Evolving Economy Banks on Education

The Thomas Jefferson Institute for Public Policy

Virginia Economic Forecast 2004–05

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Foreward

The Thomas Jefferson Institute for Public Policy is proud to present its fourth annual report on the economy of the United States and Virginia. It is part of the foundation's efforts to offer well-researched studies for our leaders to assist them in better preparing for the future.

This year's annual Virginia Economic Forecast was once again researched and written by Dr. Christine Chmura and her team of top-notch economists at Chmura Economics & Analytics (CEA) in Richmond. Dr. Chmura opened this firm after serving as Chief Economist at Crestar Bank. This company has grown into a leading member of its industry. Over twenty five years of experience is housed in this specialized economic consulting firm specializing in quantitative research, traditional economics and workforce and economic development.

Virginia Economic Forecast: 2004—2005 is made available to our state's elected leaders, business leaders and the media in order to assist them in better understanding the economic reality facing our state. This year's edition, titled "Evolving Economy Banks on Education," makes it clear that the country and Virginia are in a growth pattern economically. This year's Economic Forecast also makes it clear that future economic growth depends upon a well-educated workforce and that Virginia needs to mindful of this as it plans for the future.

Last year's Virginia Economic Forecast anticipated an acceleration in economic activity during the second half of 2003 as military activity in Iraq appeared to be subsiding. Not only did this second half growth emerge, but continued consumer spending and a relentless housing market bumped growth above CEA's forecast. In 2003, real gross domestic product expanded at a 3.1% pace, compared with CEA's forecast of 2.0% growth. CEA forecasts last year called for steady (3.5%) output growth in 2004 and the latest data indicate that the economy grew at a 4.2% annualized rate in the first quarter of the year.

We once again thank SunTrust for sponsoring this year's *Virginia Economic Forecast: 2004 – 2005.* Nothing in this report should be construed as supporting or opposing any legislation and is the opinion of the authors and not necessarily that of the Thomas Jefferson Institute, its Board of Directors, or SunTrust as the sponsor of this report.

Michael W. Thompson
Chairman and President
Thomas Jefferson Institute for Public Policy
May 2004

In the Nation...

- The economic recovery accelerated through 2003 with growth coming from a broad base of sectors. In particular, low interest rates coupled with fiscal stimulus in the form of tax relief supported consumer spending and a booming housing market. The labor market, which had languished for most of the recovery period, appears to be on the mend and has shown significant growth in early 2004. Employment growth has been positive since September 2003 and looks to continue in 2004.

- The domestic economy is expected to continue to exhibit robust growth through 2004 and into 2005. Chmura Economics & Analytics (CEA) forecast anticipates real gross domestic product (GDP) growth of 4.9% in 2004 and 4.6% in 2005. Consumer spending is expected to continue its role as a driving force for growth with 4.1% growth in 2004 and 3.9% growth in 2005. Business investment is forecast to eclipse nonresidential investment for the first time since 2001 with growth of 11.0% in 2004 and 12.8% in 2005.

- The Federal Open Market Committee (FOMC), the policy-making body of the Federal Reserve Board, pushed interest rates down to their lowest level in over forty years in an effort to revive the weak job market. As of April 2004, the federal funds rate target stood at 1.0%. Gradual tightening of monetary policy is expected in the second half of 2004.

In Virginia...

- Virginia's labor market has outperformed that of the nation and has entered into a phase of expansion—having recaptured all jobs lost during and after the 2001 recession. The national labor market remains below its employment peak of March 2001. For the year ending with March 2003, employment in Virginia advanced 2.2% while U.S. employment grew 0.5%.

- At a regional level, the results were mixed for Virginia's metropolitan areas. Nonfarm employment, the broadest indicator of regional growth, expanded in only three of eight metro areas for the year ending with March 2004. Employment grew in Northern Virginia (+4.4%), Hampton Roads (+2.0%), and Roanoke (+1.2%). Employment in Richmond-Petersburg showed no change while net job losses plagued Danville (-1.3%), Lynchburg (-0.2%), Charlottesville (-0.6%), and Bristol (-0.5%).

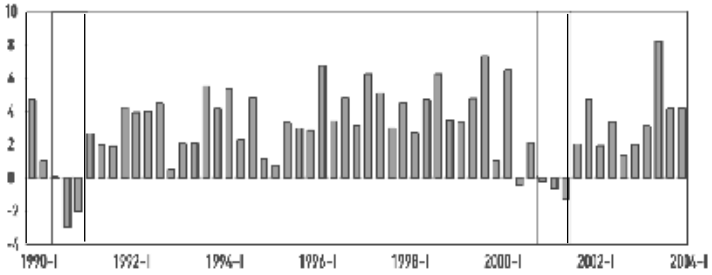
- Virginia's economy is well-positioned to take advantage of economic growth that will become increasingly reliant on a fluid and knowledgeable workforce. Educational attainment measures exceed national averages and this factor improves job prospects in the Commonwealth. Employment in Virginia is forecast to grow 2.8% in 2004 and 2.6% in 2005.

NATIONAL ECONOMY

On the Path of Robust Growth

By the end of the first quarter of 2004, the U.S. economy finally seemed to hit all cylinders. The economy has been growing at a healthy rate since the second half of 2003, with real gross domestic product (GDP) expanding at an annual rate of 8.2% for the third quarter and 4.1% for the fourth quarter (see chart below). Inflation, measured by the core consumer price index (CPI),[1] has been under 2% since January 2003. Even the last missing piece of a robust economic recovery—job creation—seemed to turn the corner in March of 2004. In that month alone, non-farm payroll employment increased by a remarkable 308,000 jobs.

Real Gross Domestic Product
Annualized Percent Change*



Source: Bureau of Economic Analysis

Just less than one year ago, a robust economic recovery stood on a relatively shaky foundation. Real GDP growth was lackluster for the first half of 2003. There was widespread worry about disinflation. The labor market continued to weaken and shed tens of thousands of jobs every month. Over the first eight months of 2003, private non-farm payroll employment fell, on average, more than 35,000 per month.[2] With interest rates at the lowest level in decades and the federal budget deficit increasing, there were serious concerns that there was little room for further monetary and fiscal policy stimuli.

