing Northern Virginia workforce during the 2010-2020 period by the GMU Center for Regional Analysis has provided new data on the magnitude and composition of occupational demand and skills and educational requirements that will determine whether the economy's near-term potentials can be achieved. Additionally, for the first time, these analyses identified a second dimension of Northern Virginia's future workforce requirements, one that has been largely overlooked in the past; that is, the demand for replacement

workers to backfill positions vacated by retirements or natural turnover. These “new” workers will not add to the total number of workers in Northern Virginia but they will require workers that are not now currently in the workforce. As shown in Table 2, the projected split between net new and replacement workers favors the latter and, in total, they represent a number far exceeding previous projections that had only accounted for net new job growth. Rather than experiencing a 20.1 percent gain in employment (that is the net increase), the total labor requirement will be for 649,700 workers, representing a 43.1 percent increase in ten years. Replacement positions will account for 53.3 percent of all of this demand.

Table 2

Workforce Demand in Northern Virginia, 2010-2020
(in thousands)

Type of Job	2010	2020	Change	Percent
Total Jobs	1,509.1	1,812.4	303.3*	20.1
Replacement			346.4	23.0
Total Openings			649.7	43.1

Sources: EMSI, GMU Center for Regional Analysis

*net new jobs

When Northern Virginia’s demand for workers is compared to the projected increase of workers (both net new and replacement) for the entire Washington metropolitan area, the dominance of the Northern Virginia economy is clear. These comparisons are presented in Table 3.

The data in Table 3 suggest that Northern Virginia’s economy will generate a larger share of the Washington metropolitan area’s net new jobs than its replacement positions. This performance difference is indicative of a rapidly growing and evolving economy (rather than one where workforce turnover is the major dynamic) and has significant labor force education and training implications. While all sectors and occupations will experience turnover due to retirements and normal attrition, those occupations experiencing rapid growth during the past decade are characterized by a younger and more technologically skilled workforce and will demand a greater proportion of workers to fill new jobs than to backfill old jobs. Therefore, the types of occupations that will drive Northern Virginia’s future growth are key to building a competitive and productive workforce.

Table 3

Workforce Demand in Northern Virginia and
the Washington Metropolitan Area, 2010-2020
(in thousands)

Type of Job	Metropolitan Area	Northern Virginia	Percent of Metro Area
Net New Jobs	503.1	303.3	60.3
Replacement	901.4	346.4	38.4
Total Openings	1,404.5	649.7	46.2

Sources: EMSI, GMU Center for Regional Analysis

Northern Virginia’s Major Near-Term Sources of Net New Jobs

Five sectors, consisting of multiple occupations, will account for 72.3 percent of Northern Virginia’s net new jobs between 2010 and 2020. One sector—professional, scientific and technical services—alone is projected to account for 41 percent of all net new jobs, a greater percentage than the next four largest sources of workforce demand combined.

Table 4

Five Major Sector Sources of Net New Job Growth
In Northern Virginia, 2010-2020

Sector	2010 Jobs	2010-2020 Job Change	Percent Change	% All New Jobs
Prof., Scientific, Tech	316,175	124,157	39.2	40.9
Health Care	107,377	32,113	30.0	10.6
Government	243,555	29,454	12.1	9.7
Admin Support	94,639	18,421	19.5	6.4
Real Estate Services	66,022	15,239	23.1	5.0
Total 5 Sector	827,768	219,384	26.5	72.3
% of All Jobs	54.8			
Total All Jobs	1,509,110	1,812,383	20.1	

Sources: EMSI and GMU Center for Regional Analysis

Key occupational groupings within the professional, scientific and technical services sector in which Northern Virginia also has a higher proportion of jobs relative to the national sectoral job mix are shown in Table 5.

Table 5

Key Sub-Sectors in Northern Virginia's
Professional, Scientific and Technical Services Sector

NAICS Code	Description	2010 Jobs	2020 Jobs	Net New Jobs	% Change	2010 NVCC LQ
5416	Management, Scientific, and Technical Consulting Services	73,310	123,873	50,563	69%	4.38
5415	Computer Systems Design and Related Services	120,813	170,219	49,406	41%	7.21
5413	Architectural, Engineering, and Related Services	34,017	41,566	7,549	22%	2.44
5419	Other Professional, Scientific, and Technical Services	26,510	32,561	6,051	23%	1.64
5411	Legal Services	13,652	16,679	3,027	22%	1.06
5417	Scientific Research and Development Services	19,264	21,975	2,711	14%	3.28

Source: EMSI and GMU Center for Regional Analysis LQ = ratio of the local job share to its national sector

The Educational and Skills Requirements of Northern Virginia's Future Workforce

Different types of jobs require different levels of education and skills training. Across the economy, the net new and replacement jobs also have different education and skills requirements. As a large percentage of replacement jobs will be filled internally within a business or government agency, up-skilling and continuing education of workers already in the workforce will become even more important going forward than it is today, especially for workers under the age of 45, most of whom will still be in the labor force twenty years from now.

