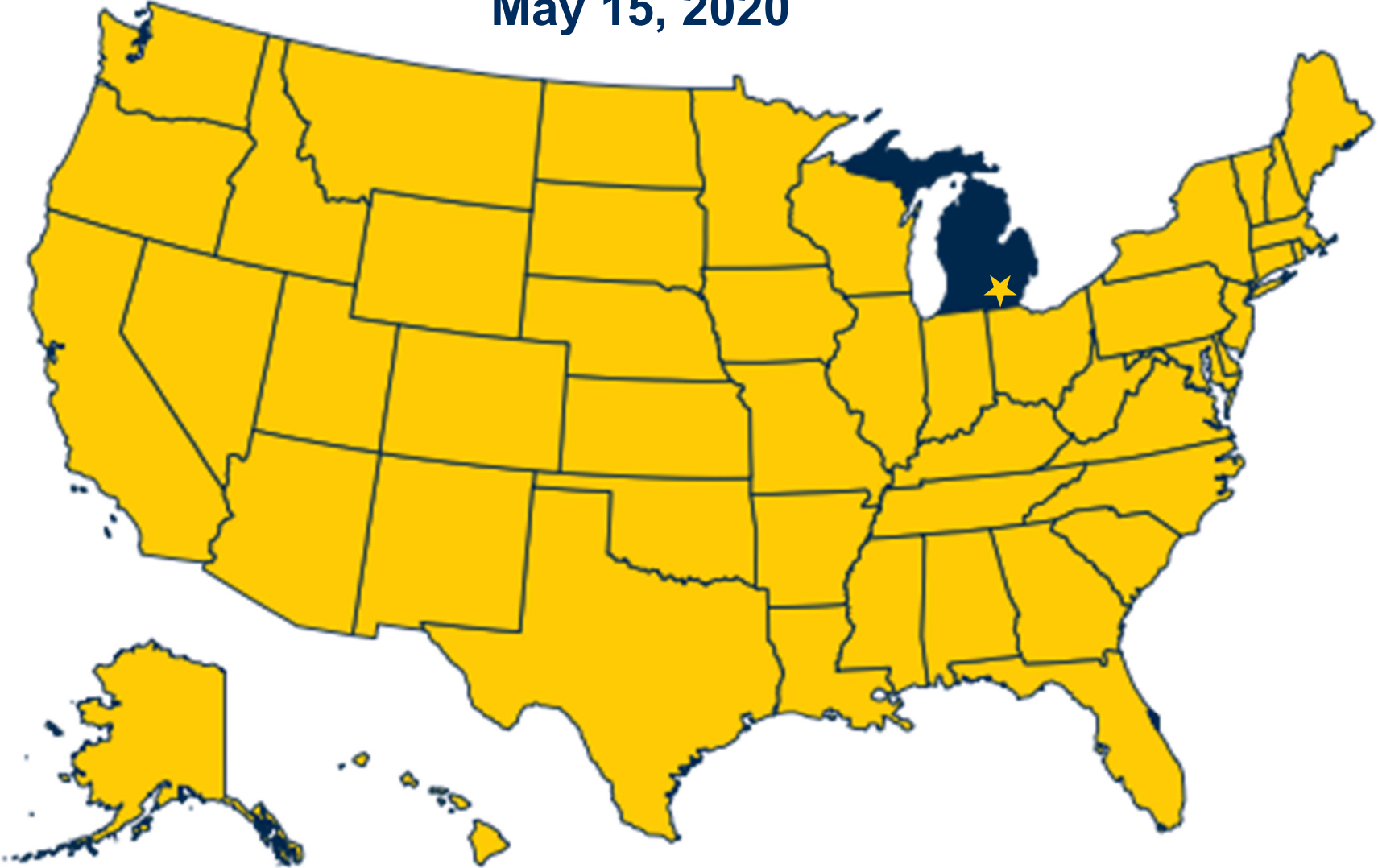


The U.S. and Michigan Outlook for 2020–2022

Consensus Revenue Estimating Conference