As the U.S. economy emerged from the most recent recession in the fourth quarter of 2001, consumer spending has been the steady driving force of the economy throughout 2002 and the first half of 2003. However, a pick up in business investment fueled the brisk expansion starting the third quarter of 2003. Due to the capacity build up in the boom years of the late 1990s and early 2000s, businesses were hesitant to undertake capital investments at the early stage of recovery. Instead, they focused on improving efficiencies of current facilities and labor force contributions to meet increasing demand. The following chart shows that capacity utilization is well below the peak years of the late 1990s. While real non-residential fixed investment grew at an average annual rate of 10.3% from 1997 to 2000,[3] it dropped by 4.5% in 2001 and further declined by 7.2% in 2002.[4] As the economy continued to expand, the opportunity to enhance efficiency from existing facilities dwindled. Firms finally decided to undertake capital investment in the

Total Capacity Utilization Rate

Source: Federal Reserve Board

* Note: Recession periods are represented by rectangles in charts throughout the publication.

[1] Core CPI is the price index of consumer goods excluding food and energy.

[2] Source: Board of Governors of the Federal Reserve System, Monetary Policy Report to the Congress, February 2004.

second half of 2003. The annualized growth rate in non-residential fixed investment was over 10% for the third and fourth quarter of 2003. Accompanying capital investment, the final piece of the economic expansion puzzle—job creation—came into place in the first quarter of 2004.

LOOKING AHEAD

Economic Forecast

All signs point to strong growth in 2004. The National Forecast Summary table presents Chmura Economics & Analytics (CEA) forecast of the major indicators of the national economy. Real GDP is forecast to grow 4.9% in 2004. Consumer expenditures, which account for two thirds of the U.S. economy, will continue to be the driving force for sustained growth. With labor market conditions improving, CEA is optimistic that consumer expenditures in 2004 will increase by 4.1% from 2003. The most recent retail numbers are consistent with this optimism—retails sales in the first quarter 2004 rose 7.7% from the same period a year ago.[5]

Investment will continue to expand, providing the extra boost for an above-average year of growth. With the almost certain prospect that the Federal Open Market Committee (FOMC) will raise interest rates some time this year, real residential investment will slow, but is still forecast to grow 6.1% in 2004. Real nonresidential investment, forecasted to grow at a brisk rate of 11.0% in 2004, will outpace residential investment for the first time since 2001.

Compared with 2004, economic growth will slow somewhat in 2005 with real GDP expanding 4.6%. Rising interest rates in the second half of 2004 will have the most significant effect on real residential investment, which is expected to increase by only 1.5% in 2005. Real consumer expenditures and non-residential investment will hold on to a similar pace to that of 2004.

By historical standards, this pace of growth is high, and will create pressure on inflation. As a result, the FOMC will raise interest rates to bring the growth down to a more sustainable level in the range of 2% to 3% annually in the coming years.

National Forecast Summary

	—Actual—			—Forecast—	
	2001	2002	2003	2004	2005
	Change From a Year Ago (%)				
Real Gross Domestic Product	0.5	2.2	3.1	4.9	4.6
Consumer Expenditures	2.5	3.4	3.1	4.1	3.9
Residential Investment	0.3	4.9	7.5	6.1	1.5
Nonresidential Investment	-4.5	-7.2	3.0	11.0	12.8
Equipment and Software	-5.2	-2.8	5.5	14.4	14.4
Government Expenditure	2.8	3.8	3.3	2.5	2.6
	Trade Deficit (Billions of Dollars)				
Net Exports, Goods & Services	-398	-470	-509	-523	-517
	Change from a Year Ago (%)				
Consumer Price Index	1.9	2.2	1.9	2.5	1.7
	Yields (%)				
Federal Funds Rate	3.9	1.7	1.1	1.3	3.1
Prime Rate	6.9	4.7	4.1	4.3	6.1
10-Year Treasury	5.0	4.6	4.0	4.1	5.2
30-Year Conventional Mortgage	7.0	6.5	5.8	5.9	7.1

Source: Chmura Economics & Analytics.

Monetary Policy

All eyes are on the FOMC for the inevitable tightening of monetary policy. Due to the considerable slack in the labor market until early 2004, the FOMC has been patient with its expansionary monetary policy. With the strong job creation in March 2004, it is not a matter of whether, but when, the Fed will increase the federal funds rate target in

[3] Non-residential investment includes plants, equipment, and software purchased by businesses.

[4] Source: Bureau of Economic Analysis.

[5] Source: Census Bureau of Department of Commerce.

2004.

CEA forecasts the FOMC will start raising the federal funds rate at either its June or August meeting. At the end of 2004, the federal funds rate is forecast to hit 1.8%. Barring any catastrophic events, the FOMC will bring the federal funds rate to a 'neutral' level between the 4% to 5% range by the end of 2005 through a series of adjustments.[6]

However, many uncertainties can shift the economy from the solid growth trajectory CEA has forecasted here. A prolonged occupation in Iraq, a major terrorist attack at home or abroad, or a potential policy change associated with the November presidential election could have significant impact on the growth and structural changes of the U.S. economy.

Economic Structural Change and Education

As the economy slowly moved out of the recession in the past two years, significant changes were taking place in the behavior of the U.S. economy. With the manufacturing industry in decline since the 1980's, continued structural change[7] has persisted in the U.S. economy and this phenomenon has been particularly visible during periods of recession and early recovery.[8] There are two indicators that structural changes are happening currently. The first is that some industries added jobs in both recession and recovery, while industries that lost jobs also did so in both recession and in recovery. Job gains and losses thus provide a simple way to distinguish growing from shrinking industries. Moreover, the very fact of a slow recovery with minimal job creation indicates changes in economic structure. If the recession is purely cyclical fluctuation without structural changes, companies can easily find workers when the economy recovers. However, when workers are permanently laid off and need to seek employment in another sector, the time and resources required to complete the adjustment are greater, thus the recovery is slower.

