

VIRGINIA'S ROLE IN  
NORTH AMERICAN  
ENERGY DEVELOPMENT

*Th. Jefferson*

VIRGINIA ECONOMIC  
FORECAST 2015



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# FOREWORD

The Thomas Jefferson Institute for Public Policy is proud to present its fifteenth annual report on the economy of the United States and Virginia – *Virginia Economic Forecast 2015*. This is part of the foundation’s efforts to bring well-researched studies to our state leaders in the public, private and non-profit sectors to assist them in better preparing for the future.

This year’s annual *Virginia Economic Forecast* was again researched and written by Dr. Christine Chmura and her team at Chmura Economics and Analytics headquartered in Richmond. This firm is the state’s leading private economic consulting group specializing in quantitative research, traditional economics, workforce and economic development, and software design.

*Virginia Economic Forecast 2015* 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. We are proud that this year’s *Forecast* is being electronically distributed by four of the state’s most important business associations: the Virginia Chamber of Commerce, Virginia National Federation of Independent Business, Virginia Retail Federation and the Virginia Manufacturers Association. This year’s public policy section is entitled, “Virginia’s Role in North American Energy Development.” It is an analysis of the huge potential we are seeing in the energy boom taking place in our Northern Hemisphere and how Virginia can gain significant economic benefit from it. This year’s *Forecast* describes the continued, but slow, improvement in our economy and projects cautiously that improvement will continue although more slowly than anyone wants.

Last year’s *Virginia Economic Forecast* anticipated the modest and uneven growth in 2013 due in part to federal spending cuts. Government spending contracted as forecast in 2013, though the contraction was smaller than the projected decline (-2.0% versus a projection of -3.2%). In turn, real gross domestic product expanded at a slightly faster 2.2% rate compared to Chmura’s projection of 1.8% growth. Consumer spending was right on target (+2.4% versus a projected +2.2%), while residential investment was slightly weaker than expected (+11.9% versus a projection of +13.1%). In Virginia, job growth was modest, as expected, advancing 1.0% compared to projected growth of 0.8%. Building permits outperformed expectations (+21.6% versus a forecast of +16.1%), while real retail sales rose less than expected (+0.1% versus the expected +2.4%).

This year’s *Virginia Economic Forecast* is sponsored by Cassaday and Company, a nationally recognized investment advisory and financial planning company, headquartered in McLean. This company was recognized as *Barron’s Top 100 Independent Advisors 2014*. Steve Cassaday is a member of our Board of Directors here at the Thomas Jefferson Institute and a well-respected business leader here in our state and nationally. Nothing in this report should be considered as supporting or opposing any legislation. The opinions are those of the authors and not necessarily those of the Thomas Jefferson Institute, its Board of Directors, or Cassaday and Company as the sponsor of this year’s *Forecast*.



A handwritten signature in black ink that reads "Michael Thompson". The signature is fluid and cursive, written in a professional style.

Michael Thompson, Chairman & President  
Thomas Jefferson Institute for Public Policy  
December 2014



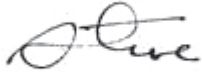


# INTRODUCTION

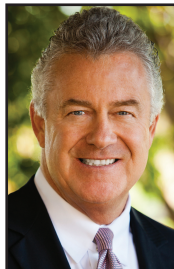
It is a distinct privilege to present the Virginia Economic Forecast for your review. Cassaday & Company, Inc. is proud to sponsor this publication again in 2015. The forecast is a versatile tool that provides insights and perspectives that will prove invaluable for businesses, associations and policy makers.

This is one of many pieces produced under the auspices of The Thomas Jefferson Institute for Public Policy but stands out due to its broad based overview of the economics of the Commonwealth based on the work of Chmura Economics & Analytics. This year's report focuses on the energy boom taking place in the Northern Hemisphere and how Virginia can capitalize on this opportunity.

As a board member I am grateful that The Thomas Jefferson Institute for Public Policy is able to provide this valuable publication, free of charge, for your use. I hope that you will find the annual Virginia Economic Forecast to be an important tool in planning, developing and executing your business strategy.



Stephan Quinn Cassaday, CFP<sup>®</sup>, CFS  
President



**CASSADAY  
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INDEPENDENT WEALTH MANAGEMENT



# EXECUTIVE SUMMARY

## The Nation

- Five years after the end of the national recession, U.S. employment has surpassed its pre-recession peak and labor market conditions continue to improve moderately. Annualized real gross domestic product (GDP) growth has exceeded 3% in four of the last five quarters but only seven times out of the 21 quarters since the recovery began. Employment has grown for fifty consecutive months, and 2,506,000 nonfarm payroll jobs have been added since January. The overall impact on the economy of an improving labor force has been dampened by underemployment and stagnant wages. The drop in gasoline prices since May 2014, however, should boost consumer spending.
- The U.S. recovery will likely be dampened in 2015 by federal spending cuts and weak global growth. Across the board federal government spending cuts, a struggling recovery in Europe, a recession in Japan, and decelerating growth in China pose downside risks to U.S. economic growth.
- Chmura Economics & Analytics forecasts real GDP to grow 2.4% in 2014 and 3.4% in 2015. Employment is expected to expand 1.8% in 2014, followed by 1.7% growth in 2015. Consumer spending grew 2.4% in 2013 and is expected to grow 2.4% and 2.8% in 2014 and 2015, respectively. Growth in residential real estate and investment in commercial structures is forecast to be moderate in 2014 with continued growth expected in 2015. Inflation remains under control and interest rates are forecast to remain historically low. The Federal Reserve Bank is expected to raise the federal funds rate target after the second quarter of 2015.

## North American Energy Development

- All three North American countries— Mexico, Canada, and the United States—share the same strategic goal of achieving energy independence for the continent. However, reaching that potential requires different approaches in each country as all three countries are leveraging their own competitive advantages.
- In Mexico, the primary issue is to increase production capacity, and the government is undertaking an ambitious reform in the energy sector, allowing foreign and private investments in resource exploration, extraction, and processing. The focus in Canada is infrastructure development that supports energy production and export, with multiple planned pipeline projects leading to east and west coast as well as Gulf of Mexico. In the United States, hydraulic fracking has resulted in an oil/natural gas boom that has reduced American reliance on foreign oil. One of the new development focuses is to grow liquefied natural gas (LNG) production and export capacity.
- Virginia can also play an important role in North American energy development by serving as a vital connection between domestic energy production and exports to European/Asian markets through its port. The Port of Virginia is one of only two East Coast ports currently equipped for the larger ships that will pass through the expanded Panama Canal. Its close proximity to the large reserve of shale gas in West Virginia, Pennsylvania, and Ohio provides the shorter and cost-efficient route to the export market. In addition, with the recent approval by the federal government to allow for possible exploration of gas and oil off the Atlantic coast, the Virginia's port is poised to become "the energy capital of the East Coast" in the long term.





## Virginia

- Current estimates indicate the Commonwealth has finally surpassed its pre-recession peak level of employment. Employment expanded 0.4% (+14,998 jobs) over the year ending October 2014, compared with 2.0% growth in the nation. Since May 2011, the pace of year-over-year job growth in the nation has exceeded the pace in Virginia, and the United States passed its previous peak a few months before Virginia. This contrasts with the period from October 2008 through November 2009 when jobs in both the state and nation were contracting and the pace of job losses in the nation was at least one percentage point faster than in Virginia in all but one month.
- Over the year ending October 2014, most of the job gains in Virginia came from education and health services, which added an estimated 16,917 jobs. Job losses over this period were largely concentrated in professional and business services (-8,660 jobs).
- The professional and business services sector and high-tech sectors in Virginia are relatively more dependent on Department of Defense (DoD) spending than in the nation overall, and are likely being impacted by federal spending cuts. Professional and business services employment declined 1.3% in Virginia over the year ending October 2014; in contrast, employment in this sector rose 3.6% in the nation over the same period. Between the first quarter of 2010 and the first quarter of 2014, level-one high-tech employment has contracted 0.9% in the state, compared with 9.1% growth in the nation.
- Following a slow rebound from the recession, the housing market in Virginia plateaued in 2014. The Virginia Association of Realtors reported that 100,058 homes were sold in the state in 2013, a 10.0% increase from 2012; but sales have been consistently lower in 2014 than in 2013 through the third quarter. The median sales price in the third quarter of 2014 was \$260,000, up 2.4% from a year earlier. Residential building permit activity also plateaued. After jumping 21.6% in 2013, single-family building permits in Virginia are expected to decline 9.1% in 2014.



VMA is the only statewide, non-government trade association dedicated to manufacturers.

VMA's four service areas are:

1. **GOVERNMENT AFFAIRS/LOBBYING**
2. **BUSINESS PRODUCTS/SERVICES**
3. **WORKFORCE DEVELOPMENT**
4. **NETWORKING/PROFESSIONAL DEVELOPMENT**

Since 1922, we have exclusively served as *Industry's Advocate*<sup>™</sup>. Our mission is to create the best environment in the United States for world-class advanced technology businesses to manufacture and headquarter for maximum productivity, profitability and competitiveness.

