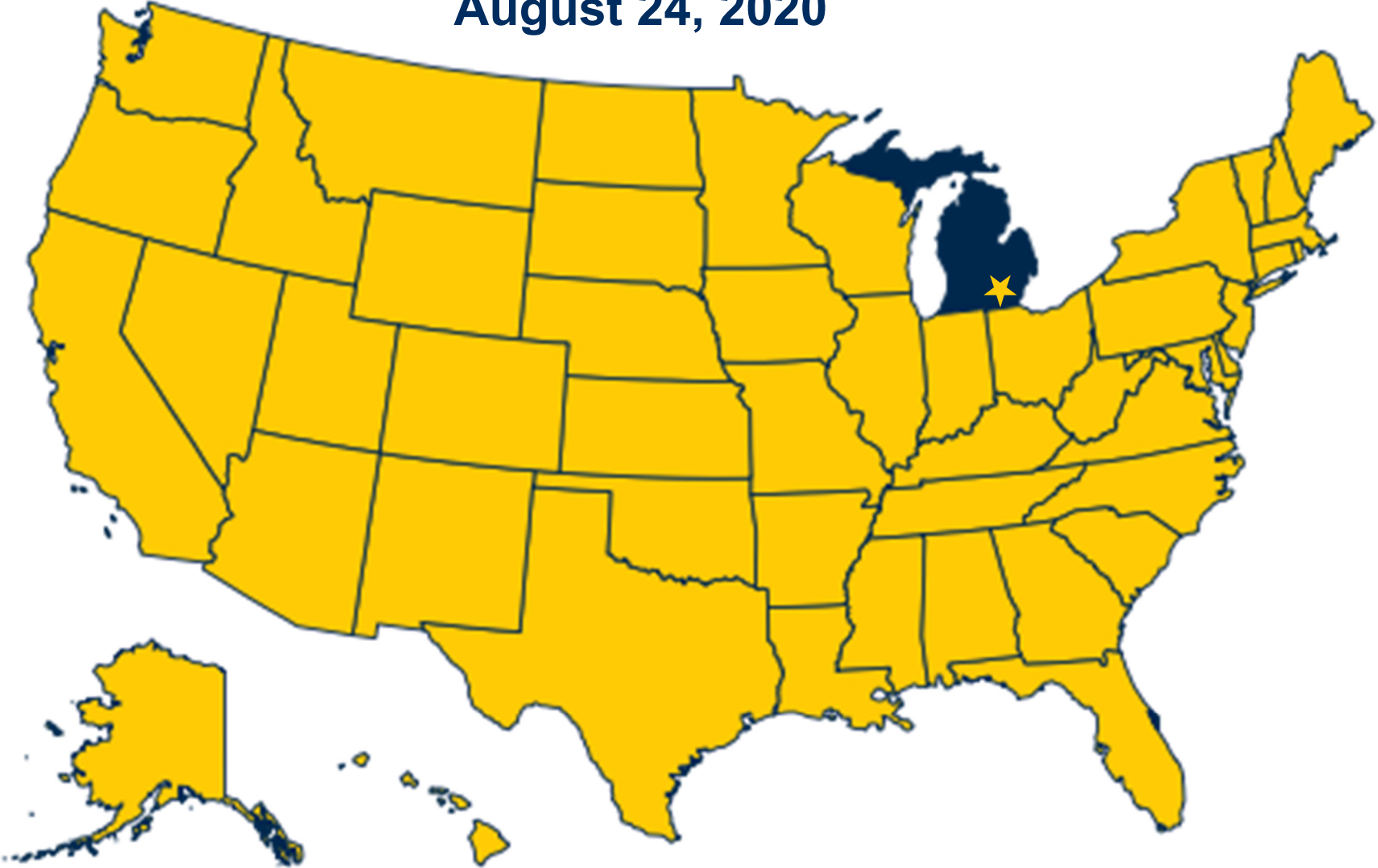


The U.S. and Michigan Outlook for 2020–2022

Consensus Revenue Estimating Conference

August 24, 2020

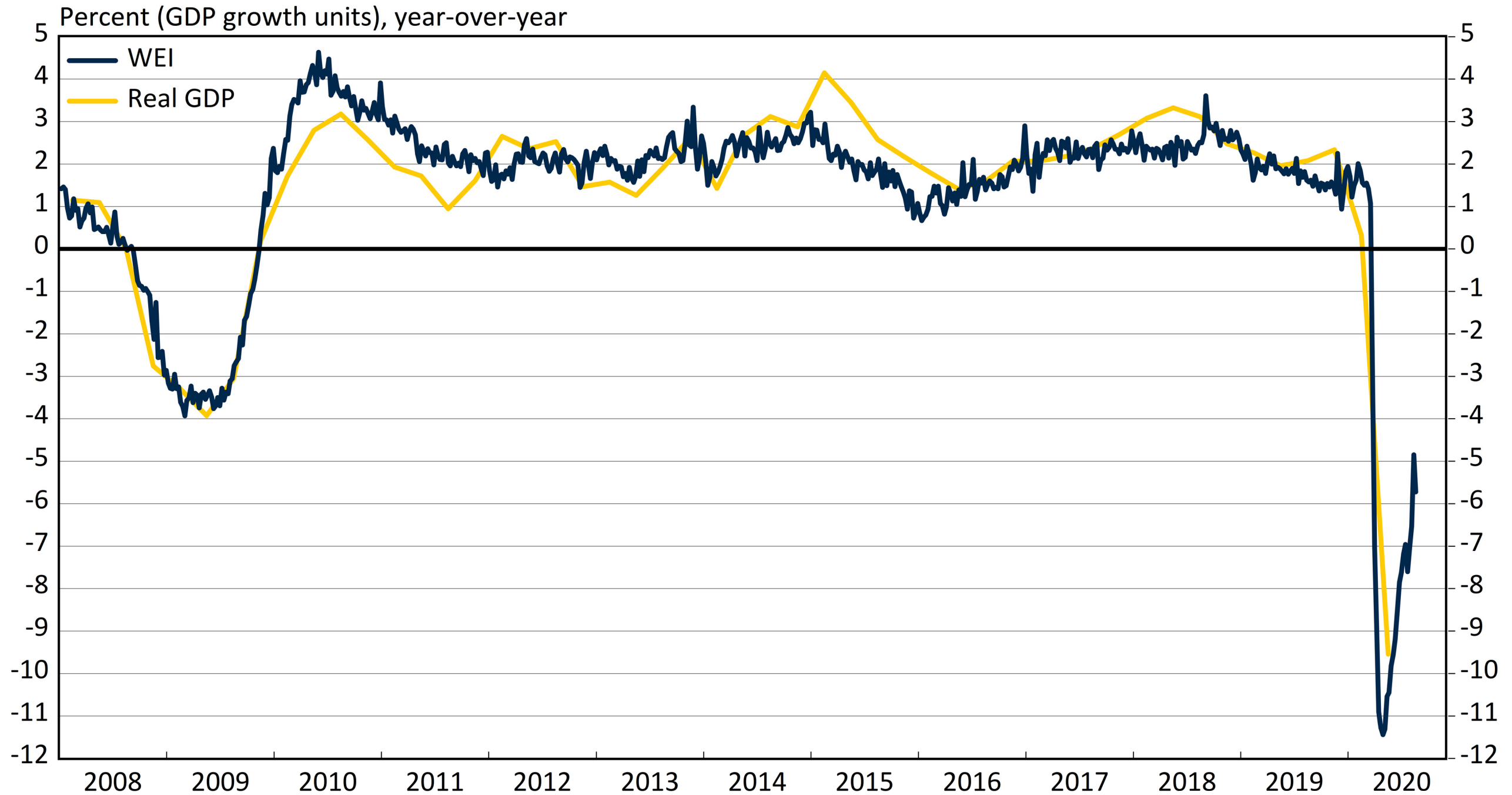


Research Seminar in Quantitative Economics

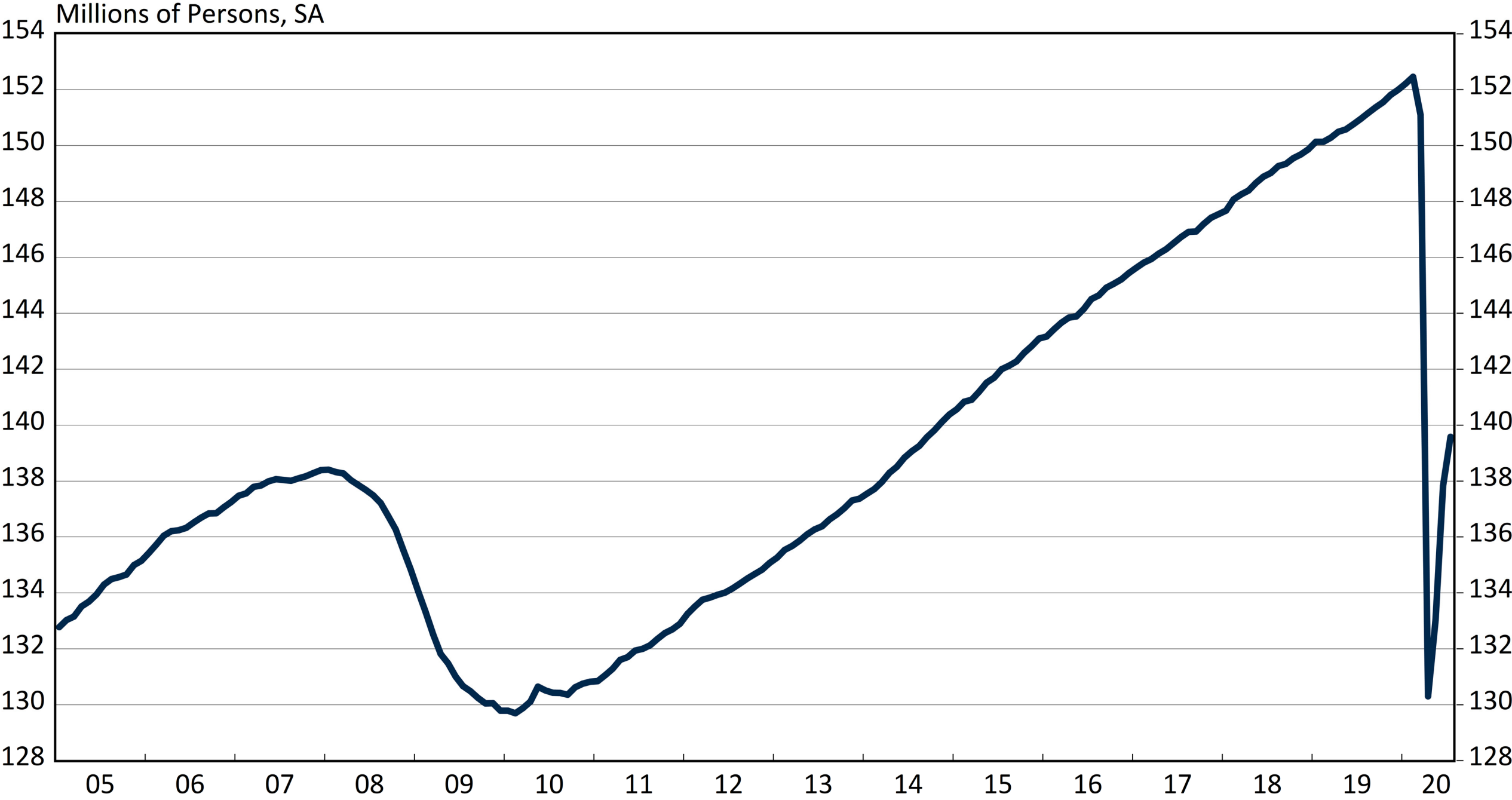


High-Frequency Economic Indicators

Weekly Economic Index (Lewis-Mertens-Stock)



Monthly Payroll Jobs



Monthly Retail Sales and Food Services



U.S. Economic Outlook

Epidemiology and Public Health Policy Assumptions:

➤ Epidemiology news:

- Getting infected results in strong immune response that is likely to last
- Hard-hit areas with >20% antibody prevalence avoiding second waves so far
- Vaccine pipeline looks promising

➤ Recent outbreak in the Sunbelt states:

- Modest activity restrictions, peak healthcare load manageable, caseload dropping rapidly
