



2022 Annual Economic Forecast

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Dragas Center for Economic Analysis and Policy

Strome College of Business

Old Dominion University

January 26, 2022



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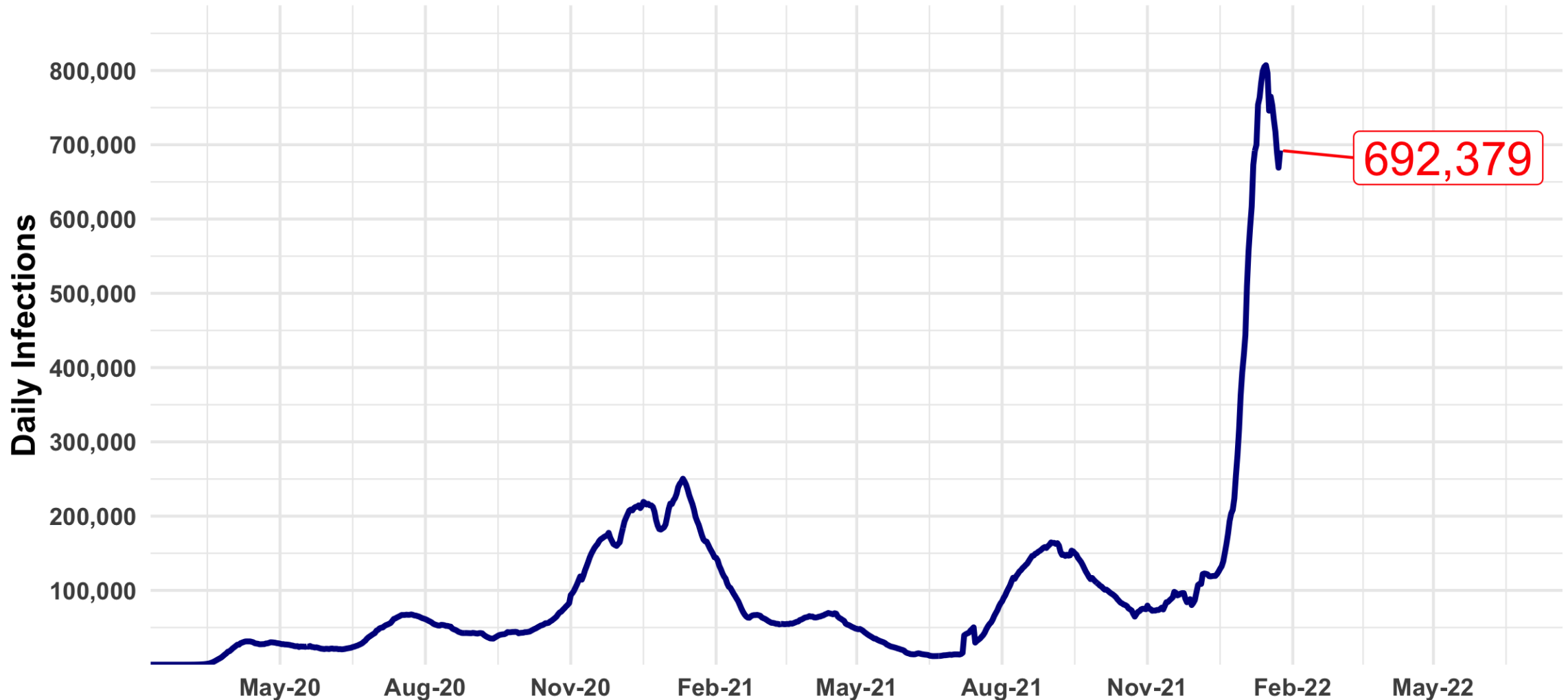
Last Time We Met (June 2021)

- ✓ Vaccines continue to drive improvements in business and consumer sentiment.
- ✓ Vaccine hesitancy and resistance will lead to outbreaks of COVID-19.
- ✓ Supply-chain constraints will challenge sectoral growth through 2021.
- ✓ A 'relief cliff' is coming in September as many COVID-19 emergency programs expire.
- ✓ Additional stimulus is unnecessary and would increase inflationary expectations.
- ✓ Disinformation and media-driven politics have created enclaves of Americans with separate worldviews.
- ✓ Even with these challenges, the United States and Virginia will experience a robust expansion in economic activity and jobs in 2021.

COVID-19



7-Day Moving Average of Daily COVID-19 Infections United States, February 9, 2020 - January 24, 2022



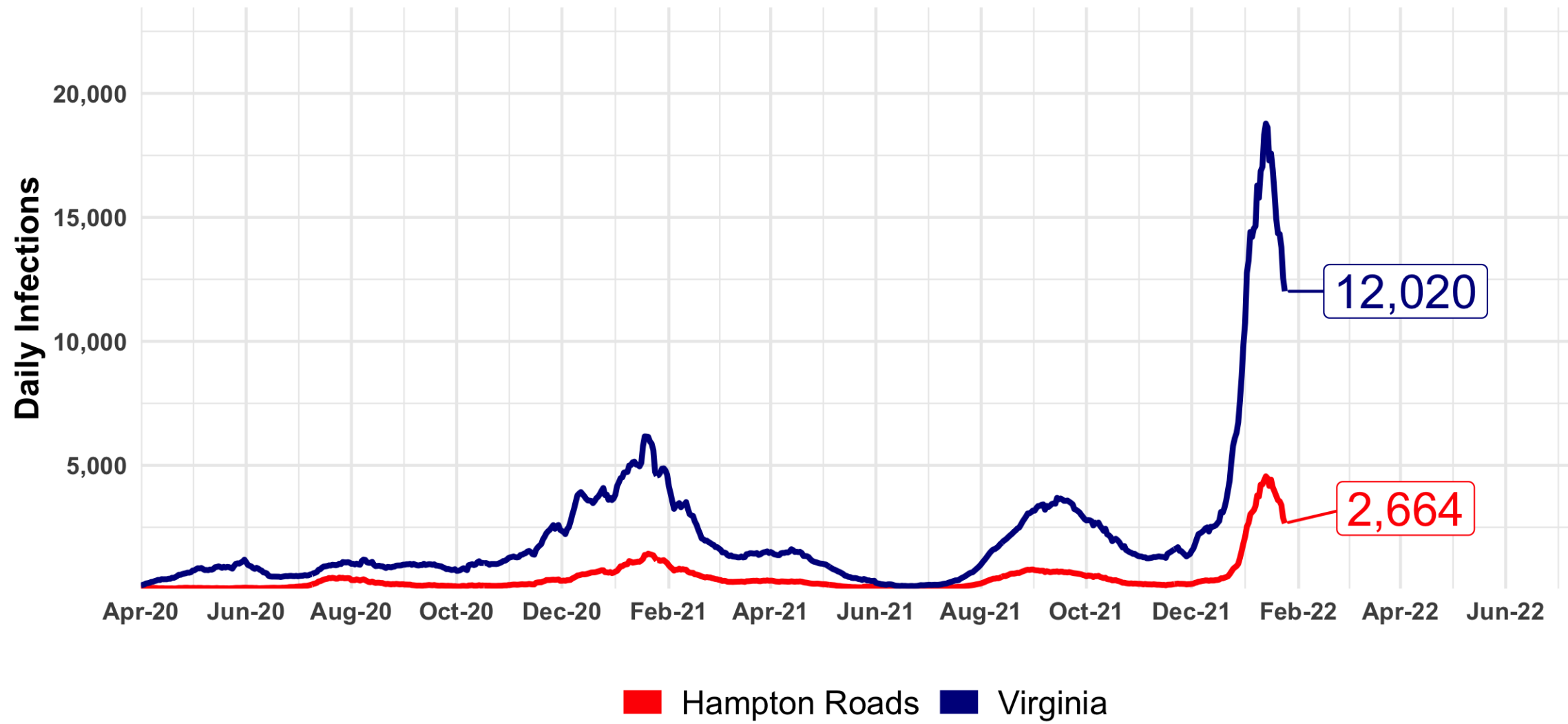
Source: Centers for Disease Control and Prevention, United States COVID-19 Cases and Deaths by State over Time.

7-Day Moving Average of Daily COVID-19 Deaths United States, February 9, 2020 - January 24, 2022



Source: Centers for Disease Control and Prevention, United States COVID-19 Cases and Deaths by State over Time.

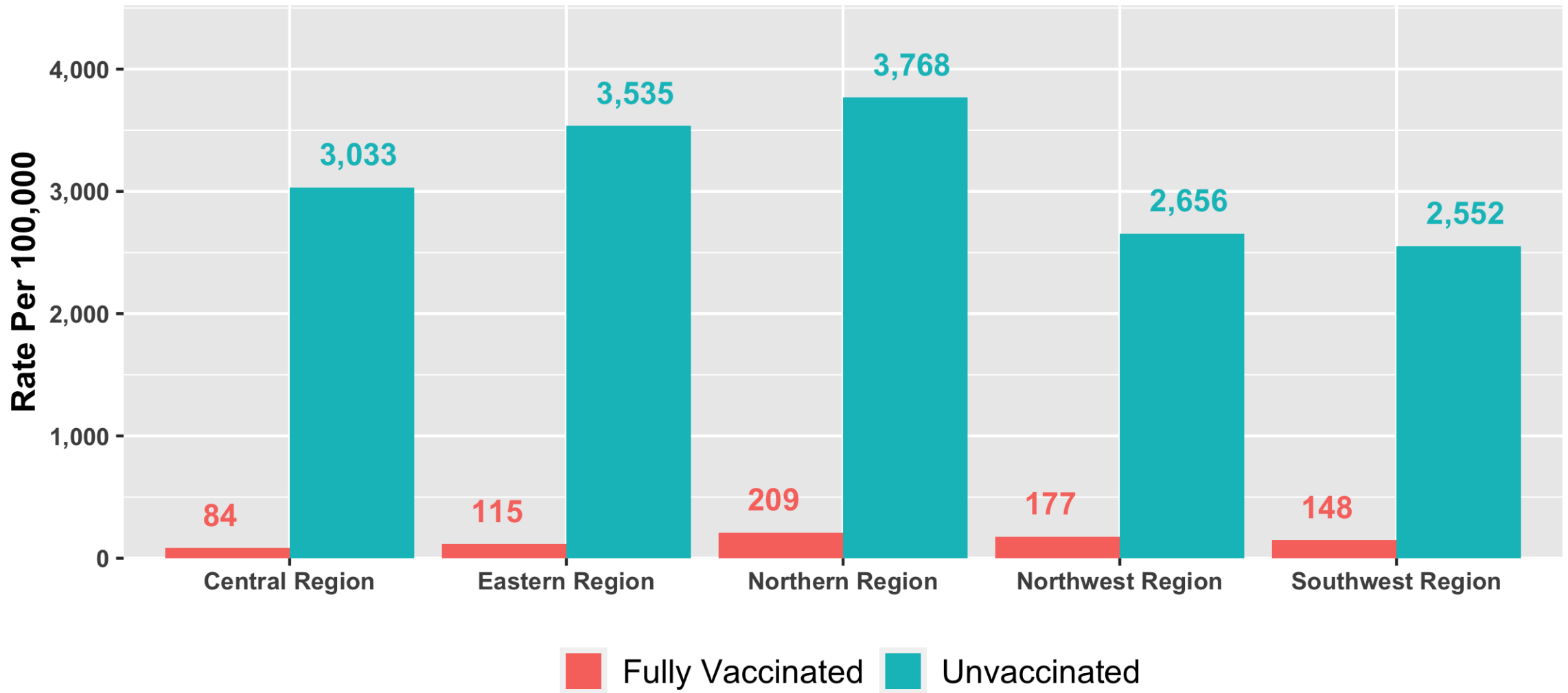
7-Day Moving Average of Daily COVID-19 Infections
Hampton Roads and Virginia, April 1, 2020 - January 24, 2022



Sources: Virginia Department of Health and Dragas Center for Economic Analysis and Policy.

COVID-19 Infections by Vaccination Status, Virginia Health Regions

Rate Per 100,000 Per Vaccination Group, Week of January 15, 2022

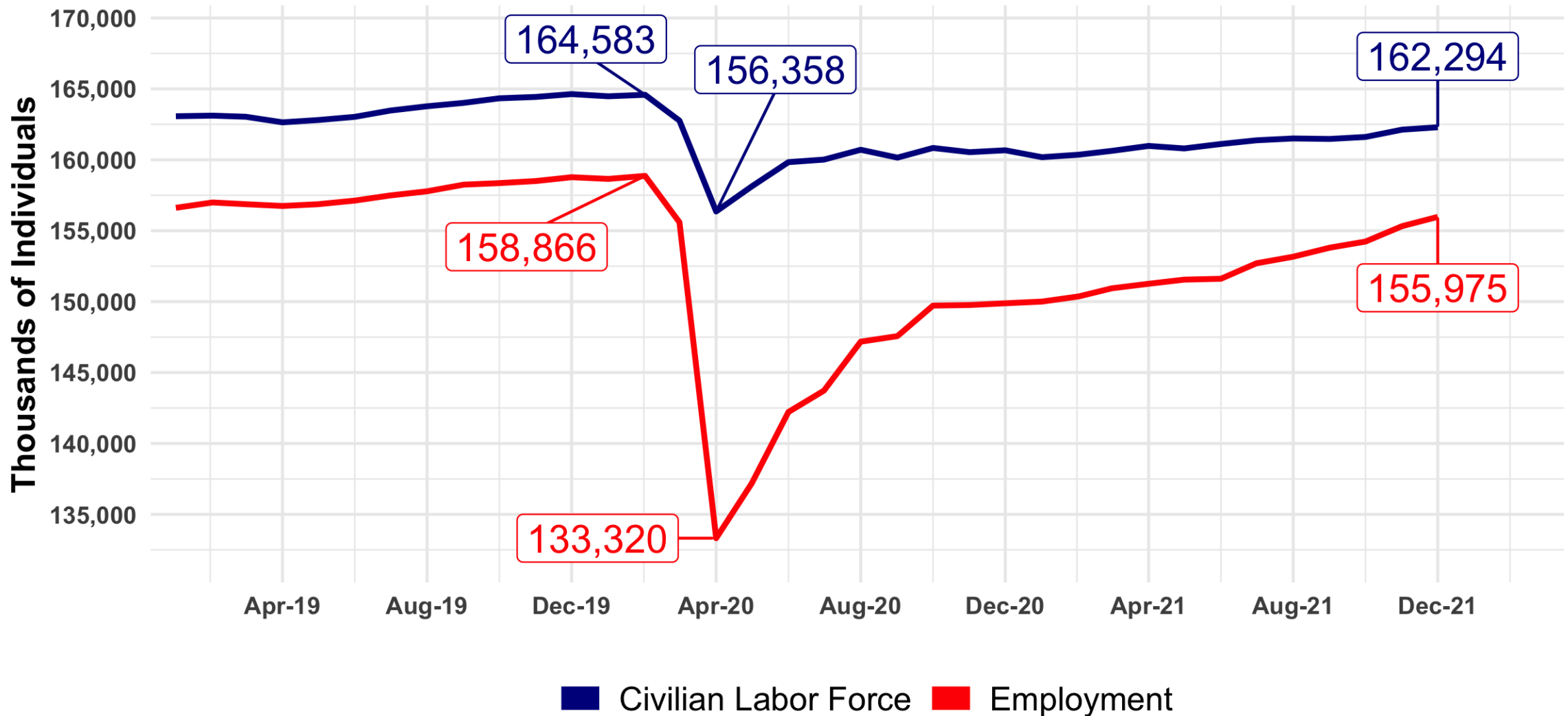


Sources: Virginia Department of Health, Centers for Disease Control and Prevention, and Dragas Center for Economic Analysis and Policy. 2019 NCHS population estimates.

Recovery and Resignation



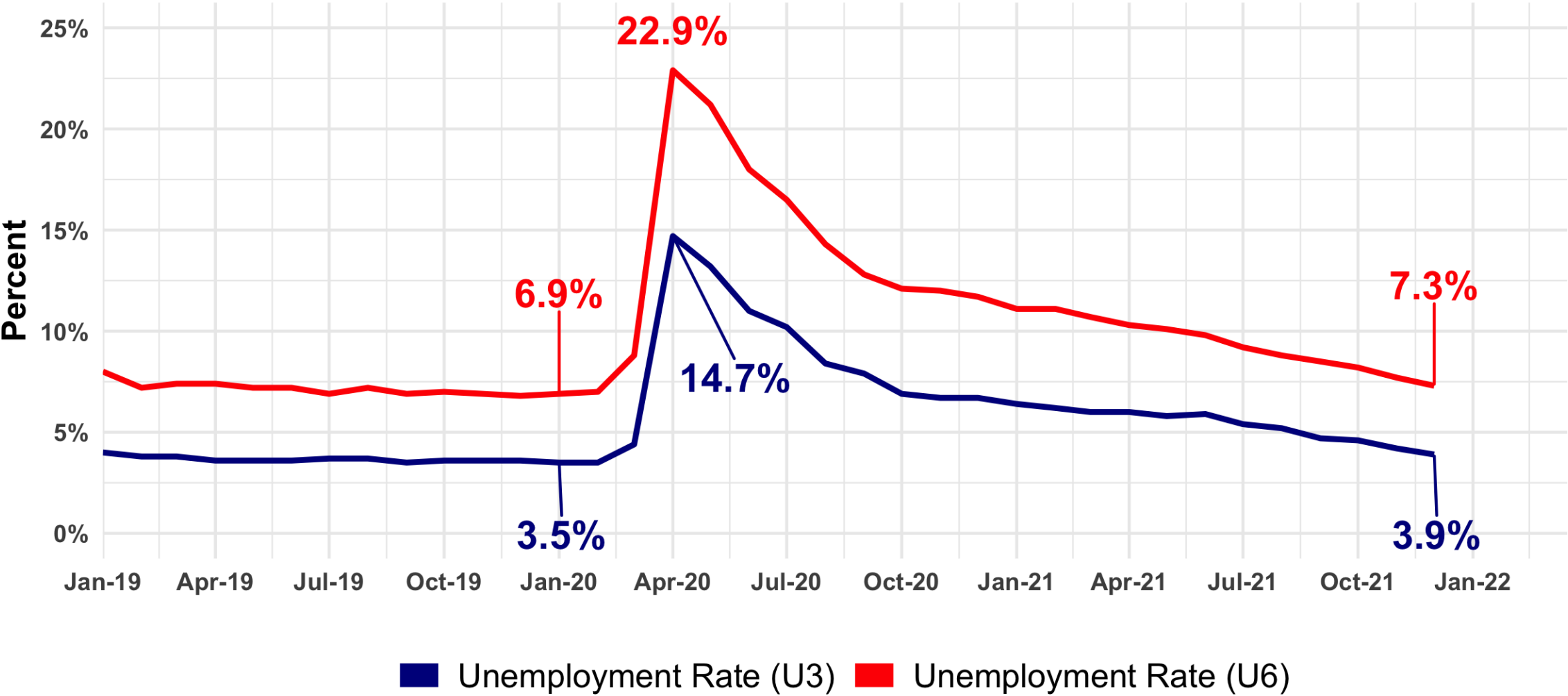
Civilian Labor Force and Individual Employment United States, January 2019 - December 2021



Source: Bureau of Labor Statistics, seasonally adjusted data.

Unemployment Rate

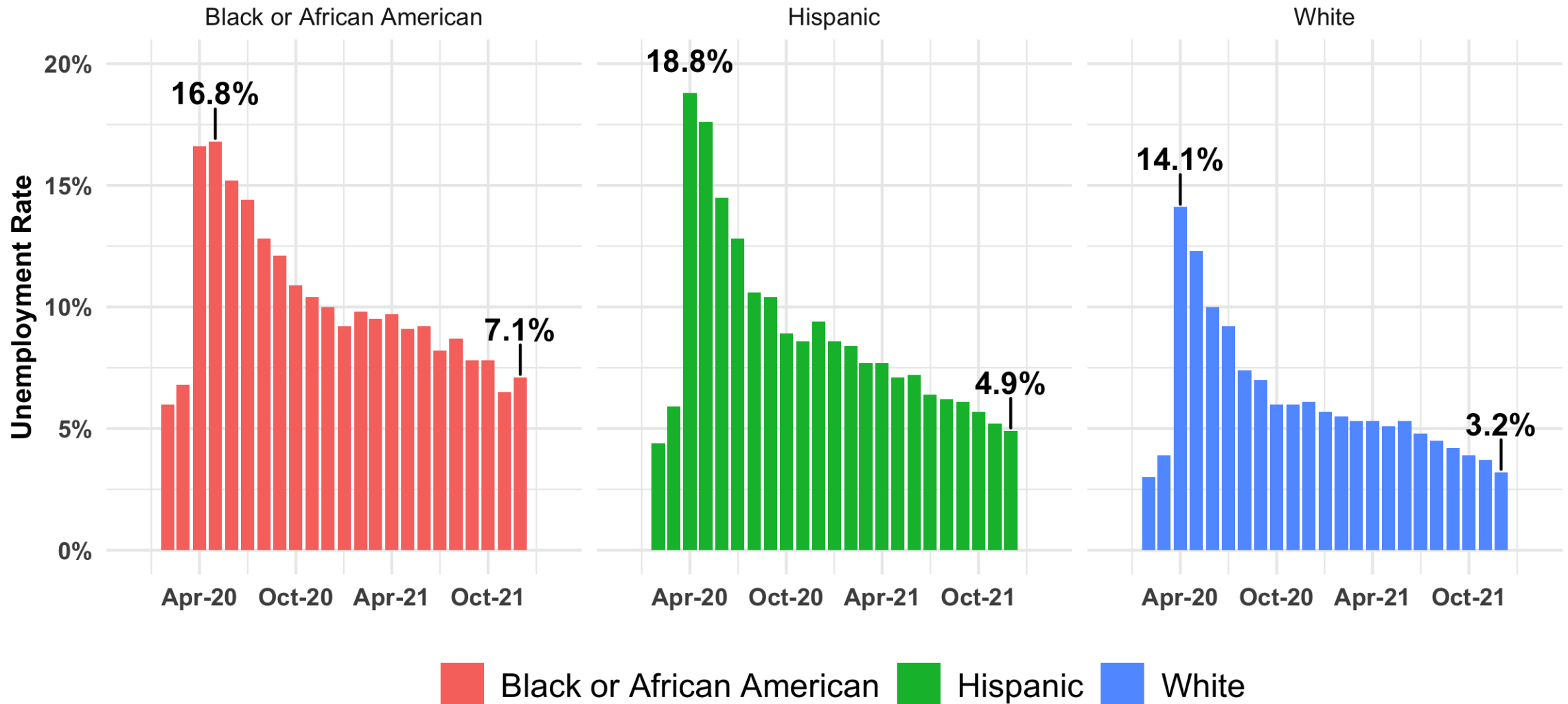
United States, January 2019 - December 2021



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.