May 15, 2020

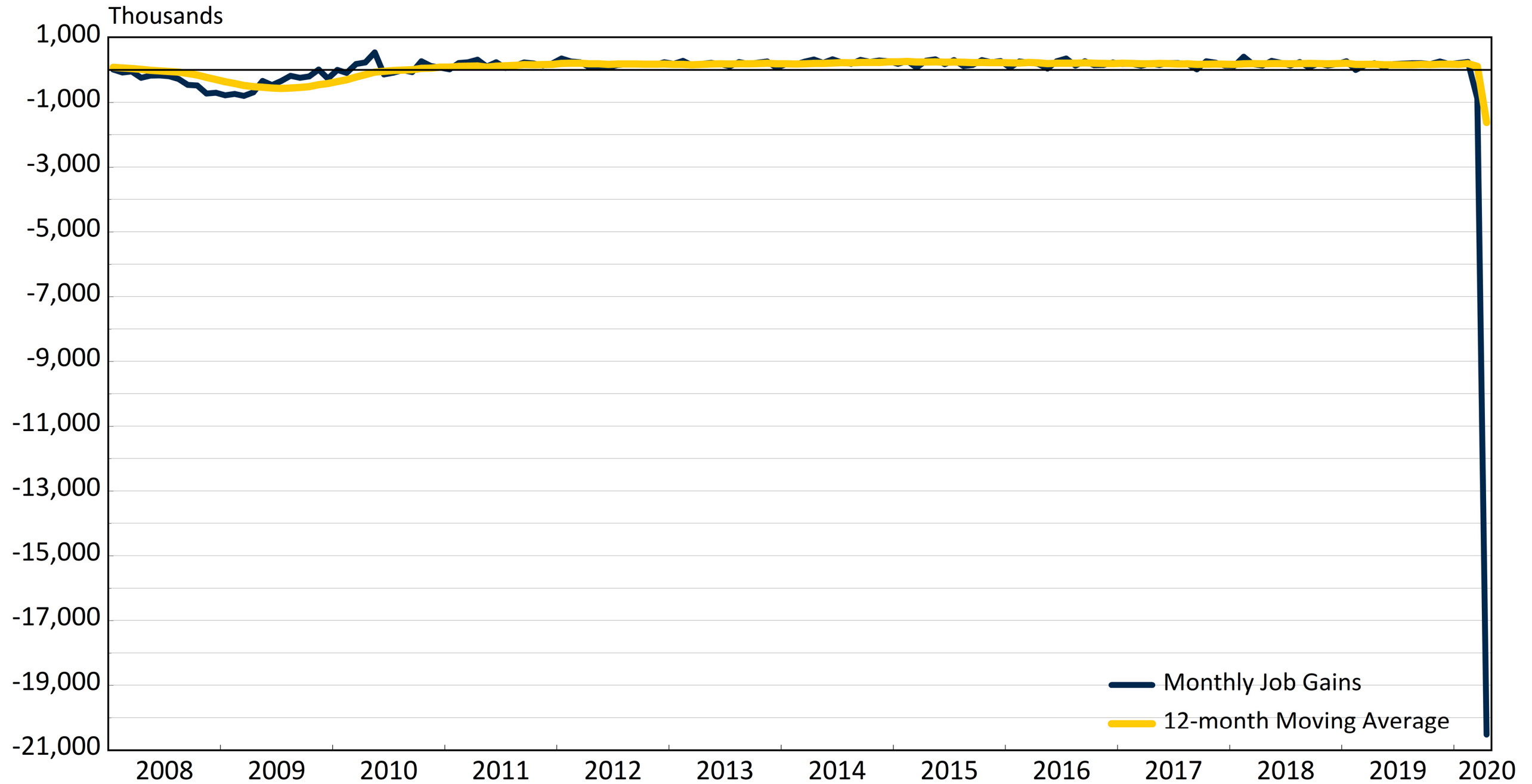


Research Seminar in Quantitative Economics

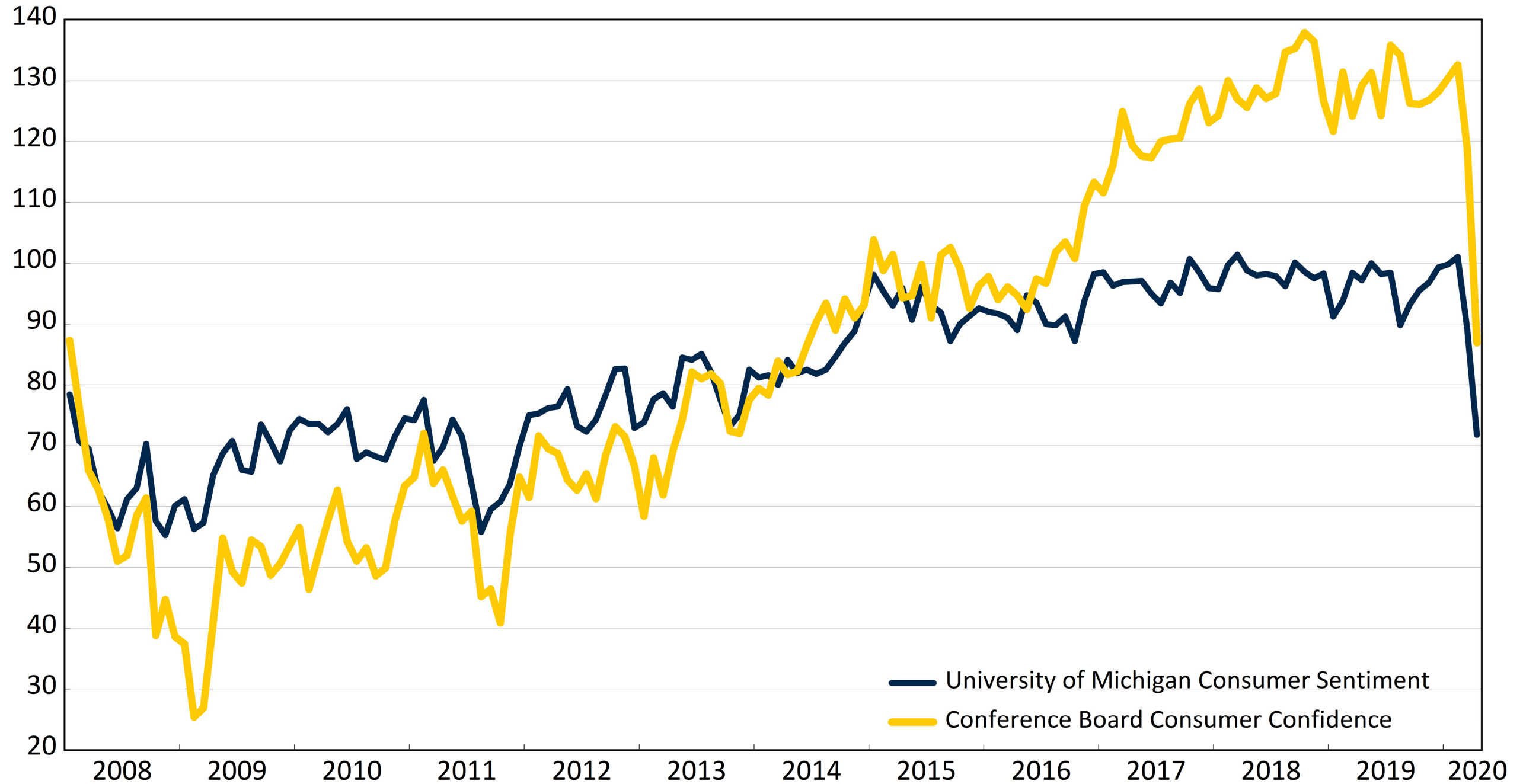