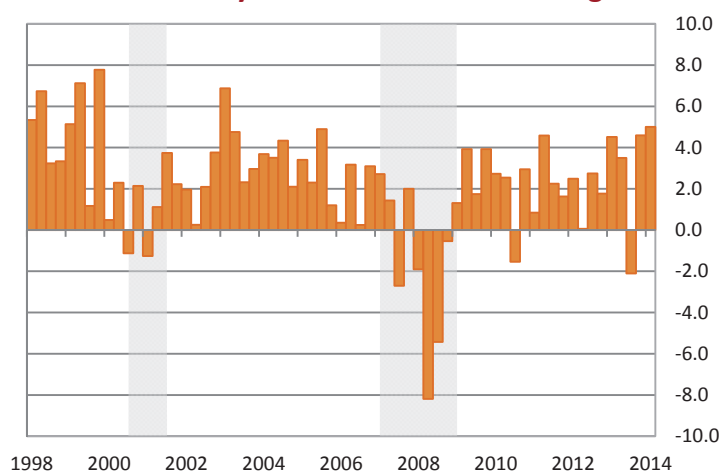
## QUICK FACTS

- **VMA is the only statewide association exclusively dedicated to small, medium, and large manufacturers and their suppliers.**
- **VMA has regulatory and government affairs services focused on state, local and federal levels of government.**
- **VMA is member driven with 9+ standing committees for members to participate in to shape public policy for Virginia's industrial sector.**
- **VMA offers over 20 networking and professional development events a year.**
- **VMA offers over a dozen discount business services, worth thousands in cost savings per year, to members.**
- **VMA has its own workforce development division focused on closing the skills gap for manufacturing occupations and industry image-building.**

## Beyond Recovery: Moderate Expansion

Following sluggish and uneven growth since 2009, economic activity expanded at a moderate pace for much of 2013 and 2014. Real gross domestic product (GDP) increased at an annualized pace of 2.2% in 2013 with a low of 1.8% in the second quarter and a high of 4.5% in the third quarter. Real GDP contracted at an annualized rate of 2.1% in the first quarter of 2014, impacted by more severe-than-usual winter weather, before rebounding in the second and third quarters to increase at annualized rates of 4.6% and 5.0%, respectively.<sup>1</sup> Annualized GDP growth has exceeded 3% in four of the last five quarters, but only seven times out of the 21 quarters since the recovery began.

**Real Gross Domestic Product  
Quarterly Annualized Percent Change**



Source: Bureau of Economic Analysis

Five years after the end of the national recession, U.S. employment surpassed its pre-recession peak and labor market conditions continue to improve. From December 2007 through February 2010, 8.7 million people lost their jobs in the nation. Since then, almost 10.4 million jobs have been added, with nonfarm employment in November 1.2% above its previous peak. Reaching pre-recession employment levels, however, does not take into account growth in the labor market due to new job-seekers and neither does it account for the reduction due to individuals who retire. As of the end of November 2014, the U.S. has an estimated gap of 4.9 million jobs needed to reach pre-recession employment levels while accounting for these changes in the potential labor force.<sup>2</sup>

Employment has risen for fifty consecutive months. In 2013, nonfarm employment added an average 194,000 jobs a month. Through November, the average monthly gain in 2014 has risen to 241,000 jobs, which translates into 2,506,000 new jobs since January 2014. In more positive labor market news, initial unemployment claims have steadily declined since the beginning of 2009 and are at their lowest level since 2000 as of the beginning of November 2014.

The unemployment rate stood at 5.8% as of November 2014, down 1.2 percentage points from a year earlier. In comparison, the unemployment rate was 4.7% in November 2007, before the recession. The Labor Department's U-6 rate, a more inclusive measure which accounts for people who have stopped looking for work or cannot find full-time jobs, decreased 0.1 percentage point to 11.4% and has fallen 1.7 percentage points since November 2013. By comparison, the U-6 unemployment rate was 8.4% in November 2007, before the start of the recession.

The Dow Jones Industrial Average has rebounded strongly since the first quarter of 2009 to reach record highs, but concerns about global economic activity and central-bank policy have increased volatility.

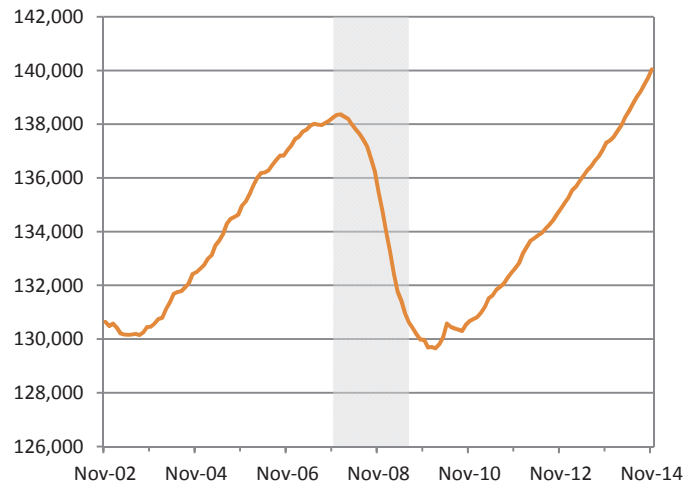
<sup>1</sup> The third quarter GDP is based on the third estimate from the Bureau of Economic Analysis (BEA).

<sup>2</sup> Source: The Hamilton Project at the Brookings Institute, [http://www.hamiltonproject.org/jobs\\_gap/](http://www.hamiltonproject.org/jobs_gap/). Retrieved 12/8/2014.





## Nonfarm Employment



Source: Bureau of Labor Statistics

## Monetary Policy

The federal funds rate has been virtually 0% since December 2008. Moreover, as of October 29 2014, the Federal Open Market Committee (FOMC) press release continued to indicate that:

*... the current 0 to 1/4 percent target range for the federal funds rate remains appropriate... The Committee anticipates, based on its current assessment, that it likely will be appropriate to maintain the 0 to 1/4 percent target range for the federal funds rate for a considerable time following the end of its asset purchase program this month, especially if projected inflation continues to run below the Committee's 2 percent longer-run goal, and provided that longer-term inflation expectations remain well anchored.*

The FOMC minutes also noted that "labor market conditions continued to improve" and that "the underutilization of labor had continued to diminish," but qualified that underemployment is still an issue.

*...a number of participants judged that the large number of individuals working part time for economic reasons and the continued drift down in the labor force participation rate suggested that the unemployment rate was understating the degree of labor market underutilization.*

In addition, the FOMC has gradually cut its bond-buying program down from \$85 billion monthly since January 2014 and voted to end the program in October. The October 29 press release explains:

*...there has been a substantial improvement in the outlook for the labor market since the inception of its current asset purchase program. Moreover, the Committee continues to see sufficient underlying strength in the broader economy to support ongoing progress toward maximum employment in a context of price stability. Accordingly, the Committee decided to conclude its asset purchase program this month.*

Even though the labor market is improving, inflation below the Federal Reserve's 2% inflation target provides justification for continued accommodative policy. The core personal consumption expenditure (PCE) index, the Federal Reserve's preferred measure of inflation, increased 1.6% over the year ending October 2014. In addition, lower energy prices are expected to hold down inflation in the near term.



## Forecast

Chmura Economics & Analytics forecasts real GDP to grow 2.4% in 2014 and 3.4% in 2015. Employment is expected to expand 1.8% in 2014, followed by 1.7% growth in 2015.

Consumer spending, which accounts for about two-thirds of GDP, continues to contribute moderately to growth. Consumer spending rose 2.4% in 2013. Spending in the third quarter of 2014 increased at an annualized rate of 3.2% and is forecast to rise 2.4% and 2.8% in 2014 and 2015, respectively.

Residential real estate and nonresidential structures were strong contributors to economic growth in 2013, but recovery in the housing sector has been slow in 2014. Residential investment expanded 11.9% in 2013, but investment in residential structures is forecast to expand only 1.6% in 2014 and 5.3% further in 2015. Investment in commercial structures declined 0.5% in 2013 after growing 13.2% in 2012. Growth in investment in commercial structures is forecast to accelerate to 8.3% in both 2014 and 2015.

With inflation remaining under control, interest rates at the long end of the curve are forecast to increase only slightly over the year. The consumer price index rose a modest 1.5% in 2013 and is forecast to rise 1.8% in 2014 and 2.0% in 2015. The Fed is expected to hold the federal funds rate target near zero until the third quarter of 2015 due to the slow economic growth. Longer-term yields are projected to remain low with the 10-year Treasury yield averaging 2.5% in 2014 and 2.8% in 2015.

Chmura expects the national unemployment rate to average 6.2% in 2014, 5.3% in 2015, and 4.9% in 2016. WTI crude oil is assumed to average \$70.00 per barrel in 2015 compared to about \$94.00 per barrel in 2014.