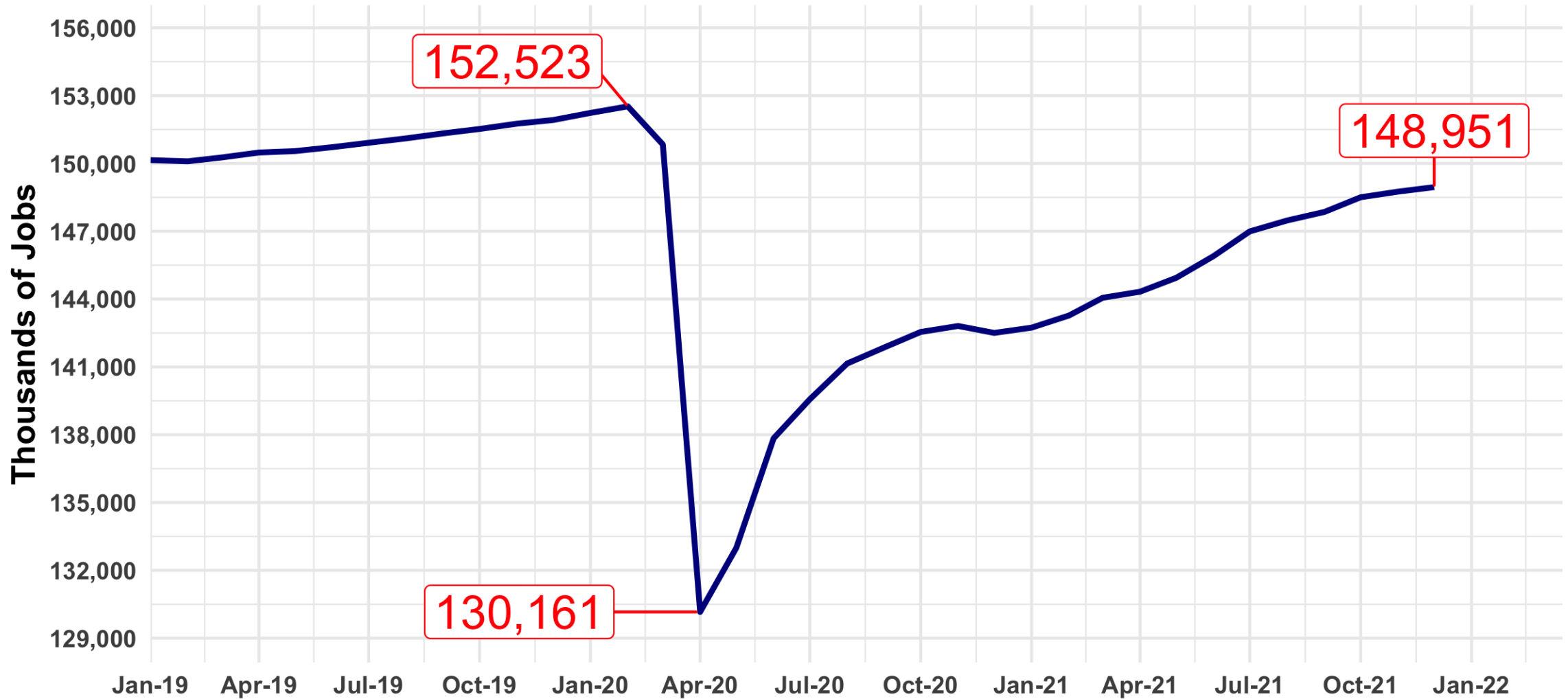
Unemployment Rate by Race and Ethnicity

United States, February 2020 - December 2021



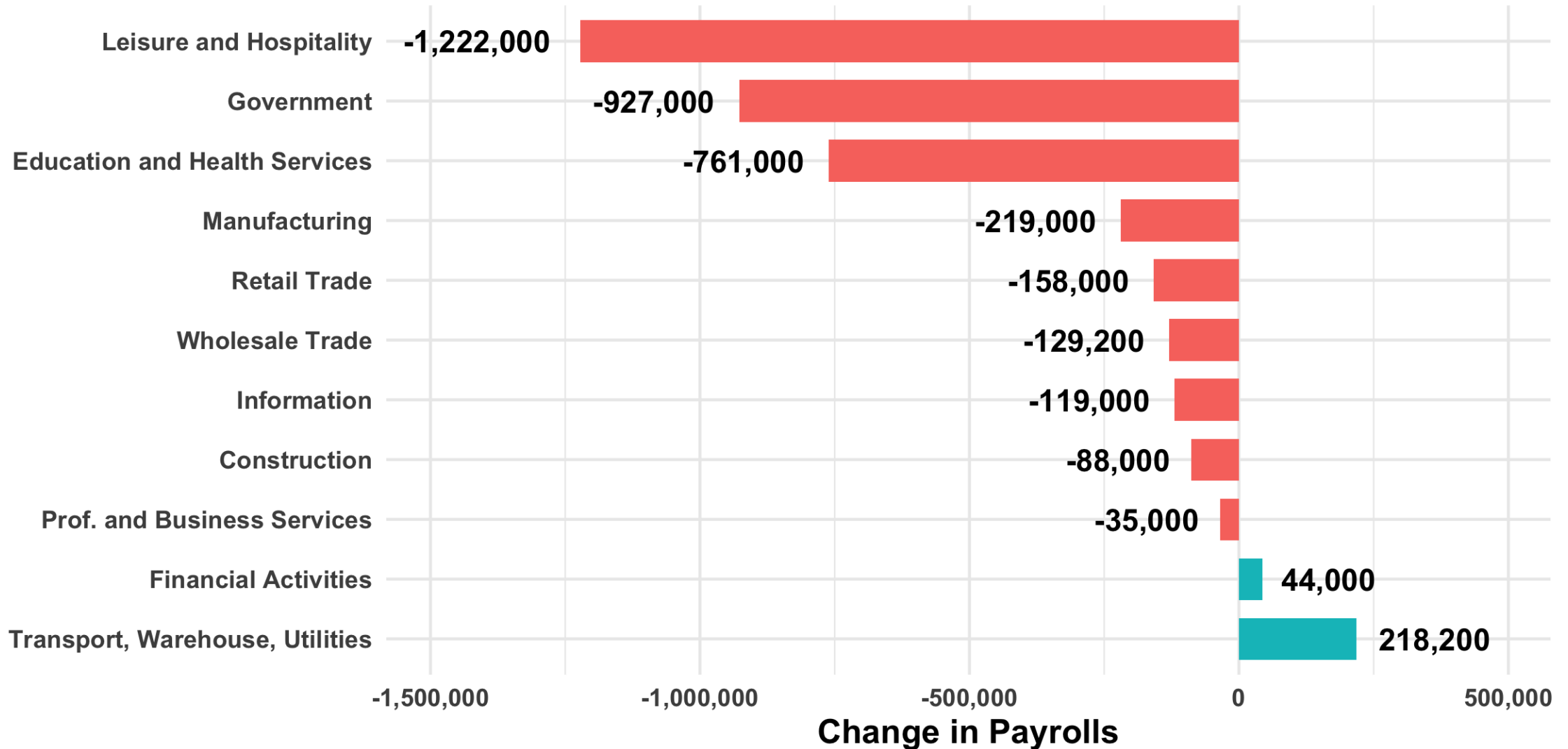
Source: Bureau of Labor Statistics, seasonally adjusted data.

Nonfarm Payrolls (Jobs) United States, January 2019 - December 2021



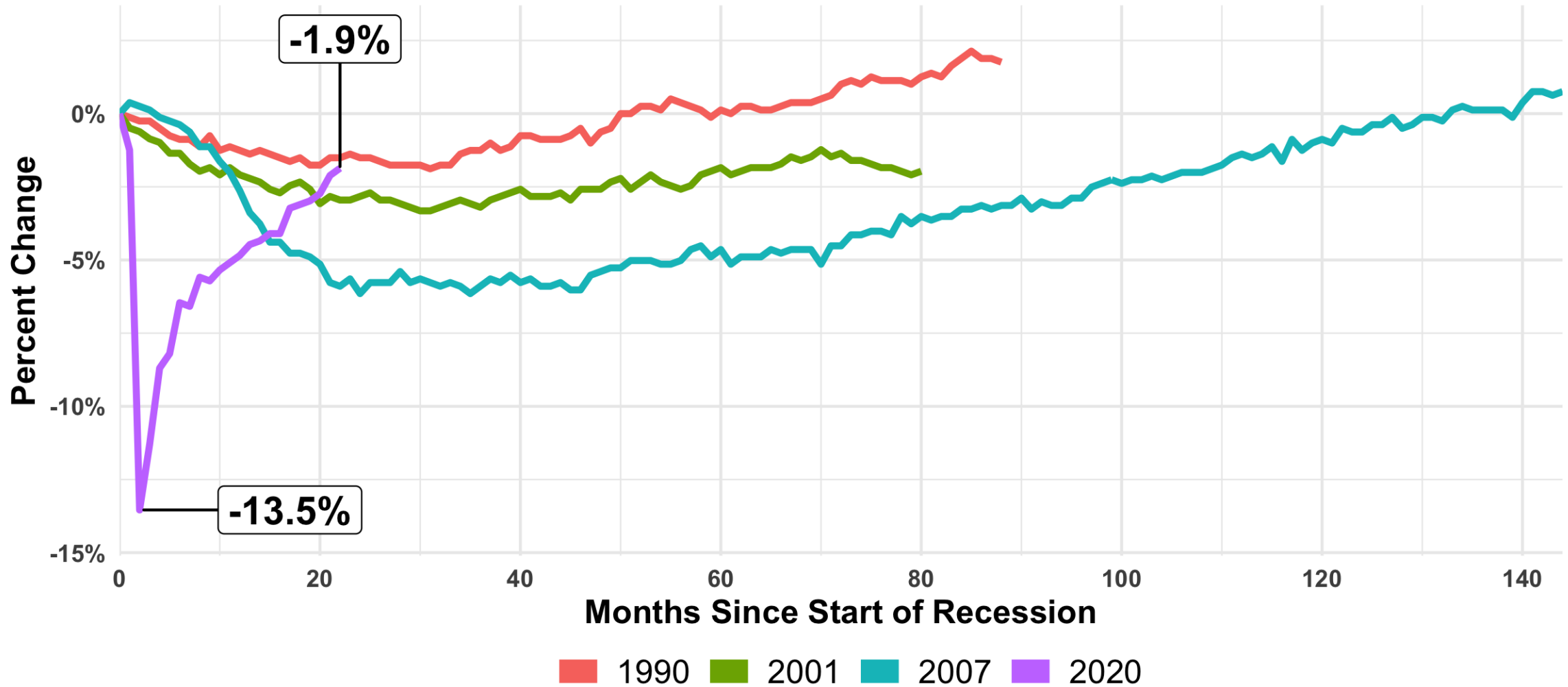
Source: Bureau of Labor Statistics, seasonally adjusted data.

Change in Nonfarm Payrolls (Jobs) United States, February 2020 - December 2021



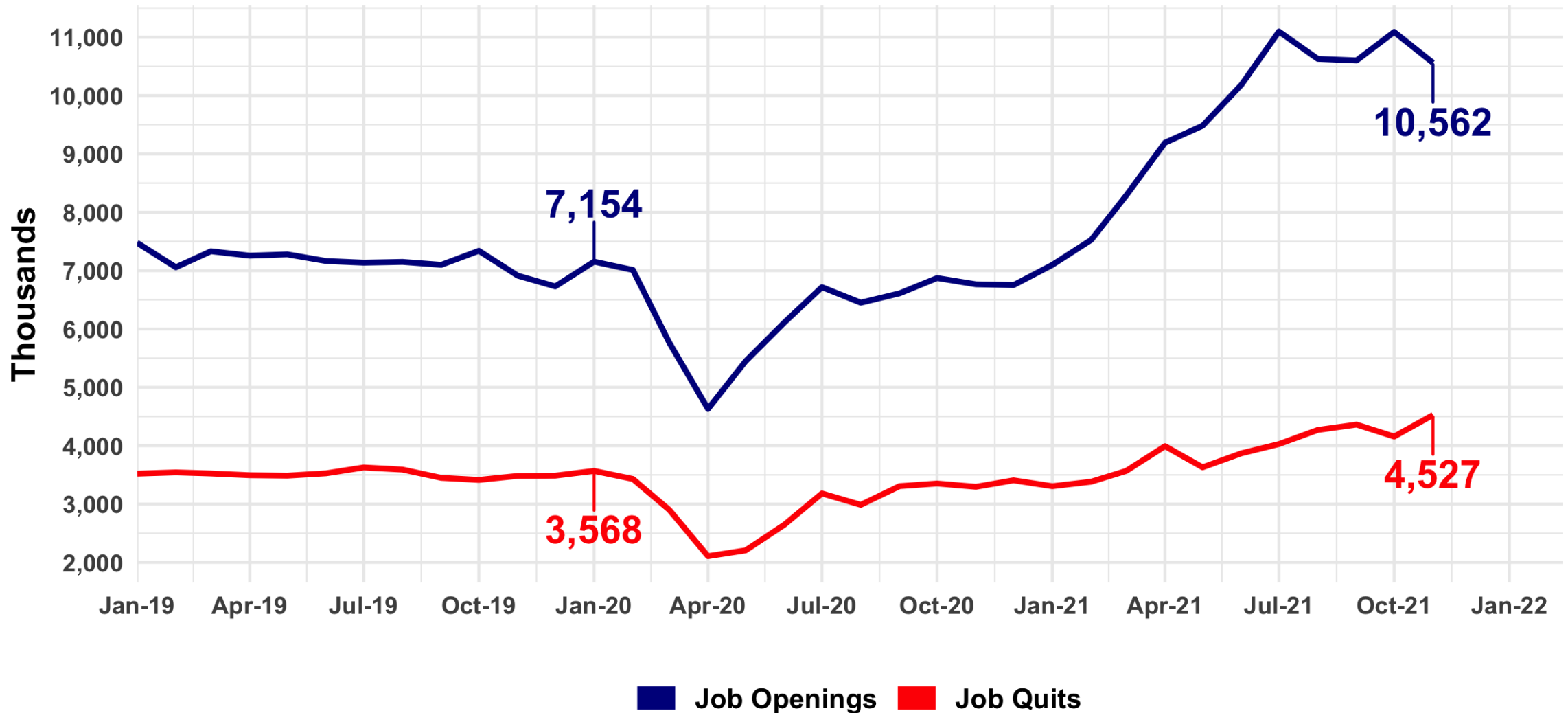
Source: Bureau of Labor Statistics, seasonally adjusted data.

Employment-Population Ratio for Workers Aged 25 to 54 United States, Recessions of 1990, 2001, 2007, and 2020



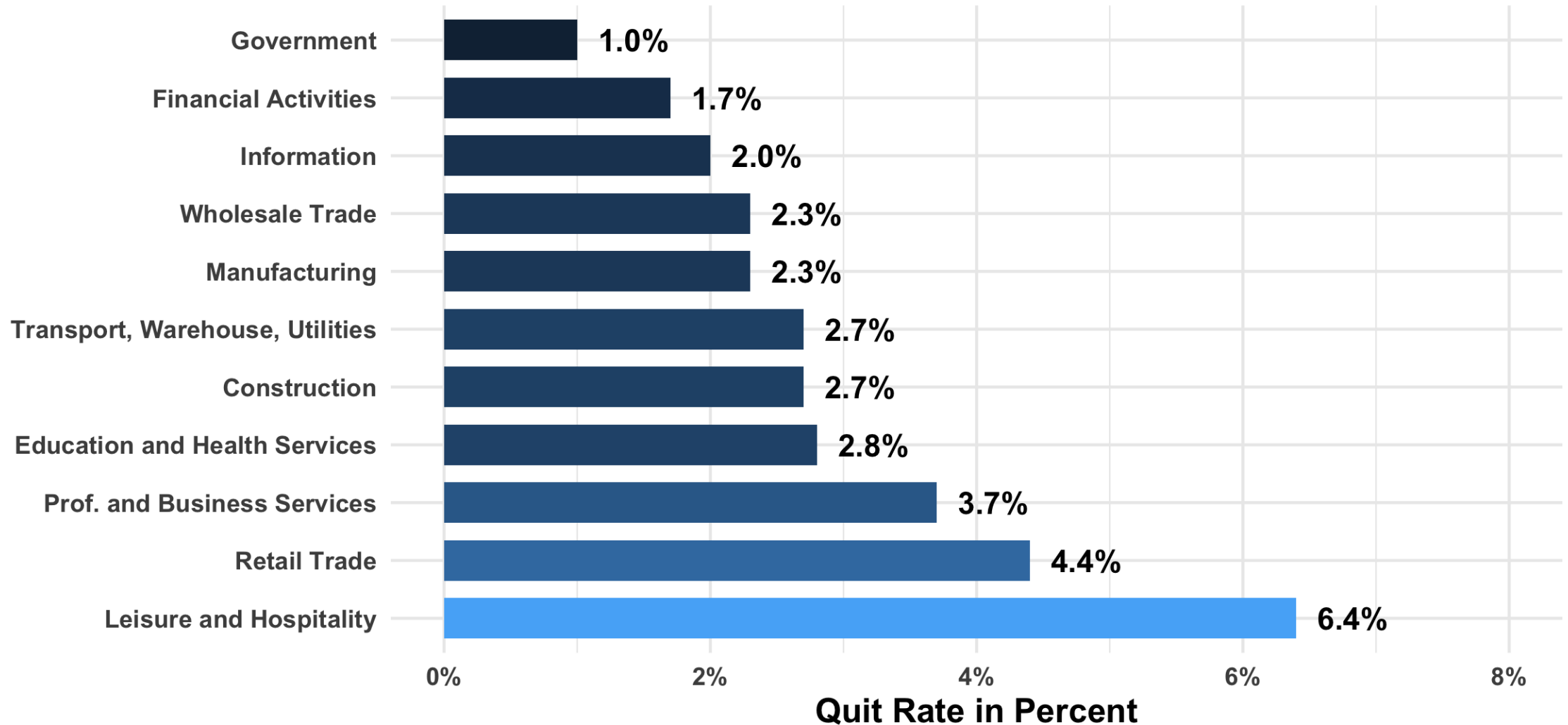
Source: Bureau of Labor Statistics, seasonally adjusted data.
Change in employment-population ratio from the start of each recession.

Job Openings and Quits United States, January 2019 - November 2021



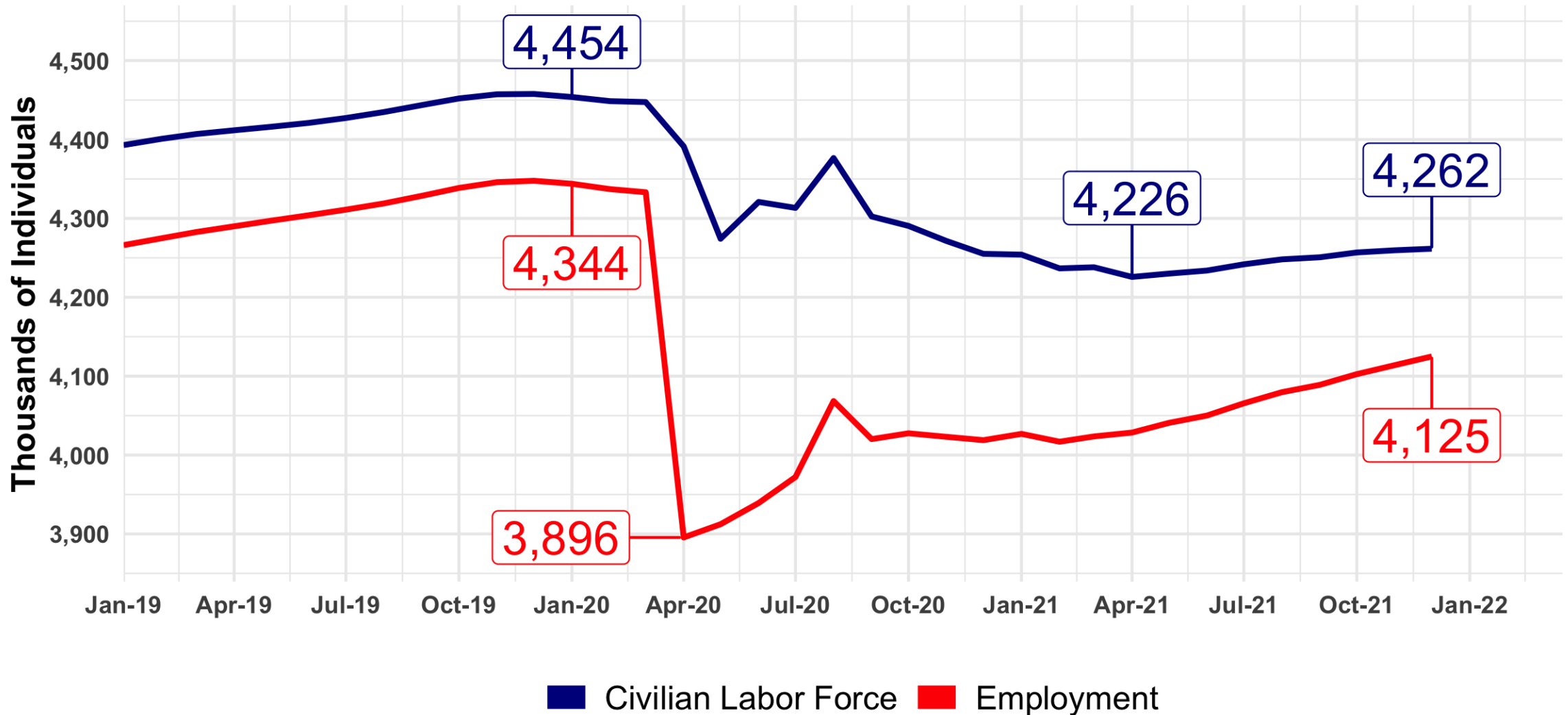
Source: Bureau of Labor Statistics, seasonally adjusted data.