- Makes extreme activity restrictions elsewhere less likely in future outbreaks

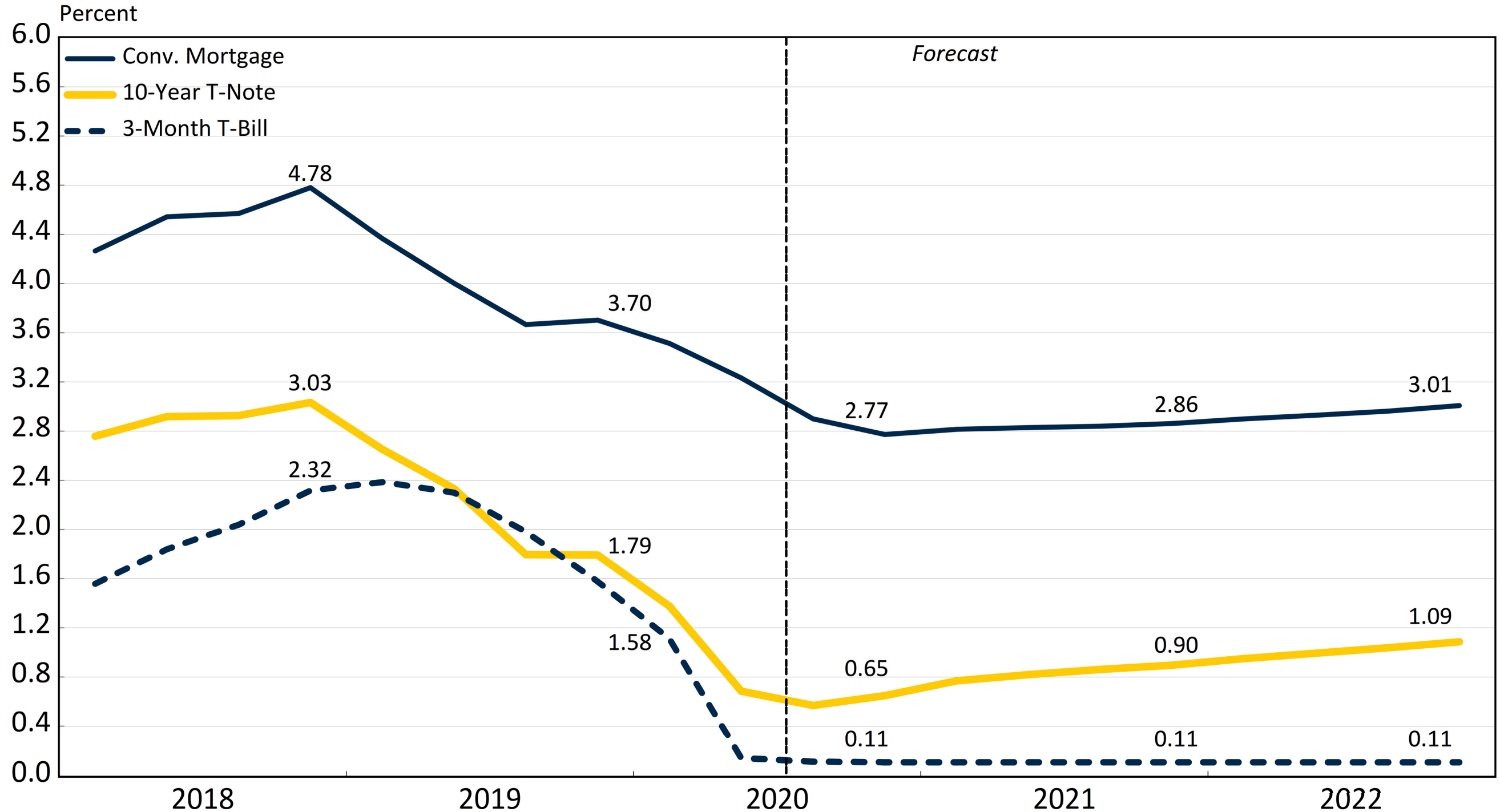
➤ Expectations:

- Few, localized stay-at-home/non-essential business closures
- Modest mitigation measures stay in place for a while
- Wide distribution of a vaccine with flu-vaccine effectiveness by mid-2021

Monetary Policy

- The fed funds rate at zero since March and for the forecast window
- Massive liquidity and market functioning support
- Several direct lending programs to businesses and governments
 - Most are undersubscribed
- Negative interest rates extremely unlikely
- The Fed is cooling on yield curve control
- Enhanced forward policy guidance is likely
 - Will signal commitment to calendar and inflation/unemployment based rules