Historically, the American economy has survived, or even thrived, with structural changes. Manufacturing jobs in the United States were perceived as migrating to low-wage Japan in the 1950s and 1960s, to low-wage Mexico in the 1990s and most recently to low-wage China.[9] After losing tens of thousands of manufacturing jobs, the American economy emerged from the recession in the early 1990s with the longest economic expansion in history. The economy boomed and technological advancement occurred at a breathtaking pace. The result is that millions of new jobs that never existed were created—jobs such as call center associates, webmasters, database architects, or system administrators.

The economy is facing a similar challenge as another structural change is underway. One side effect of innovations in information technology and telecommunication is that many jobs can be performed anywhere and anytime. An increasing number of better-paying white-collar jobs seem to be lost to outsourcing. Many of these jobs, that were previously perceived to be secure, are in the service sector. How does the U.S. economy absorb displaced workers and create new jobs and new sectors? To meet these challenges, our education system has to play an increasingly important role in economic growth.

A basic role of education is to develop flexibility in the workforce to allow for smooth re-allocation of human resources as the economy continues the process of structural change. Today's workers will likely change careers multiple times during their working lives. It falls on our education

[6] A 'neutral' interest rate means the interest rate is at such a level that it neither stimulates, nor contracts the economy.

[7] Structural change is defined as changes in the industrial composition of overall economy. Some industries grow faster than others and expand their shares in the economy. Some industries grow slowly or decline, which leads to their shrinking shares in the economy. One example of structural change is the declining of manufacturing sectors in the U.S. economy.

[8] See remarks by McDonough, former president of the Federal Reserve Bank of New York, to New York State Bankers Association Annual Financial Services Forum on March 20, 2003.

[9] See testimony of Chairman Alan Greenspan before the Committee on Education and the Workforces, U.S. House of Representatives. March 11, 2004.

system, in partnership with businesses, to provide training and preparation throughout people's careers. One in three of the current enrollees in community colleges and almost one of two part-time enrollees at four-year undergraduate schools are aged thirty or older.[10] They have years of working experiences. It is the job of our education system to develop curriculum and training programs that meet marketing needs to enable workers moving from one industry to another.

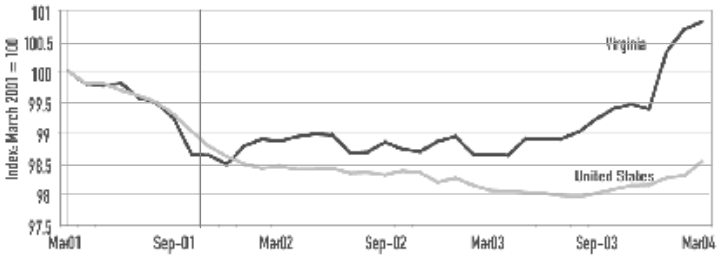
Another fundamental role of our institutions of higher education in achieving sustained economic growth is to transform knowledge into economic value. We are in a global environment where prospects for economic growth depend significantly on a country's capacity to develop and apply new technologies.[11] Fortunately, the great American research universities are breeding grounds for innovations. Around these universities are centers of technological innovation and entrepreneurship. From their labs or dorm rooms will emerge the next Google, the next Dell, or other wholly new sectors. The ability to transform knowledge into business value is one of the biggest competitive advantages of the U.S. economy. As long as American universities are the envy of the world, and as long the best and the brightest around the world continue to come here to study, the U.S. economy will find ways to innovate and grow.

[10] See testimony of Chairman Alan Greenspan before the Committee on Education and the Workforces, U.S. House of Representatives. March 11, 2004.
[11] See remarks by Chairman Alan Greenspan before the National Governor's Association, 92nd Annual Meeting. July 11, 2000.

Virginia's economic diversity has helped the state recoup all the jobs lost during the 2001 recession while the United States continues to recover. In terms of diversity, high-tech opportunities characterize Northern Virginia, while the Richmond area serves as a center for banking and financial services. Hampton Roads is home to the largest naval installation on the East Coast and, the region's economy is supported by the military activity and other defense spending, such as shipbuilding.

Since the close of the last recession in November 2001, both Virginia and the United States have been plagued by a poorly performing labor market. Recently, however, the labor market situation has brightened, and Virginia has recaptured all of the jobs lost during the recession and its aftermath. Since national employment peaked in March 2001, Virginia has added a net 28,516 jobs through March

Virginia Economy Regains Jobs Lost During Recession
Employment Growth Since March 2001 Peak



Source: Bureau of Labor Statistics
Note: Virginia employment peaked in December, 2000, three months earlier than the national economy.

2004. During the same period, the U.S. economy has yet to recover all of the jobs lost. As of March 2004, the national economy is still some 2.0 million jobs below the March 2001 peak.

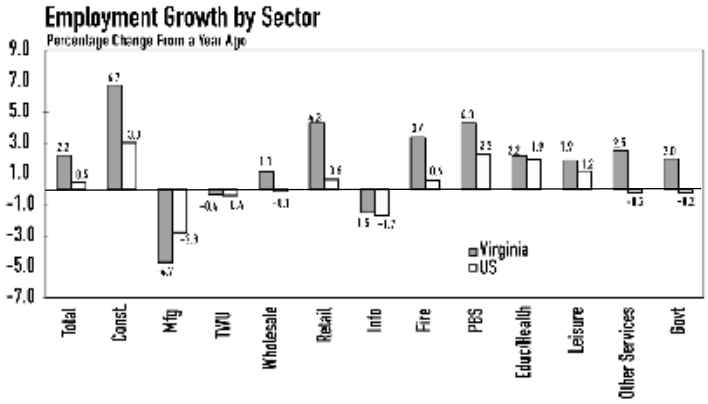
Contributing to Virginia's relatively strong labor market performance is the above-average level of educational attainment of the state's workforce. As of 2000, 29.5% of Virginians held a bachelor's degree or higher compared with 24.4% across the nation.[1] Despite the state's relatively high education levels, continued advances in education and skills will be an integral part of the state's sustained growth strategy, especially at a regional level. In a speech earlier this year, Alan Greenspan, Chairman of the Federal Reserve, commented on the unavailing importance of an increasingly educated workforce. While noting that college education has permeated a greater proportion of the U.S. workforce, Greenspan also suggested that the country is "…graduating too few skilled workers to address the apparent imbalance between the supply of such workers and the burgeoning demand for them."[2]

The burgeoning demand for highly skilled and educated workers is evidenced from the latest occupational projections from the Bureau of Labor Statistics. In six of the ten fastest growing occupations through 2012, an associate's or bachelor's degree is the most significant source of postsecondary education or training criteria. Some of these occupations include: network systems analysts, physician assistants, and medical records technicians.