## Balanced Risks to the Forecast

The risks that the economy will grow slower or faster than our forecast are fairly balanced. On the negative side, continued federal government spending cuts are damping economic growth; and federal-dependent states such as Virginia are bearing the brunt of those cuts. Across-the-board budget cuts known as the sequester kicked in on March 1, 2013 and remain in effect until Congress enacts new legislation. Federal agencies required workers to take unpaid furlough days because of the budget cuts, and the Department of Defense in particular has had to make significant cuts in contract spending and compensation. Additional spending reductions by the federal government will continue to drag down economic growth over 2015 under current legislation.

The struggling euro zone economy, a recession in Japan, decelerating growth in China, and a strengthening dollar will create headwinds for U.S. economic growth by reducing demand for U.S. exports. A struggling euro zone economy impacts the United States by depressing demand for U.S. exports from our European trading partners, while the price of U.S. imports from Asia could increase as economies slow. The strengthening dollar may also weigh on U.S. exports.

There are some optimistic scenarios under which the economy may grow faster than forecast. The momentum in the economy is on the side of continued growth with the manufacturing sector expanding 1.4% over the year ending with November 2014 and the residential real estate sector continuing to show modest improvement. In addition, the drop in gasoline prices will likely boost consumer spending during the all-important holiday selling season. The national average price of a gallon of regular gasoline fell from \$3.68 in May 2014 to \$3.38 in September, and \$2.81 as of the last week in November according to AAA. Another positive factor that may play a role in boosting economic growth more than expected is the historically low interest rates that continue to support spending on durable goods and homes.





## Chmura Economic Forecast

	Actual		Forecast		
	2012	2013	2014	2015	2016
	Percent Change				
Real Gross Domestic Product	2.3	2.2	2.4	3.4	3.7
Consumption Expenditures	1.8	2.4	2.4	2.8	2.9
Gross Private Domestic Investment	9.2	4.9	5.8	7.6	8.7
Residential Investment	13.5	11.9	1.6	5.3	7.8
Nonresidential Investment	7.2	3.0	6.5	8.7	9.8
Producer's Durable Equipment	6.8	4.6	7.0	10.8	12.7
Structures	13.2	-0.5	8.3	8.3	8.9
Intellectual Property Products	3.9	3.4	4.5	5.3	5.6
Government Expenditures	-1.4	-2.0	0.0	1.6	1.4
	Trade Deficit (Billions of 2009 Dollars)				
Net Exports, Goods & Services	-452.6	-420.5	-447.2	-460.0	-465.2
	Percent Change				
Consumer Price Index	2.1	1.5	1.8	2.0	2.2
	Yields (%)				
Federal Funds Rate	0.1	0.1	0.1	0.4	2.4
Prime Rate	3.3	3.3	3.3	3.5	5.4
10-Year Treasury	1.8	2.4	2.5	2.8	4.6
30-Year Conventional Mortgage	3.7	4.0	4.2	4.5	6.2

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# VIRGINIA'S ROLE IN NORTH AMERICAN ENERGY DEVELOPMENT

## Energy Development in North America

Private and public sector leaders in energy, infrastructure, transportation, logistics, and border facilitation came together on August 26, 2014 at the North American Sustainable Economic Development Summit in Las Colinas-Irving, Texas to address the challenges and opportunities presented in North America.<sup>1</sup> The strategy to secure North American energy independence was a centerpiece of the summit. Another key topic was the economic ramifications from the Panama Canal expansion. Both of those developments are directly related to Virginia.

All three North American countries (and partners in the North America Free Trade Agreement, or NAFTA)—Mexico, Canada, and the United States—share the same strategic goal of achieving energy independence for the continent. That means reducing reliance on imported oil from Middle Eastern and other countries, while increasing energy cooperation and integration throughout North America.

Studies show that there are sufficient energy reserves in North America to achieve energy independence. However, reaching that potential requires different approaches in each country. In Mexico, the primary issue is to increase production capacity, and the government is undertaking an ambitious reform in the energy sector. The focus in Canada is infrastructure development that supports energy production and export. In the United States, hydraulic fracking has resulted in an oil/natural gas boom, and one of the new development focuses is to grow liquefied natural gas (LNG) production and export. All three countries are leveraging their own competitive advantages to strengthen North America's resolve toward energy dependency to support sustainable economic growth.



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<sup>1</sup>Unless noted otherwise, all data and charts in this article come from the report: First North American Sustainable Economic Development Summit, Energy, Infrastructure, Transportation, Logistic and Border Facilitation, by The Center for North American Sustainable Economic Development. This is a project of the U.S.-Mexico Cultural & Educational Foundation, United States-Mexico Chamber of Commerce.



# North American Energy Market





## Mexico: Energy Reform

Mexico's government is currently undergoing changes with proposals for eleven constitutional reforms that will affect a wide range of industries and can result in a profound transformation of its economy. The three main objects of the reform efforts are increasing productivity to boost economic growth, reinforcing the rights of Mexicans, and strengthening Mexico's democratic regime.

One of the reforms in Mexico is aimed at significantly boosting its energy production. Currently, Mexico is one of the leading energy producers in the world. For example, Mexico

- Is the 9th-largest oil producer in the world
- Exports 850,000 barrels of crude oil a day to the U.S. for processing
- Is the United States' number one supplier of gasoline and natural gas
- Has the 6th-largest recoverable shale gas reserve in the world

Energy reform is necessary in Mexico to meet growing demand from a fast-growing population. In 2010, Mexico's population was close to 114 million. Based on a 2007 estimate, the population will grow to 130 million in 2027, with 88% living in urban areas. This population increase will expand vehicle usage from the current 29 million to 63 million by 2027. Despite being a leading energy producer, it is estimated that by 2019 or 2020, Mexico will move into an energy deficit position. Strong reform can ensure that energy production from Mexico can meet growing demand and maintain energy independence in the future.

The Mexican government passed twelve laws that aim to achieve energy reform through nine initiatives that could dramatically increase energy production in the country. Moreover, existing regulations are being strengthened to ensure necessary investment from the government to the energy sector.



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## Mexico Energy Reform

Act		The Nine Initiatives
1	Hydrocarbons Act	Hydrocarbons Decree
2	Foreign Investment Act	
3	Mining Act	
4	Public – Private Association Act	Electricity Decree
5	Electricity Industry Act	
6	Geothermal Energy Act	
7	National Waters Act	Geothermal Decree
8	National Agency for Industrial Safety and Environmental Protection in the Hydrocarbon Sector Act	
9	Petróleos Mexicanos Act	State-Owned Productive Enterprises Decree
10	Comisión Federal de Electricidad Act	
11	Federal State Owned Companies Act	
12	Public Sector Purchasing, Leases and Services Act,	
13	Public Works and Related Services Act	
14	Coordinated Energy Regulators Act	Regulators' Decree
15	Federal Public Administration Act	
16	Hydrocarbon Act	Fiscal Decree
17	Federal Duties Act	
18	Fiscal Coordination Act	
19	Mexican Oil Fund for Stability and Development Act	Mexican Oil Fund Decree
20	Federal Budget and Fiscal Responsibility Act	
21	Public Debt Act	Budget Decree

# VIRGINIA CHAMBER

THE VOICE of BUSINESS

Building upon a strong foundation, we invite you to join us in shaping the future of **Virginia** business.

## Representing **your** interests in Richmond & Washington

As the largest business advocacy organization in the Commonwealth, the Virginia Chamber ensures the voice of businesses across the state – businesses like yours – are loud and clear before our state and federal lawmakers.

Our leadership in the policy arena combined with a powerful new arsenal of legislative and grassroots tools enable us to represent your interests and protect your business from stifling regulation and antibusiness legislation.

We invite you to join us in driving a strong pro-business agenda that helps grow your business and Virginia's economy.

Visit [www.vachamber.com](http://www.vachamber.com) to learn more.

The key to Mexico's energy reform is to allow private or foreign enterprises to explore and extract oil and gas resources in the country. For example, Mexico will enable domestic and foreign firms to drill in deep water fields and shale beds.

Even with the reforms, the government still maintains a level of control. Specifically, entitlements—the right to explore and extract hydrocarbons on behalf of the State—were allocated to Mexico's State Productive Enterprises. Mexican Petroleum (Pemex) will become a State Productive Enterprise. The reform will provide Pemex with technical and management autonomy, while maintaining the State's ownership. Pemex will be able to contract debt and set wages for the company as well as for its affiliates and subsidiaries. By this arrangement, the State will assume the role of owner without directly intervening in its administration.

Exploration and extraction contracts will be signed with Pemex when other private or foreign companies are involved. Contracts will be awarded through public bidding processes to the party offering the best terms for the State, which retains a direct participation up to 30%. Those reform efforts are expected to speed up the approval and license process for new exploration and extraction.

Outside energy exploration and extraction, energy reform also involves energy refining and processing. Currently, Mexico lacks the capacity for oil refining and natural gas processing due to insufficient investment. As a result, 29% of natural gas, 45% of gasoline, and 75% of petrochemicals are imported. The new energy reform will allow private investment in construction and operation of oil refineries and petrochemical centers.