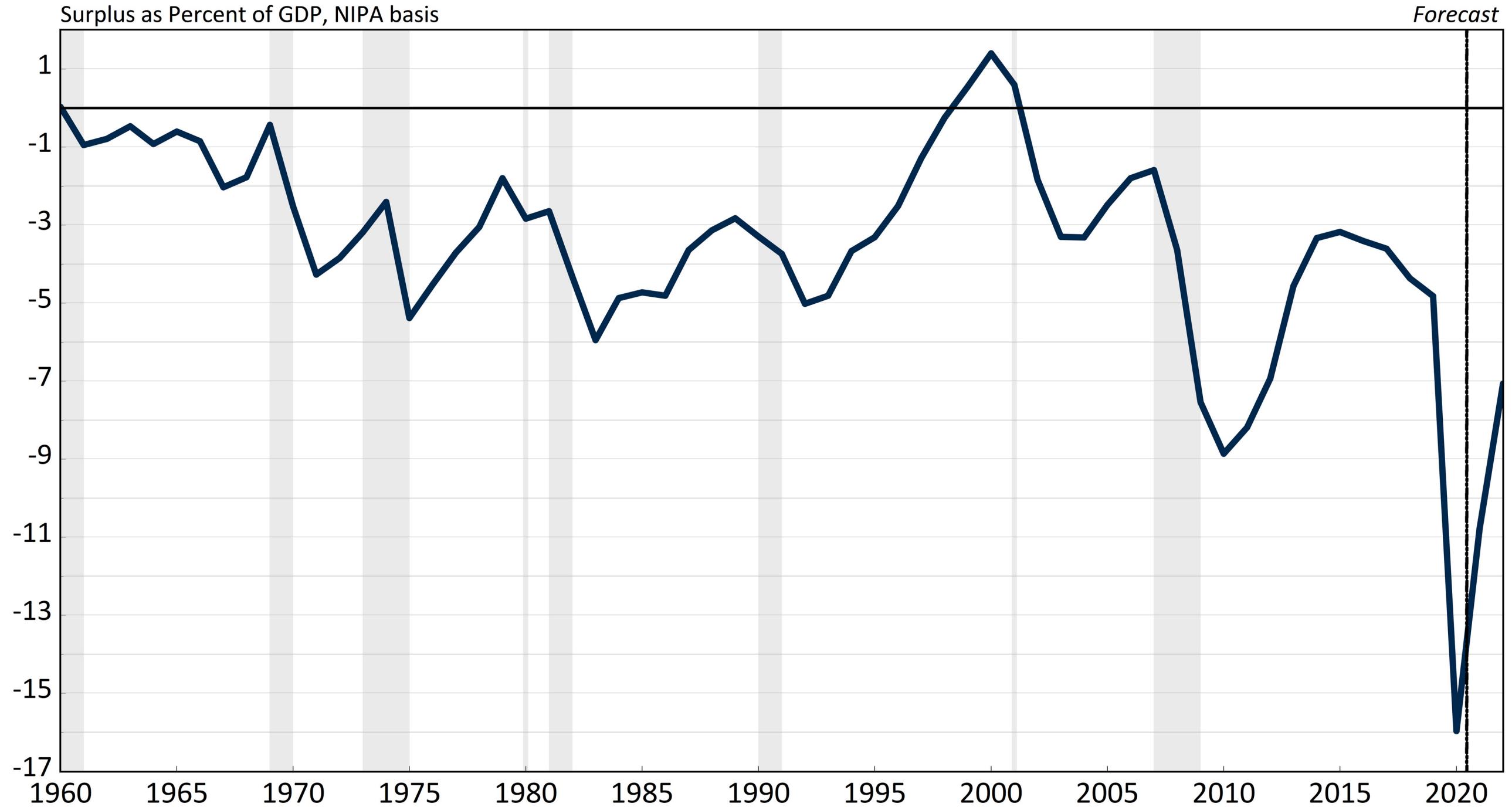
Market Interest Rates



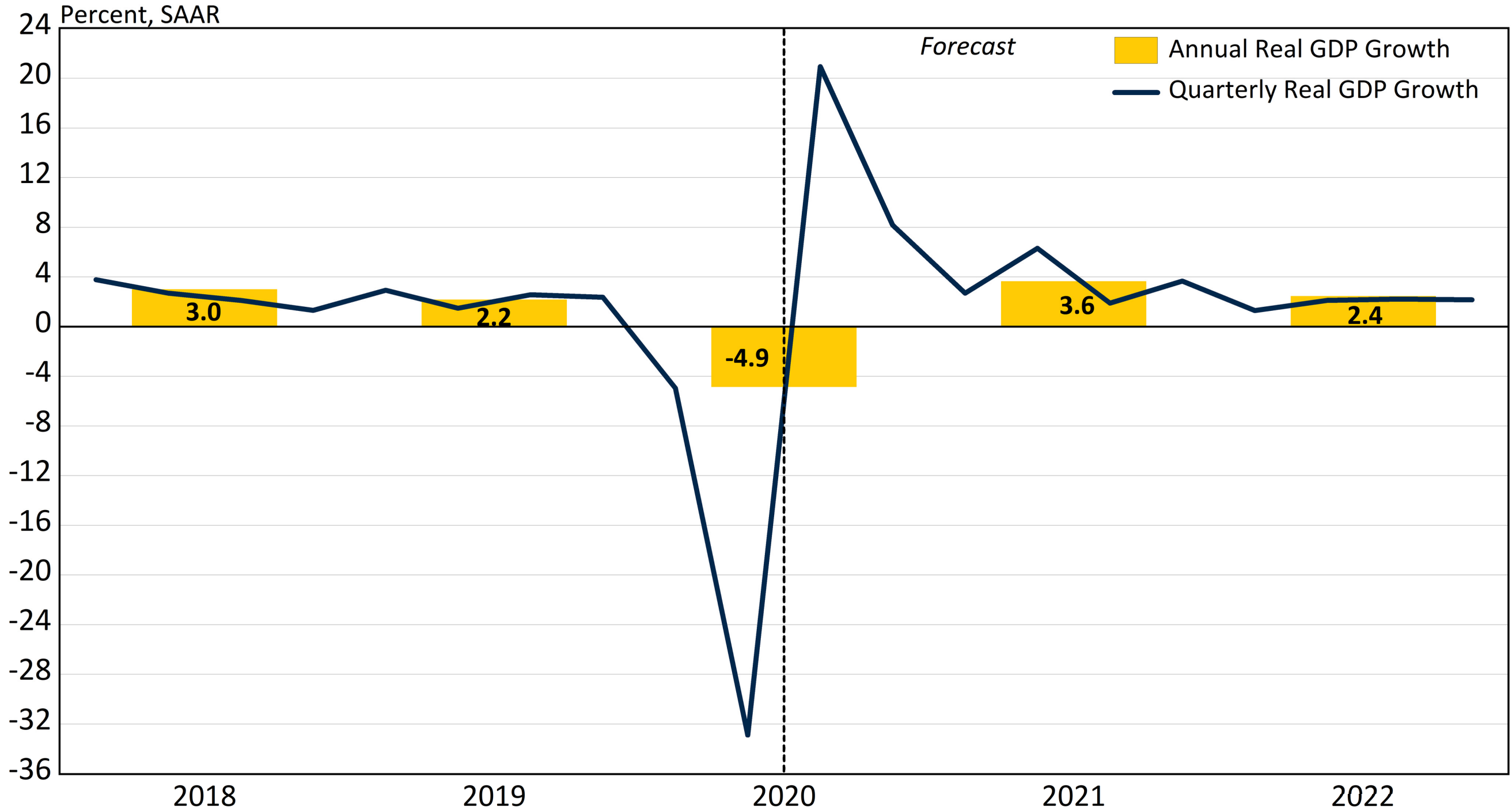
Fiscal Policy: Surprising Lack of Urgency

- Four COVID-19 relief bills so far, more is needed
 - Last bill was early June
- More than \$500 bln in personal income support in Q2
 - Early estimates suggest 50-75% went into consumption
- Continuation of income support is needed
 - We assumed \$350/week UI benefit through 2020, \$175/week in 2021Q1
 - Another round of stimulus checks
- State and local governments face large budget holes
 - We expect \$150bln in general aid, \$100bln for schools for FY2021