The fastest growing occupations in the nation are also expected to play an important role in Virginia's economic growth over the next couple of years where CEA forecasts statewide employment to grow 2.8% in 2004 and 2.6% in 2005. Positive employment growth is also expected in all of Virginia's metropolitan areas over the next two years with the exception of Danville where employment continues to decline in 2004. In addition, retail sales are expected to continue to support the state economy with 4.9% growth in 2004, while the pace of growth in the housing market is forecast to decelerate as interest rates begin to creep up. Building permits, a forward-looking measure of the housing market, are forecast to grow at a slow pace in 2004 and decline in 2005.

[1] Educational attainment as a percentage of the state's population aged 25 years or older.
[2] See testimony of Chairman Alan Greenspan before the Committee on Education and the Workforces, U.S. House of Representatives. March 11, 2004.

Employment Growth by Sector
Percentage Change from a Year Ago



Last Year's Growth

Nonfarm employment, the broadest indicator of regional growth, increased much faster in Virginia than in the United States over the past year. For the year ended March 2004, nonfarm employment increased 2.2% in Virginia (+76,773 jobs) while growing only 0.5% in the nation (+627,000 jobs).

By sector, Virginia showed strong broad-based employment gains over the past year with job growth in 9 out of 12 major industry sectors. In contrast, employment increased in only 6 of 12 sectors for the United States overall. The largest job gains in Virginia came in the professional and business services sector. For the year ended March 2004, employment in this industry expanded by 23,274 jobs, or by 4.3%. Strong growth was also exhibited by construction and retail trade. Construction employment increased 6.7% (14,363 jobs) while retail trade employment advanced 4.3% (17,135 jobs).

Other sectors posting employment gains in excess of 5,000 in the state included leisure; education and health services; and finance, insurance, and real estate. Wholesale trade employment showed modest 1.1% growth over the past year.

The industries with declining payrolls in Virginia for the year ending March 2004 were manufacturing; information; and transportation, warehousing, and utilities. Manufacturing employment declined by 4.7% (14,658 jobs), while employment in the information sector fell 1.5% (1,519 jobs). Employment in the transportation, warehousing, and utilities industry declined 0.4% (439 jobs). In contrast, U.S. employment dropped in six industries. Among the industries experiencing employment contractions nationwide were manufacturing; transportation, warehousing, and utilities; wholesale trade; information; other services; and government.

By region, three of Virginia's eight major metro areas exhibited employment growth for the year ended March 2004. Northern Virginia grew at the fastest pace with a 4.4% employment gain. Given the larger size of Northern Virginia, the net job creation (52,009 jobs) was considerably higher than any other area. Nonetheless, positive employment gains were also recorded in Hampton Roads (+2.0%), and in Roanoke (+1.2%). Employment in Richmond-Petersburg showed no change over the year.

Virginia's southern and western metro areas did not generally share in the expansion. Employment in Danville declined most swiftly (-1.3%), while Lynchburg (-0.2%) and Charlot-

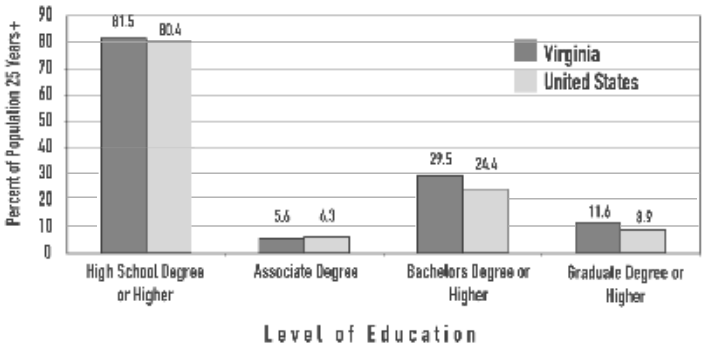
Top 20 Employers, Third Quarter 2003

Greater than 5,000 Employees

1.	Department of Defense
2.	Wal-Mart Associates Inc.
3.	Fairfax County Public Schools
4.	Northrop Grumman Newport News
5.	Food Lion LLC
6.	U.S. Postal Service
7.	County Of Fairfax
8.	City of Virginia Beach School Board
9.	Sentara Health System
10.	Capital One Service Inc.
11.	INOVA Health System
12.	Virginia Department of Transportation
13.	University of Virginia
14.	Prince William County School Board
15.	Science Applications International Corp.
16.	Chesterfield County School Board
17.	Virginia Polytechnic & State University
18.	Henrico County School Board
19.	City of Norfolk School Board
20.	First Union National Bank

Source: Virginia Employment Commission and Chmura Economics & Analytics

Educational Attainment in Virginia Exceeds National Averages



Source: U. S. Census Bureau, 2000 Census

tesville (-0.6%) also witnessed declining employment levels. Employment in the Virginia portion of the Bristol metro area, on the Virginia-Tennessee border, dropped 0.5%.

Education and the Virginia Workforce

As noted earlier in a reference from Alan Greenspan, the importance of education in a constantly evolving economy cannot be understated. In this respect, Virginia exceeds national averages for most educational attainment measures. In Virginia, 81.5% of the population has earned a high school degree compared to 80.4% in the United States.[3] Virginia falls slightly below the national average in terms of associate degrees with 5.6% of the state population reaching this level of education compared with 6.3% in the country.

Boasting some of the best and highly respected colleges and universities in the country, Virginia's real advantage is apparent in higher education. The state's system of 4-year institutions and community colleges coupled with premier private colleges offer ambitious students a broad array of highly esteemed degrees. In the Commonwealth, 29.5% of the population have earned a bachelor's degree or higher, while that figure drops to 24.4% in the United States. Similarly, the percentage of the population holding graduate degrees is higher in Virginia than the national average (11.6% vs. 8.9%). By broadening the pool of prospective college students, the relative affordability of Virginia's colleges and universities has fostered a well-educated citizenry.[4] Given the higher education levels, it is not surprising that Virginia's labor market has adapted and recaptured all of the jobs lost during and after the 2001 recession.