Rate of Job Quits by Industry United States, November 2021



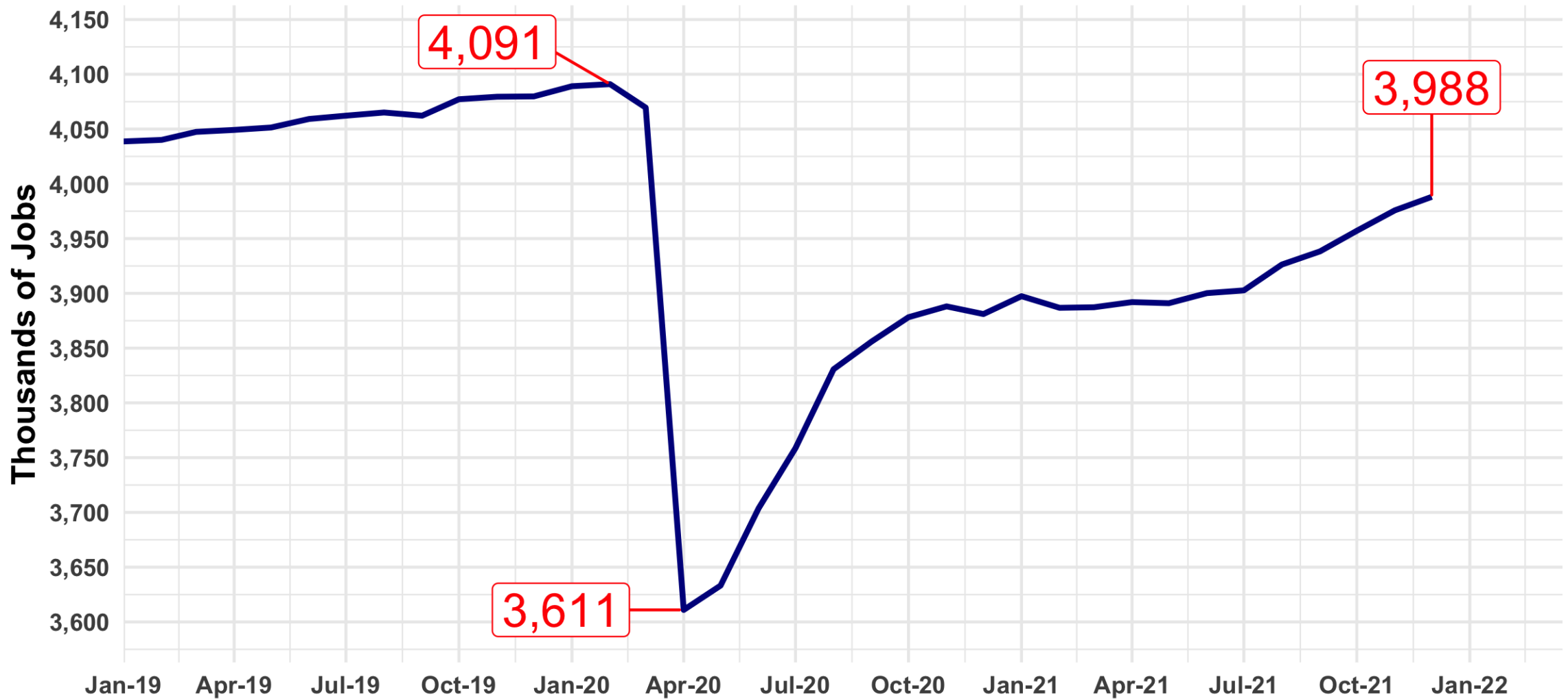
Source: U.S. Department of Labor, seasonally adjusted data.
The quit rate is equal to ratio of total quits to total employment in each industry.

Civilian Labor Force and Individual Employment Virginia, January 2019 - December 2021



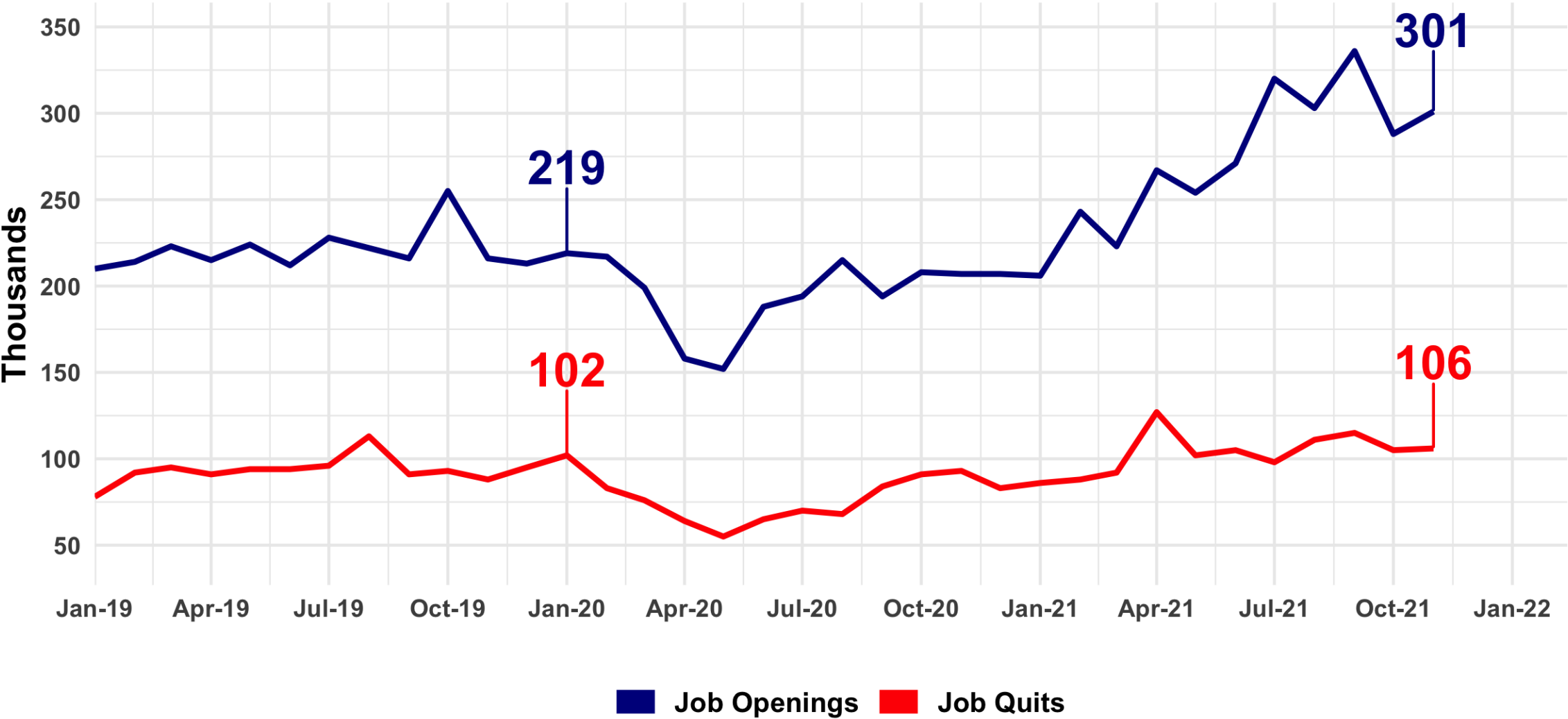
Source: Bureau of Labor Statistics, seasonally adjusted data.

Nonfarm Payrolls (Jobs) Virginia, January 2019 - December 2021



Source: Bureau of Labor Statistics, seasonally adjusted data.

Job Openings and Quits
Virginia, January 2019 - November 2021

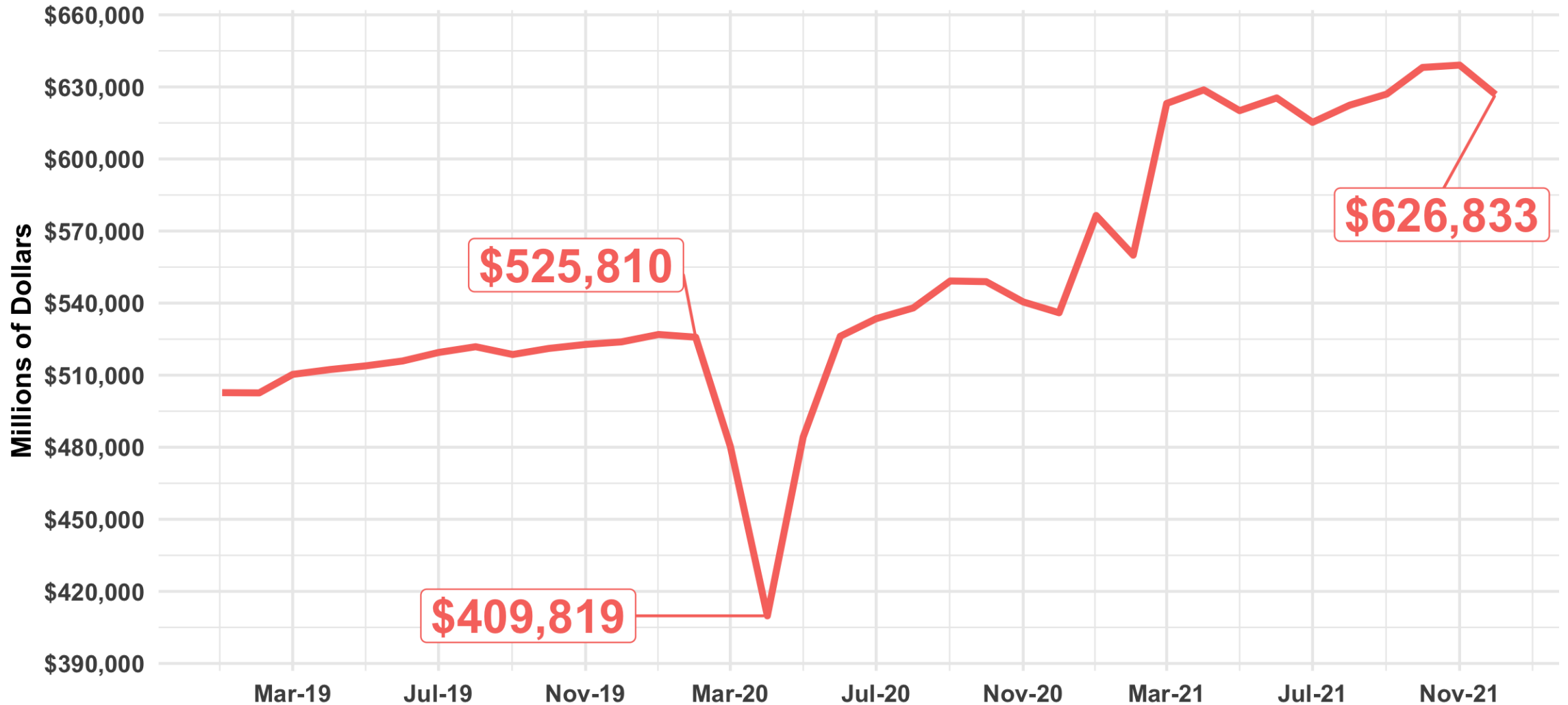


Source: Bureau of Labor Statistics, seasonally adjusted data.

Inflation and Interest Rates



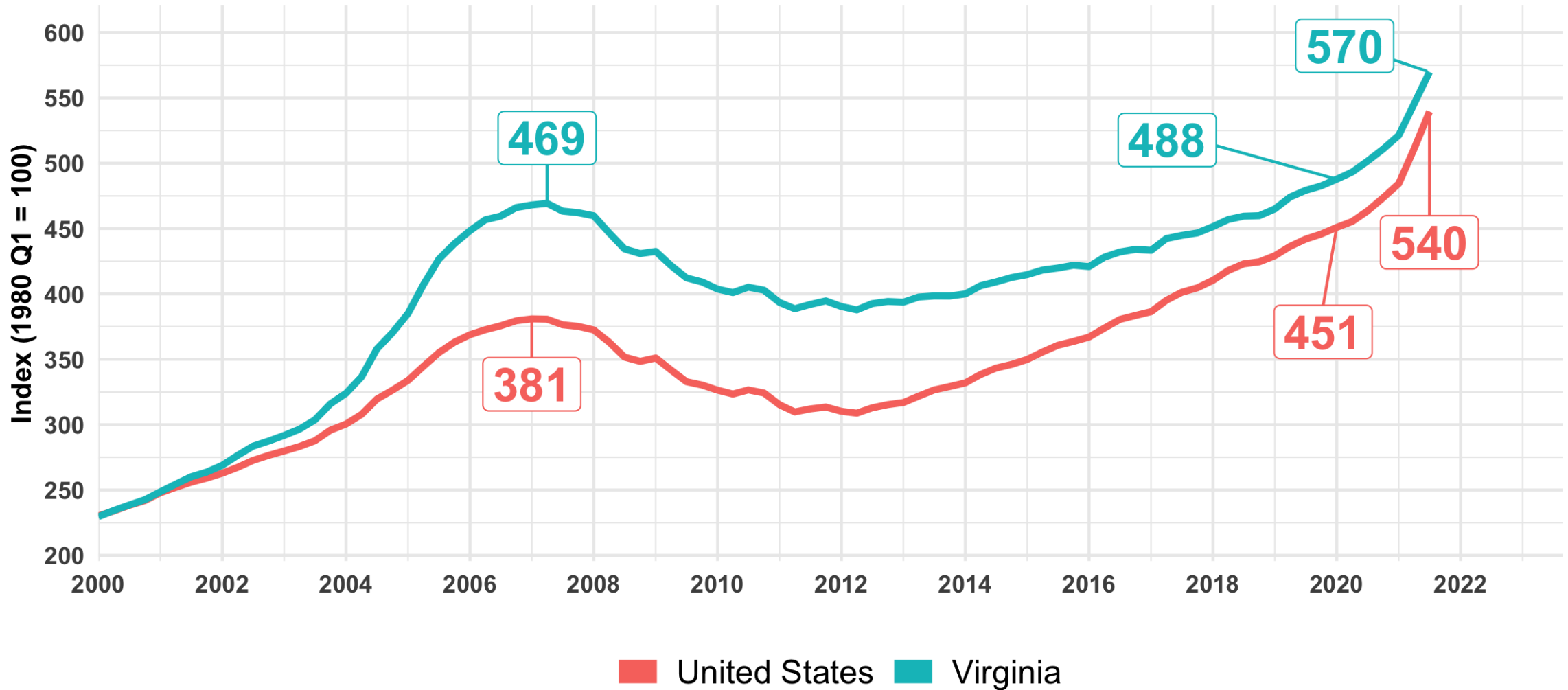
Advance Retail and Food Services United States, January 2019 - December 2021



Source: U.S. Census Bureau, seasonally adjusted data.

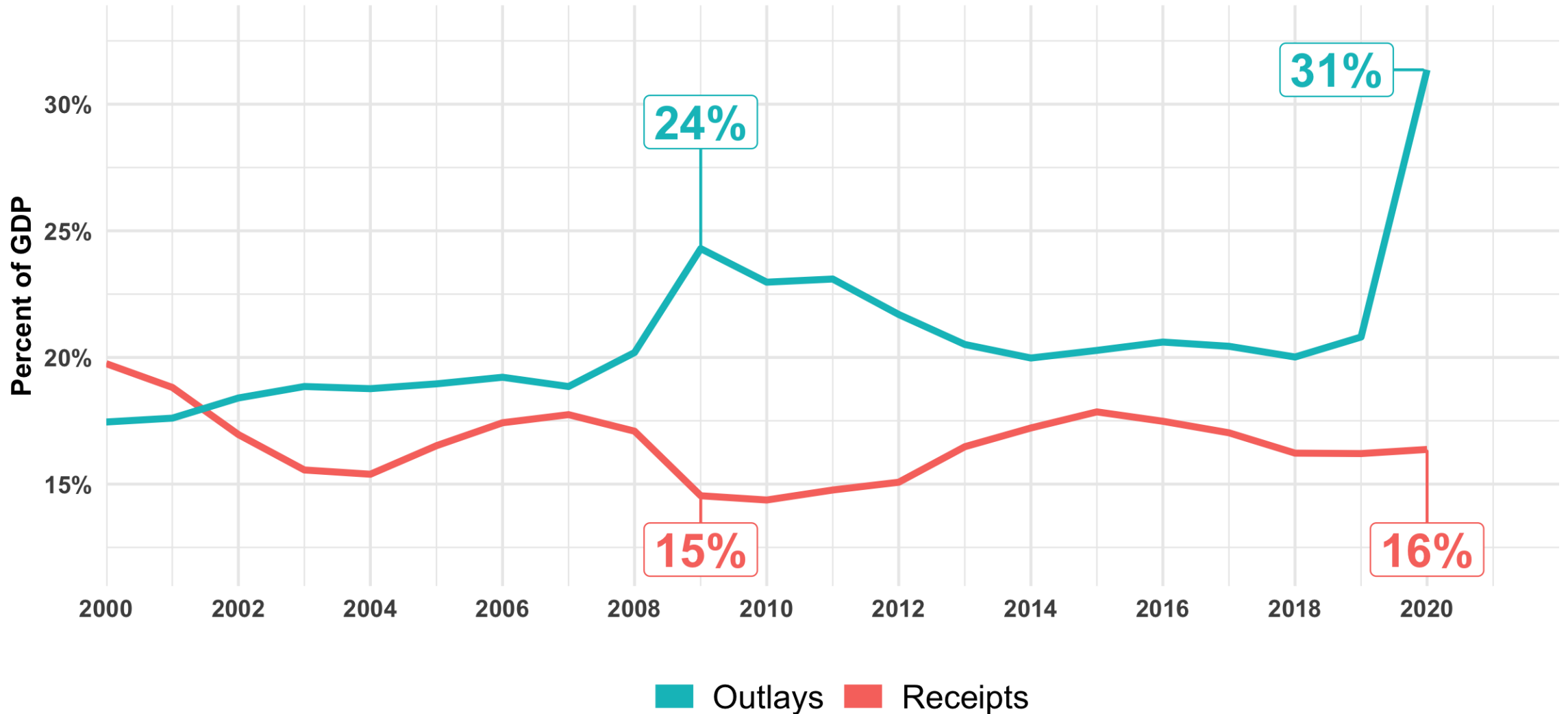
All Transactions House Price Index

United States and Virginia, January 2000 - July 2021



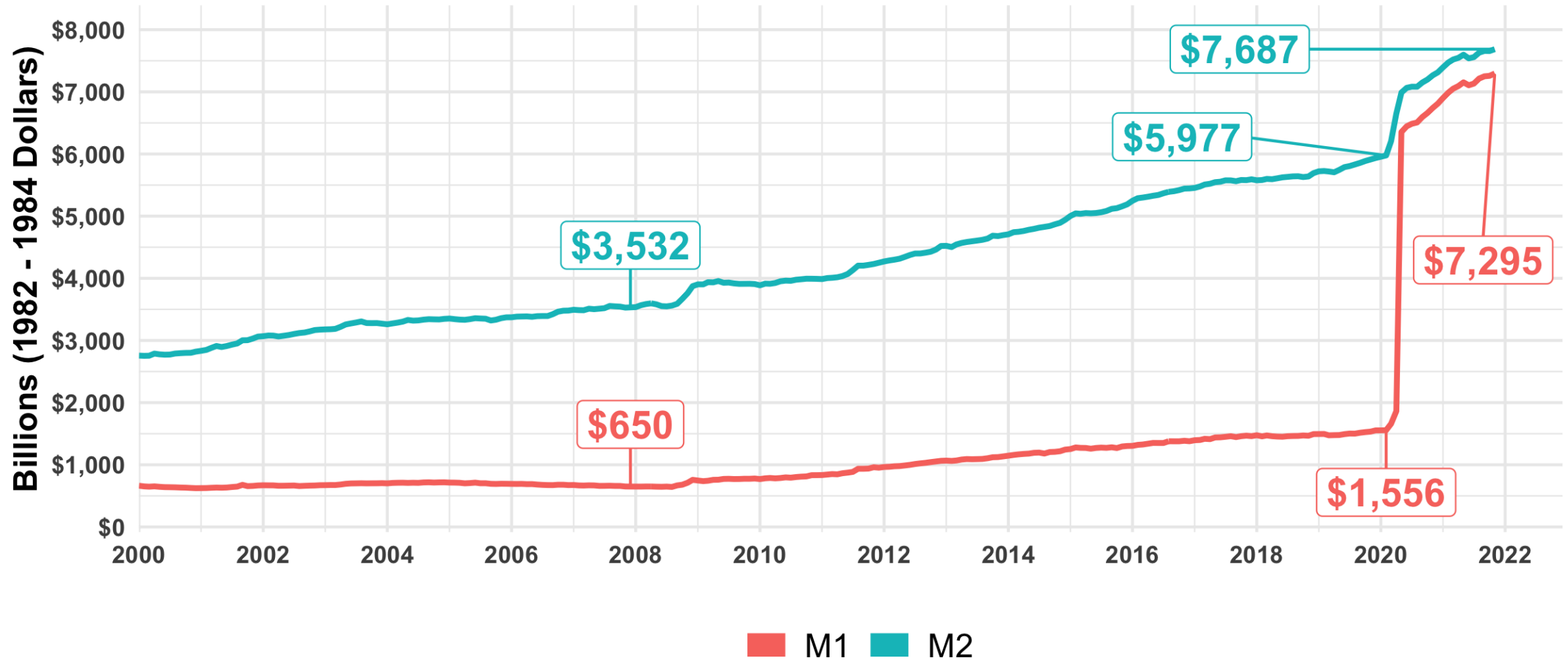
Source: U.S. Federal Housing Finance Agency, not seasonally adjusted data. Index estimated using sales prices and appraisal data. Base year is chained (1980 Q1=100).

