2022 Midyear Economic Forecast

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Strome College of Business
Old Dominion University

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GDP and Inflation
Real Gross Domestic Product
United States, Q1 2010 - Q1 2022

Compounded annual rate of change, seasonally adjusted annual rate.
Contributions to Percent Change in Real Gross Domestic Product
United States, 2021 Q4 - 2022 Q1

- Private Investment: 0.1%
- Personal Consumption: 2.1%
- Imports: -2.6%
- Government: -0.5%
- Exports: -0.6%

Monthly Inflation
United States, January 2007 - April 2022

Source: Bureau of Labor Statistics, seasonally adjusted data.
Core inflation does not include the food and energy sectors.
Monthly Inflation in Durables, Nondurables, and Services
United States, January 2007 - April 2022

Source: Bureau of Labor Statistics, seasonally adjusted data.
Monthly Inflation and Inflationary Expectations
United States, January 2010 - April 2022

Source: Bureau of Labor Statistics, seasonally adjusted data; University of Michigan, Inflationary Expectations, not seasonally adjusted data.
Constant Maturity Rates of U.S. Treasuries
January 2, 2007 - June 6, 2022

Source: Board of Governors of the Federal Reserve System, not seasonally adjusted data.
Housing Markets Tighten
Homeowner and Rental Vacancy Rate
United States, Q1 2000 - Q1 2022

Source: U.S. Census Bureau, Housing Vacancies and Homeownership, not seasonally adjusted data.
The rental vacancy rate is the proportion of the rental inventory that is vacant for rent.
The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant for sale.
Homeowner and Rental Vacancy Rate
Virginia, 2000 - 2021

Source: U.S. Census Bureau, Residential Vacancies and Homeownership Annual Statistics, not seasonally adjusted data.
The rental vacancy rate is the proportion of the rental inventory that is vacant for rent.
The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant for sale.
All Transactions House Price Index
United States and Virginia, Q1 2000 - Q1 2022

Source: U.S. Federal Housing Finance Agency, not seasonally adjusted data. Index estimated using sales prices and appraisal data. Base year is chained (1980 Q1=100).
Labor Markets Recover
Civilian Labor Force and Individual Employment
United States, January 2019 - May 2022

Source: Bureau of Labor Statistics, seasonally adjusted data.
Unemployment Rate
United States, January 2019 - May 2022

Source: Bureau of Labor Statistics, seasonally adjusted data. The U6 rate is the broadest measure of unemployment and includes persons marginally attached to the labor force and persons working part-time for economic reasons.
Unemployment Rate by Race and Ethnicity
United States, February 2020 - May 2022

Black or African American
- May-20: 16.8%
- Jan-21: 6.2%
- Sep-21: 18.8%
- May-22: 4.3%

Hispanic
- May-20: 18.8%
- Jan-21: 4.3%
- Sep-21: 14.1%
- May-22: 3.2%

White
- May-20: 14.1%
- Jan-21: 3.2%
- Sep-21: 3.2%
- May-22: 3.2%

Source: Bureau of Labor Statistics, seasonally adjusted data.
Nonfarm Payrolls (Jobs)
United States, January 2019 - May 2022

Source: Bureau of Labor Statistics, seasonally adjusted data.
Change in Nonfarm Payrolls (Jobs)
United States, February 2020 - May 2022

- Leisure and Hospitality: -1,345,000
- Government: -615,000
- Education and Health Services: -340,000
- Wholesale Trade: -41,100
- Manufacturing: -17,000
- Construction: 40,000
- Information: 64,000
- Financial Activities: 78,000
- Retail Trade: 159,000
- Transport, Warehouse, Utilities: 709,000
- Prof. and Business Services: 821,000

Source: Bureau of Labor Statistics, seasonally adjusted data.
Employment-Population Ratio for Workers Aged 25 to 54

Source: Bureau of Labor Statistics, seasonally adjusted data.
Change in employment-population ratio from the start of each recession.
Job Openings and Quits
United States, January 2019 - April 2022

Thousands of Jobs

Source: Bureau of Labor Statistics, seasonally adjusted data.
Rate of Job Quits by Industry
United States, April 2022