While Virginia's workforce as a whole appears to be educationally advanced, the state totals hide some significant regional variation. Ranked in order of the percentage of the population holding at least a bachelor's degree, Northern Virginia and Charlottesville are the only metro areas to surpass the state average (see table). Richmond-Petersburg falls just shy of the state average with 29.2% of its population having earned a bachelor's degree. Other regions in the state show much lower levels of educational attainment. Danville and Bristol fall well below state and national averages for education.

In addition to the post-secondary educational attainment of an area's workforce, it is also important to recognize the impact of public schools on the future and emerging workforce. While Virginia lags the nation in some commonly cited spending categories, these data mask some positive trends in the state school system. According to the National Education Association (NEA), Virginia tends to spend less per student than the U.S. average. For the 2002-2003 school

Educational Attainment in Virginia's Metropolitan Areas

	High School Degree	Bachelor's Degree
Northern Virginia	88.7%	46.6%
Charlottesville	84.0%	40.1%
Virginia	81.5%	29.5%
Richmond -Petersburg	82.6%	29.2%
Hampton Roads	84.8%	23.9%
Roanoke	80.9%	22.5%
Lynchburg	76.2%	19.3%
Bristol	70.3%	14.3%
Danville	67.8%	11.3%

Source: U.S. Census Bureau, Census 2000.

[3] Educational attainment data are from Census 2000. Population is defined as the population 25 years and greater.

[4] According to Congressional Quarterly's State Fact Finder 2004: Rankings Across America, Virginia ranks as the 4th most affordable state in the country for individuals seeking higher education.

year, average expenditures per student were $6,316 in Virginia compared with $7,829 in the U.S.[5] Also, average teacher salaries in Virginia stood at $43,152 in 2002-2003 – somewhat below the $45,930 national average.[6] However, in a sign that Virginia more effectively utilizes its educational funds, the NEA report also noted that Virginia exhibited quite favorable student to teacher ratios in 2002-2003. Virginia ranked fourth in the nation with a ratio of 12.6 students per teacher. The national average was 15.7.

Furthermore, the results of the state's school system argue that Virginia school expenditures are made in an efficient and effective manner. As of 2003, Virginia students ranked 9th in average proficiency in reading in 8th grade. The state ranked 14th in average proficiency in math in 8th grade; and in terms of SAT scores, Virginia students ranked 10th nationally.[7] With the new Virginia budget earmarking an additional $1.5 billion to K-12 education, Virginia's public education system looks to earn high marks in the coming years.

The need for an increasingly educated workforce is confirmed by the latest occupational employment projections from the U.S. Bureau of Labor Statistics. For six of the top ten fastest growing occupations through 2012, the most significant source of postsecondary education is an associate's or bachelor's degree. The table above displays the top ten occupations, in terms of employment growth from 2002-2012 and lists Virginia employment in these occupations as of 2002.

Top Ten Fastest Growing Occupations in the United States, 2002–2012

Occupation	Virginia Employment 2002	Projected Annual Average Change, 2002-2012	Most significant source of postsecondary education
Medical Assistants	7,150	4.7%	Moderate-term on-the-job training
Network systems and data communications analysts	6,130	4.6%	Bachelor's degree
Physician assistants	690	4.1%	Bachelor's degree
Social and human service assistants	3,820	4.1%	Moderate-term on-the-job training
Home health aides	9,390	4.0%	Short-term on-the-job training
Medical records and health information technicians	3,190	3.9%	Associate degree
Physical therapist aides	920	3.9%	Short-term on-the-job training
Computer software engineers, applications	18,480	3.8%	Bachelor's degree
Computer software engineers, systems software	16,600	3.8%	Bachelor's degree
Physical therapist assistants	1,110	3.9%	Associate degree

Source: Table modified from Bureau of Labor Statistics News Release February 11, 2004.

Technology in Virginia

Although the rate of decline has eased, high-tech employment in Virginia continued to fall as of the third quarter 2003.[8] High-tech employment declined by 0.2%, or 830 jobs, in the state compared with 0.4% growth in overall employment. Despite the latest contraction in high-tech employment, wages and salaries in these industries increased 3.3% over the past four quarters.

The largest high-tech industry in the Commonwealth, computer systems design and related services, posted employment growth of 0.9% (867 jobs) over the year ending with the third quarter 2003. The largest increase in jobs came from the management, scientific, and technical consulting services sector, which expanded by 6.8% (2,654 jobs). In contrast, the largest number of job losses (1,480 jobs) was reported in industries involved in manufacturing and re-

[5] National Education Association. Fall 2003 Rankings and Estimates. Data are for public schools grades K-12.

[6] Spending and salary figures are not adjusted for cost of living differences.

[7] Congressional Quarterly's State Fact Finder 2004: Rankings Across America.

[8] The definition used to group high-tech industries has changed from previous editions of the Virginia Economic Forecast because of the shift from the Standard Industrial Classifications (SIC) to the North American Industry Classification System (NAICS) for coding industry sectors. As a result, the high-tech employment figures presented in this report are not directly comparable to previous editions.