High-Frequency Economic Indicators

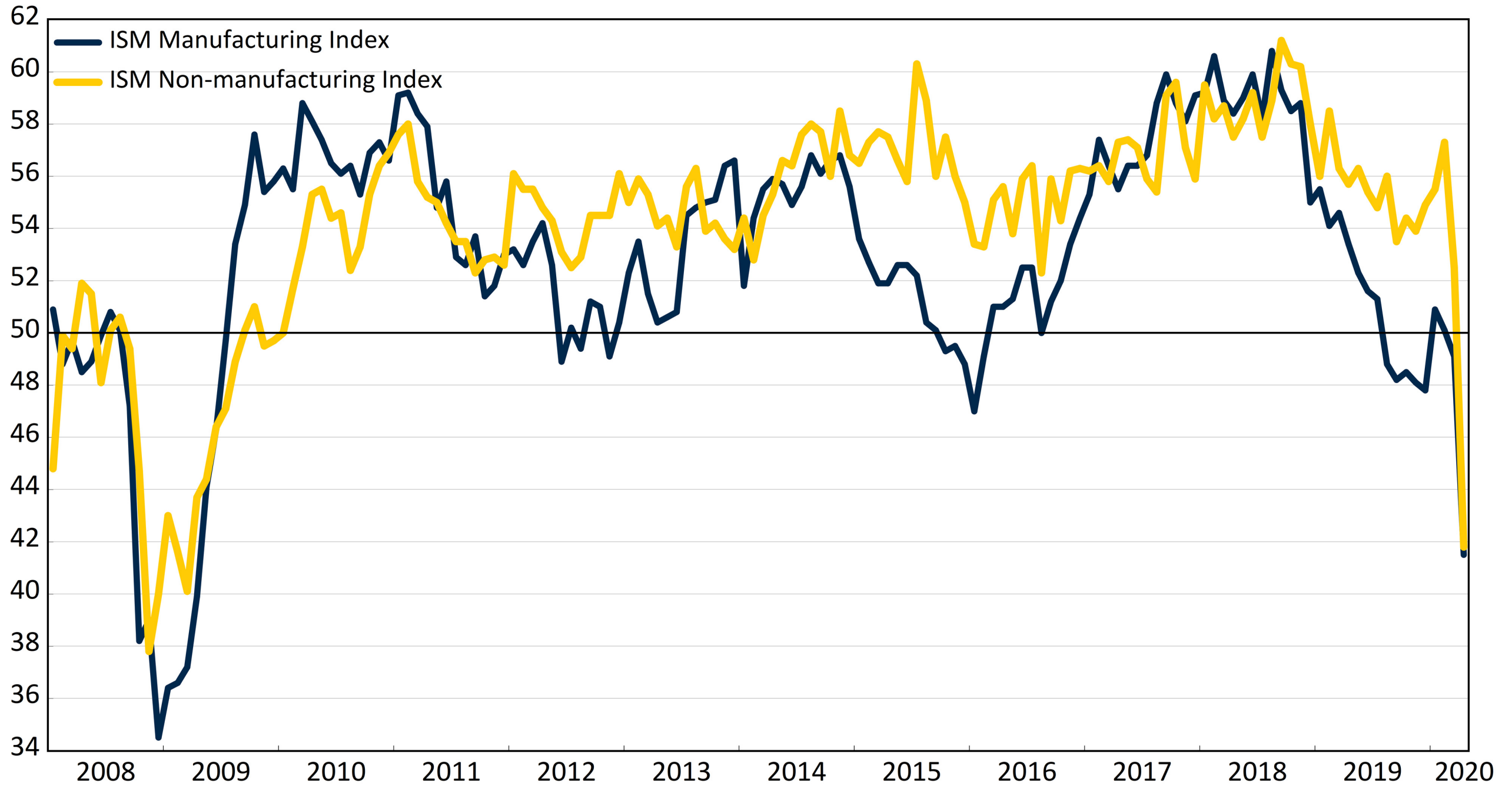
Monthly Payroll Job Gains Through April 2020