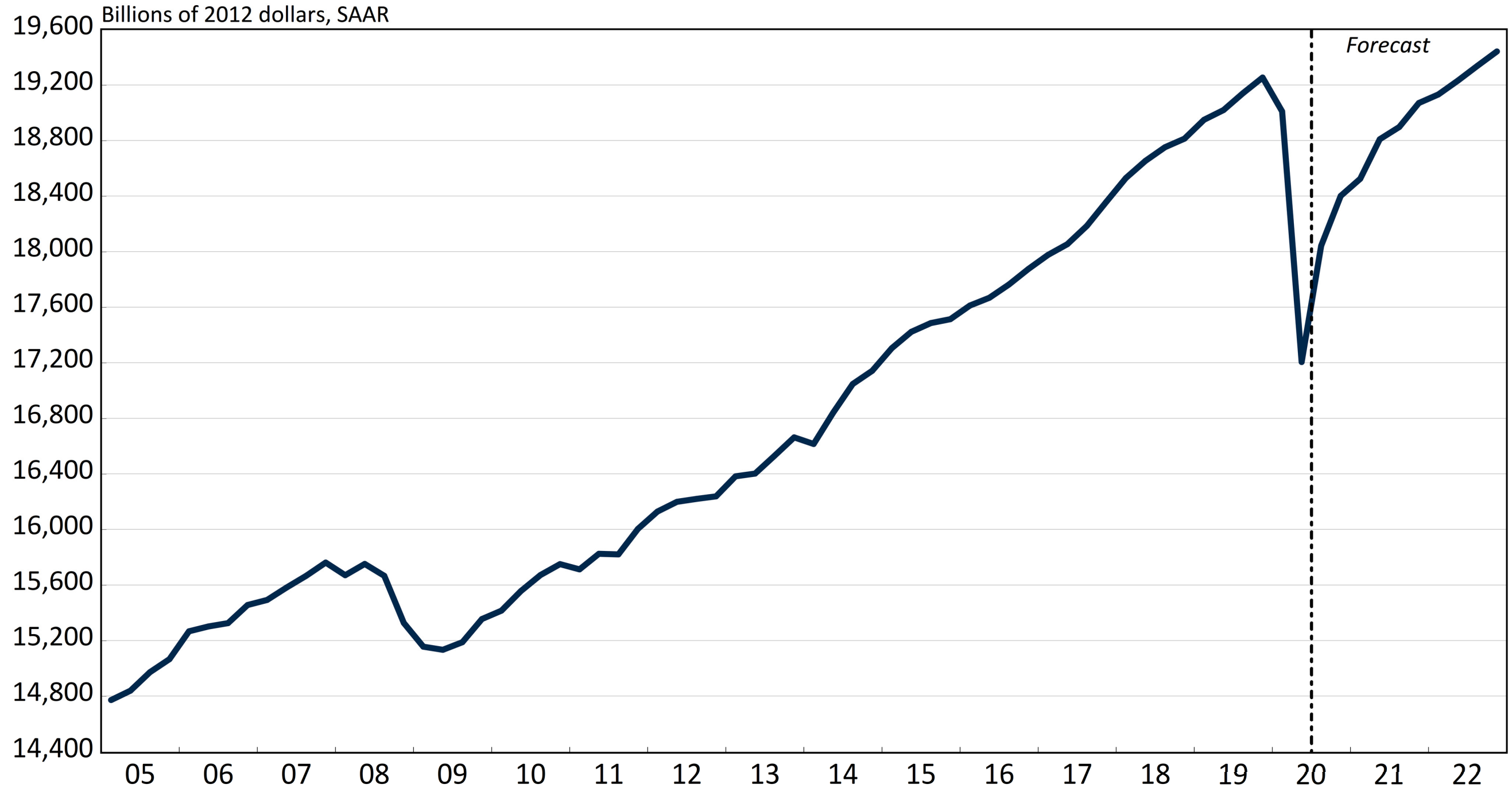
Federal Budget Balance, Fiscal Year



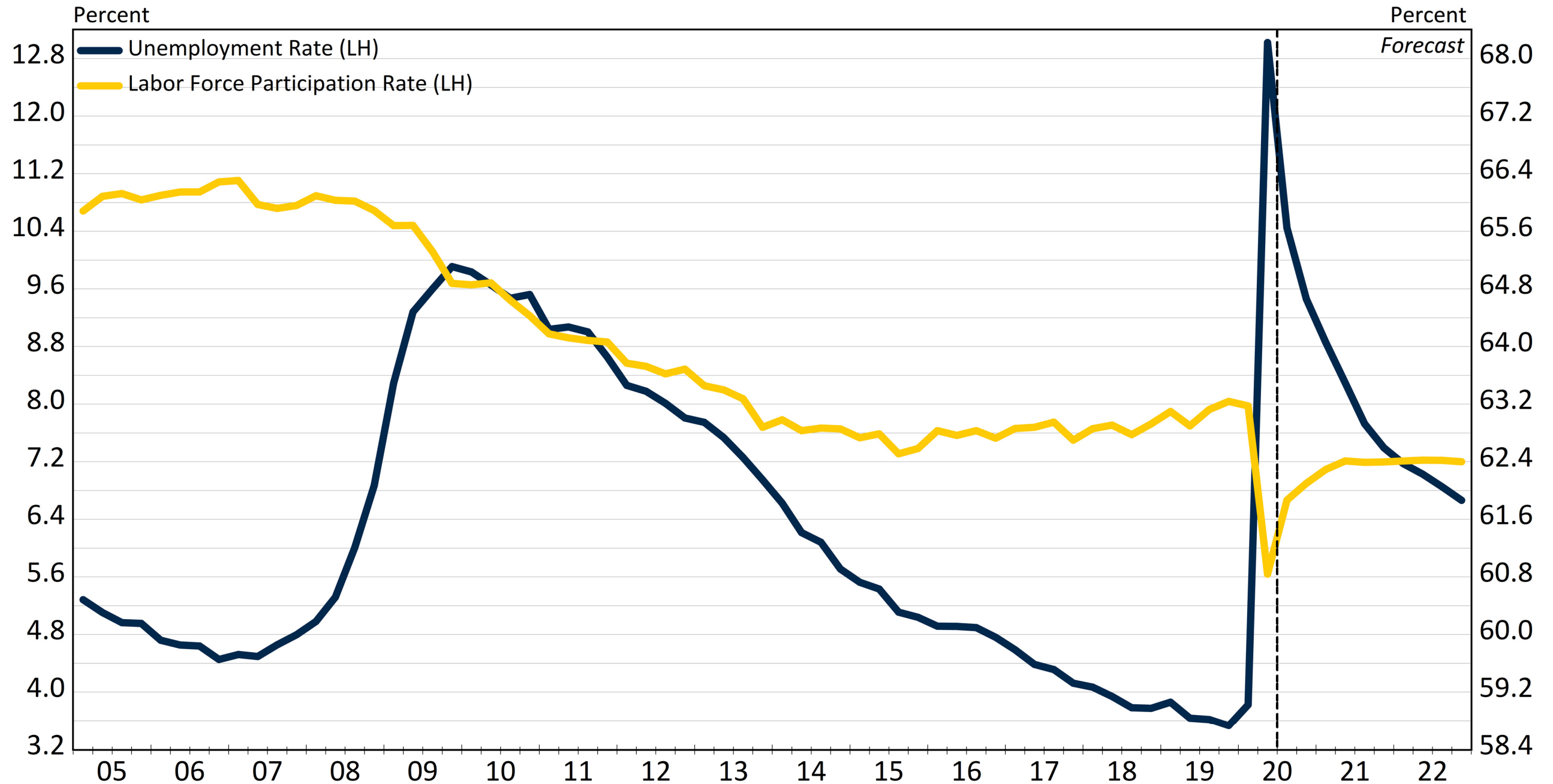
Real GDP Growth



Quarterly U.S. Real GDP