High-Technology Growth in Virginia

NAICS	Industry	Employment				Wages and Salaries Thousands of Dollars*			
		2002Q3	2003Q3	Change	% Change	2002Q3	2003Q3	Change	% Change
Total Employment		3,396,775	3,411,188	14,414	0.4	30,924,133	32,161,612	1,237,478	4.0
Total High Technology		425,532	424,702	-830	-0.2	6,787,740	7,010,385	222,645	3.3
3251	Basic Chemical Manufacturing	1,669	1,615	-54	-3.2	23,907	24,103	196	0.8
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing	8,023	7,652	-371	-4.6	106,373	105,900	-473	-0.4
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	364	360	-4	-1.1	2,807	3,006	199	7.1
3254	Pharmaceutical and Medicine Manufacturing	3,894	3,841	-53	-1.4	54,301	59,131	4,830	8.9
3255	Paint, Coating, and Adhesive Manufacturing	878	860	-18	-2.1	10,137	10,274	138	1.4
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	1,302	1,257	-45	-3.5	12,379	13,352	973	7.9
3259	Other Chemical Product and Preparation Manufacturing	2,812	2,462	-350	-12.4	27,946	26,582	-1,364	-4.9
3331	Agriculture, Construction, and Mining Machinery Manufacturing	2,045	1,907	-138	-6.7	19,738	19,473	-265	-1.3
3332	Industrial Machinery Manufacturing	2,339	2,266	-73	-3.1	24,321	25,148	827	3.4
3333	Commercial and Service Industry Machinery Manufacturing	2,713	2,586	-127	-4.7	36,942	35,607	-1,334	-3.6
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	5,709	5,154	-555	-9.7	49,257	46,365	-2,893	-5.9
3335	Metalworking Machinery Manufacturing	1,578	1,487	-91	-5.8	14,883	14,253	-631	-4.2
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	1,120	1,137	17	1.5	17,355	16,496	-859	-5.0
3339	Other General Purpose Machinery Manufacturing	4,149	4,112	-37	-0.9	43,871	43,962	91	0.2
3341	Computer and Peripheral Equipment Manufacturing	2,758	2,570	-188	-6.8	29,722	29,133	-589	-2.0
3342	Communications Equipment Manufacturing	3,654	2,927	-727	-19.9	55,098	50,746	-4,351	-7.9
3343	Audio and Video Equipment Manufacturing	88	77	-11	-12.5	788	706	-82	-10.4
3344	Semiconductor and Other Electronic Component Manufacturing	6,273	5,294	-979	-15.6	73,138	65,350	-7,787	-10.6
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	5,716	5,140	-576	-10.1	75,951	74,754	-1,197	-1.6
3346	Manufacturing and Reproducing Magnetic and Optical Media	2,284	804	-1,480	-64.8	26,719	17,422	-9,297	-34.8
3363	Motor Vehicle Parts Manufacturing	9,335	8,687	-648	-6.9	82,705	80,608	-2,097	-2.5
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	16,364	16,234	-130	-0.8	302,038	311,345	9,307	3.1
4236	Electrical and Electronic Goods Merchant Wholesalers	7,529	7,369	-160	-2.1	116,067	115,390	-677	-0.6
4431	Electronics and Appliance Stores	13,168	13,189	21	0.2	118,576	117,569	-1,007	-0.8
5112	Software Publishers	8,757	8,242	-515	-5.9	191,961	194,370	2,410	1.3
5152	Cable and Other Subscription Programming	2,545	2,970	425	16.7	25,199	27,282	2,083	8.3
5161	Internet Publishing and Broadcasting	1,656	1,706	50	3.0	25,982	26,130	148	0.6
5181	Internet Service Providers and Web Search Portals	10,928	10,926	-2	-0.0	258,982	255,779	-3,203	-1.2
5182	Data Processing, Hosting, and Related Services	11,729	12,173	444	3.8	179,719	192,420	12,701	7.1
5191	Other Information Services	5,226	5,097	-129	-2.5	31,747	31,380	-367	-1.2
5413	Architectural, Engineering, and Related Services	55,534	57,213	1,679	3.0	818,635	902,002	83,367	10.2
5414	Specialized Design Services	2,342	2,255	-87	-3.7	23,031	22,729	-302	-1.3
5415	Computer Systems Design and Related Services	96,762	97,629	867	0.9	1,746,415	1,878,640	132,225	7.6
5416	Management, Scientific, and Technical Consulting Services	38,901	41,555	2,654	6.8	684,348	733,994	49,646	7.3
5417	Scientific Research and Development Services	17,382	17,704	322	1.9	294,903	323,194	28,291	9.6
5511	Management of Companies and Enterprises	68,006	68,245	239	0.4	1,181,802	1,115,792	-66,011	-5.6

* Includes some stock options that were exercised.

N.D. = non disclosed

producing magnetic and optical media.

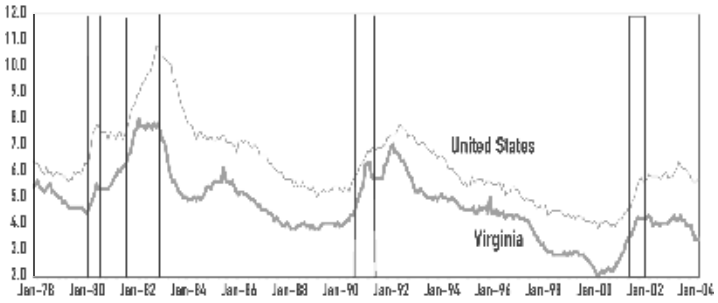
Labor Market

Throughout 2003, the unemployment rate in Virginia held below 4.5% and remained lower than the national average. As of March 2004, Virginia's unemployment rate dipped down to 3.4% -- its lowest since June 2001. The national unemployment rate, which has been steadily declining since June 2003, stood at 5.7% in March.

Delving deeper into unemployment data for Virginia, unemployed workers are generally more concentrated in production-type occupations compared to service-related occupations. As of the second quarter 2003, the three occupations in the state with the most unemployed workers were "other production occupations,"[9] construction trades workers, and material moving workers. These three occupations accounted for 22.4% of Virginia's total unemployment at that time.

Educational characteristics of the unemployed in Virginia lend further support to the importance of continuing education. As of December 2003, individuals with a high school education or less constituted 58.0% of the state's unemployed. Workers holding an associate's degree accounted for 25.5% of unemployment, while Virginians with a bachelor's degree or an advanced degree made up only 16.5% of unemployed workers.

Unemployment Rate

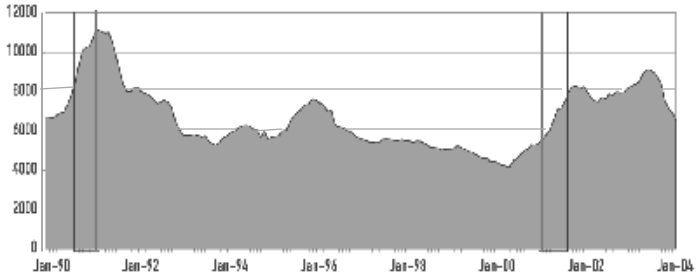


Source: Bureau of Labor Statistics

Recent trends in initial claims are consistent with the relatively strong employment growth that has begun to emerge in Virginia – a trend that is likely to continue. Initial unemployment claims in Virginia fell 21.3% on a year-over-year basis as of March 2004. Since peaking in July 2003, claims have dropped 28.4% in the state.