Federal Outlays and Receipts as a Percent of GDP United States, 2000 - 2020



Source: U.S. Office of Management and Budget.

Real M1 and M2 Money Stock United States, January 2000 - November 2021



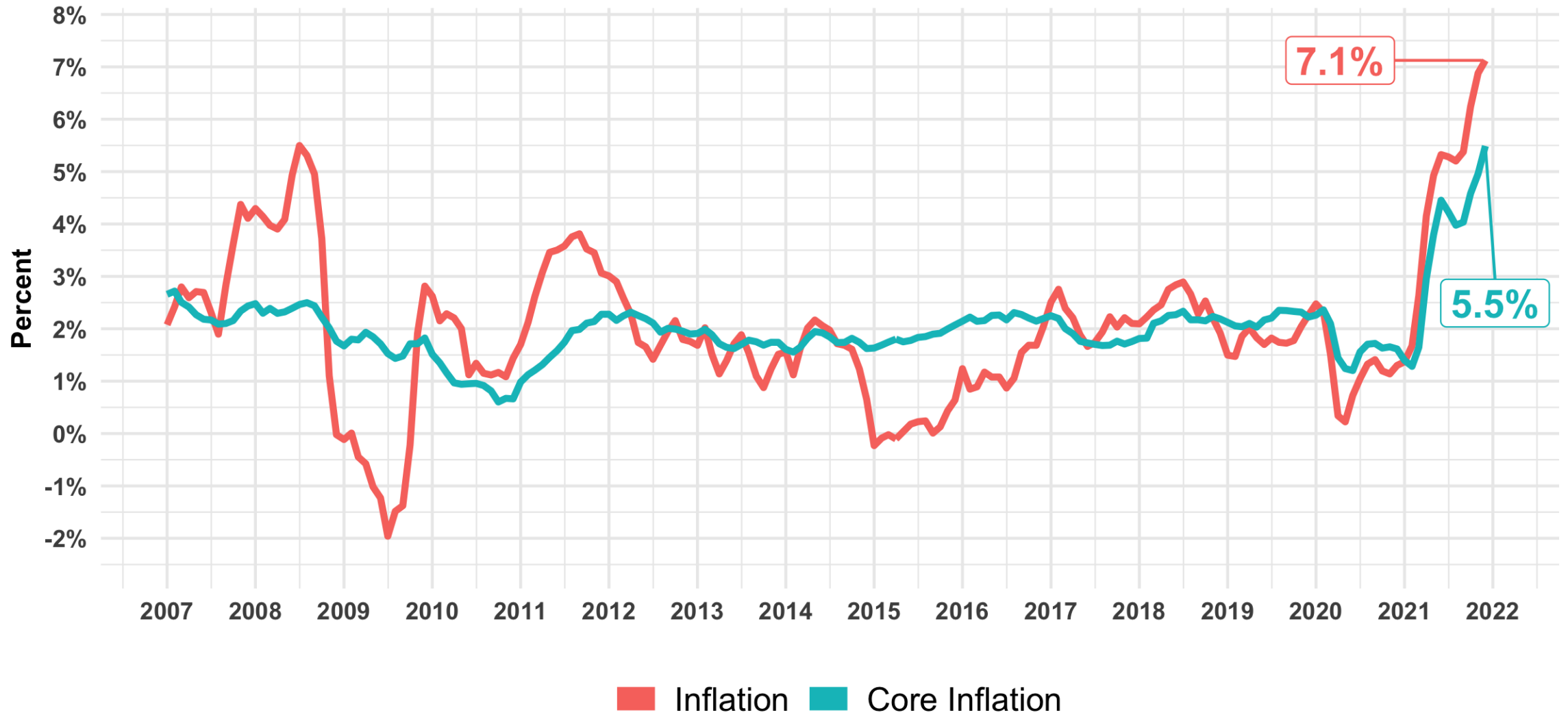
Source: Board of Governors of the Federal Reserve System.

M1 is the sum of currency held by the public and transaction deposits at depository institutions.

M2 is M1 plus time deposits under \$100,000 and balances in retail Money Market Funds net of IRA and Keogh balances.

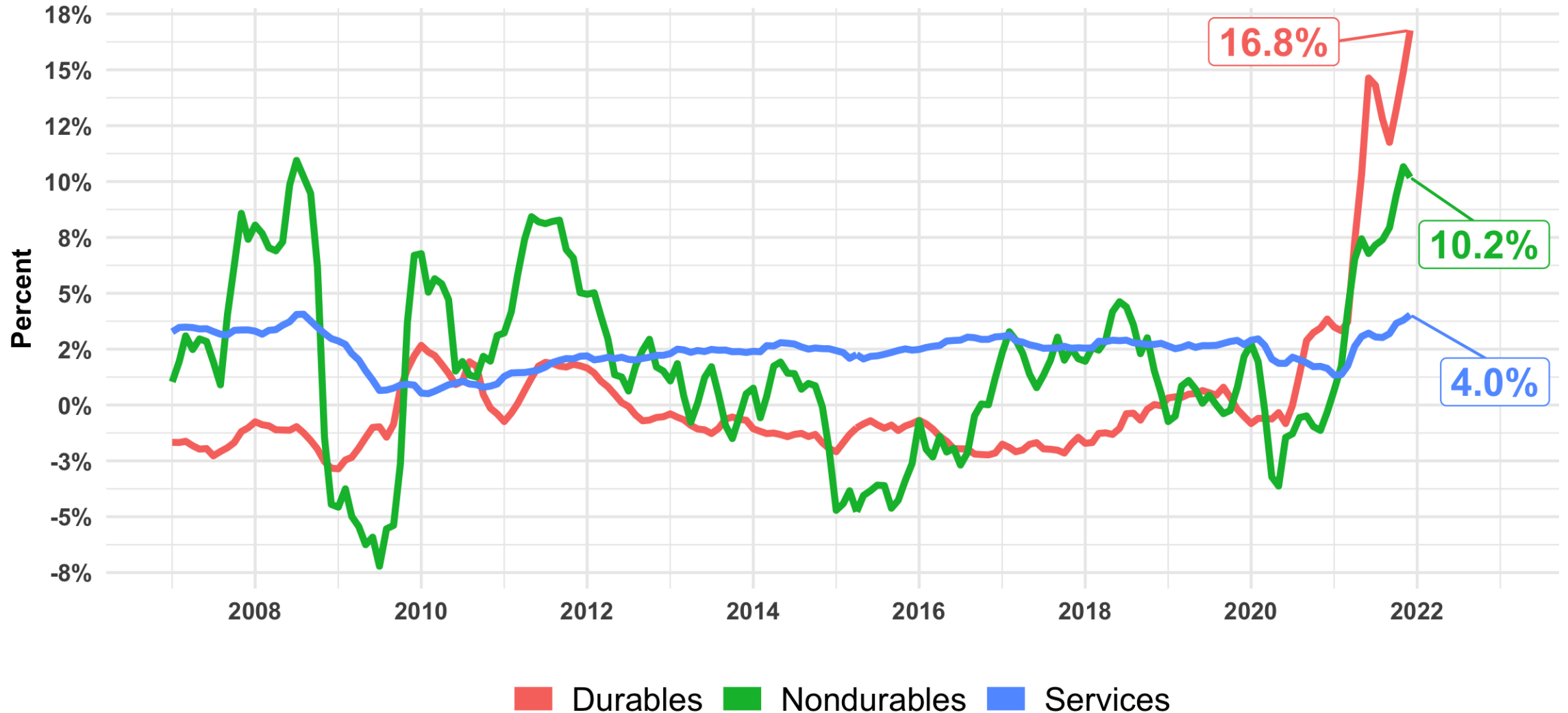
Monthly Inflation

United States, January 2007 - December 2021



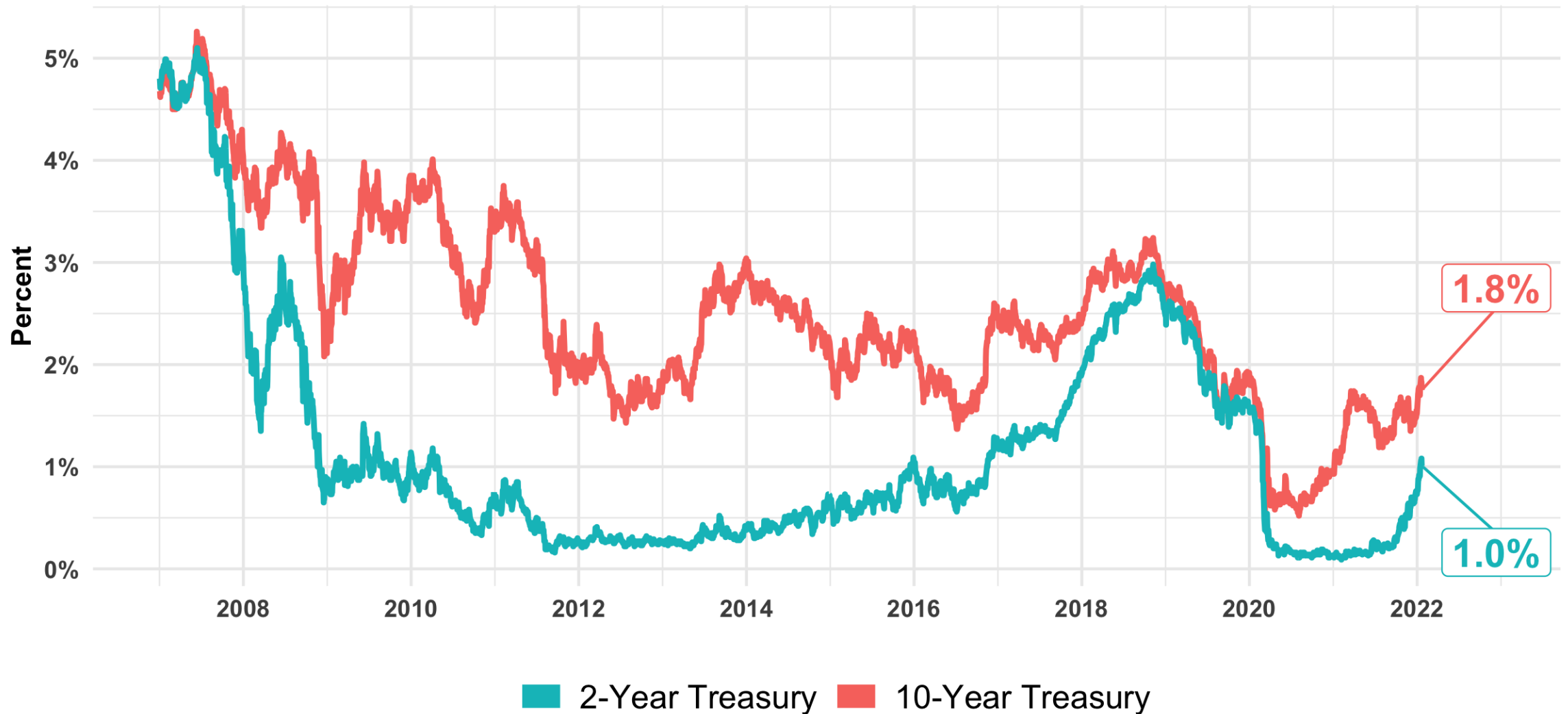
Source: Bureau of Labor Statistics, seasonally adjusted data.

Monthly Inflation in Durables, Nondurables, and Services United States, January 2007 - December 2021



Source: Bureau of Labor Statistics, seasonally adjusted data.

Constant Maturity Rates of U.S. Treasuries January 2007 - January 2022



Source: Board of Governors of the Federal Reserve System.

2022 and Beyond



Looking Ahead

- Vaccines continue to be effective at reducing the severity and mortality of COVID-19.
- Supply-chain constraints ease in the second half of 2022, but continue well into 2023.
- The 'Great Resignation' continues as baby boomers continue to leave the workforce.
- The Federal Reserve continues to lag behind inflationary expectations.
- Appropriations bills are unlikely to pass Congress until late Spring (if at all).
- National security issues may displace COVID-19 in 2022. How would the U.S. and NATO respond to a Russian invasion of Ukraine?
- Expect robust growth in 2022, but uncertainty continues to cloud forecasts.

National and Virginia Forecast

| | 2020 | 2021 | 2022 | 2023 |
|--|-----------------|-----------------|-----------------|-----------------|
| U.S. Real GDP Growth | -3.70% | 5.20% | 3.00% | 2.80% |
| Civilian Job Growth | -5.70% | 2.70% | 2.40% | 1.50% |
| Unemployment Rate | 8.10% | 5.40% | 4.00% | 3.30% |
| Inflation Rate | 1.20% | 4.70% | 3.80% | 2.80% |
| Core Inflation Rate | 1.60% | 3.60% | 3.50% | 2.40% |
| Federal Funds Rate | 0.25% | 0.25% | 1.25% | 1.75% |
| 10-year Treasury Bill | 0.89% | 1.45% | 2.00% | 2.50% |
| 30-year Conventional Mortgage | 3.11% | 2.96% | 4.00% | 4.50% |
| Federal Deficit (Fiscal Year, Billions) | -\$2,777 | -\$1,200 | -\$1,000 | -\$1,000 |
| Virginia Real GDP Growth | -2.80% | 3.80% | 3.00% | 2.80% |
| Virginia Civilian Job Growth | -5.00% | 2.50% | 2.20% | 1.50% |

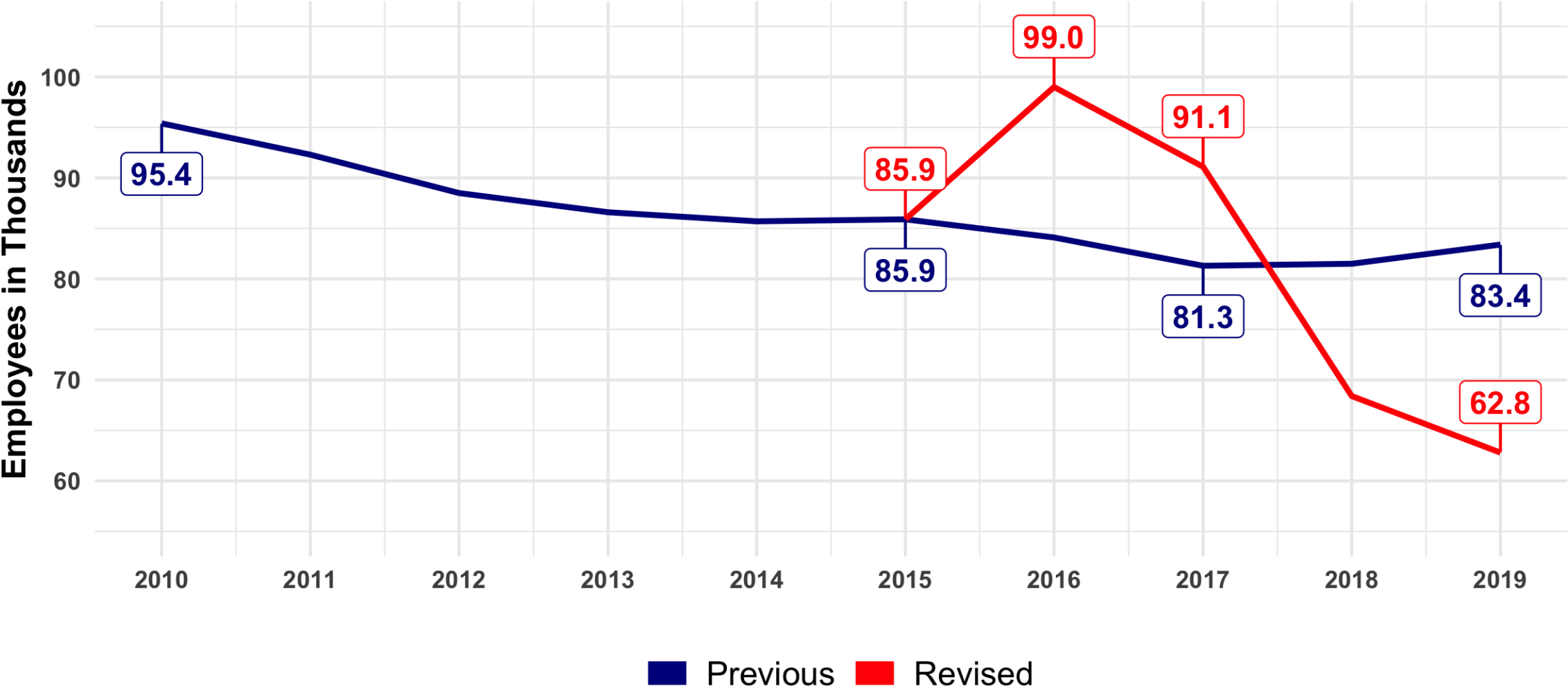
2022 Hampton Roads Economic Forecast



Defense Spending In Hampton Roads Through 2019

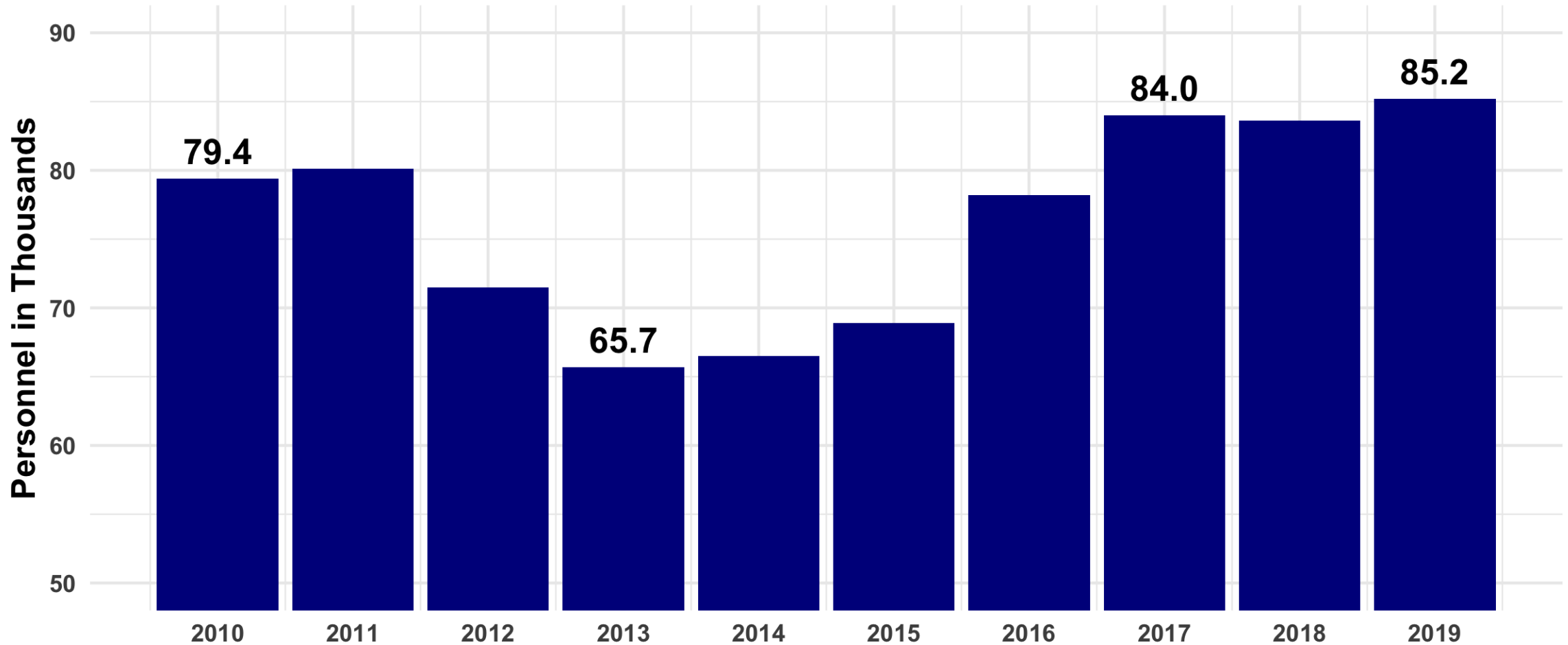


**Military Employment
Hampton Roads, 2010 - 2019**



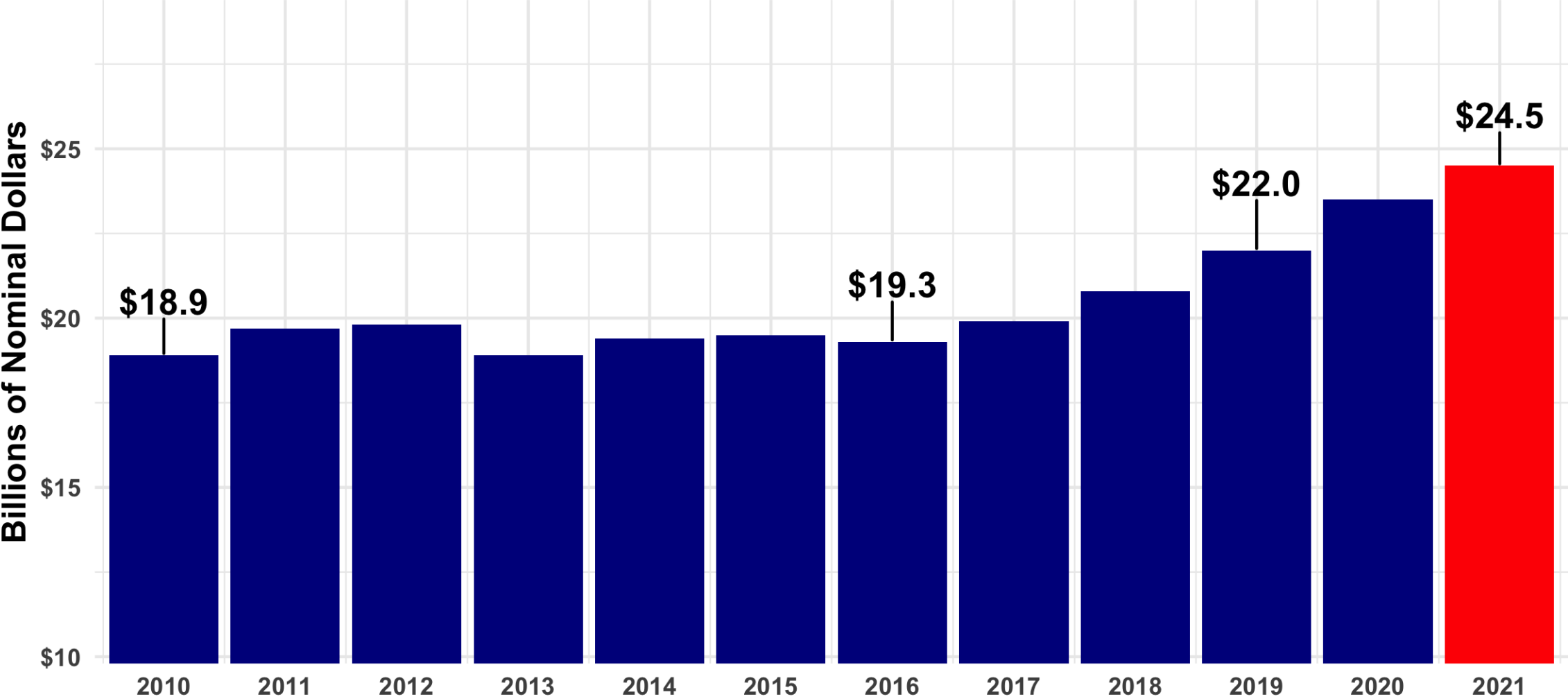
Sources: U.S. Bureau of Economic Analysis and Dragas Center for Economic Analysis and Policy.
Previous series updated on November 17, 2020; revised series released on November 16, 2021.