While those initiatives aim to dramatically increase the extraction and processing of fossil fuel energy resources, Mexico's energy reform are also focused on attracting investment in renewable energy sectors as well as energy conservation. Initiatives in this area will bring many opportunities in construction and transportation—including new standards for buildings, lighting systems, and equipment. There are ample opportunities for private and foreign investment in terms of energy-efficient technologies.

## Canada: Infrastructure Development

Like Mexico, Canada is also one of the most resource-rich countries in the world. Canada has the second-largest proven resources of oil and the largest estimated oil reserves in the world. In addition, Canadian coal reserves are the fifth-largest in the world. With such rich energy resources, Canada is quickly becoming an energy nation. The oil and gas sector in Canada is a \$160 billion-a-year industry, which is ten times the size of any other resource industry in Canada, including agriculture. Canada's oil production will continue to grow rapidly, and is expected to double in the next twenty years.

Canada is the third-largest producer of natural gas in the world; and it is the second-largest exporter of natural gas in the world, after Russia. Currently, there are twelve proposals for natural gas exploration; of these, up to three will advance over the next five years. In addition, Canada is the third-largest producer of hydroelectricity in the world, after China and Brazil. Canada has tremendous capacity to double the production of hydroelectricity.

Canada is the smallest country in NAFTA, in terms of population. In 2013, its population was only 11% of the United States population, and 30% of Mexico's population. It is apparent that energy production in Canada far exceeds its domestic demand. As a result, the challenge for Canada's sustained energy development is to expand its export market. This will ensure that its energy products can be transported to the United States, Mexico, and other global markets. As a consequence, new transportation infrastructure development is another important focus for Canada.



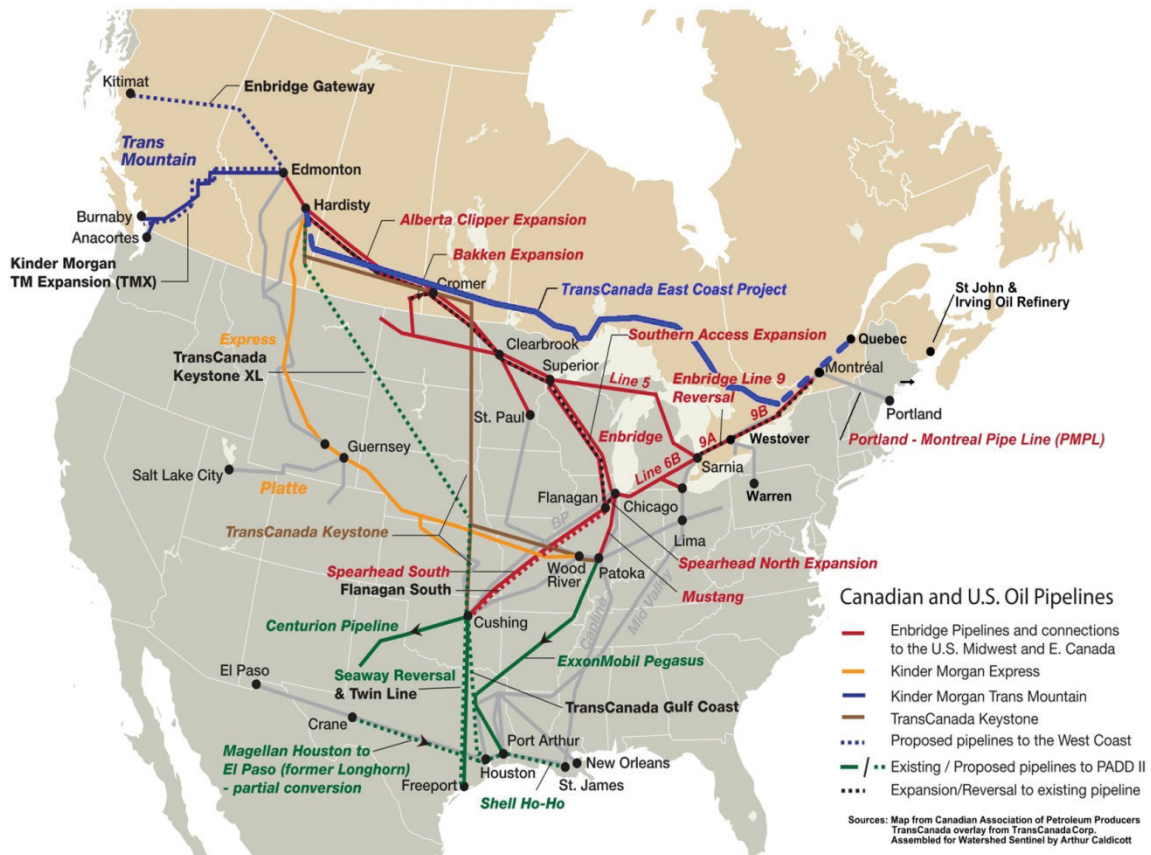


Traditionally, the United States has been the main importer of Canadian energy products. As the United States develops its domestic production, its imports from Canada will dwindle. For that reason, the energy sector in Canada is attempting to develop infrastructure for export to other countries. There are pipeline proposals to the west, south, east, and even to the north, if the Arctic Ocean becomes more navigable. Through those potential new pipelines, the Canadian energy sector hopes to achieve market diversification by expanding exports to new markets in North America, Asia, and Europe.

One controversial project—the Keystone XL Pipeline—is part of Canada’s effort to reach the world market. Canada’s proposal for this pipeline from Alberta to the Gulf of Mexico would transport 850,000 barrels of oil a day for refining or shipping to domestic or international destinations. However, there are strong objections to such pipelines from U.S. environmental groups and some members of Congress. The recent mid-term election resulted in the Republican Party controlling both houses of Congress, and they have vowed to advance legislation to get this pipeline approved in 2015.

Keystone is only one of the most high-profile pipelines under consideration in Canada. The following map shows that there are also proposed new pipelines from Alberta to the West Coast, where energy products can be transported to Asia. Pipelines to Quebec on the East Coast of Canada are also proposed, which can facilitate energy export to European countries.

## Canadian Pipeline Development



## United States: On the Road to Energy Independence

In the United States, new technologies have allowed for increased exploration of previously unattainable resources. As a result, America's shale gas and oil are changing the global energy market.

Hydraulic fracturing, or "fracking," the process of extracting natural gas from shale deep within the earth, has been around since 1947. It was not until about 2008 that its impact on the U.S. energy supply became notable. Meanwhile, there was rising global demand from emerging economies such as China, India, and Brazil. The rising price of oil and gas in the mid-2000s made the fracking technology economically feasible. Turmoil in the Middle East also heightens the need for the United States to seek supply domestically. Combined, those influences have encouraged increased exploration of previously unattainable resources.

America is in the midst of an oil and gas boom. The United States will surpass Russia and Saudi Arabia as the world's top oil producer by 2015 and will be close to energy self-sufficiency in the next two decades. This fact will motivate the United States to consider the export market. Unlike Canada, the largest export potential for the United States is not oil but natural gas. That is because even when there is surplus oil production, current U.S. law prohibits export of crude oil. To reach the global market, natural gas needs to be liquefied for transport by container ships. As a result, research will continue to increase in support of liquefied natural gas (LNG) development.

There is enormous demand for natural gas throughout the world. Growing economies such as India, China, South Korea, and Japan provide a market for this product in Asia. For example, following the devastating earthquake and resulting tsunami in 2011, nuclear energy in Japan is now being replaced with natural gas for electricity generation. Europe is another large market for U.S. LNG. Currently, Europe imports natural gas from Russia through various pipelines. However, recent conflicts in the Ukraine threaten stability in the region; and European countries prefer natural gas from friendly trade partners.

At this time, the LNG industry in the United States provides 100,000 jobs and is poised to grow rapidly. There are 23 LNG projects in queue in the United States. Big developments are happening for LNG today, and it is clearly the energy game-changer for the United States.

## North America: Sustainable Future

It is possible for North America to achieve energy independence. Canada has achieved it, and Mexico can meet its growing domestic demand through energy reform efforts. The rising U.S. energy output, combined with greater automobile fuel efficiency, will help reduce American dependency on foreign energy. If the U.S. continues to import oil in the future, it will likely come from Canada and Mexico, rather than from the Middle East. The shale gas revolution provides a new source of energy, and a bolster to the economy, for the United States.

American shale gas is changing the balance of competitiveness in the world economy, providing an unanticipated advantage: this inexpensive natural gas is fueling a U.S. manufacturing renaissance. Companies are building new plants at existing facilities, leading to more employment. While jobs were shifting offshore decades ago, factories and jobs are now returning to the United States.

American shale gas also has environmental benefits. Natural gas is a cleaner fuel for generating electricity than traditional coal. Throughout the country and in Virginia, traditional coal-burning power plants are now being powered by natural gas as one of the main strategies for power companies to reduce pollution and greenhouse gas emission. In addition, lower energy prices, as a result of ample domestic supply, benefits consumers and business alike.