- Government: 1.1%
- Information: 1.7%
- Wholesale Trade: 2.1%
- Financial Activities: 2.2%
- Education and Health Services: 2.5%
- Transport, Warehouse, Utilities: 2.7%
- Manufacturing: 2.8%
- Construction: 2.9%
- Prof. and Business Services: 3.7%
- Retail Trade: 4.2%
- Leisure and Hospitality: 5.2%

Source: U.S. Department of Labor, seasonally adjusted data.
The quit rate is equal to ratio of total quits to total employment in each industry.
Civilian Labor Force and Individual Employment
Virginia, January 2019 - April 2022

Thousands of Individuals

Source: Bureau of Labor Statistics, seasonally adjusted data.
Nonfarm Payrolls (Jobs)
Virginia, January 2019 - April 2022

Thousands of Jobs

Source: Bureau of Labor Statistics, seasonally adjusted data.
Job Openings and Quits
Virginia, January 2019 - March 2022

Thousands of Jobs

Source: Bureau of Labor Statistics, seasonally adjusted data.
Looking Ahead

- Supply-chain shocks continue to challenge consumers and businesses into 2023.
- Russia's invasion of Ukraine continues to roil commodity markets in the near-term.
- Slower growth in housing markets as interest rates rise. New housing supply remains below Great Recession levels.
- Inflationary expectations continue to harden as fuel and food prices continue to rise.
- Expect several 50-basis point increases in the discount rate by the Federal Reserve. Is a 'soft landing' even possible?
- Higher inflation remains persistent as growth slows in the second half of 2022.
<table>
<thead>
<tr>
<th>Economic Indicator</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U.S. Real GDP Growth</strong></td>
<td>-3.70%</td>
<td>5.20%</td>
<td>2.20%</td>
<td>1.80%</td>
</tr>
<tr>
<td><strong>Civilian Job Growth</strong></td>
<td>-5.70%</td>
<td>2.70%</td>
<td>1.20%</td>
<td>0.60%</td>
</tr>
<tr>
<td><strong>Unemployment Rate</strong></td>
<td>8.10%</td>
<td>5.40%</td>
<td>3.80%</td>
<td>4.10%</td>
</tr>
<tr>
<td><strong>Inflation Rate</strong></td>
<td>1.20%</td>
<td>6.70%</td>
<td>6.50%</td>
<td>4.80%</td>
</tr>
<tr>
<td><strong>Core Inflation Rate</strong></td>
<td>1.60%</td>
<td>5.00%</td>
<td>5.50%</td>
<td>4.40%</td>
</tr>
<tr>
<td><strong>Federal Funds Rate</strong></td>
<td>0.25%</td>
<td>0.25%</td>
<td>1.90%</td>
<td>2.50%</td>
</tr>
<tr>
<td><strong>10-year Treasury Bill</strong></td>
<td>0.89%</td>
<td>1.45%</td>
<td>2.50%</td>
<td>3.00%</td>
</tr>
<tr>
<td><strong>30-year Conventional Mortgage</strong></td>
<td>3.11%</td>
<td>2.96%</td>
<td>5.00%</td>
<td>5.75%</td>
</tr>
<tr>
<td><strong>Federal Deficit (Fiscal Year, Billions)</strong></td>
<td>-$3,132</td>
<td>-$2,772</td>
<td>-$1,200</td>
<td>-$1,200</td>
</tr>
<tr>
<td><strong>Virginia Real GDP Growth</strong></td>
<td>-2.80%</td>
<td>4.00%</td>
<td>2.40%</td>
<td>2.00%</td>
</tr>
<tr>
<td><strong>Virginia Civilian Job Growth</strong></td>
<td>-5.00%</td>
<td>2.50%</td>
<td>1.20%</td>
<td>0.80%</td>
</tr>
</tbody>
</table>
2022 Hampton Roads Economic Forecast
Military Employment
Hampton Roads, 2010 - 2020

Thousands of Employees


95.4 95.4 85.9 85.9 99.0 91.1 81.3 83.4 64.4

Estimated Direct Department of Defense Spending
Hampton Roads, 2010 - 2021*

Real Gross Domestic Product (GDP)
Hampton Roads, 2002 - 2021

Jobs and Employment
Nonfarm Payrolls (Jobs)
Hampton Roads, Virginia, and the United States, February 2010 - February 2020