Active Duty Navy Personnel Hampton Roads, FY 2010 - FY 2019



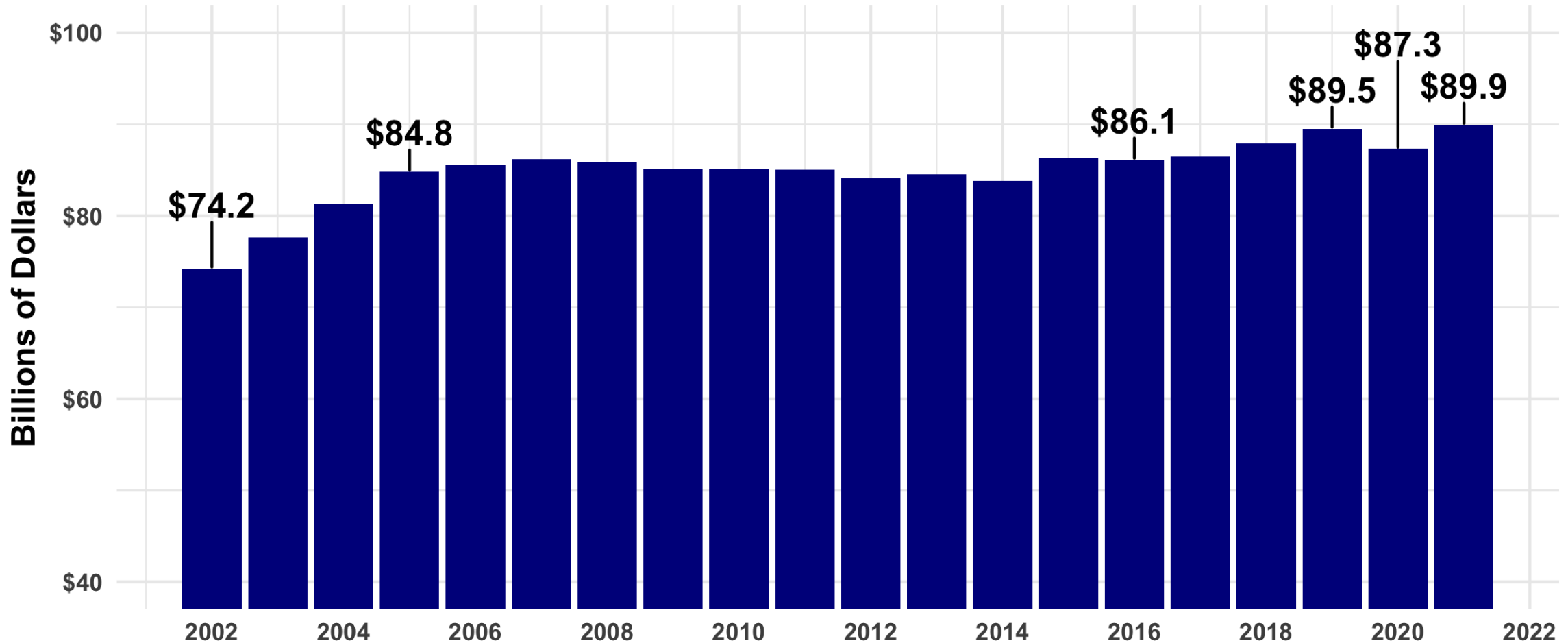
Sources: Navy Region Mid – Atlantic Public Affairs Office: Statistical Reports for Fiscal Years 2010 to 2019, The Navy in Hampton Roads, and Dragas Center for Economic Analysis and Policy.
Data reported here exclude students and other transients.

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



Sources: U.S. Department of Defense and Dragas Center for Economic Analysis and Policy. *2021 is an estimate.

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

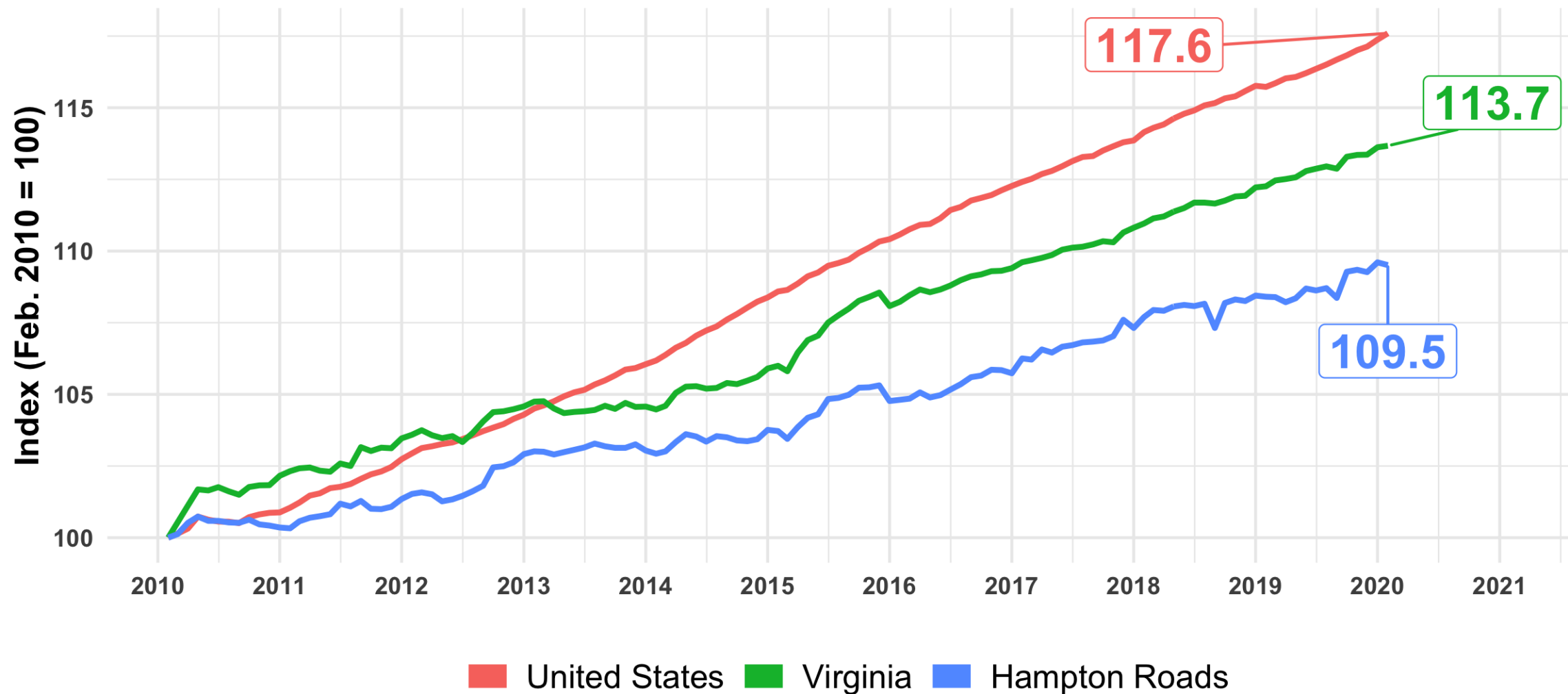


Sources: Bureau of Economic Analysis and Dragas Center for Economic Analysis and Policy.
Data on GDP incorporates latest BEA revisions in December 2020. Data for 2020 and 2021 for Hampton Roads are our estimate. Real GDP in 2012 Chained Dollars.

Jobs and Employment

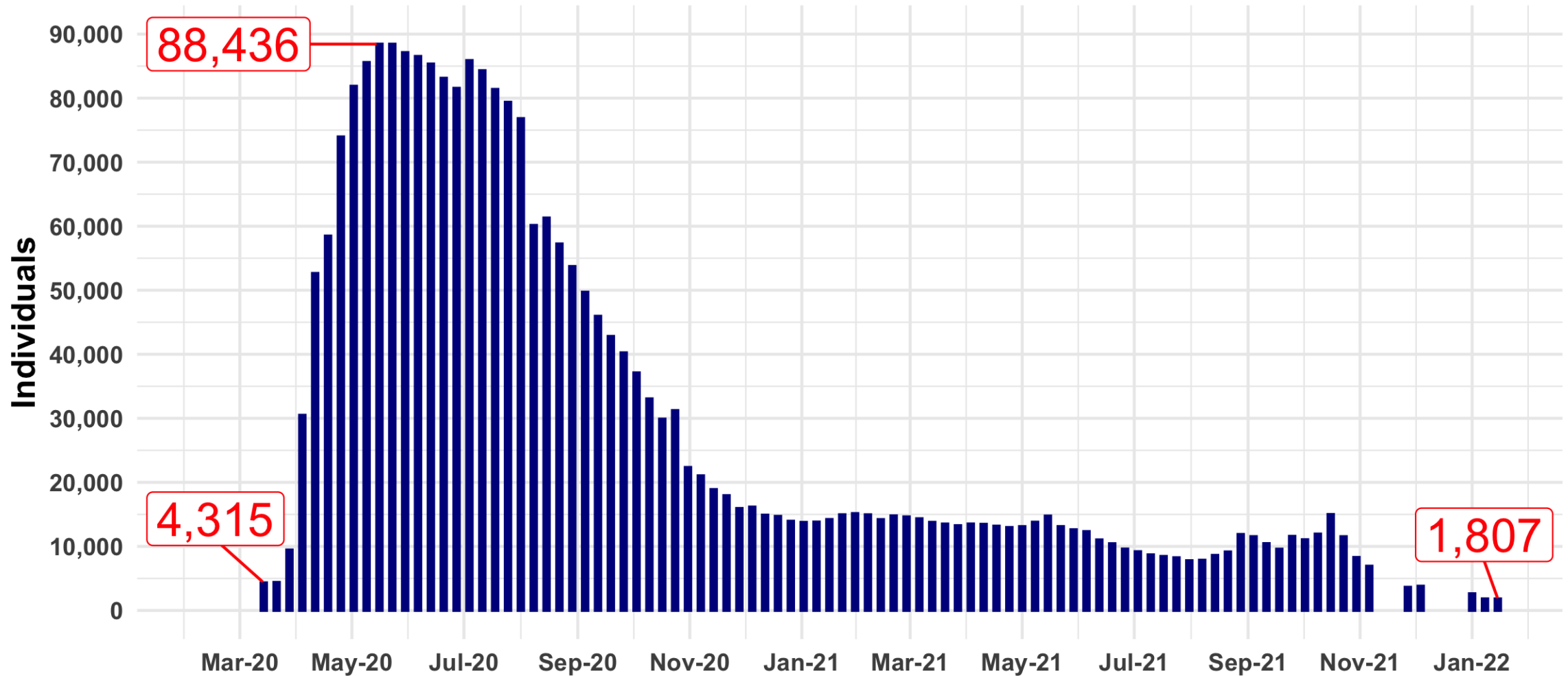


Nonfarm Payrolls (Jobs)
Hampton Roads, Virginia, and the United States, February 2010 - February 2020



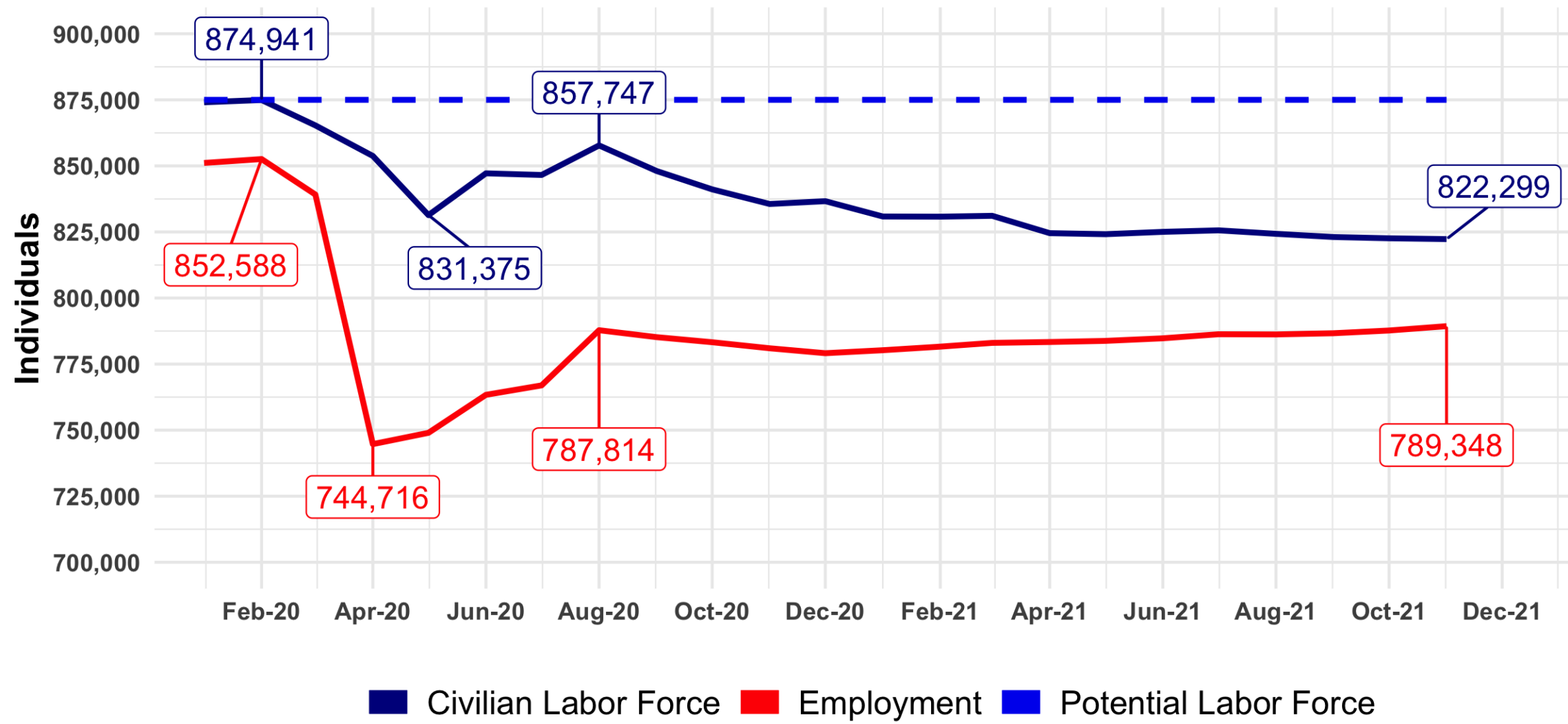
Source: Bureau of Labor Statistics, seasonally adjusted data.
February 2010 was the trough of nonfarm payrolls for the United States, Virginia, and Hampton Roads.

Continued Claims for Unemployment Insurance Hampton Roads, March 14, 2020 - January 15, 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.

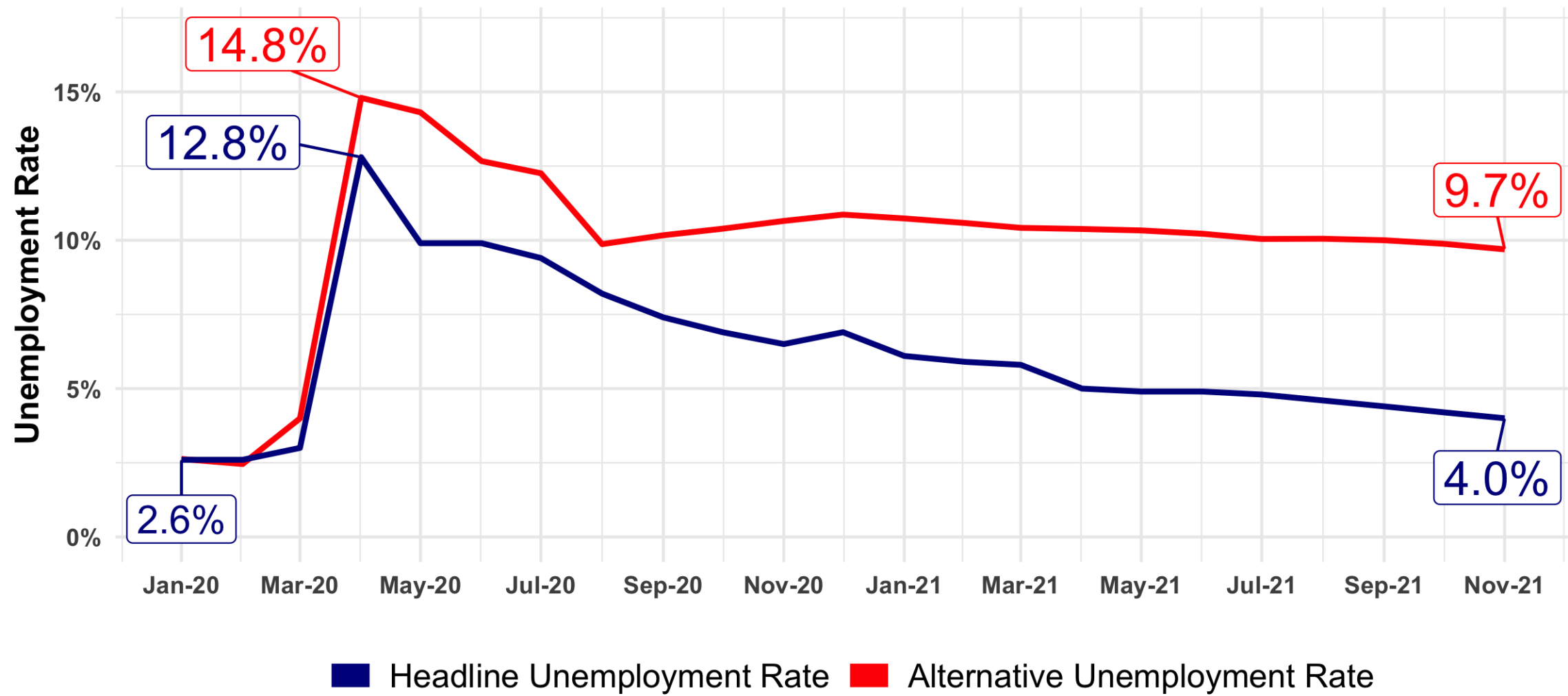
Civilian Labor Force and Employment
Hampton Roads, January 2020 - November 2021



Source: Bureau of Labor Statistics, seasonally adjusted data.