## Virginia and North American Energy Development

In the past twenty years, Virginia businesses have benefited greatly from NAFTA and have experienced dramatic increases in its exports to Mexico. According to the U.S-Mexico Chamber of Commerce, total Virginia exports to Mexico increased 386% from 1993 to 2013. In 2013, Mexico was the third-largest destination for Virginia exports—second only to Canada and China.

As shown in the table below, total Virginia exports to Mexico reached \$1.05 billion in 2013. Mexican markets are increasingly important to Virginia businesses. In 2010, Mexico was the fifth-largest export market for Virginia. It climbed to fourth-largest in both 2011 and 2012; it further ascended to third place in 2013.

<b>Top 10 Virginia Export Markets (2013)</b>	
	<b>Amount (\$Million)</b>
Canada	\$3,228
China	\$1,872
Mexico	\$1,052
United Kingdom	\$996
Germany	\$790
Japan	\$576
The Netherlands	\$570
Singapore	\$526
Taiwan	\$458
Belgium	\$435
<b>Top 10 Markets Total</b>	<b>\$10,503</b>
<b>Total Virginia Export</b>	<b>\$17,945</b>

Source: U.S. Census

Virginia can also play an important role in North American energy development (summarized above). As North America is approaching or exceeding energy self-sufficiency, the energy sector will seek overseas markets. In this global context, Virginia can serve as a vital connection between domestic energy production and exports to European/Asian markets through its port. The Port of Virginia is a valuable asset; it is one of only two East Coast ports currently equipped for the larger ships that will pass through the expanded Panama Canal. The Master Plan of the Port of Virginia calls for the development of Craney Island Terminal, which could double the capacity of the Port of Virginia, which will enable the port to handle larger trade volume.<sup>2</sup> The Port of Virginia has already served as an energy exporting port, and the largest export commodity from the port is coal. With the role of coal projected to diminish in the U.S. economy, the Port of Virginia can become a gateway port for LNG export.

One advantage of the Port of Virginia is its close proximity to the large reserve of shale gas in West Virginia, Pennsylvania, and Ohio. For the North American energy sector, this would be an export port of choice. The close distance implies that there will be less pipeline to construct from shale gas fields to the port. In fact, a major pipeline project from West Virginia to the Hampton Roads Region (Atlantic Coast Pipeline) was recently announced. Though this project is solely for the domestic consumption of U.S. electricity producers and households, similar pipelines can be utilized to transport natural gas/LNG for export to European markets. As energy producers look for ports to supply European markets, the Port of Virginia could be their top choice.

The Port of Virginia could be used to export LNG to Asian market as well. Construction of pipeline from shale gas fields in West Virginia, Pennsylvania, and Ohio to the Pacific Coast or Gulf of Mexico ports can be extremely expensive. Energy producers in the eastern United States may choose to utilize east coast ports for Asian markets. Since the Port of Virginia is currently ready for the Panama Canal expansion, and is one of the closest ports to shale gas fields, it can also be a primary export port for the Asian market.

Various Ports on the east coast has recognized this opportunity. Currently, Dominion is constructing an LNG export plant in Maryland.<sup>3</sup> Virginia is the prime location for such LNG facility as well. In addition, with the recent approval by the federal government to allow for possible exploration of gas and oil off

<sup>2</sup>Source: The Port of Virginia: VPA 2040 Master Plan: Executive Summary, May 28, 2013.

<sup>3</sup>Source: <http://marcellusdrilling.com/2014/10/dominion-breaks-ground-on-cove-point-md-lng-export-facility/>





the Atlantic coast, and with studies showing large potential reserves waiting to be extracted, the Virginia's port is poised to truly become "the energy capital of the East Coast" in the long term.

While the Port of Virginia may not physically export oil and gas for Mexico energy producers, it can play integral roles in North American energy development. The premise for the Port of Virginia to serve as a gateway port is the energy self-sufficiency for the United States and North America as a whole. Without Mexican energy reform and expanded production, there will not be enough energy exports to European or Asian markets. Both Virginia and Mexico can benefit tremendously from North American energy development.



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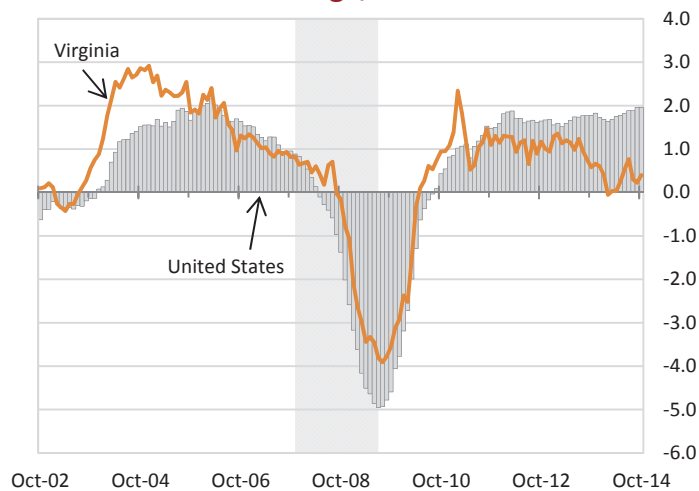
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# VIRGINIA ECONOMY

After a slow and uneven recovery from a severe national recession that ended June 2009, Virginia's employment is finally at pre-recession levels. Initial estimates indicate that Virginia has surpassed its previous peak level of employment and finally entered its "expansion" phase, albeit more slowly than the nation. Virginia's modest growth is expected to continue as additional federal spending cuts impact the state in 2015. Among other labor market indicators, initial unemployment claims have fallen below pre-recession levels. The progress of economic recovery is mixed around the state: six of the Commonwealth's metro areas have expanded beyond pre-recession employment levels, but four metros continue in the "recovery" phase.

**Employment Growth**  
Percent Change, Year-Over-Year



Source: Bureau of Labor Statistics

Virginia's year-over-year employment growth rate has lagged that of the nation since May 2011 due to federal government spending cuts and the state's dependence on the federal government. Over the year ending October 2014, total employment expanded 0.4% (+14,998 jobs) in the state compared with 2.0% growth in the nation. Prior to May 2011, the year-over-year pace of job growth in Virginia exceeded the pace in the nation for 40 consecutive months.

The total peak-to-trough employment decline was larger as a percentage of total employment in the nation than in Virginia, but U.S. employment reached its previous peak more quickly. Employment in the state peaked in January 2008 at 3,787,300 and dropped to a trough of 3,583,300 in February 2010, representing a 5.4% peak-to-trough decline. This

compares with a 6.3% decline in the nation. Initial estimates indicate that the nation surpassed its previous peak level of employment in May 2014 and continued rising to 1.0% above the previous peak as of October 2014. In contrast, initial estimates indicate Virginia surpassed its previous peak in July 2014 before declining in August and September 2014. Chmura's benchmark series suggests Virginia's initial employment estimates may be overly optimistic and will be revised downward to about 3,786,800 for July 2014—still below the previous peak level of employment.

There is wide variation among Virginia's ten metro areas in the recovery of job losses due to the recession, though only four metros are still considered to be in the "recovery" phase. Blacksburg, Charlottesville, Harrisonburg, Northern Virginia, Richmond, and Winchester have surpassed their previous peak level of employment and are considered to be in expansion. Lynchburg has the furthest to go to surpass its previous employment peak—employment continues to decline, falling 0.4% further below the region's previous trough as of October 2014. Among the other three metro areas, Hampton Roads (54%) and Bristol (54%) have recovered at least half of their job losses. Roanoke has regained 38% of its lost jobs.

In the near term, Virginia's job growth is expected to continue at a modest pace, dampened by the federal government's across-the-board budget cuts. On an annual average basis, employment in the state is projected to expand 0.3% in 2014 after increasing 1.0% in 2013. Employment growth is expected to accelerate slightly to 0.6% in 2015; this projected growth rate, however, remains well below the 1.7% annualized growth rate projected for the nation in 2015.

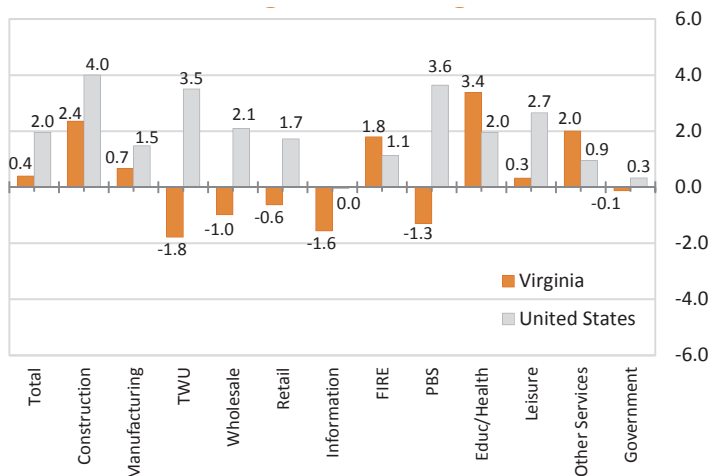


## Sector Job Growth

Over the year ending September 2014, six sectors posted job gains in Virginia, while employment contracted in six sectors. Most of the job gains in the state were in education and health services, which added 16,917 jobs over the year. The education and health services sector is historically the fastest growing in the state, averaging 3.1% annualized job growth over the past twenty years and growing significantly faster than the 1.1% annualized job growth of total employment over the same period. Finance, insurance, and real estate employment added 3,476 jobs over the year ending October 2014, growing 1.8%. The sector has averaged 1.4% annualized job growth over the past twenty years, and grew on a year-over-year basis in the state for 52 consecutive months. Two other sectors added at least 2,000 jobs over the year ending October 2013: construction (+4,376 jobs) and other services (+3,890).