Virginia: Initial Unemployment Claims

Weekly Average per Month, 6-month Moving Average



Source: Virginia Employment Commission

Income

Real personal income growth in Virginia has been relatively slow since the 2001 recession ended. Real income growth reached a low of 0.4% year-over-year growth in the first quarter 2002 and has since advanced 1.2% during the year ending with the third quarter 2003. The slow pace of income growth is predictable given the lackluster job market that prevailed for most of this period. With Virginia employment forecast to grow steadily throughout 2004 and 2005, income growth is likely to accelerate in the state.

Net earnings, comprised of wage and salary disbursements, other labor income, and proprietor's income, made up 72.7% of real personal income in Virginia at the end of the third quarter 2003. On a year-over-year basis, net earnings declined by 0.7% in the second quarter 2002 and have since risen to 1.8% in the third quarter 2003. The pace of expansion in net earnings eclipsed real personal income growth in the first quarter of 2003 and has continued to outpace income growth through the third quarter.

Retail Sales

Tax relief and low interest rates have stimulated strong spending from Virginia consumers. Retail sales advanced 11.3% for the year ended February 2004 – the fastest pace since November 1994. The rate of retail sales growth in

[9] Some examples of "other production occupations" are chemical equipment operators, hand grinding and polishing workers, and cutting workers.

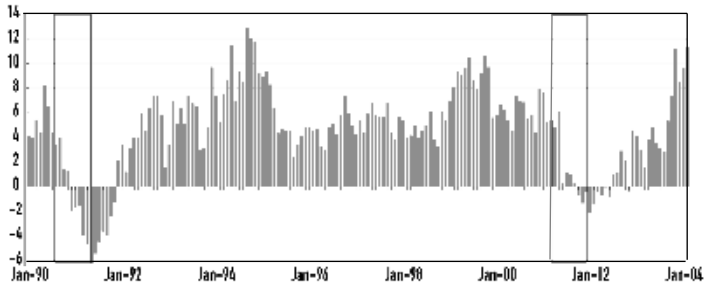
Virginia has increased rapidly since the summer of 2003. While all metro areas in the Commonwealth have enjoyed an acceleration in activity over the past year, the strongest increases were reported in Northern Virginia (+12.6%) and Hampton Roads (+12.5%).

Strong consumer spending over the past year has benefited a variety of retail sales categories. For the year ending with February 2004, lodging and restaurant sales were up 9.3% in the state for the fastest pace since May 1994. Sales of general merchandise have displayed steady growth since late 2002 and increased 9.8% for the year ending with February 2004. In addition, the low interest rate environment boosted auto sales as manufacturers offered affordable financing deals in 2003. In Virginia, auto sales rose 14.7% over the last year. December 2003 auto sales were the highest on record in the state.

Housing Market

Although auto sales received a welcome boost from low interest rates in 2003, the effect of cheap borrowing was most pronounced in Virginia's housing market. With mortgage rates falling below 6.0% for much of 2003, it was a record year for home sales in the state. Home sales increased 10% in 2003 from the previous record set in 2002. The number of closed home sales, according to the Virginia Association of Realtors, increased from 111,173 in 2002 to 122,749 in 2003.

Virginia: Retail Sales
Percentage Change from a Year Ago. 6-month Moving Average



Source: Virginia Department of Taxation

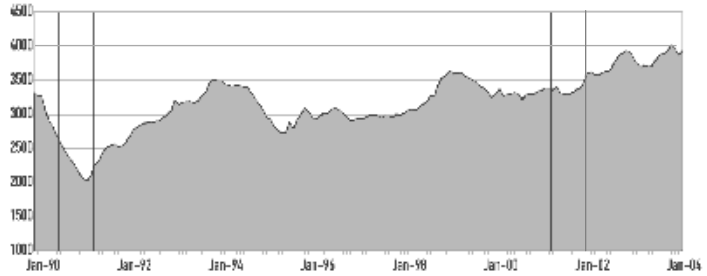
As the Virginia housing market heated up in 2003, home prices showed considerable appreciation. The median home price in Virginia jumped from $158,613 in December 2002 to $171,907 in December 2003—a gain of 8.4%.

The housing outlook for Virginia is similar to that of the nation. While continued growth is expected early in 2004, the overall level of activity is expected to subside. The Virginia Association of Realtors reported that February 2004 home sales topped the prior years' figure by 4.2%. However, recent trends in building permits suggest that the housing market will ease into more moderate levels. On a year-over year basis, building permits increased 0.8% in February 2004, but have dropped 3.4% since peaking in December 2003. CEA forecasts show building permits growing a modest 0.7% in 2004 before declining 5.3% 2005.

Metro Areas

CEA forecasts indicate that recent improvements in Virginia's labor market are expected to continue in 2004 and 2005. Employment in seven of Virginia's eight metro areas is forecast to increase over the next two years. The strongest growth in 2004 is expected in Northern Virginia (+4.6%) and Hampton Roads (+1.7%). Of the metro areas,

Virginia: Single-Family Building Permits
6-month Moving Average



Source: U. S. Bureau of the Census

Northern Virginia has the largest employment base at over 1.1 million workers as of March 2004. Hampton Roads is the second largest metro area with nearly 730,000 workers.

In addition to Hampton Roads, Virginia's other metro areas clustered along Interstate 64 are forecast to experience moderate employment growth in 2004. Employment in Richmond-Petersburg is expected to increase 0.7% for the

year, while Charlottesville employment is projected to advance 1.3%.

Employment growth is forecast to resume in Bristol, Lynchburg, and Roanoke – all areas that experienced net job contraction during 2003. Roanoke employment is projected to expand in 2004 (+1.2%) while Lynchburg (+1.2%) and Bristol (+1.0%) should also see modest growth. Danville is the only metro area forecast to lose jobs in 2004. Employment in Danville is expected to drop 0.5% in 2004 before growing 0.2% in 2005.