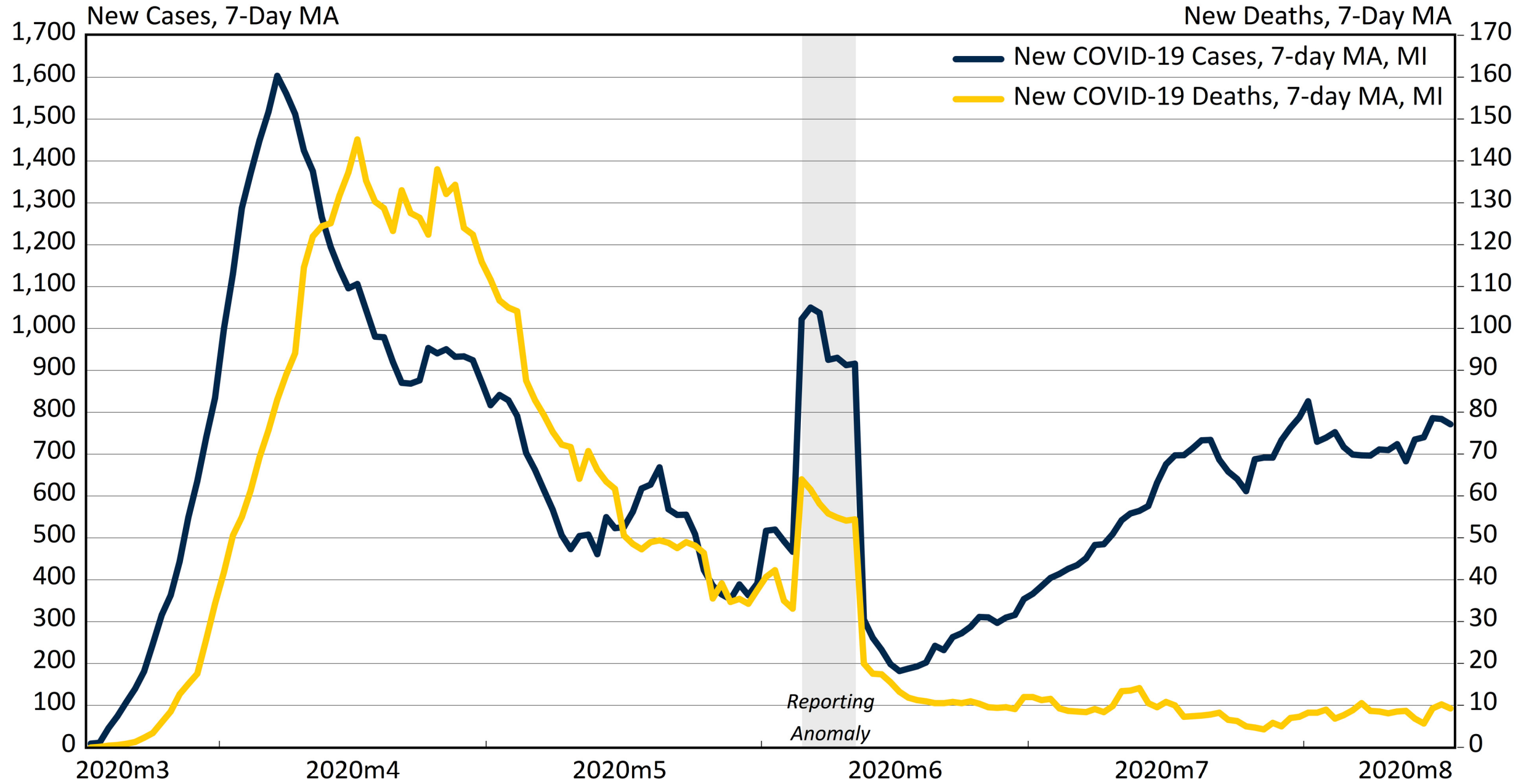


Quarterly U.S. Unemployment Rate



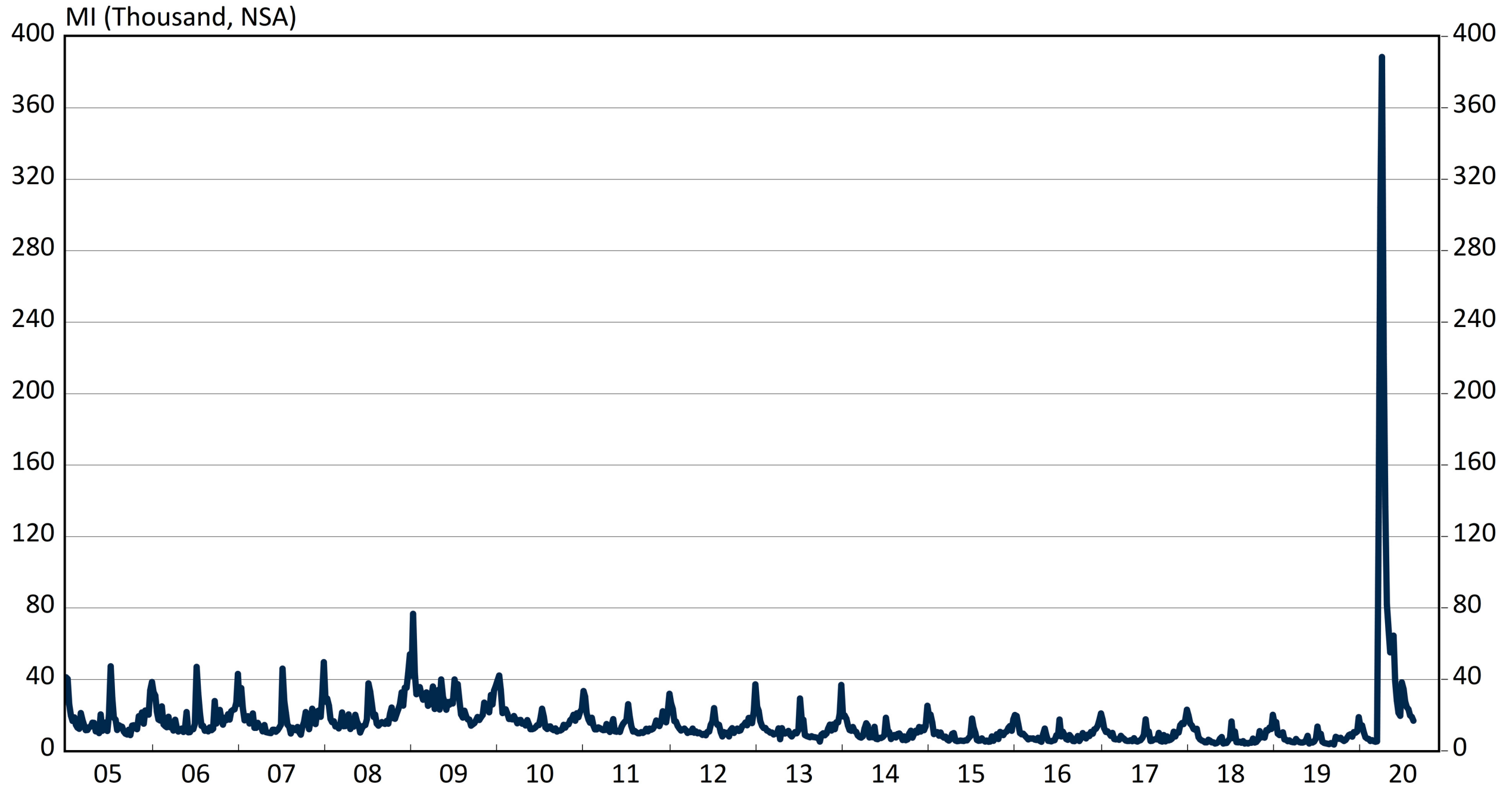
High-Frequency Indicators: Michigan

New Cases of COVID-19 (Michigan)