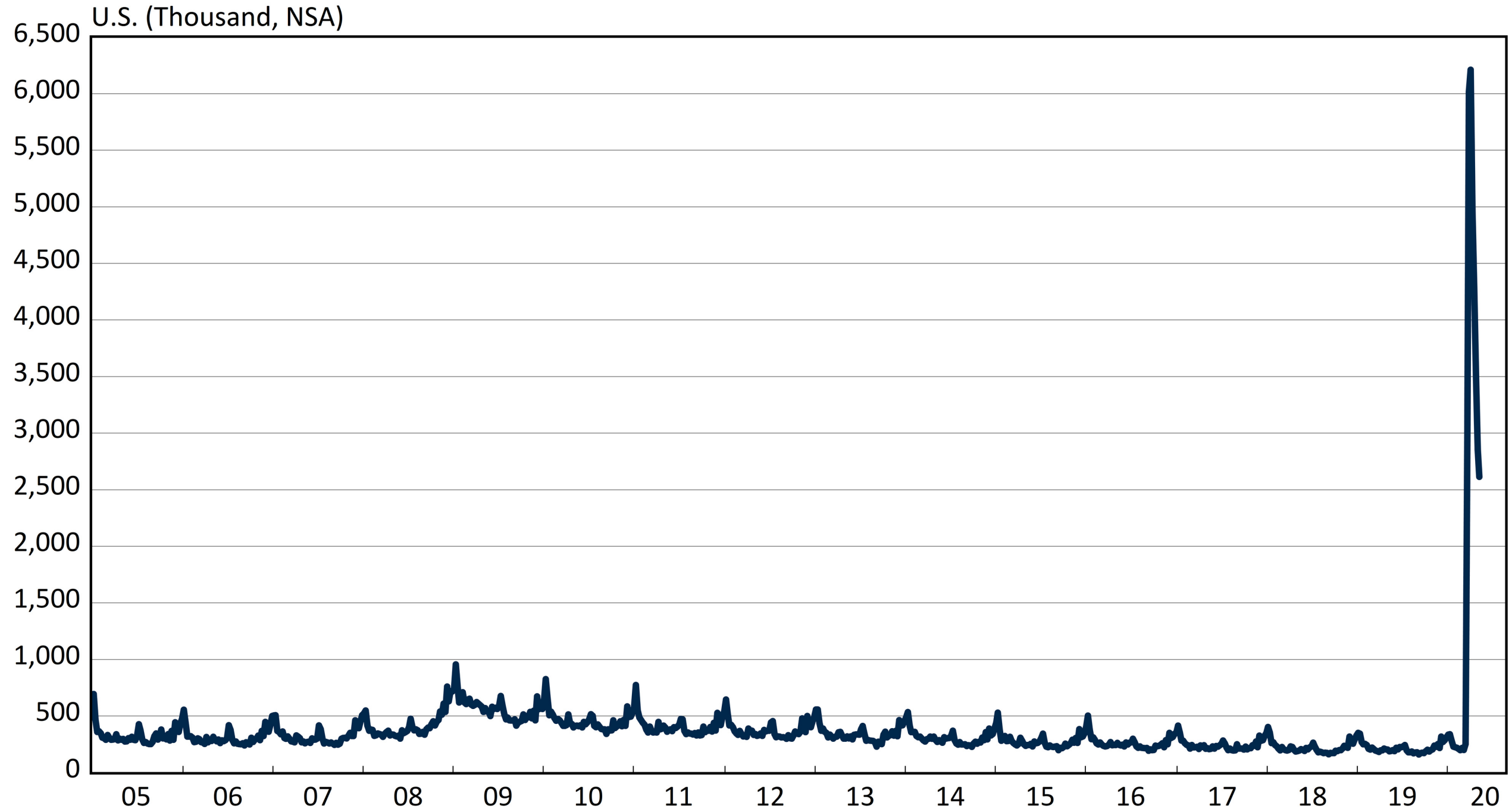
Consumer Sentiment Through April 2020



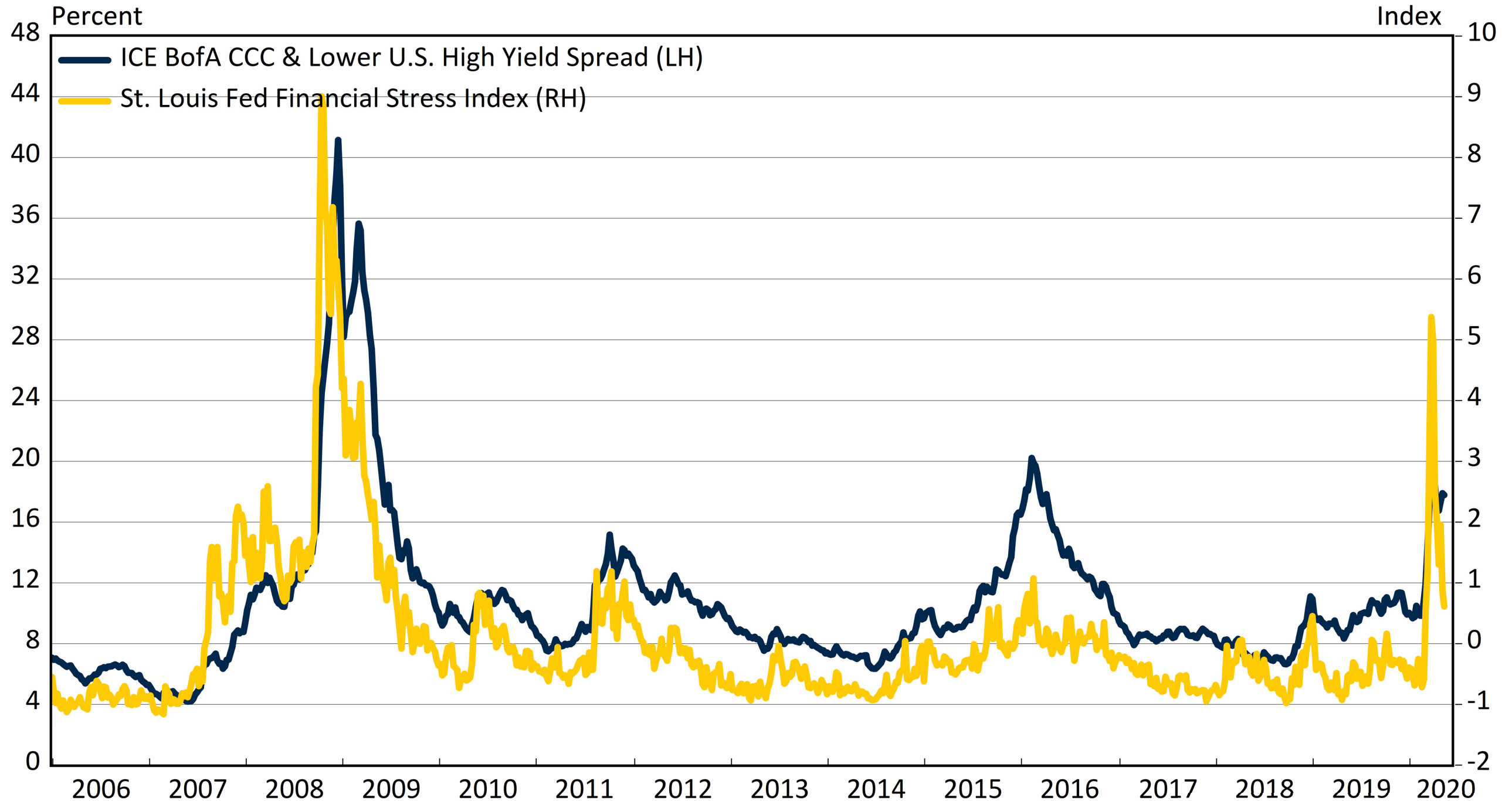
Institute of Supply Management Indexes: Contracting