Table 6 show the full range of education and skills requirements for Northern Virginia's projected net new jobs and replacement positions. Almost 50 percent of all net new jobs will require four or more years of college while only 31 percent of replacement jobs will require this level of education. The demand for college-

educated workers also differentiates Northern Virginia from the US economy. At the national level, only 34% of net new jobs will require four or more years of college.

Table 6

Education Level, All Occupations - Total Openings, Net New and Replacements Jobs
2010-2020 for the NVCC Service Area

Education Level	All Job Openings	Net New Jobs	Replacement Jobs
Doctoral degree	7,207	3,905	3,302
First professional degree	10,257	5,272	4,985
Master's degree	14,780	7,307	7,473
Degree plus work experience	60,615	32,399	28,216
Bachelor's degree	163,828	99,654	64,174
Associate's degree	23,559	12,534	11,025
Postsecondary vocational award	33,319	18,396	14,923
Work experience in a related field	47,696	21,427	26,269
Long-term on-the-job training	37,235	15,026	22,209
Moderate-term on-the-job training	72,369	34,629	37,740
Short-term on-the-job training	171,209	52,599	118,610
N/A	7,556	114	7,442
Total	649,630	303,262	346,368

Source: EMSI and GMU Center for Regional Analysis

Northern Virginia's Economic Potential Is Not Guaranteed

The economic transformation that began thirty years ago in Northern Virginia, driven by increased outsourcing of goods and services by the federal government to the benefit of businesses based or relocating to Northern Virginia, has established the economic framework for continuing growth even as the federal spending that fueled this historic growth is slowing and likely to diminish in coming years. The basis for Northern Virginia's future growth has been shown to be concentrated in its professional, scientific, and technical services that are not dependent solely on federal clients and can expand their markets nationally and globally.

In addition to these high-growth and high value-added business activities that will account for a significant proportion of Northern Virginia's projected net new job growth over the next ten and twenty years, other sources of job growth will be generated as a result of projected residential growth and its increasing incomes. Further economic growth will be associated with businesses that service Northern Virginia's core growth sectors and support its growing leisure and hospital sector.

While net new job growth will be the primary source of Northern Virginia's economic expansion, all sectors will require a growing number of new workers to replace workers leaving the workforce due to retirements and as a result of normal turnover. In fact, the demand for replacement workers to backfill vacancies across all sectors will generate a larger demand for new workers than will the economy's net expansion.

These net new and replacement positions spanning the breadth of the future workforce will require a more educated workforce than currently characterizes Northern Virginia's current workers placing new demands on all levels of educational institutions to accommodate not only an increasing number of students but more flexible programming to accommodate students of different ages and circumstances, especially students who are simultaneously working and seeking to reposition themselves to fill new jobs or vacancies created by retirements of older workers.

Northern Virginia cannot achieve its projected economic growth potentials without attracting more workers and these workers will need to be better educated in order to reflect the changing occupational and sectoral mix of jobs within Northern Virginia's increasingly high value-added economy. In the absence of sufficient future labor resources—in number and quality—Northern Virginia's economy will fall short of its growth potential. As the highest value-added jobs that will drive Northern Virginia's economy (GRP) at three times its projected population growth rate are also projected to account for the largest percentage of net new jobs, any short fall in filling these positions will have substantially greater cost to the economy than their mere numbers would suggest and result in substantially slower economic gains negatively affecting the economy's other sectors.

Educating and upskilling the future work force will be the most critical requirement for maintaining and growing Northern Virginia's vitality as its economy shifts from one that is federally dependent to one that is globally competitive. This shift increases the need for local institutions of higher education to recognize and proactively respond to the education and skills training requirements of the area's economy and its changing demography, especially its growing diversity and the lengthening age span of its potential workforce population. Successfully responding to the educational and skills training challenges of Northern Virginia's future workforce will be a critical determinant of its economic future.