Employment in the DoD-intensive professional and business services sector fell 1.3% (-8,660 jobs) in the state over the year ending October 2014. Employment in this sector grew 3.6% nationally over the same period. Professional and business services employment has contracted in Virginia on a year-over-year basis for 15 consecutive months. As of October 2014, employment in this sector accounted for 17.5% of employment in the state, and 27.1% of employment in Northern Virginia, compared with 13.9% of total U.S. employment.

**Employment Growth by Sector  
Percent Change, Year Ending October 2014**



Source: Bureau of Labor Statistics

Leisure and manufacturing also posted job gains over the year ending October 2014, while employment in five other sectors declined over the same period. The leisure sector added 1,209 jobs, while manufacturing grew by 1,543 jobs. After professional and business services, job losses over the year ending October 2014 were led by retail (-2,601 jobs). Employment in the transportation, warehousing, and utilities (-2,075); information (-1,101); wholesale (-1,096); and government (-879) sectors also declined year-over-year.

## Technology

During the recession, high-tech employment contracted at a much slower pace in Virginia than in the overall economy. From the third quarter of 2008 to the first quarter of 2010, high-tech industries shed about 13,300 jobs in the state for a 2.2% contraction. By comparison, high-tech employment in the nation posted a 6.7% peak-to-trough contraction over the same period. Between the first quarter of 2010 and the first quarter of 2014, however, high-tech employment—which is dependent on defense spending—has declined 0.8% in Virginia in contrast to 8.2% growth in the nation.





The latest data show high-tech employment declining in the state and almost every metro area. For the year ending with the first quarter of 2014, the high-tech industry shed 14,606 jobs in the state for a 2.5% contraction. Wages and salaries in high-tech industries grew over this period, up 0.5% compared with 2.1% growth in wages and salaries among all industries. High-tech employment declined in nine of the ten metro areas over this period. High-tech employment shrank in Blacksburg, Bristol, Charlottesville, Harrisonburg, Hampton Roads, Lynchburg, Northern Virginia, Richmond, and Roanoke over the year ending with the first quarter of 2014. Hampton Roads lost 2,034 high-tech jobs over this period, representing a 2.4% decline in high-tech employment in the region, while high-tech employment in Richmond declined 3.1% (-592 jobs). The Northern Virginia metro area lost 10,800 high-tech jobs over the same period, equivalent to a loss of 3.2% of high-tech employment in the region. In contrast, Winchester added 759 jobs, representing growth of 29.2% in high-tech employment in the region. As of the first quarter of 2014, Northern Virginia accounted for 56% of the state's high-tech jobs and 65% of its high-tech wages and salaries.

Level-one high-tech industries employ a higher percentage of technology-oriented occupations compared with level-two or level-three industries. Level-one industries contracted 2.2% in Virginia from peak to trough due to the recession, much less than the 7.3% contraction in the nation. Between the first quarter of 2010 and the first quarter of 2014, however, level-one high-tech employment has contracted 0.9%, compared with 9.1% growth in the nation. Over the year ending with the first quarter of 2014, the largest job gains among level-one industries in Virginia were posted in data processing, hosting, and related services (+771 jobs); software publishers (+209); and other information services (+161). Over the same period, eight of the twelve level-one industry groups shed jobs in the state, led by a loss of 3,270 jobs in computer systems design and related services and a loss of 2,546 jobs in architectural, engineering, and related services.

### High-Technology Growth in Virginia

NAICS	Industry	Employment				Wages and Salaries Thousands of Dollars*			
		2013Q1	2014Q1	Change	% Change	2013Q1	2014Q1	Change	% Change
	<b>Total Employment</b>	<b>3,593,228</b>	<b>3,593,441</b>	<b>213</b>	<b>0.0</b>	<b>48,056,268</b>	<b>49,069,276</b>	<b>1,013,008</b>	<b>2.1</b>
	<b>Total High Technology</b>	<b>590,557</b>	<b>575,952</b>	<b>-14,606</b>	<b>-2.5</b>	<b>15,830,208</b>	<b>15,914,692</b>	<b>84,484</b>	<b>0.5</b>
	<b>Level 1</b>	<b>276,335</b>	<b>269,104</b>	<b>-7,232</b>	<b>-2.6</b>	<b>7,341,341</b>	<b>7,333,721</b>	<b>-7,619</b>	<b>-0.1</b>
3254	Pharmaceutical and Medicine Manufacturing	3,106	2,708	-397	-12.8	76,753	78,092	1,339	1.7
3341	Computer and Peripheral Equipment Manufacturing	706	596	-110	-15.6	12,408	10,808	-1,600	-12.9
3342	Communications Equipment Manufacturing	1,206	1,221	15	1.2	25,896	26,118	222	0.9
3344	Semiconductor and Other Electronic Component Manufacturing	4,339	4,115	-224	-5.2	73,716	80,007	6,291	8.5
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	4,033	3,850	-183	-4.5	118,397	122,516	4,119	3.5
3364	Aerospace Product and Parts Manufacturing	3,396	3,254	-142	-4.2	88,544	92,772	4,228	4.8
5112	Software Publishers	4,876	5,085	209	4.3	151,983	167,360	15,378	10.1
5182	Data Processing, Hosting, and Related Services	10,675	11,446	771	7.2	249,692	327,024	77,333	31.0
5191	Other Information Services	8,255	8,416	161	2.0	126,864	162,750	35,886	28.3
5413	Architectural, Engineering, and Related Services	61,221	58,675	-2,546	-4.2	1,462,277	1,364,090	-98,186	-6.7
5415	Computer Systems Design and Related Services	148,091	144,821	-3,270	-2.2	4,267,863	4,220,908	-46,955	-1.1
5417	Scientific Research and Development Services	26,432	24,917	-1,515	-5.7	686,948	681,275	-5,672	-0.8
	<b>Level 2</b>	<b>179,912</b>	<b>176,393</b>	<b>-3,519</b>	<b>-2.0</b>	<b>4,545,233</b>	<b>4,607,108</b>	<b>61,875</b>	<b>1.4</b>
	<b>Level 3</b>	<b>134,310</b>	<b>130,455</b>	<b>-3,855</b>	<b>-2.9</b>	<b>3,943,634</b>	<b>3,973,862</b>	<b>30,228</b>	<b>0.8</b>

\* Includes some stock options that were exercised.

Note: Data in this table include both privately-owned and government-owned high-tech operations. Figures may not sum to totals due to rounding. Industries for which data are not disclosed are excluded from the table but not from the total high-tech figures.

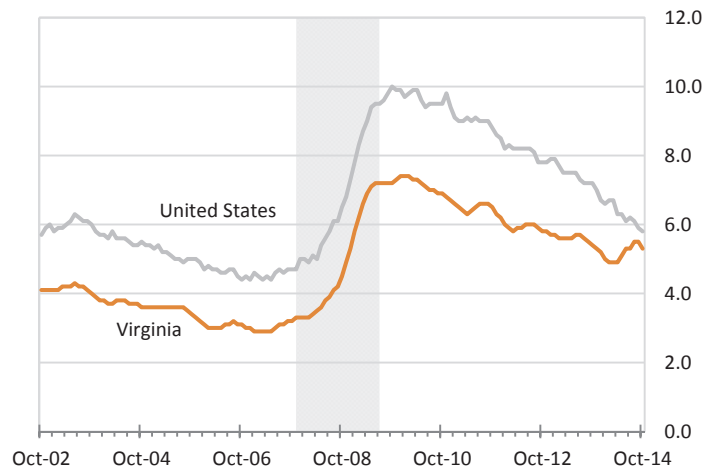
Source: Chmura Economics & Analytics and Virginia Employment Commission



## Labor Market

After peaking at 7.4% from December 2009 through February 2010, the unemployment rate in Virginia steadily trended downward to a low of 4.9% in the first quarter of 2014, before rising to 5.3% as of October 2014. Virginia's unemployment rate has been consistently below the national rate. The national unemployment rate peaked at 10.0% in October 2009 and has steadily trended downward to 5.8% in October 2014. Among the metro areas, the lowest unemployment rates in October 2014 were recorded in Northern Virginia (4.1%) and Charlottesville (4.3%)—the same metros that have had the two lowest unemployment rates in the state since December 2006. The highest metro area unemployment rates as of October 2014 were in Lynchburg (5.8%) and Bristol (5.7%).