Index (Feb. 2010 = 100)

Source: Bureau of Labor Statistics, seasonally adjusted data.
February 2010 was the trough of nonfarm payrolls for the United States, Virginia, and Hampton Roads.
Continued Claims for Unemployment Insurance
Hampton Roads, March 14, 2020 - April 30, 2022

Source: Virginia Employment Commission, non-seasonally adjusted data. Virginia cities and counties in MSA. Continued claims data in 2021 for weeks ending Nov. 13, Nov. 20, Dec. 11, Dec. 18, and Dec. 25 are not available.
Headline and Alternative Unemployment Rate
Hampton Roads, January 2020 - April 2022

Source: Bureau of Labor Statistics, seasonally adjusted data.
Alternative unemployment rate includes departures from the labor force and counted as unemployed.
Growth in Nonfarm Payrolls
Selected Metropolitan Areas, February 2020 - April 2022

Hampton Roads: -3.0%
Richmond: -2.5%
Greenville: -1.2%
Northern Virginia: -1.0%
Charleston: 1.0%
Charlotte: 2.0%
Jacksonville: 3.6%
Nashville: 4.0%
Durham Chapel Hill: 4.1%
Raleigh: 4.8%

Civilian Jobs Gained/Lost
Selected Sectors in Hampton Roads, April 2019 - April 2022

- Transportation and Warehousing: +1,000
- Prof. and Business Services: +900
- Mining, Logging, and Construction: +900
- Wholesale Trade: -400
- Leisure and Hospitality: -800
- Financial Activities: -1,300
- Information: -1,600
- Retail Trade: -1,600
- Other Services: -1,900
- Manufacturing: -2,900
- Health Care and Social Assistance: -3,000
- Local Government: -6,300

The Port of Virginia: Significant Growth in 2021
Twenty Foot Equivalent Container Units (TEUs)
Port of Virginia, 2010 - 2021

Sources: Virginia Port Authority and the Dragas Center for Economic Analysis and Policy.
Hotels Rebound but Challenges Remain
Nominal and Real (Inflation-Adjusted) Hotel Revenue
Hampton Roads, 2000 - 2021

Sources: STR Trend Reports January 2018 (for data through 2012) and January 2022 (for data beginning 2013), Bureau of Labor Statistics (base year is chained; 1982-84=100), and the Dragas Center for Economic Analysis and Policy.
## Percent Change in Selected Key Performance Indicators of Hotels in USA, Virginia, and Hampton Roads: 2019 to 2020

<table>
<thead>
<tr>
<th></th>
<th>Hotel Revenue</th>
<th>RevPAR</th>
<th>Hotel Rooms Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>-49.5%</td>
<td>-47.4%</td>
<td>-35.9%</td>
</tr>
<tr>
<td>Virginia</td>
<td>-48.0%</td>
<td>-46.7%</td>
<td>-34.3%</td>
</tr>
<tr>
<td>Hampton Roads</td>
<td>-35.2%</td>
<td>-34.7%</td>
<td>-23.3%</td>
</tr>
<tr>
<td>Chesapeake/Suffolk</td>
<td>-21.3%</td>
<td>-21.3%</td>
<td>-11.4%</td>
</tr>
<tr>
<td>Newport News/Hampton</td>
<td>-28.7%</td>
<td>-29.2%</td>
<td>-15.5%</td>
</tr>
<tr>
<td>Norfolk/Portsmouth</td>
<td>-32.7%</td>
<td>-34.2%</td>
<td>-20.7%</td>
</tr>
<tr>
<td>Virginia Beach</td>
<td>-28.9%</td>
<td>-30.3%</td>
<td>-20.5%</td>
</tr>
<tr>
<td>Williamsburg*</td>
<td>-64.5%</td>
<td>-61.2%</td>
<td>-53.8%</td>
</tr>
</tbody>
</table>