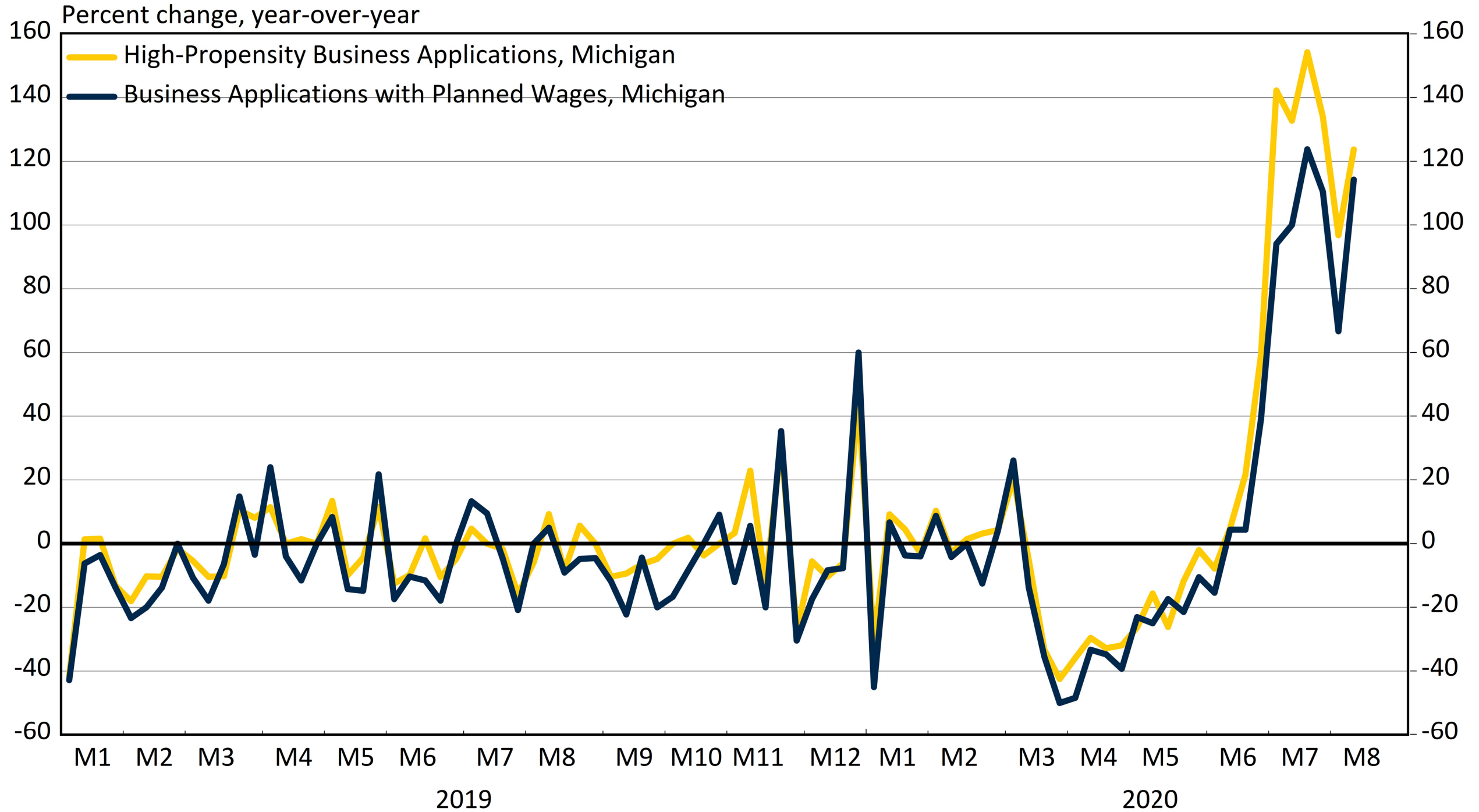


Source: New York Times

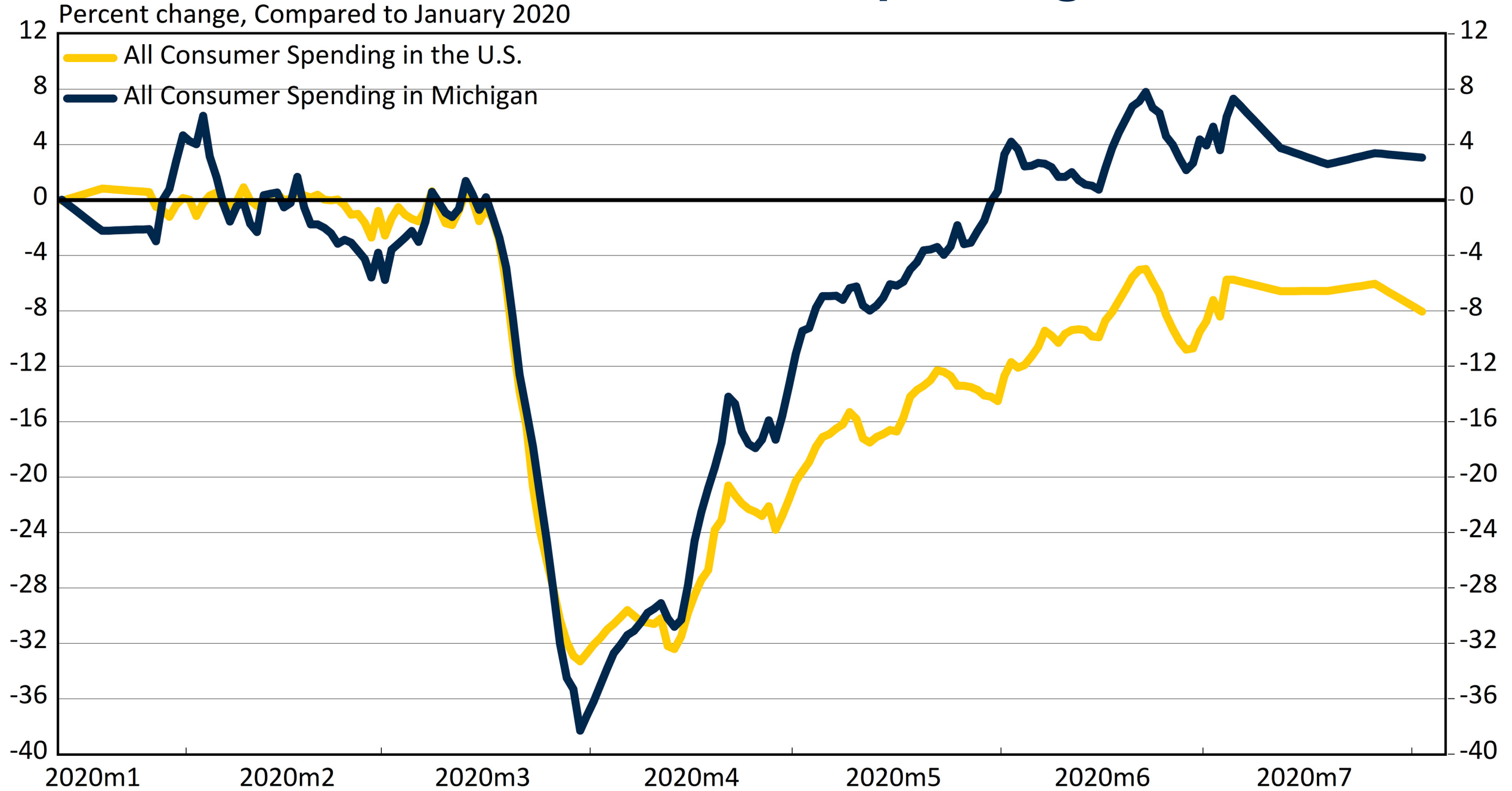
Weekly Initial Unemployment Insurance Claims (Michigan)



Business Formation Statistics (Michigan)