### Unemployment Rate



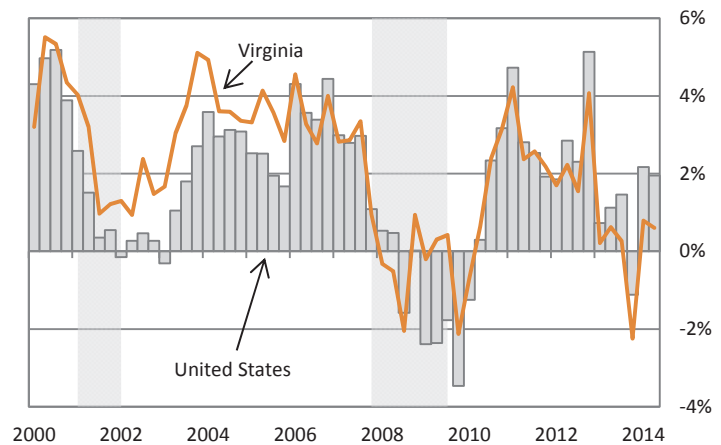
Source: Bureau of Labor Statistics

The moving average of initial unemployment claims in Virginia has fallen below pre-recession levels, a further indication of improvement in the labor market. The six-month moving average of initial unemployment claims in Virginia peaked in July 2009 at 47,083. Initial claims have receded sharply since, with the moving average falling 57% to 20,477 as of September 2014. By comparison, initial claims averaged about 22,000 per month in the Commonwealth in the two years leading up to the recession.

## Income

From 2012 to 2013, personal income advanced 1.2% in Virginia compared with 2.0% in the nation—Virginia's pace of growth ranked 41st among the fifty states. Personal income is made up of (1) net earnings; (2) dividends, interest, and rent; and (3) transfer receipts. Virginia's total income growth in 2013 trailed that of the nation due to weaker growth in net earnings—which expanded only 0.2% in the state compared with 1.8% growth in the nation. Over the past ten years, Virginia averaged 1.9% annualized growth in real personal income, outpacing the 1.7% annualized growth in the nation.

### Real Personal Income Growth Percent Change, Year-Over-Year



Source: Bureau of Economic Analysis

The proportion of income supplied by net earnings fell at a faster pace in the state than in the nation in 2013. Net earnings consist of wage and salary disbursements, other labor income, and proprietor's income. From 2012 to 2013, the proportion of income from net earnings fell 0.6 percentage points to 66.2% in Virginia while inching down in the nation from 64.2% to 64.1%. The percentage of income supplied by transfer payments (social security, unemployment compensation, welfare, disability payments,



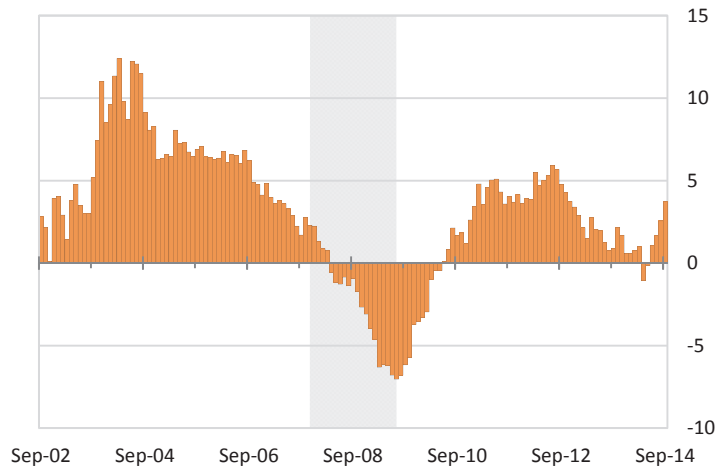
etc.) grew in both the nation and the state. From 2012 to 2013, the proportion of income provided by transfer payments inched up from 16.9% to 17.1% in the nation while it increased from 12.9% to 13.2% in Virginia.

Total wages and salaries in Virginia rose 1.1% in 2013 after increasing 3.1% in 2012. With continued growth at a moderate pace, wages and salaries growth is forecast to advance 2.1% in 2014 before accelerating to 3.1% in 2015. Wages and salaries are expected to grow in 2014 in all of the metro areas in Virginia and the pace of growth is expected to accelerate in every state metro area in 2015.

## Retail Sales

Consumer spending in Virginia continues to expand above pre-recession levels. Over the year ending September 2014, retail sales advanced 3.7% in the state as all ten metro areas posted expansions. The six-month moving average of retail sales peaked in Virginia in June 2007 before plunging 8.4% to a trough in August 2009. The moving average of retail sales surpassed its previous peak in early 2012, and as of September 2014, the moving average was 6.9% above the pre-recession peak. Metro area sales in September were higher than their previous peaks in all metro areas except Winchester.

**Virginia Retail Sales, Percent Change Year-Over-Year, Six Month Moving Average**



Source: Virginia Department of Taxation

On an annual average basis, real retail sales inched up 0.1% in 2013 after increasing 2.4% in 2012. Real retail sales are expected to improve 1.2% in 2014, boosted by low oil prices since May 2014, and to accelerate to 2.1% growth in 2015. All of the state metro areas are expected to experience real retail sales growth over 2014 and 2015 except Northern Virginia, as defense budget cuts continue to impact the region.

## Housing Market

Following a slow rebound from the recession, the housing market in Virginia plateaued in 2014. The Virginia Association of Realtors reported that 100,058 homes were sold in the state in 2013, a 10.0% increase from 2012, but sales have been consistently lower in 2014 than in 2013 through the third quarter. The median sales price in the third quarter of 2014 was \$260,000, up 2.4% from a year earlier.

A better measure of home prices is the Federal Housing Finance Agency's (FHFA) House Price Index, a weighted repeat sales index that is a true measure of price appreciation as it is not affected by changes in the size or quality of homes sold. According to the FHFA index, home prices increased 2.7% in Virginia in the second quarter of 2013 on a year-over-year basis;<sup>1</sup> this marks the sixth consecutive quarter of year-over-year gains in Virginia. Home prices appreciated at a much faster 5.8% pace in the nation over the year ending with the second quarter of 2014.

According to the FHFA index, Virginia home prices in the second quarter of 2014 are 12.2% below their peak that was reached in the second quarter of 2007. Among the metro areas, the largest declines in

<sup>1</sup>This is calculated using the FHFA's All-Transactions Index as opposed to their Purchase Only Index. The All Transactions Index augments purchase price valuations with appraisals from refinanced mortgages.

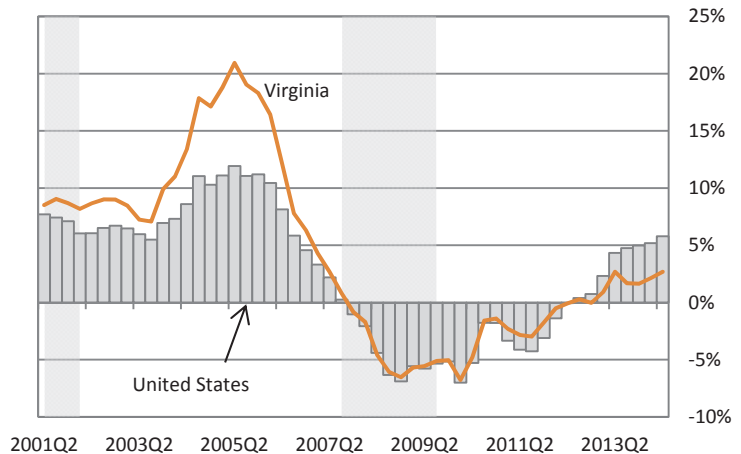




prices were recorded in Winchester (prices fell 35.4% from the peak reached in the second quarter of 2006 to the trough in first quarter of 2010) and the Washington DC tri-state metro (prices declined 25.3% from the peak in the fourth quarter of 2006 to the trough in the second quarter of 2011). As of the second quarter of 2014, home prices in all metro areas remain below their previous peaks.

Residential building permit activity provides additional support that the housing market plateaued in 2014. After jumping 21.6% in 2013, single-family building permits are expected to decline in Virginia by 9.1% in 2014 when all of the data have been released. Single-family building permits are forecast to inch up 0.9% in 2015. All of the metros in the Commonwealth with building permits data<sup>2</sup>, with the exception of Winchester, are projected to decline in 2014; building permits are expected to grow in every metro area except Northern Virginia in 2015.

**Home Price Appreciation  
Percent Change, Year-Over-Year**



Source: Federal Housing Finance Agency

## Metro Areas

Employment growth in Virginia is expected to remain modest in 2014 and 2015 due to the across-the-board cuts in federal spending. On an annual average basis, employment in Virginia grew 1.3% in 2011 before growth decelerated to 1.1% in 2012 and 1.0% in 2013. Statewide employment is forecast to expand just 0.3% in 2014 and 0.6% in 2015. Employment is expected to grow in every metro area in the state in 2015.