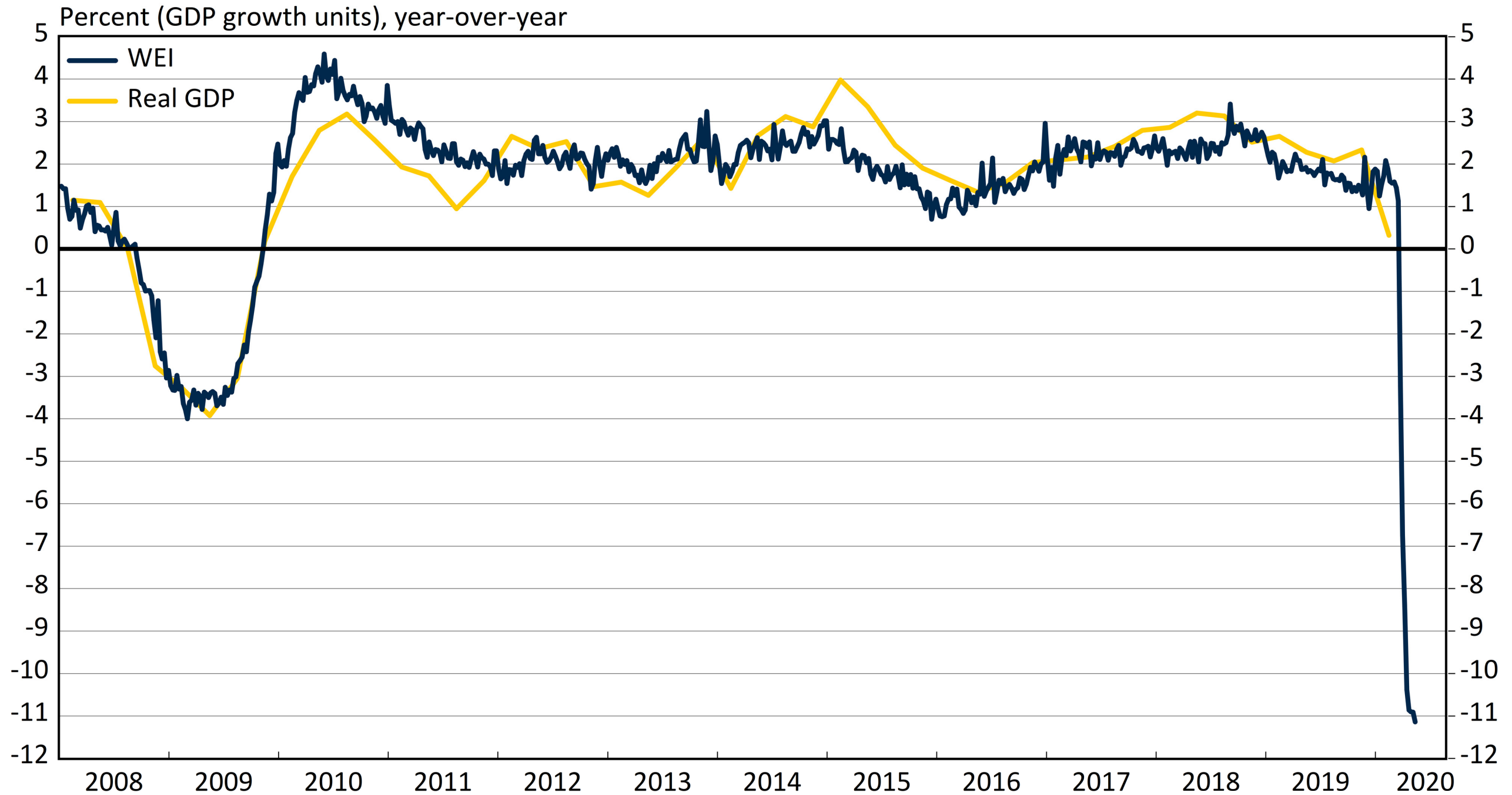
Weekly Initial Unemployment Insurance Claims (U.S.)