*Williamsburg market includes City of Williamsburg and James City County. Sources: STR Trend Report January 2022, and the Dragas Center for Economic Analysis and Policy.
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<thead>
<tr>
<th></th>
<th>Hotel Revenue</th>
<th>RevPAR</th>
<th>Hotel Rooms Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>-16.0%</td>
<td>-16.8%</td>
<td>-11.8%</td>
</tr>
<tr>
<td>Virginia</td>
<td>-17.9%</td>
<td>-18.0%</td>
<td>-11.4%</td>
</tr>
<tr>
<td>Hampton Roads</td>
<td>9.3%</td>
<td>7.7%</td>
<td>-1.4%</td>
</tr>
<tr>
<td>Chesapeake/Suffolk</td>
<td>11.4%</td>
<td>11.4%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Newport News/Hampton</td>
<td>0.5%</td>
<td>0.6%</td>
<td>-3.9%</td>
</tr>
<tr>
<td>Norfolk/Portsmouth</td>
<td>5.2%</td>
<td>-0.9%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Virginia Beach</td>
<td>21.2%</td>
<td>14.4%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Williamsburg*</td>
<td>-6.0%</td>
<td>-0.7%</td>
<td>-15.5%</td>
</tr>
</tbody>
</table>

* Williamsburg market includes City of Williamsburg and James City County. Sources: STR Trend Report January 2022, and the Dragas Center for Economic Analysis and Policy.
Airbnb & Vrbo Revenue as a Percent of Hotel Revenue
Hampton Roads, January 2015 - December 2021

Sources: STR Trend Report January 2022 and AirDNA data received in January 2022.
AirDNA data exclude shared rooms.
Shares of Hotel and Airbnb & Vrbo Revenue
Hampton Roads Sub-Markets, 2019

<table>
<thead>
<tr>
<th>Sub-Market</th>
<th>Airbnb &amp; Vrbo</th>
<th>Hotels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia Beach</td>
<td>70.4%</td>
<td>38.3%</td>
</tr>
<tr>
<td>Williamsburg Mkt</td>
<td>11.7%</td>
<td>19.1%</td>
</tr>
<tr>
<td>Norfolk/Portsmouth</td>
<td>7.9%</td>
<td>14.5%</td>
</tr>
<tr>
<td>Newport News/Hampton</td>
<td>3.5%</td>
<td>14.6%</td>
</tr>
<tr>
<td>Chesapeake/Suffolk</td>
<td>1.2%</td>
<td>13.5%</td>
</tr>
</tbody>
</table>

Sources: STR Trend Report January 2022, AirDNA data received in January 2022, and the Dragas Center for Economic Analysis and Policy.
Annual Revenue of Airbnb & Vrbo Private Rooms and Whole House Rentals
Hampton Roads, 2016 - 2021

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$12</td>
<td>$12</td>
<td>$12</td>
<td>$12</td>
<td>$12</td>
<td>$12</td>
</tr>
<tr>
<td>Private Rooms</td>
<td>$2</td>
<td>$2</td>
<td>$2</td>
<td>$2</td>
<td>$2</td>
<td>$2</td>
</tr>
<tr>
<td>Whole House</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
</tr>
</tbody>
</table>

$246

$237

Source: AirDNA data received in January 2022; excludes shared rooms.
Taxable Sales
Hampton Roads, 2007 - 2021

Billions of Nominal Dollars

Sources: Virginia Department of Taxation and the Dragas Center for Economic Analysis and Policy.
Housing Values Surge and Rents Rise
Existing Residential Homes Sold and Average Days on the Market
Hampton Roads, 2010 - 2021

Sources: Real Estate Information Network Inc. and the Dragas Center for Economic Analysis and Policy.
Estimated Months of Supply of Existing Homes
Hampton Roads, January 2010 - May 2022

Average = 5.30 months

Sources: Real Estate Information Network Inc. and the Dragas Center for Economic Analysis and Policy.
Months of supply is based on average sales in the last 12 months.
Median Sales Price of Existing Homes
Hampton Roads, 2010 - 2021