Employment in six of Virginia's metro areas is forecast to grow less than 1.0% in 2015. The slowest growth is projected in Lynchburg (+0.2%), following an expected contraction of 0.5% in employment in the region over 2014. In 2015, employment is also expected to expand modestly in Charlottesville (+0.4%), Roanoke (+0.4%), Hampton Roads (+0.6%), Northern Virginia (+0.6%), and Bristol (+0.7%). Over the year ending October 2014, employment declined on a year-over-year basis in Lynchburg (-0.5%) and Roanoke (-0.9%). Employment in Lynchburg has declined on a year-over-year basis for eleven consecutive months, falling to a new trough in April 2014 as the labor market recovery struggles to gain traction in the region. Over the year ending October 2014, employment edged up 0.3% in Northern Virginia and 0.8% in Hampton Roads—two areas of the state that are relatively more dependent on DoD spending. Employment in Virginia grew 0.4% over the same period, compared with 2.0% growth in the nation.

Metro areas with above-average job growth expectations for 2015 include Winchester (+1.7%), Harrisonburg (+1.6%), Richmond (+1.5%), and Blacksburg (+1.3%). Employment has expanded in Winchester on a year-over-year basis for 55 consecutive months, in Richmond for 53 straight months, and in Blacksburg for 49 months in a row. Over the year ending October 2014, Harrisonburg employment expanded the fastest among the metro areas, growing 2.0%. Employment grew 1.7% in Richmond, 1.0% in Winchester, and 0.8% in Blacksburg over the same period. The unemployment rate in Winchester was 4.6% in October 2014, third-lowest among the state metros. Harrisonburg had the fourth-lowest unemployment rate (5.0%), compared with an unemployment rate of 5.2% in Richmond, and 5.3% in Blacksburg. The unemployment rate in all four of these metro areas was below the national unemployment rate of 5.8% in October.

<sup>2</sup>Building permits data are not reported for the Blacksburg metro area.



Blacksburg, Charlottesville, Harrisonburg, Northern Virginia, Richmond, and Winchester have surpassed their previous peak levels of employment as of October 2014. Hampton Roads and Bristol have each regained 54% of their lost jobs, Roanoke has regained 38%, and Lynchburg continues to decline with employment in October 2014 falling 0.4% lower than the previous trough. Northern Virginia, which accounts for more than one-third of the state's jobs, is expected to have growth restrained to 0.1% in 2014 in large part due to federal government cuts. The region has been a driver in the state's recovery with traditionally above-average growth, but employment is forecast to grow on par with the state at just 0.6% in 2015. In contrast, national employment is expected to expand 1.7% in 2015.

## Virginia Forecast Summary: Most Likely Scenario Annual Average Change

	Actual			Forecast			Actual			Forecast	
	2011	2012	2013	2014	2015		2011	2012	2013	2014	2015
<b>Blacksburg</b>						<b>Northern Virginia</b>					
Total Employment*	2.2%	2.8%	1.2%	0.7%	1.3%	Total Employment*	2.0%	1.8%	0.9%	0.1%	0.6%
Wages and Salaries**	4.7%	4.9%	1.6%	2.8%	3.2%	Wages and Salaries**	3.7%	2.9%	0.6%	1.5%	3.0%
Real Retail Sales	4.7%	3.9%	-0.5%	1.3%	2.0%	Real Retail Sales	3.0%	2.9%	0.6%	-0.5%	2.2%
Building Permits***	NA	NA	NA	NA	NA	Building Permits	1.8%	23.7%	26.0%	-10.9%	-1.3%
<b>Bristol</b>						<b>Richmond</b>					
Total Employment*	1.9%	0.2%	-0.8%	0.0%	0.7%	Total Employment*	1.4%	2.0%	1.8%	1.2%	1.5%
Wages and Salaries**	0.5%	4.9%	-4.7%	2.3%	3.7%	Wages and Salaries**	3.4%	3.1%	2.1%	3.0%	3.3%
Real Retail Sales	2.6%	-1.2%	-4.4%	1.3%	2.3%	Real Retail Sales	2.5%	2.9%	-1.3%	3.1%	3.1%
Building Permits	-5.1%	-9.6%	-11.1%	-20.9%	0.6%	Building Permits	-3.8%	18.4%	25.9%	-5.2%	3.0%
<b>Charlottesville</b>						<b>Roanoke</b>					
Total Employment*	1.8%	0.6%	1.0%	-0.4%	0.4%	Total Employment*	0.7%	1.4%	0.5%	0.0%	0.4%
Wages and Salaries**	3.6%	4.1%	2.9%	1.9%	3.2%	Wages and Salaries**	2.4%	3.2%	1.7%	1.7%	2.8%
Real Retail Sales	2.0%	2.8%	1.6%	4.1%	2.2%	Real Retail Sales	2.5%	2.2%	-1.0%	2.9%	1.4%
Building Permits	3.2%	-5.3%	14.4%	-3.3%	0.9%	Building Permits	9.1%	-9.1%	28.4%	-15.3%	1.5%
<b>Hampton Roads</b>						<b>Winchester</b>					
Total Employment*	0.3%	0.8%	1.4%	0.2%	0.6%	Total Employment*	3.3%	1.8%	2.8%	1.6%	1.7%
Wages and Salaries**	2.3%	3.6%	1.4%	1.9%	3.1%	Wages and Salaries**	4.3%	3.4%	3.9%	4.1%	4.7%
Real Retail Sales	0.8%	0.8%	1.3%	0.6%	1.8%	Real Retail Sales	7.2%	3.3%	1.5%	2.2%	3.0%
Building Permits	-7.0%	25.9%	8.6%	-8.6%	0.1%	Building Permits	-6.7%	12.1%	37.3%	15.5%	15.0%
<b>Harrisonburg</b>						<b>Non-MSAs</b>					
Total Employment*	2.3%	0.7%	0.7%	0.7%	1.6%	Total Employment*	-0.2%	-2.6%	0.6%	0.2%	0.3%
Wages and Salaries**	3.3%	3.9%	1.5%	2.6%	3.5%	Wages and Salaries**	4.0%	2.5%	1.2%	2.6%	3.3%
Real Retail Sales	3.0%	1.1%	2.5%	3.2%	3.3%	Real Retail Sales	-1.0%	3.7%	-2.0%	2.0%	1.5%
Building Permits	-37.4%	28.1%	43.0%	-23.7%	9.5%	Building Permits	8.5%	8.2%	14.6%	-4.3%	1.6%
<b>Lynchburg</b>						<b>VA-Totals</b>					
Total Employment*	-0.8%	0.2%	0.0%	-0.5%	0.2%	Total Employment*	1.3%	1.1%	1.0%	0.3%	0.6%
Wages and Salaries**	1.1%	1.9%	1.7%	1.7%	2.5%	Wages and Salaries**	3.3%	3.1%	1.1%	2.1%	3.1%
Real Retail Sales	-1.1%	-0.3%	1.1%	1.6%	2.0%	Real Retail Sales	2.0%	2.4%	0.1%	1.2%	2.1%
Building Permits	-33.1%	42.9%	22.8%	-14.3%	6.0%	Building Permits	-3.0%	20.6%	21.6%	-9.1%	0.9%

\*Employment refers to nonagricultural employment.

\*\*Wages and salaries include some options that were exercised. Actual data are through the 3rd quarter of 2014.

\*\*\*Since 2005, building permits data are not reported for the Blacksburg metro.

All reported series are seasonally adjusted.



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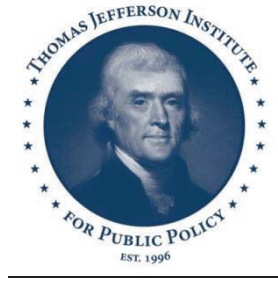
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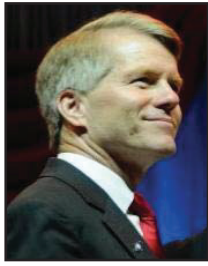
*“If the condition of man is to be progressively ameliorated, as we fondly hope and believe, education is to be the chief instrument in effecting it.”*

Thomas Jefferson, July 13, 1818

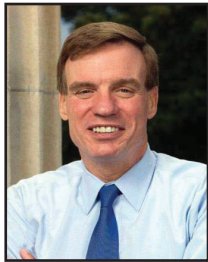




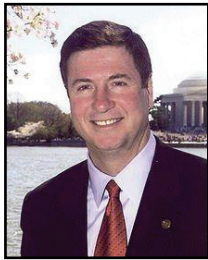
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*“I can never fear that things will go far wrong where common sense has fair play.”*

Thomas Jefferson, December 20, 1786



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**John Ryan:** Retired Senior Counsel and Director of Govt Affairs for Bristol Myers Squibb.

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**Dr. Robert F. Turner:** Law professor at the University of Virginia at Charlottesville.



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*“... 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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