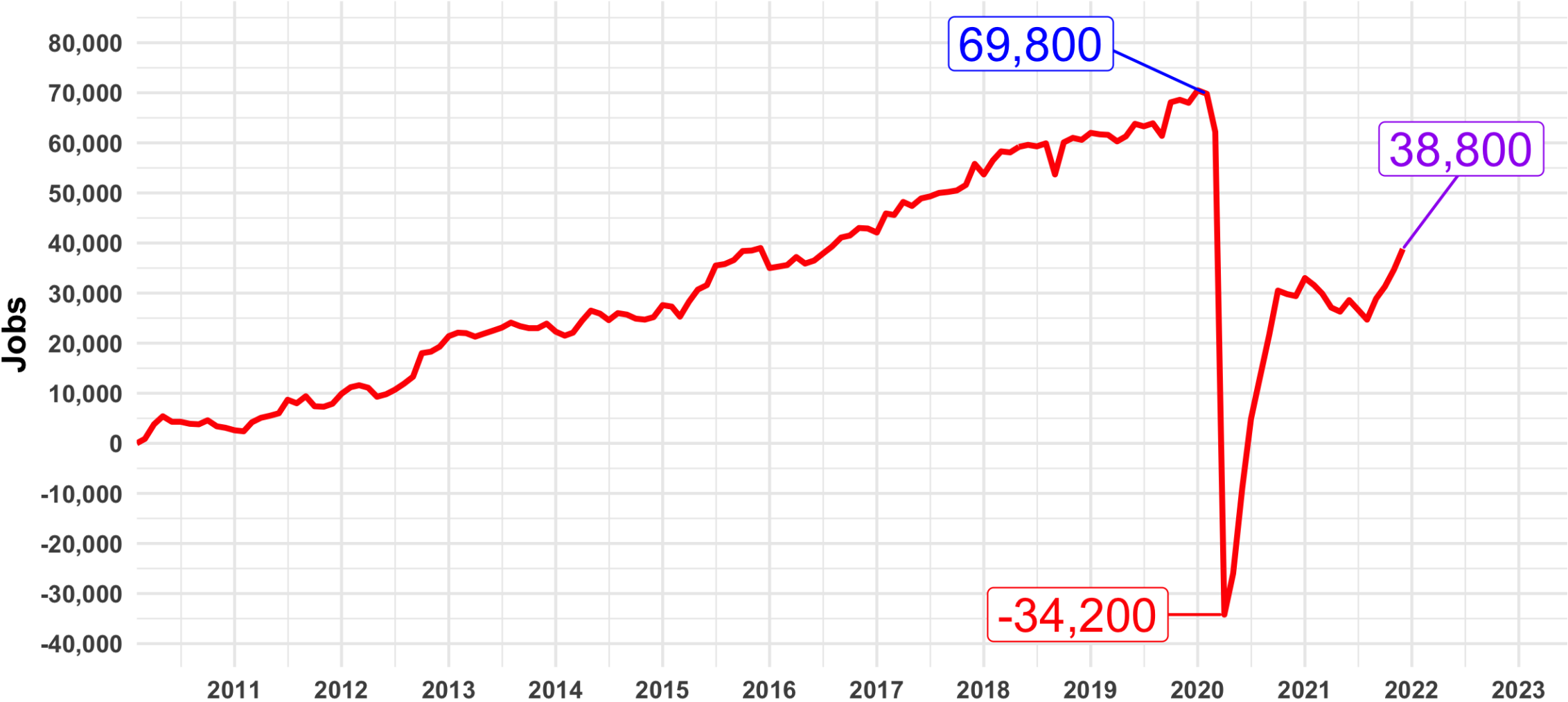
Headline and Alternative Unemployment Rate

Hampton Roads, January 2020 - November 2021



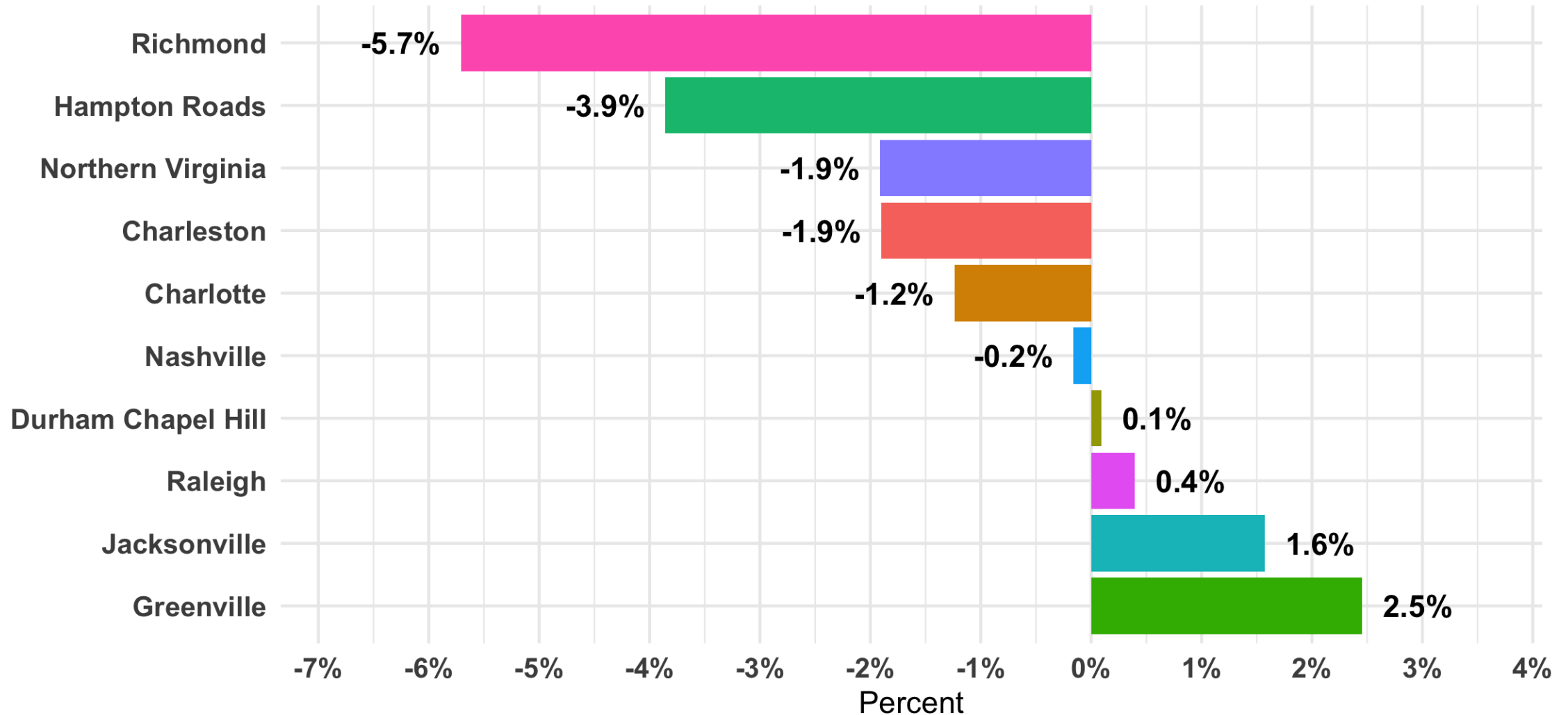
Source: Bureau of Labor Statistics, seasonally adjusted data.
Alternative unemployment rate includes departures from the labor force and counted as unemployed.

Change in Nonfarm Payrolls (Jobs)
Hampton Roads, February 2010 - December 2021



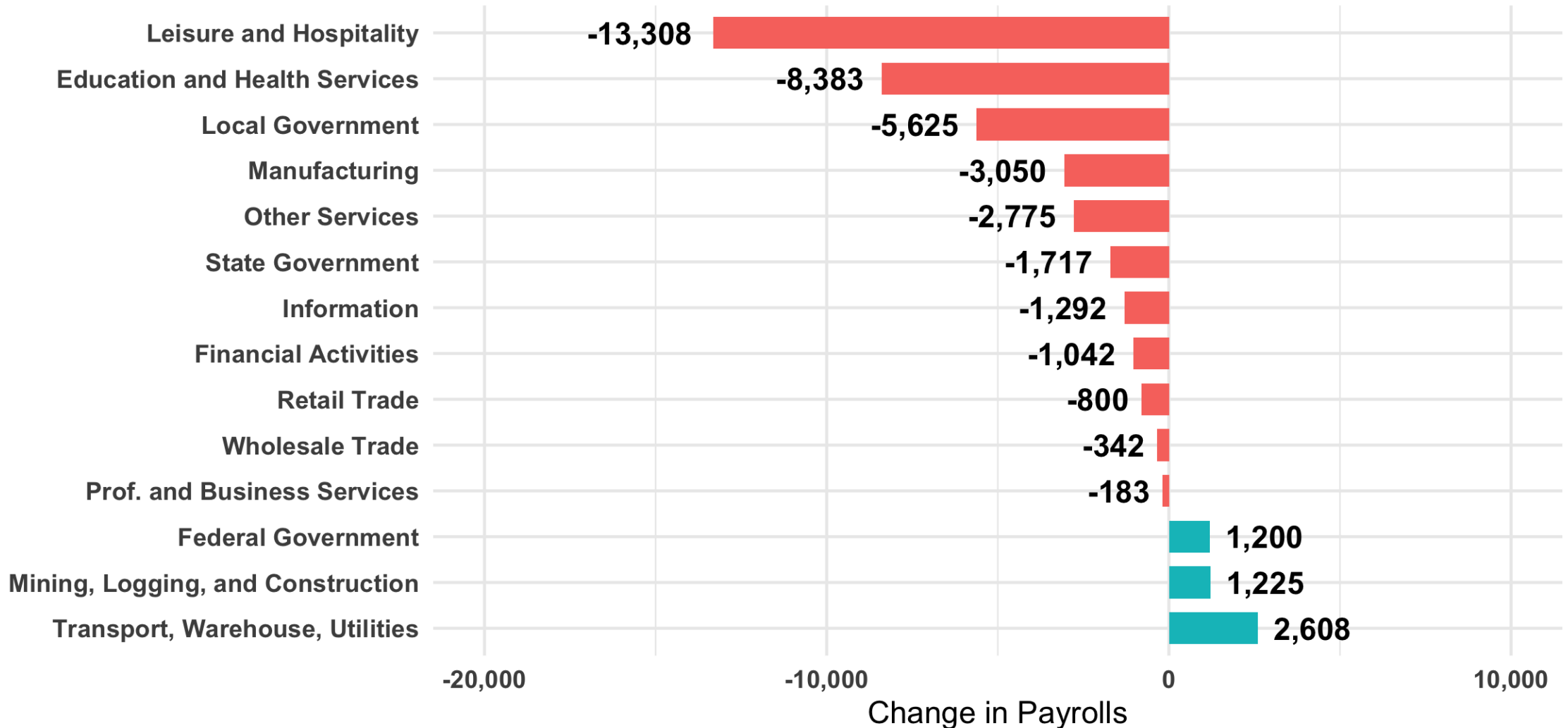
Source: Bureau of Labor Statistics, seasonally adjusted data.

Growth in Nonfarm Payrolls Selected Metropolitan Areas, February 2020 - December 2021



Sources: Bureau of Labor Statistics, seasonally adjusted data,
and the Dragas Center for Economic Analysis and Policy.

Change in Nonfarm Payrolls (Jobs) Hampton Roads, 2019 - 2021

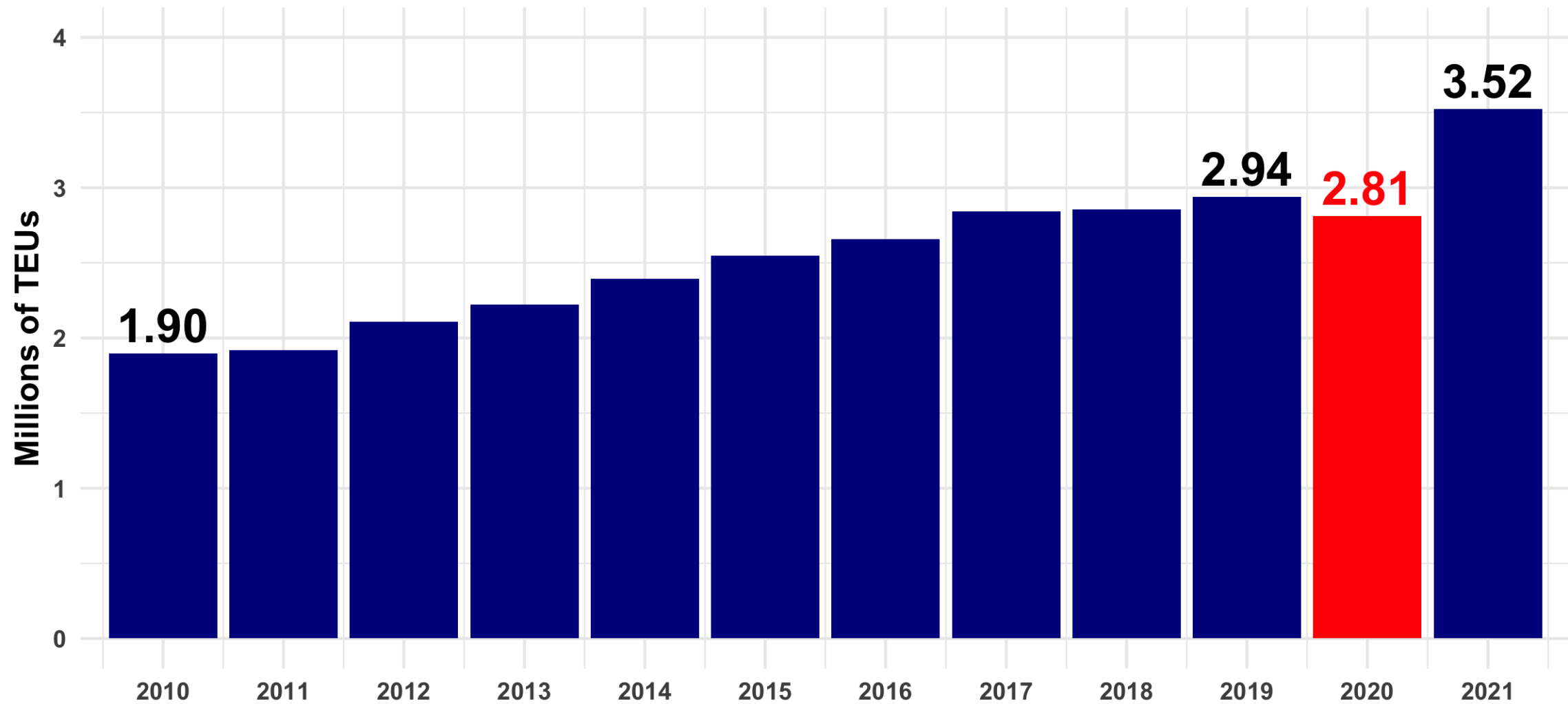


Sources: Bureau of Labor Statistics, non-seasonally adjusted data,
and the Dragas Center for Economic Analysis and Policy.

The Port of Virginia: Significant Growth in 2021

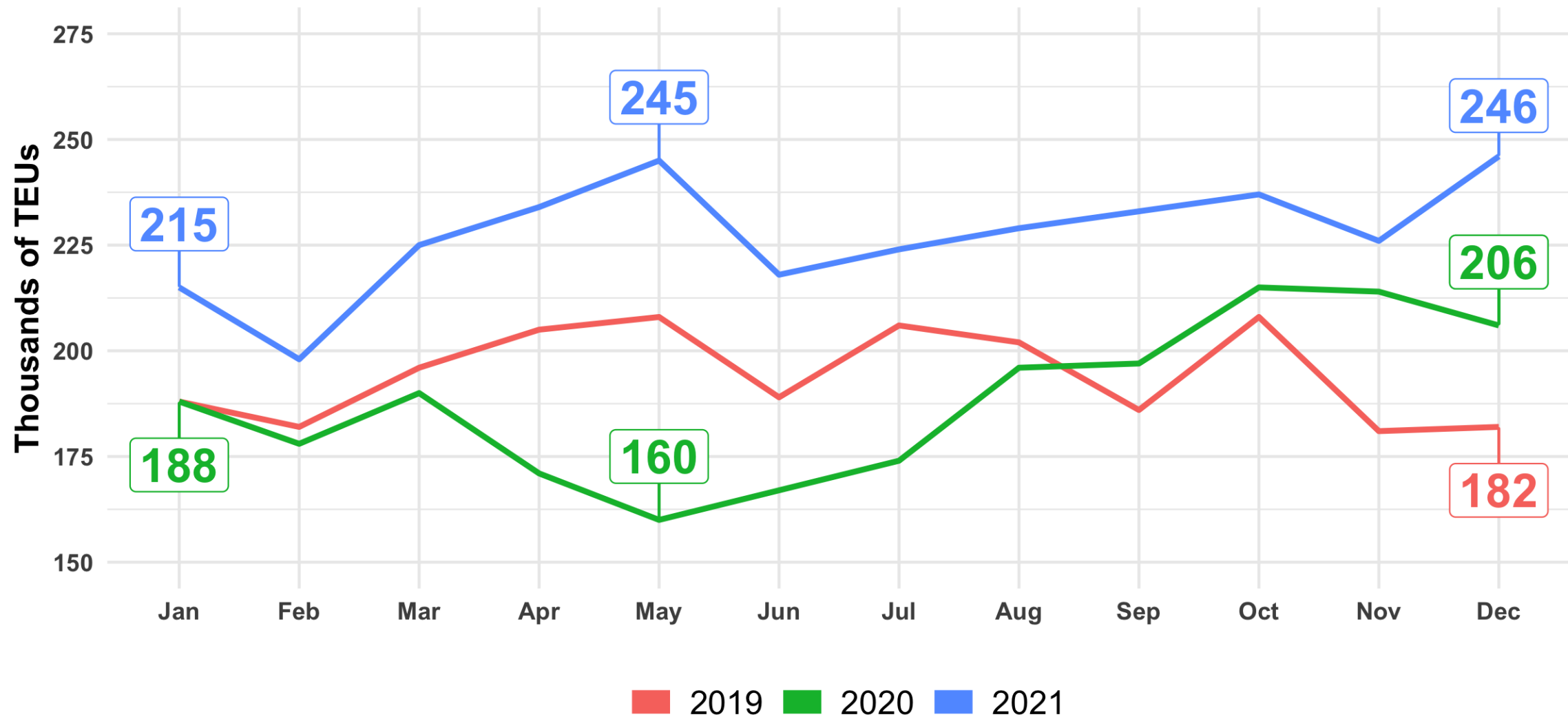


Twenty Foot Equivalent Container Units (TEUs)
Port of Virginia, 2010 - 2021



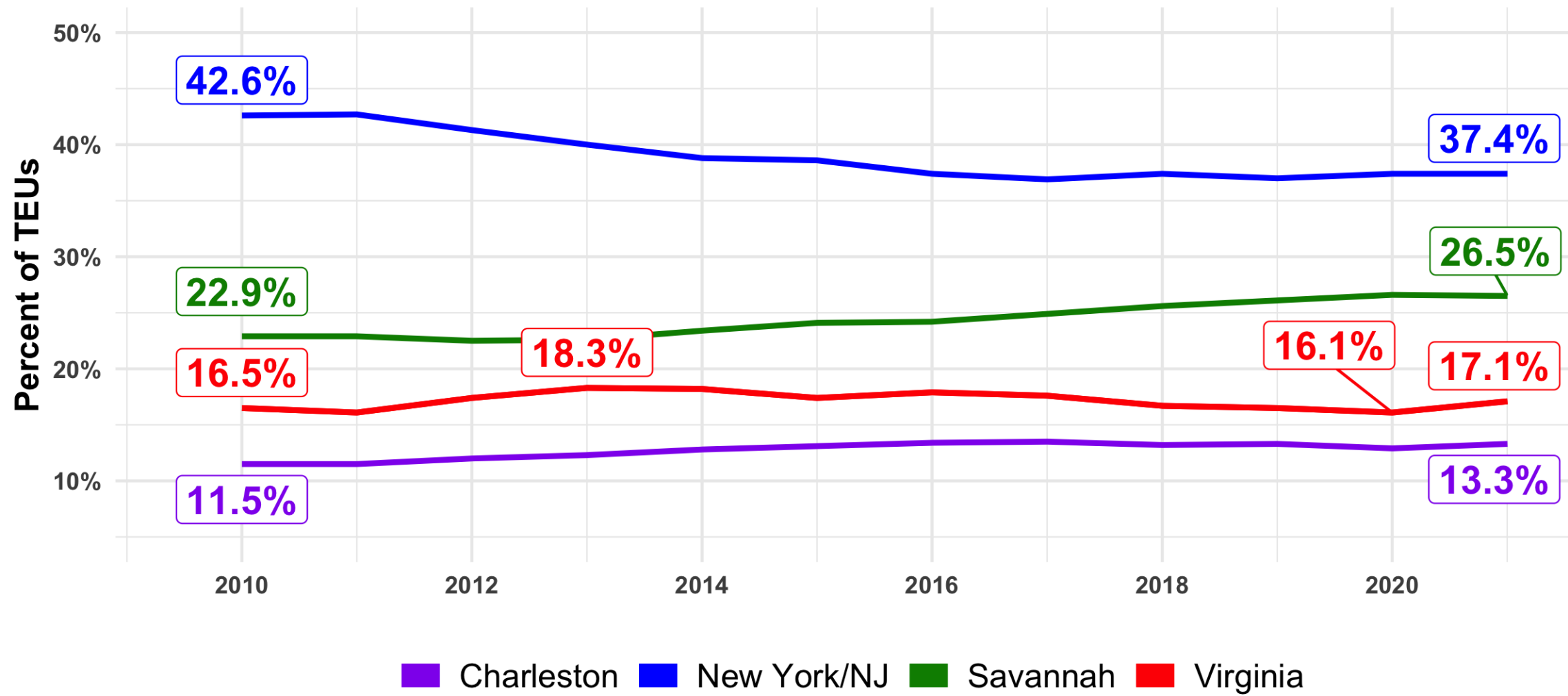
Sources: Virginia Port Authority and Dragas Center for Economic Analysis and Policy.

**Total Loaded Twenty Foot Equivalent Container Units (TEUs)
Port of Virginia, January 2019 - December 2021**



Sources: Virginia Port Authority and Dragas Center for Economic Analysis and Policy.