Sources: Real Estate Information Network Inc. and the Dragas Center for Economic Analysis and Policy. Information deemed reliable but not guaranteed.
<table>
<thead>
<tr>
<th>City</th>
<th>2020</th>
<th>2021</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chesapeake</td>
<td>$282,000</td>
<td>$315,000</td>
<td>11.7%</td>
</tr>
<tr>
<td>Norfolk</td>
<td>$229,000</td>
<td>$258,000</td>
<td>12.7%</td>
</tr>
<tr>
<td>Portsmouth</td>
<td>$182,250</td>
<td>$210,000</td>
<td>15.2%</td>
</tr>
<tr>
<td>Suffolk</td>
<td>$275,000</td>
<td>$312,500</td>
<td>13.6%</td>
</tr>
<tr>
<td>Virginia Beach</td>
<td>$285,000</td>
<td>$310,000</td>
<td>8.8%</td>
</tr>
<tr>
<td>Hampton</td>
<td>$193,000</td>
<td>$225,000</td>
<td>16.6%</td>
</tr>
<tr>
<td>Newport News</td>
<td>$209,000</td>
<td>$230,000</td>
<td>10.0%</td>
</tr>
<tr>
<td>Williamsburg*</td>
<td>$323,000</td>
<td>$350,000</td>
<td>8.4%</td>
</tr>
<tr>
<td><strong>Hampton Roads</strong></td>
<td><strong>$255,000</strong></td>
<td><strong>$279,000</strong></td>
<td><strong>9.4%</strong></td>
</tr>
</tbody>
</table>

* Represents Poquoson, Williamsburg, James City County, York County and Gloucester County. Sources: Real Estate Information Network and the Dragas Center for Economic Analysis and Policy.
Weekly 30-Year Fixed Mortgage Rate
January 3, 2019 - June 2, 2022

Annual Mortgage Rates
3.85% for 2015; 3.65% for 2016
4.00% for 2017; 4.54% for 2018
3.93% for 2019; 3.11% for 2020
2.96% for 2021

Mortgage Rate

Sources: Freddie Mac and Federal Reserve Bank of St. Louis. Weekly rate ending Thursday of each week.
Zillow Observed Rent Index (ZORI): Hampton Roads and the United States
January 2014 - April 2022

Index (Jan. 2014 = 100)

United States
Hampton Roads

Source: Zillow Research Data All Homes Plus Multifamily Time Series, smoothed seasonally adjusted data.
Estimated Direct Department of Defense Spending
Hampton Roads, 2016 - 2022*

<table>
<thead>
<tr>
<th>Year</th>
<th>Billions of Nominal Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>$19.3</td>
</tr>
<tr>
<td>2017</td>
<td>$19.9</td>
</tr>
<tr>
<td>2018</td>
<td>$20.8</td>
</tr>
<tr>
<td>2019</td>
<td>$22.0</td>
</tr>
<tr>
<td>2020</td>
<td>$23.5</td>
</tr>
<tr>
<td>2021</td>
<td>$24.5</td>
</tr>
<tr>
<td>2022</td>
<td>$25.3</td>
</tr>
</tbody>
</table>

## Regional Forecast

<table>
<thead>
<tr>
<th></th>
<th>2019 Actual</th>
<th>2020 Actual</th>
<th>2021 Estimated/Actual</th>
<th>2022 Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hampton Roads Real GDP</td>
<td>1.9%</td>
<td>-2.5%</td>
<td>3.0%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Civilian Job Growth</td>
<td>0.6%</td>
<td>-5.3%</td>
<td>1.7%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>3.1%</td>
<td>7.1%</td>
<td>4.5%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Taxable Sales</td>
<td>4.9%</td>
<td>6.7%</td>
<td>16.8%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Hotel Revenue</td>
<td>1.8%</td>
<td>-35.2%</td>
<td>68.8%</td>
<td>8.4%</td>
</tr>
<tr>
<td>General Cargo Tonnage</td>
<td>-0.2%</td>
<td>-3.9%</td>
<td>20.3%</td>
<td>8.7%</td>
</tr>
<tr>
<td>General Cargo TEUs</td>
<td>2.9%</td>
<td>-4.2%</td>
<td>25.2%</td>
<td>11.8%</td>
</tr>
<tr>
<td>One-Unit Housing Permit Value</td>
<td>3.5%</td>
<td>10.9%</td>
<td>6.7%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>
Consistent with the national forecast, regional economic growth in 2022 is forecasted to be lower than its growth in 2021.

Defense spending will continue to provide a boost for the Hampton Roads economy.

Port of Virginia is expected to hit new cargo records in 2022.

Despite increases in mortgage rates, single-family home prices in 2022 will continue to increase at a moderate pace.
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