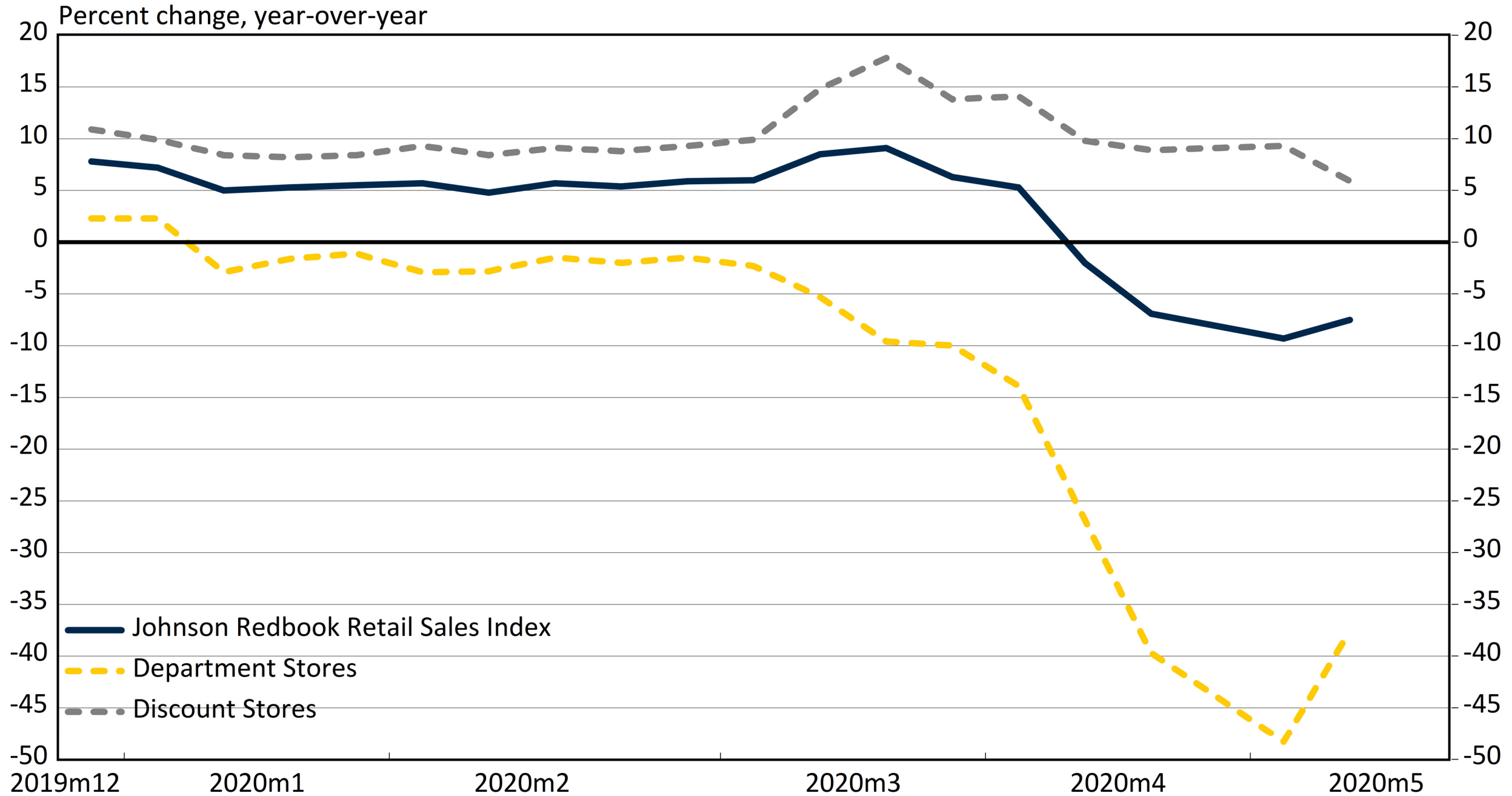
Financial Stress



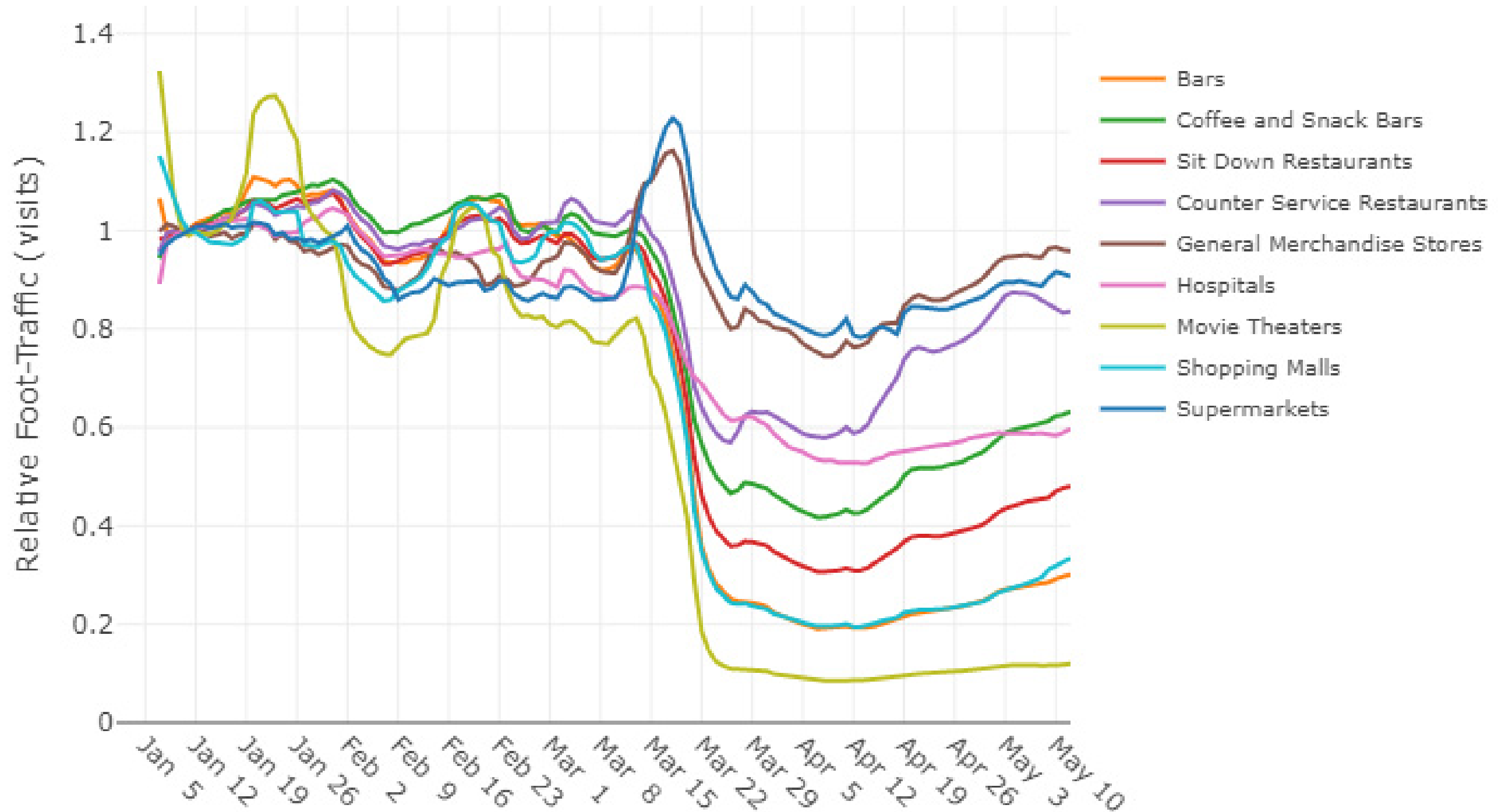
Weekly Economic Index (Lewis-Mertens-Stock)