Shares of Total Loaded TEUs
Selected East Coast Ports, 2010 - 2021*

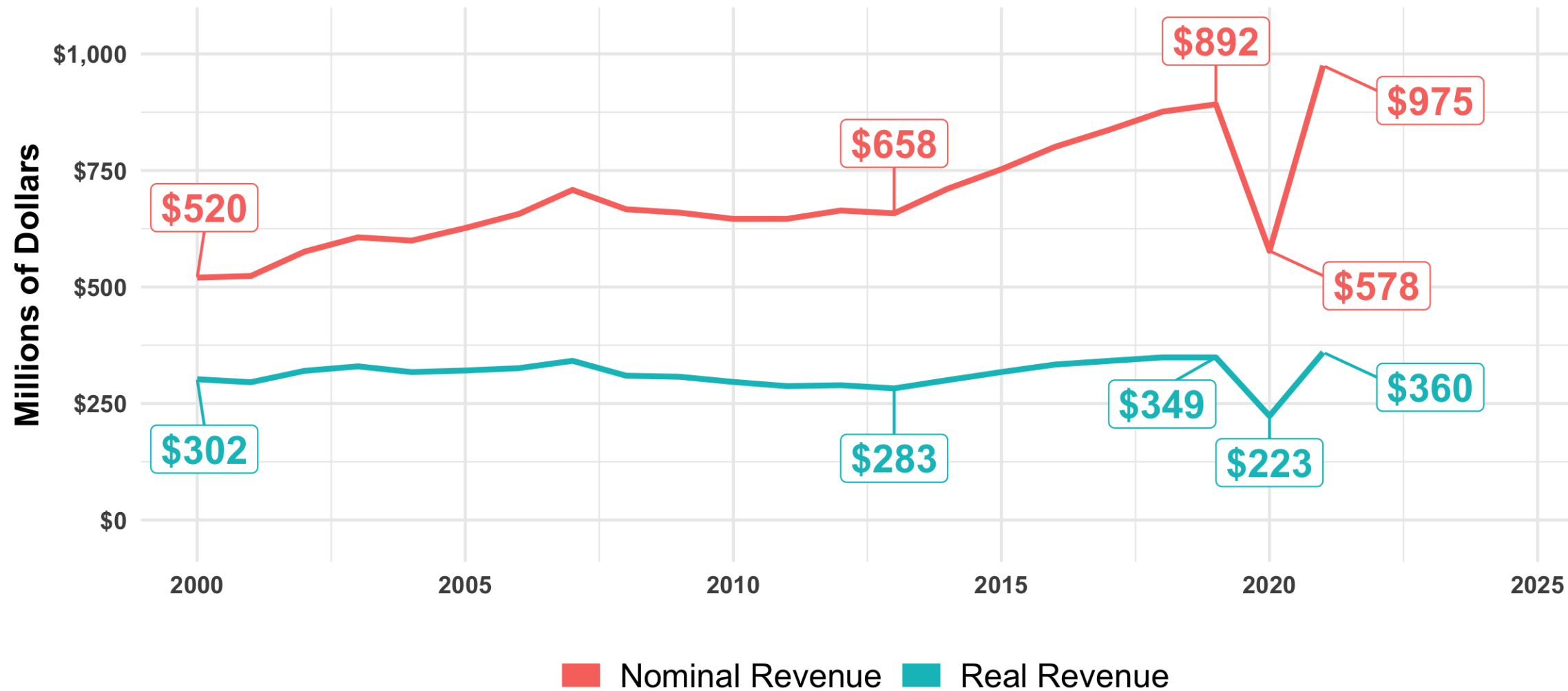


Sources: American Association of Port Authorities, websites of ports, and Dragas Center for Economic Analysis and Policy.
*Data through November 2021.

Hotels Rebound but Challenges Remain



Nominal and Real (Inflation-Adjusted) Hotel Revenue Hampton Roads, 2000 - 2021



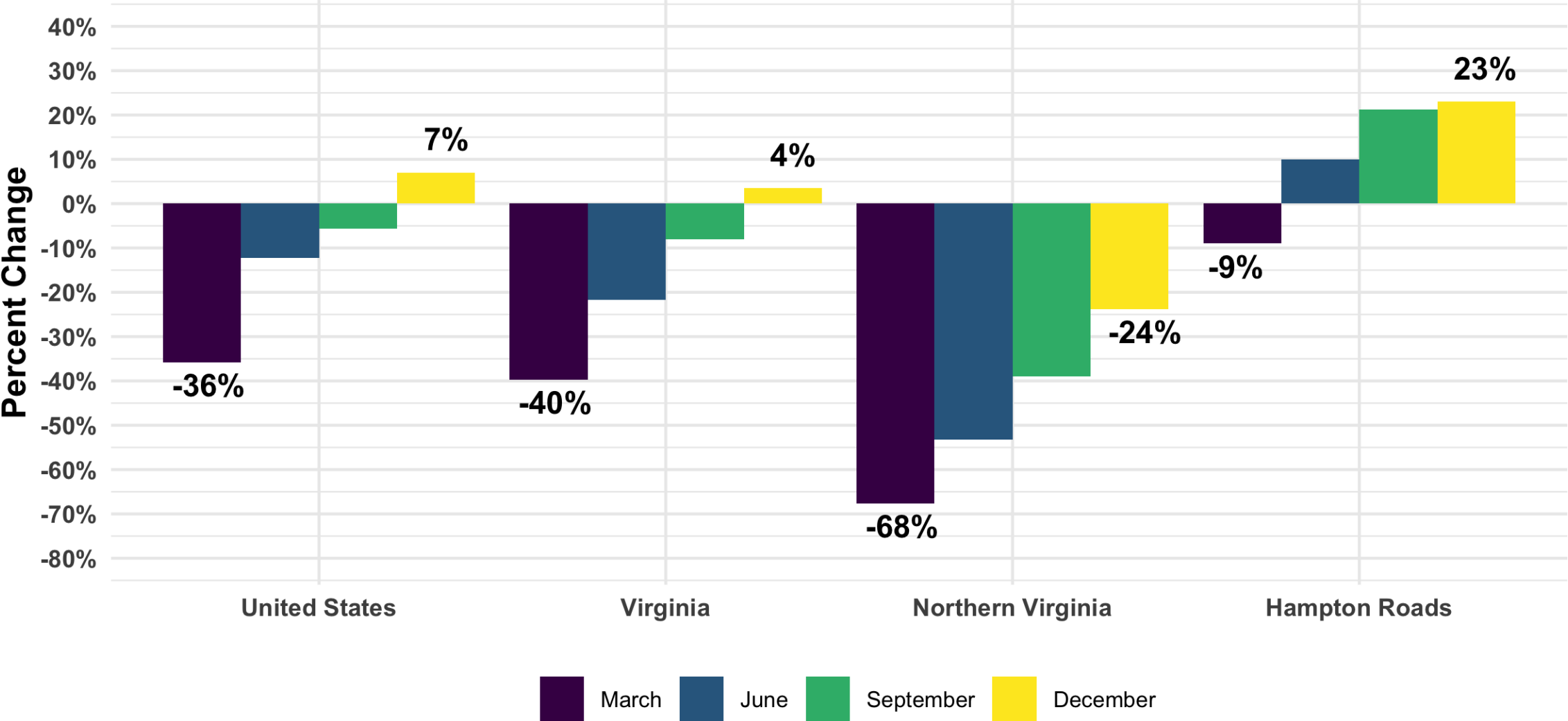
Sources: STR Trend Reports January 2017 and January 2021, STR Monthly Reports, and Bureau of Labor Statistics (base year is chained; 1982-84=100), and Dragas Center for Economic Analysis and Policy.

Percent Change in Selected Key Performance Indicators of Hotels in USA, Virginia, and Hampton Roads: 2019 to 2020

| | <u>Hotel Revenue</u> | <u>RevPAR</u> | <u>Hotel Rooms Sold</u> |
|-----------------------------|----------------------|---------------|-------------------------|
| USA | -49.4% | -47.5% | -35.7% |
| Virginia | -47.9% | -46.7% | -34.2% |
| Hampton Roads | -35.2% | -34.7% | -23.3% |
| Chesapeake/Suffolk | -21.5% | -21.4% | -11.5% |
| Newport News/Hampton | -29.0% | -29.2% | -15.9% |
| Norfolk/Portsmouth | -32.7% | -34.2% | -20.7% |
| Virginia Beach | -28.9% | -30.2% | -20.4% |
| Williamsburg* | -64.0% | -60.6% | -53.3% |

* Williamsburg market includes City of Williamsburg and James City County. Sources: STR Trend Report January 2021, and Dragas Center for Economic Analysis and Policy.

Percent Change in Monthly Hotel Revenue
United States, Virginia, Northern Virginia, and Hampton Roads, 2019 to 2021



Sources: STR Monthly Trend Reports and Dragas Center for Economic Analysis and Policy.

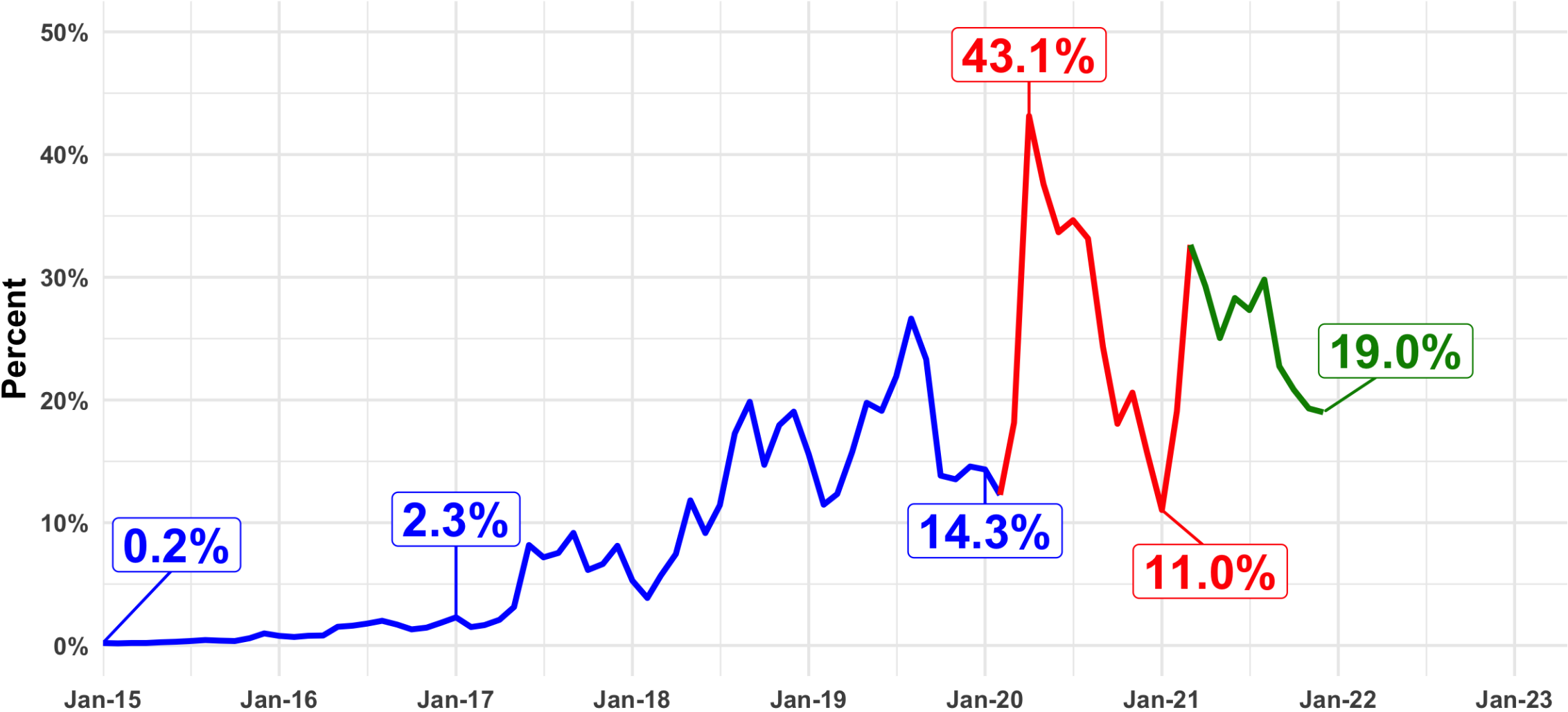
Percent Change in Selected Key Performance Indicators of Hotels in USA, Virginia, and Hampton Roads: 2019 to 2021

| | <u>Hotel Revenue</u> | <u>RevPAR</u> | <u>Hotel Rooms Sold</u> |
|-----------------------------|----------------------|---------------|-------------------------|
| USA | -16.0% | -16.8% | -11.8% |
| Virginia | -17.9% | -18.0% | -11.4% |
| Hampton Roads | 9.3% | 7.7% | -1.4% |
| Chesapeake/Suffolk | 11.4% | 11.3% | 4.9% |
| Newport News/Hampton | 0.5% | 0.6% | -3.9% |
| Norfolk/Portsmouth | 5.2% | -0.9% | 2.8% |
| Virginia Beach | 21.2% | 14.4% | 2.0% |
| Williamsburg* | -6.0% | -0.7% | -15.5% |

* Williamsburg market includes City of Williamsburg and James City County. Sources: STR Monthly Trend Reports, and Dragas Center for Economic Analysis and Policy.

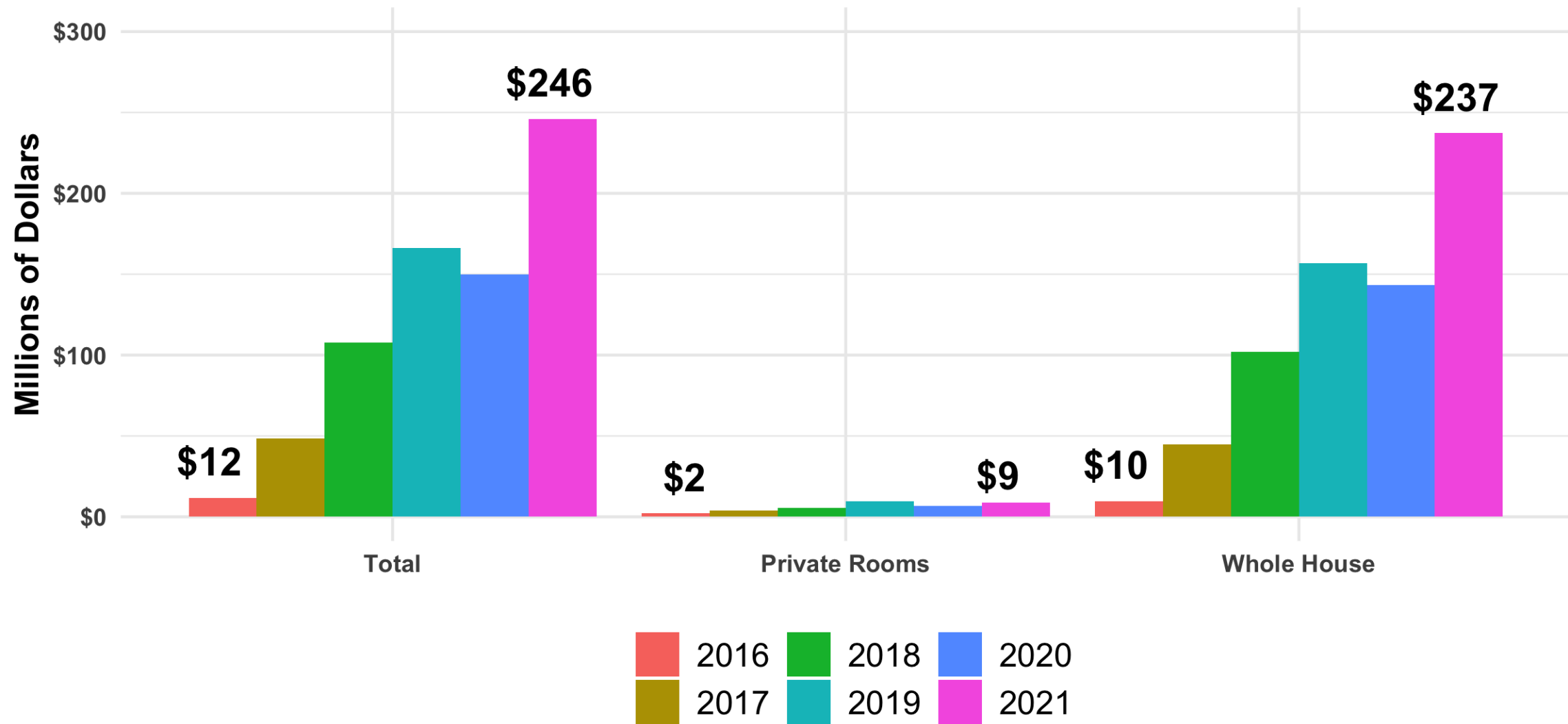
Airbnb & Vrbo Revenue as a Percent of Hotel Revenue

Hampton Roads, January 2015 - December 2021



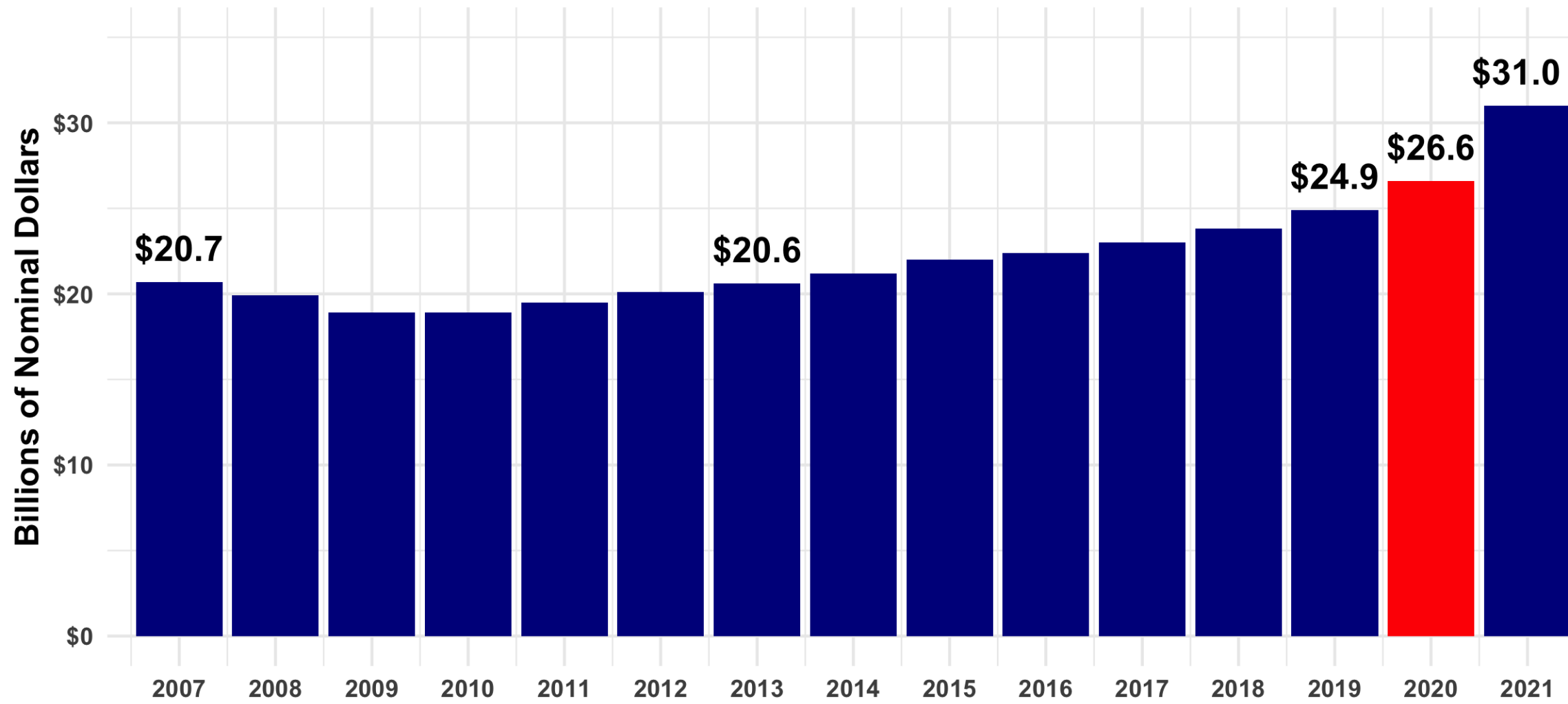
Sources: STR Trend Report January 2021, STR Monthly Reports, and AirDNA data received in January 2022.
AirDNA data exclude shared rooms.

Annual Revenue of Airbnb & Vrbo Private Rooms and Whole House Rentals
Hampton Roads, 2016 - 2021



Source: AirDNA data received in January 2022; excludes shared rooms.

Taxable Sales
Hampton Roads, 2007 - 2021

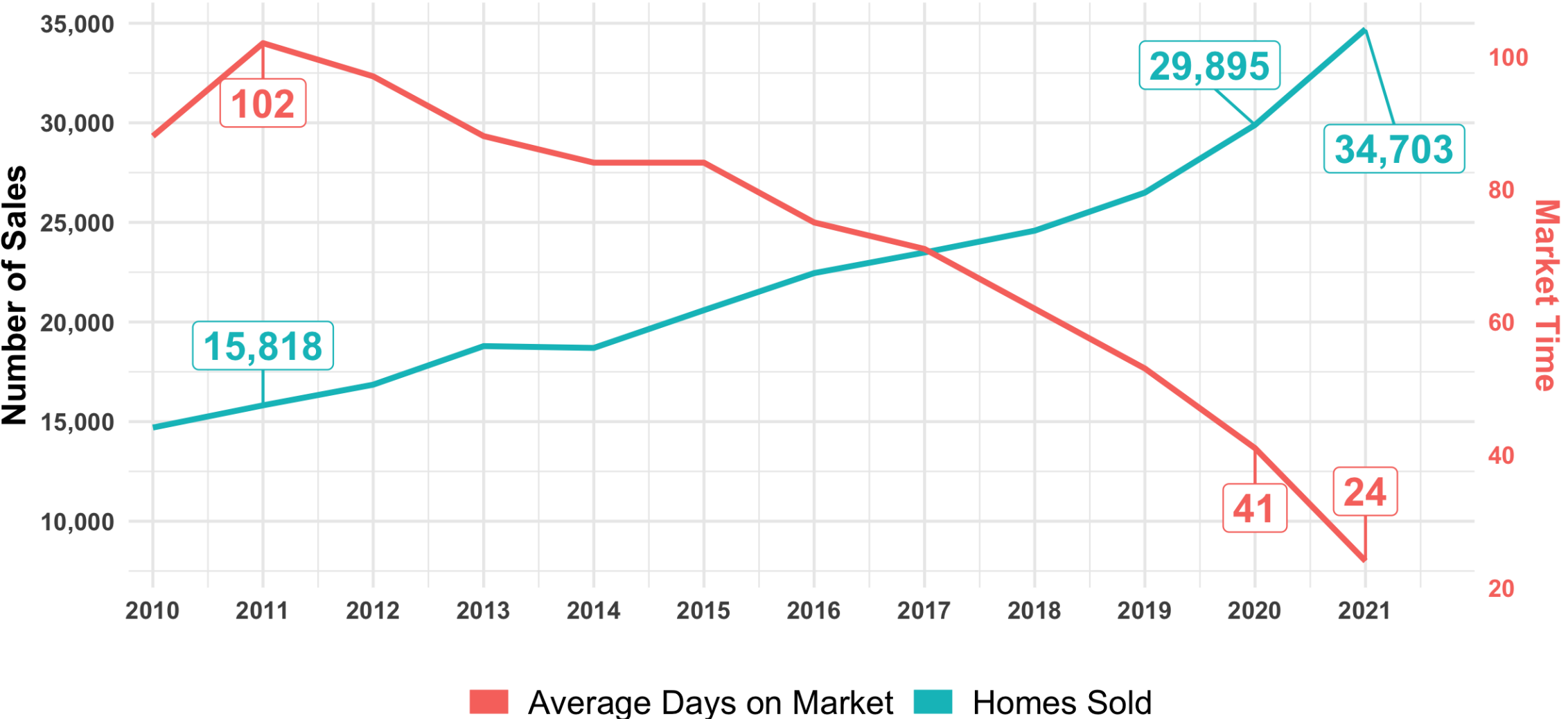


Sources: Virginia Department of Taxation and Dragas Center for Economic Analysis and Policy.