Total Consumer Spending

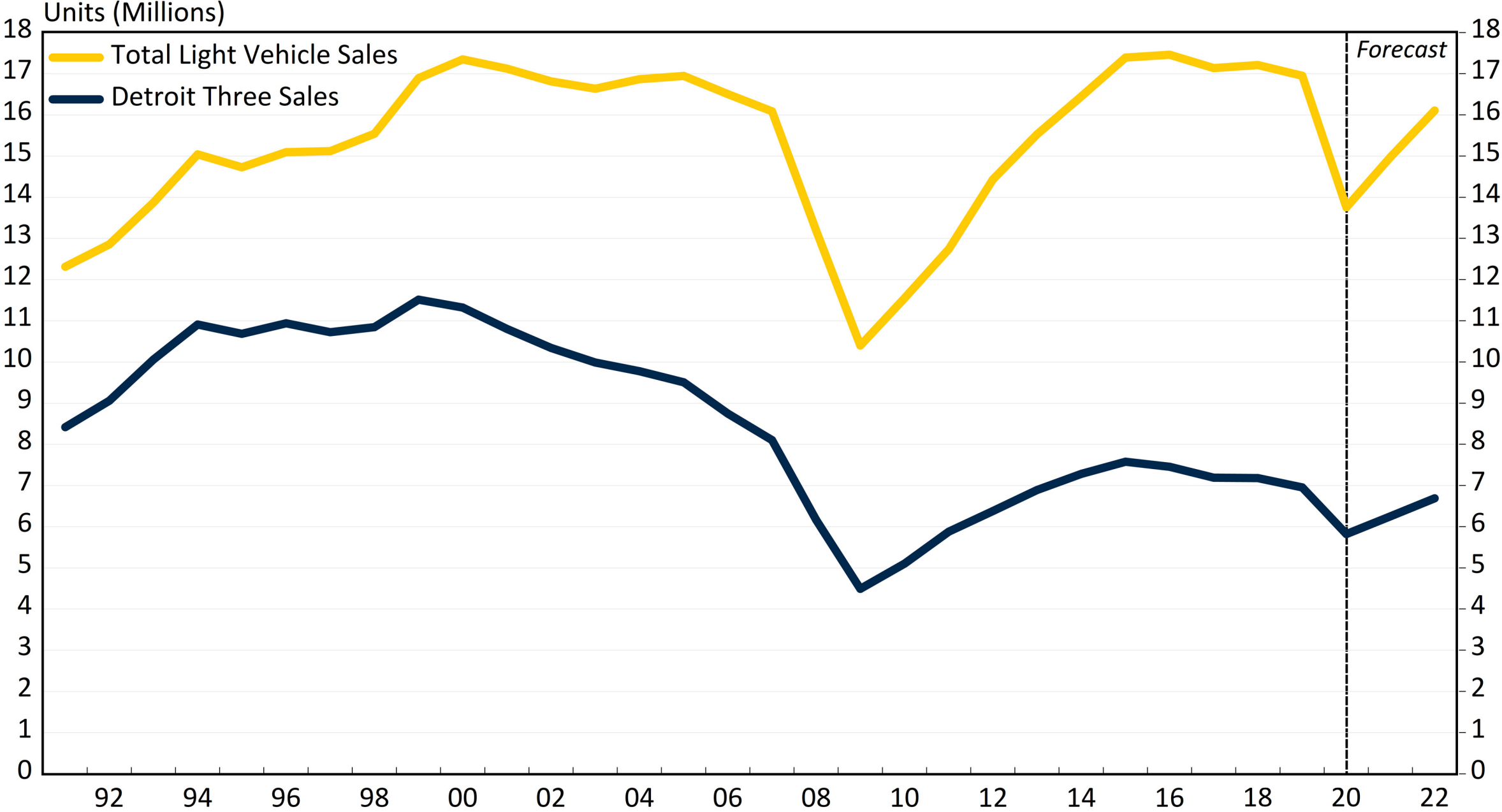


Source: Affinity Solutions via Opportunity Insights

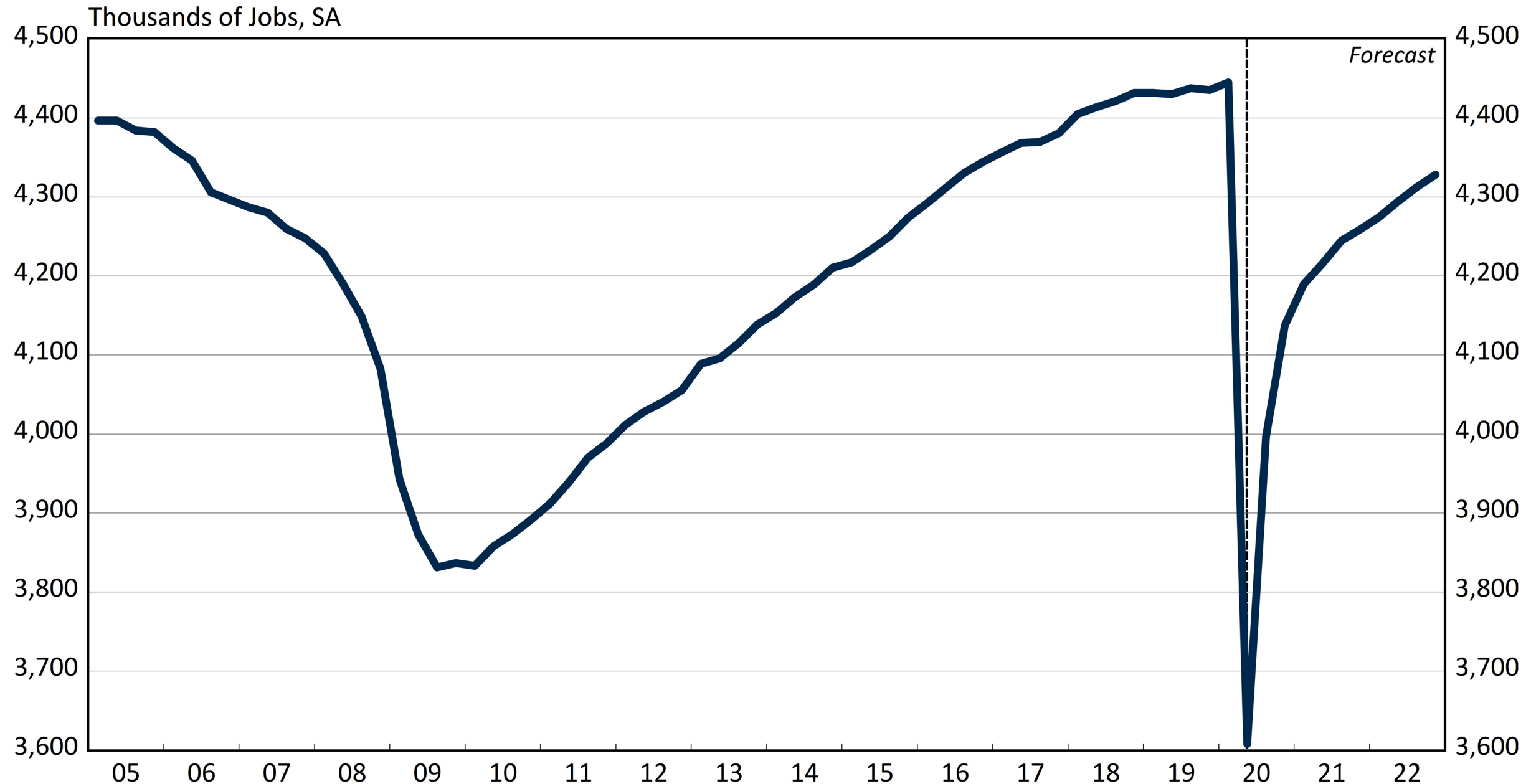
RSQE: August 2020

Michigan Economic Outlook

Annual U.S. Light Vehicle Sales, 1991–2022

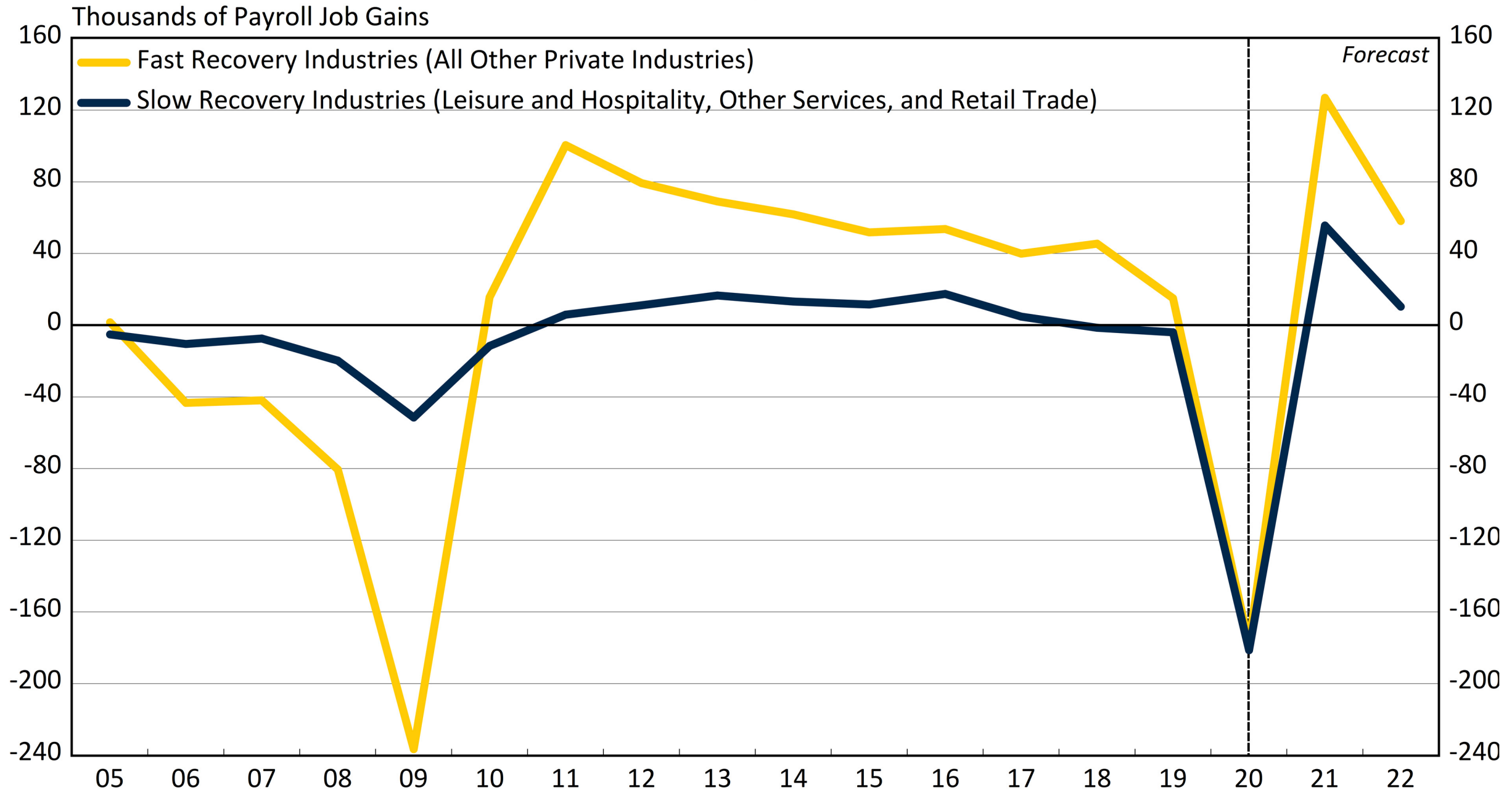