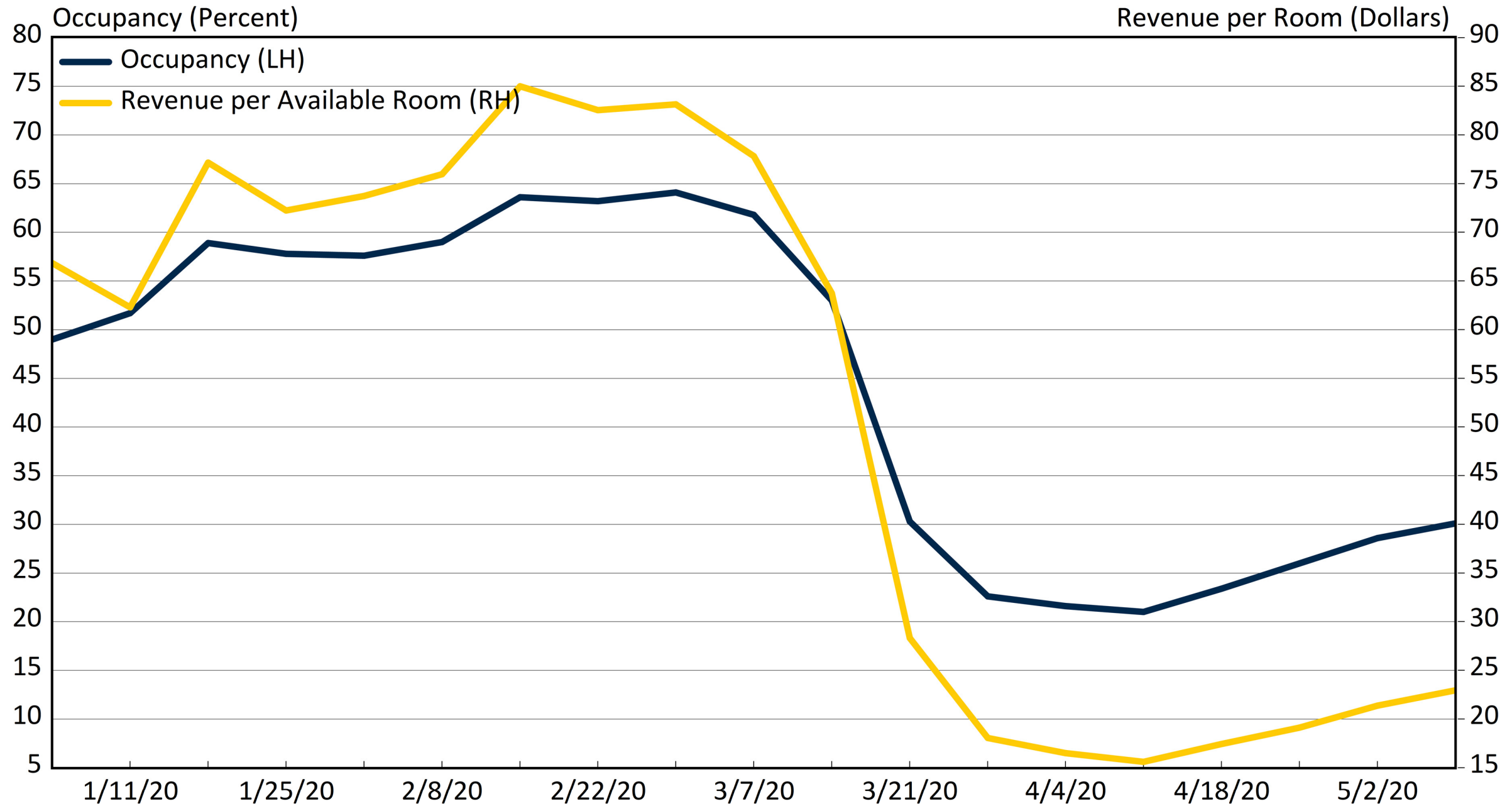
Retail Sales



SafeGraph Foot Traffic by Industry