Housing Values Surge and Rents Rise

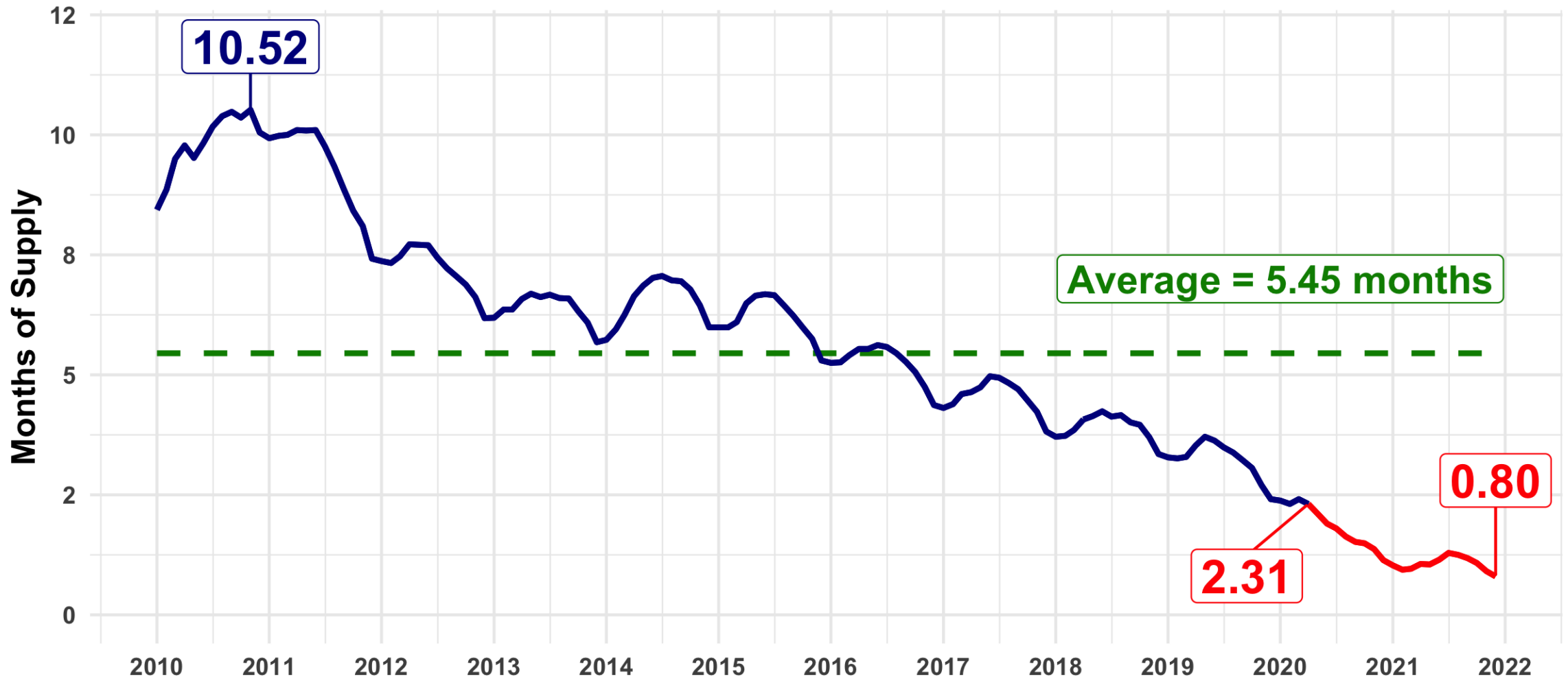


Existing Residential Homes Sold and Average Days on the Market Hampton Roads, 2010 - 2021



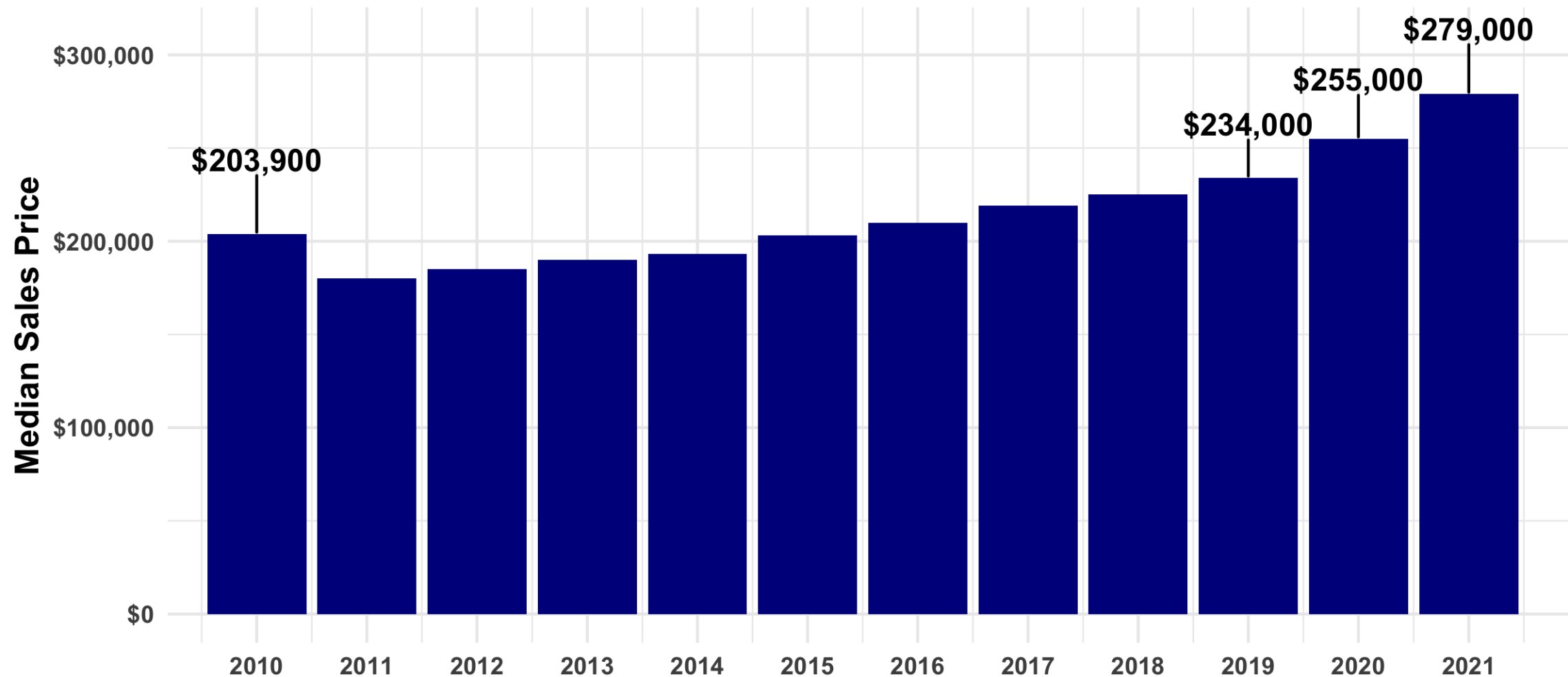
Sources: Real Estate Information Network Inc. and Dragas Center for Economic Analysis and Policy.

Estimated Months of Supply of Existing Homes Hampton Roads, January 2010 - December 2021



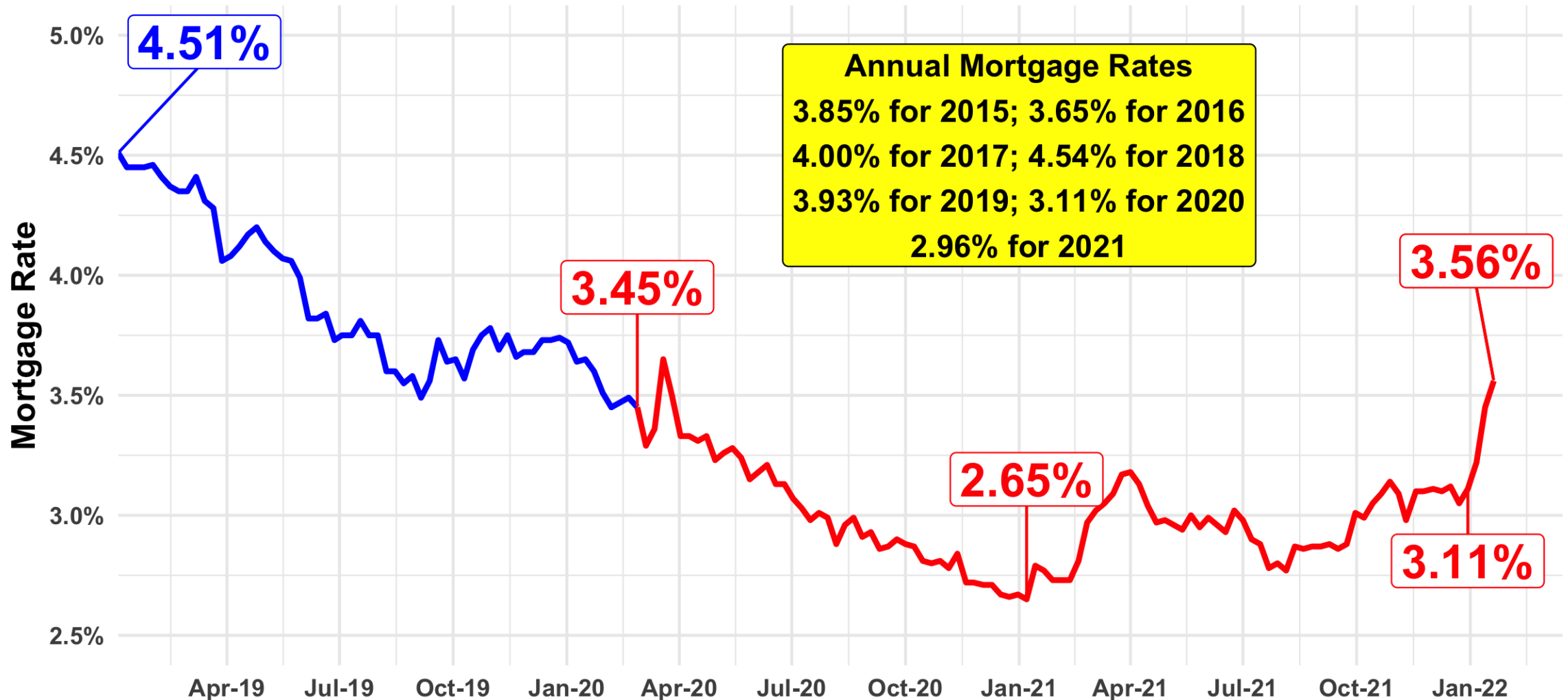
Sources: Real Estate Information Network Inc. and Dragas Center for Economic Analysis and Policy.
Months of supply is based on average sales in the last 12 months.

**Median Sales Price of Existing Homes
Hampton Roads, 2010 - 2021**



Sources: Real Estate Information Network Inc. and Dragas Center for Economic Analysis and Policy.
Information deemed reliable but not guaranteed.

Weekly 30-Year Fixed Mortgage Rate January 3, 2019 - January 20, 2022



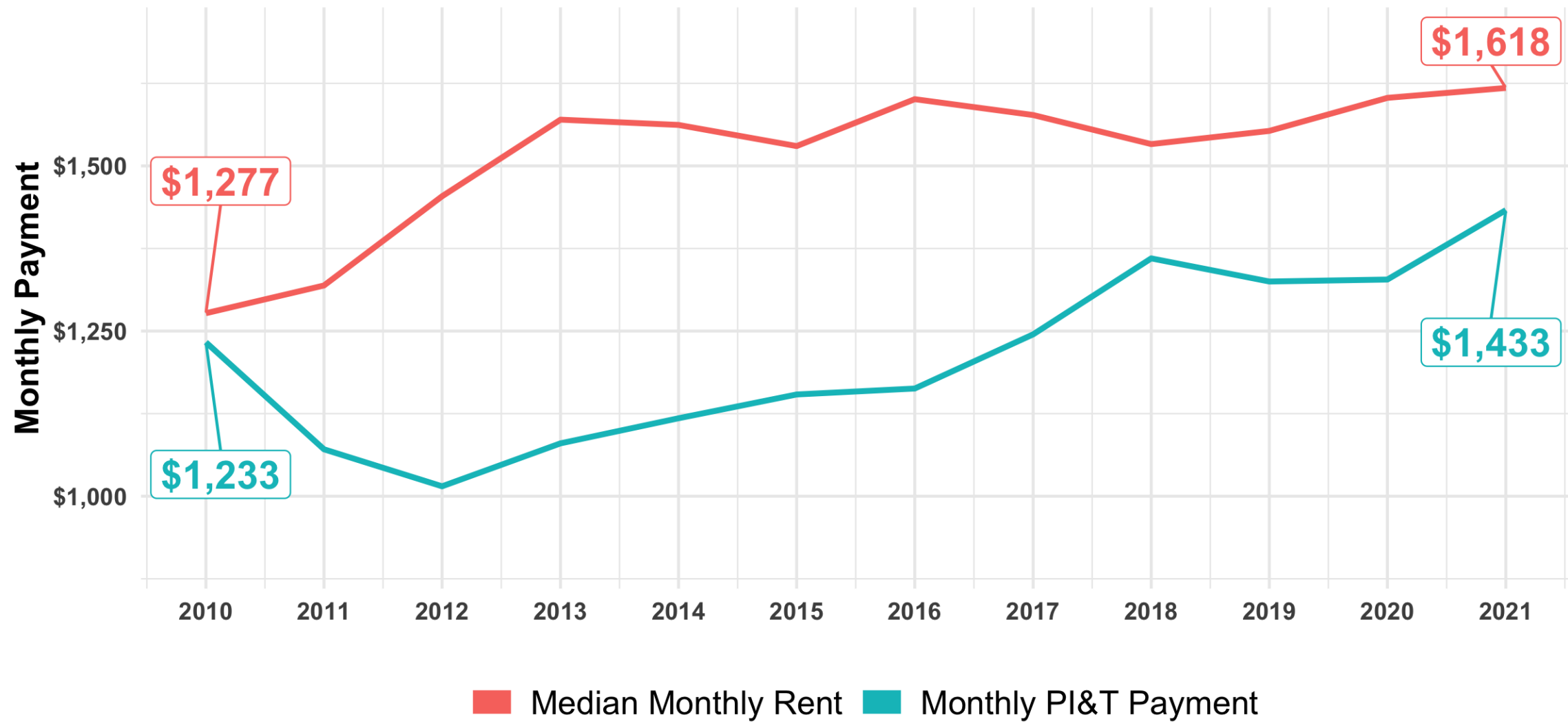
Sources: Freddie Mac and Federal Reserve Bank of St. Louis. Weekly rate ending Thursday of each week.

Median Sale Price of Existing Residential Homes for Selected Cities: Hampton Roads, 2020 and 2021

| <u>City</u> | <u>2020</u> | <u>2021</u> | <u>Percent Change</u> |
|----------------|-------------|-------------|-----------------------|
| Chesapeake | \$282,000 | \$315,000 | 11.7% |
| Norfolk | \$229,000 | \$258,000 | 12.7% |
| Portsmouth | \$182,250 | \$210,000 | 15.2% |
| Suffolk | \$275,000 | \$312,500 | 13.6% |
| Virginia Beach | \$285,000 | \$310,000 | 8.8% |
| Hampton | \$193,000 | \$225,000 | 16.6% |
| Newport News | \$209,000 | \$230,000 | 10.0% |
| Williamsburg* | \$323,000 | \$350,000 | 8.4% |
| Hampton Roads | \$255,000 | \$279,000 | 9.4% |

* Williamsburg represents Poquoson, Williamsburg, James City County, York County and Gloucester County. Source: Real Estate Information Network and Dragas Center for Economic Analysis and Policy.

Estimated House Rental and Principal, Interest, and Taxes for a House Payment Hampton Roads, 2010 - 2021

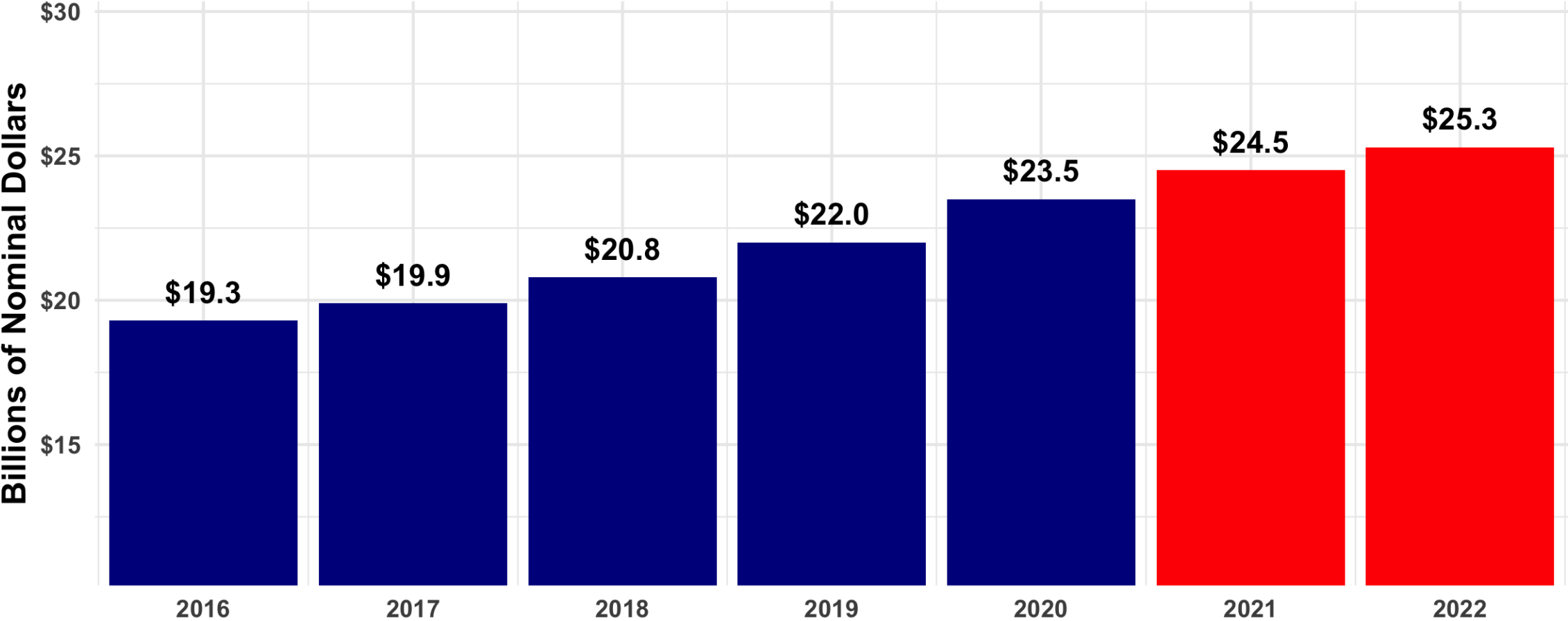


Sources: H.U.D. and Dragas Center for Economic Analysis and Policy.

The Outlook



**Estimated Direct Department of Defense Spending
Hampton Roads, 2016 - 2022***



Sources: U.S. Department of Defense and Dragas Center for Economic Analysis and Policy. Includes Federal Civilian and Military Personnel and Procurement.*Data for 2020, and 2021 are estimates. Last updated on December 19, 2020. Procurement data updated on January 5, 2022.

| Regional Forecast | | | | |
|-------------------------------|----------------|----------------|--------------------------|------------------|
| | 2019 Actual | 2020 Actual | 2021 Estimated/Actual | 2022 Forecast |
| Hampton Roads Real GDP | 1.9% | -2.5% | 3.0% | 2.4% |
| Civilian Job Growth | 0.6% | -5.3% | 1.1% | 2.1% |
| Unemployment Rate | 3.0% | 7.1% | 4.8% | 3.3% |
| Taxable Sales | 4.9% | 6.7% | 16.8% | 6.8% |
| Hotel Revenue | 1.8% | -35.2% | 68.5% | 6.4% |
| General Cargo Tonnage | -0.2% | -3.9% | 20.3% | 8.7% |
| General Cargo TEUs | 2.9% | -4.2% | 25.2% | 12.8% |
| One-Unit Housing Permit Value | 3.5% | 10.9% | 3.1% | 5.2% |

2022: COVID-19 and Prospects

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

- Our presentation materials can be found at our website:
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