Michigan Payroll Employment, 2005q1–2022q4

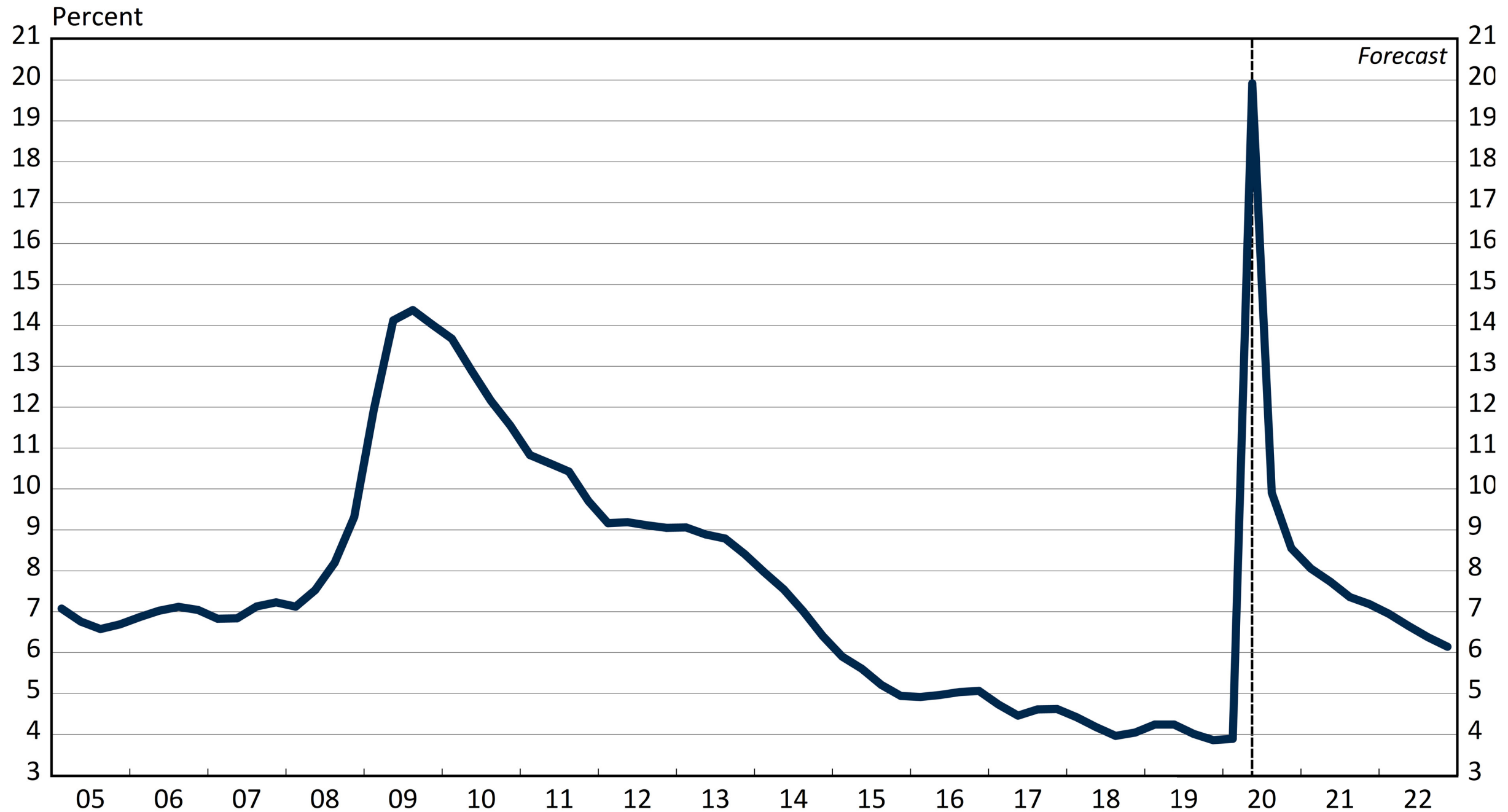


Annual Job Growth in Michigan, 2005–2022

Private Industries

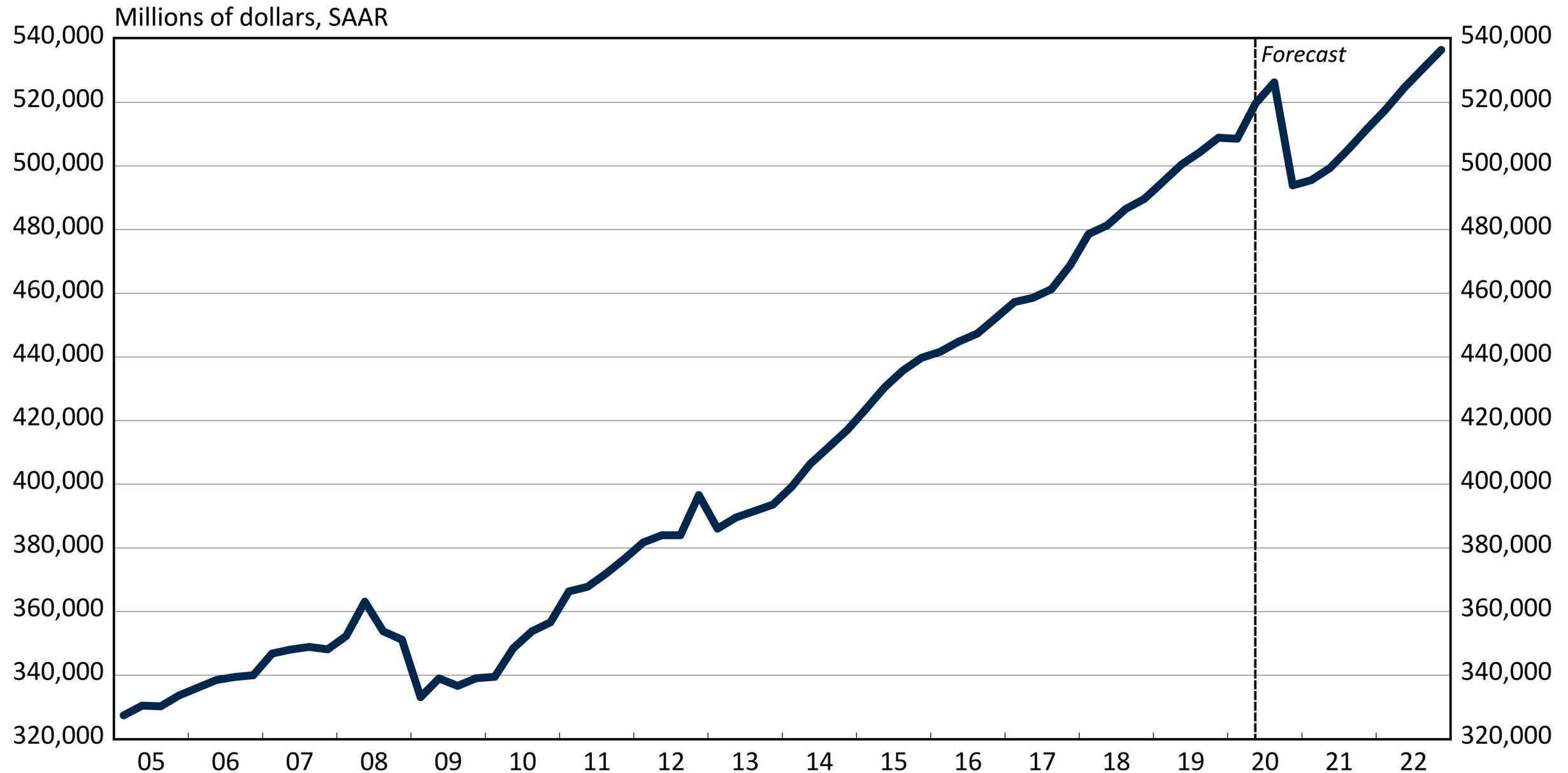


Michigan Unemployment Rate, 2005q1–2022q4



RSQE: August 2020

Michigan Personal Income, 2005q1–2022q4





lsa.umich.edu/econ/rsqe