With employment growth accelerating across the Commonwealth, wages and salaries are also forecast to increase at a quicker pace. Wages and salaries are expected to grow between a low of 1.5% in Danville and a high of 9.0% in Northern Virginia in 2004.

From a consumer spending perspective, real retail sales had a strong showing in Virginia in 2003 with seven of eight major metro areas posting gains. Danville was the only metro area in which real retail sales declined for the year. Expectations in 2004 are for strong real retail sales growth in Northern Virginia (+8.2%), Richmond-Petersburg (+4.5%), and Hampton Roads (+4.5%). Real retail sales are also expected to advance in Charlottesville (+2.3%), Lynchburg (+1.0%), and Bristol (+1.2%). Forecasts for real retail sales in Roanoke and Danville show declining sales of 1.0% and 3.6%, respectively.

The housing market showed tremendous growth in 2003 for the state overall with new records for home sales and building permits. However, the results were mixed for Virginia's metro areas. The level of building permits issued increased in only five of eight metro areas. In 2003, building permits declined in Richmond-Petersburg, Charlottesville, and Danville. In 2004, six of the eight metro area housing markets are expected to show continued growth. Building permits are forecast to increase in Northern Virginia, Roanoke, Lynchburg, Charlottesville, and Danville. In contrast, the number of permits issued in Richmond-Petersburg, and Bristol is expected to decline.

Virginia Forecast Summary

Percentage Change From A Year Ago					Forecast	
Northern Virginia	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Nonagricultural Employment	5.8%	3.4%	-0.8%	1.5%	4.6%	4.3%
Wages and Salaries*	14.7%	6.8%	-1.7%	4.4%	9.0%	9.3%
Real Retail Sales	8.6%	-2.9%	-0.6%	5.7%	8.2%	10.6%
Building Permits	3.3%	-5.7%	10.8%	5.2%	4.1%	2.2%
Hampton Roads	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Nonagricultural Employment	1.6%	2.1%	0.4%	0.9%	1.7%	1.9%
Wages and Salaries*	6.0%	6.2%	3.8%	4.1%	4.2%	5.9%
Real Retail Sales	1.6%	-0.1%	1.9%	4.4%	4.5%	2.6%
Building Permits	-13.5%	7.3%	8.9%	2.5%	-0.0%	-4.1%
Richmond Petersburg	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Nonagricultural Employment	2.0%	2.6%	-0.5%	-0.2%	0.7%	1.6%
Wages and Salaries*	6.6%	4.6%	1.8%	1.5%	4.7%	5.6%
Real Retail Sales	4.4%	-3.1%	-2.0%	4.2%	4.5%	7.8%
Building Permits	-12.7%	13.8%	6.5%	-7.4%	-2.3%	-6.2%
Roanoke	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Nonagricultural Employment	1.8%	1.0%	-1.4%	-1.7%	1.2%	0.8%
Wages and Salaries*	4.9%	4.5%	2.8%	-0.8%	1.6%	2.2%
Real Retail Sales	-0.6%	-2.4%	-1.0%	4.1%	-1.0%	1.5%
Building Permits	0.7%	0.4%	6.5%	11.9%	5.8%	3.3%
Lynchburg	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Nonagricultural Employment	1.9%	-1.2%	-1.5%	0.2%	1.2%	2.3%
Wages and Salaries*	4.7%	0.6%	-1.3%	1.4%	4.4%	5.1%
Real Retail Sales	3.0%	2.6%	-7.8%	2.4%	1.0%	3.9%
Building Permits	-13.7%	10.6%	14.9%	15.8%	4.5%	0.2%
Charlottesville	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Nonagricultural Employment	3.2%	-0.1%	-1.3%	0.8%	1.3%	2.2%
Wages and Salaries*	9.3%	4.5%	3.0%	3.7%	7.7%	7.7%
Real Retail Sales	4.0%	-1.4%	1.0%	5.2%	2.3%	5.7%
Building Permits	-2.9%	1.4%	15.3%	-11.5%	9.2%	3.8%
Danville	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Nonagricultural Employment	2.0%	-1.4%	-1.1%	-1.6%	-0.5%	0.2%
Wages and Salaries*	3.7%	-1.1%	2.2%	0.8%	1.5%	2.1%
Real Retail Sales	2.2%	-4.4%	0.4%	-1.6%	-3.6%	1.0%
Building Permits	-2.6%	-2.0%	13.5%	-17.1%	2.0%	-6.3%
Bristol	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Nonagricultural Employment	2.1%	1.8%	0.5%	-0.1%	1.0%	1.1%
Wages and Salaries*	4.8%	6.8%	-1.8%	1.8%	3.1%	3.5%
Real Retail Sales	-1.0%	-2.9%	0.1%	1.8%	1.2%	0.5%
Building Permits	-4.4%	-11.9%	8.3%	4.4%	-5.0%	-1.0%
Non-MSAs	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Nonagricultural Employment	1.4%	-9.9%	-1.4%	-0.3%	3.7%	1.7%
Wages and Salaries*	6.6%	-1.1%	0.2%	1.7%	5.0%	5.8%
Real Retail Sales	1.8%	-1.4%	1.4%	2.7%	1.1%	2.7%
Building Permits	-8.0%	13.5%	23.3%	1.6%	8.5%	1.3%
VA-Totals	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Total Nonagricultural Employment	3.0%	0.0%	-0.6%	0.5%	2.8%	2.6%
Wages and Salaries*	9.8%	4.8%	0.3%	3.2%	6.5%	7.2%
Real Retail Sales	4.7%	-2.0%	-0.2%	4.5%	4.9%	6.7%
Building Permits	-4.7%	2.8%	12.1%	1.9%	0.7%	-5.3%

*Wages and salaries include some options that were exercised. Actual data are through third quarter 2003.

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(*Mrs. Bowen is on a leave of absence during her tenure with Governor Warner.)

"...a wise and frugal government, which shall restrain men from injuring one another, shall leave them otherwise free to regulate their own pursuits of industry and improvement, and shall not take from the mouth of labor the bread it has earned. This is the sum of good government, and this is necessary to close the circle of our felicities."

—Thomas Jefferson, 1801

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