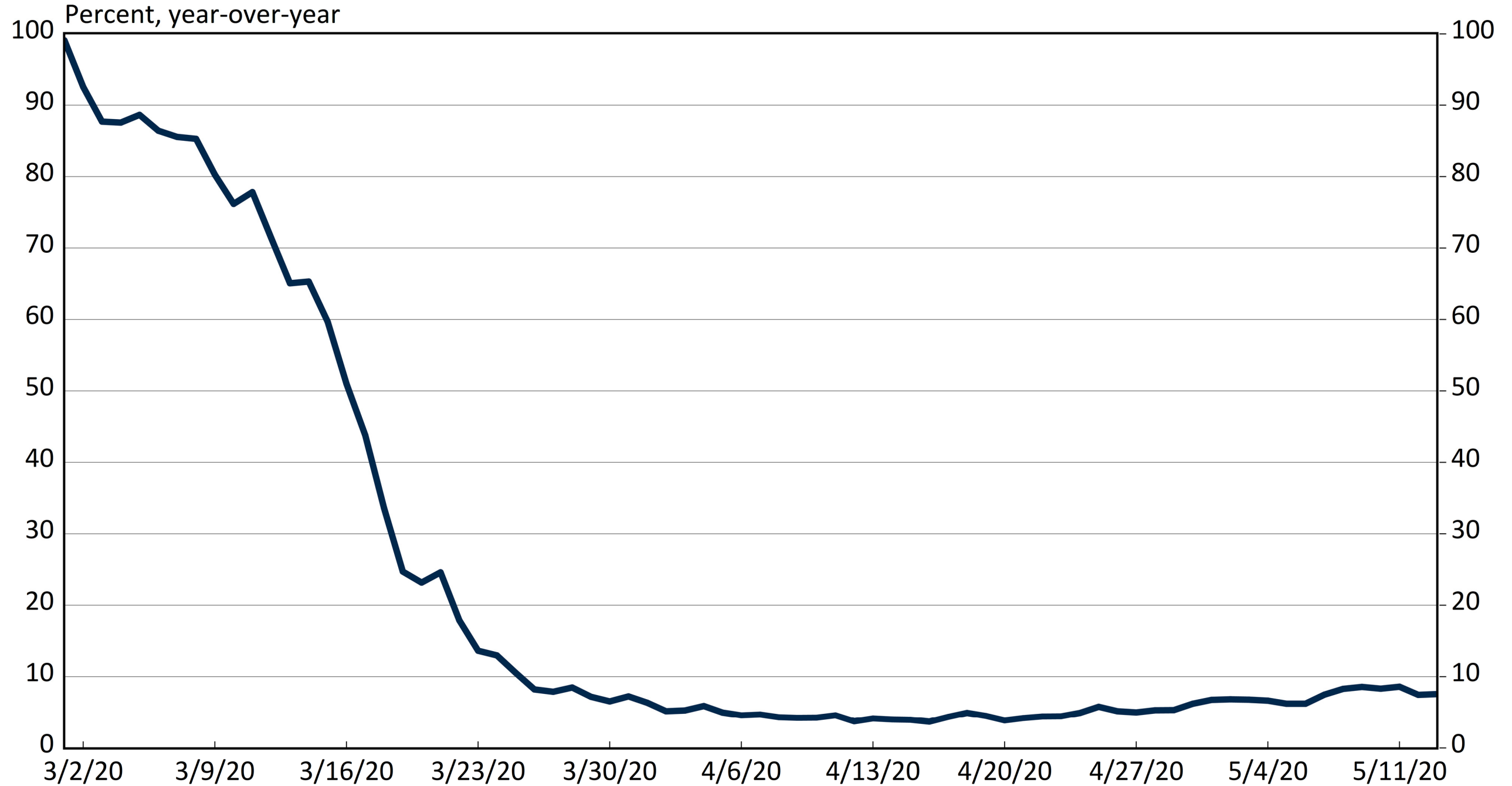


Hotel Occupancy and Revenue

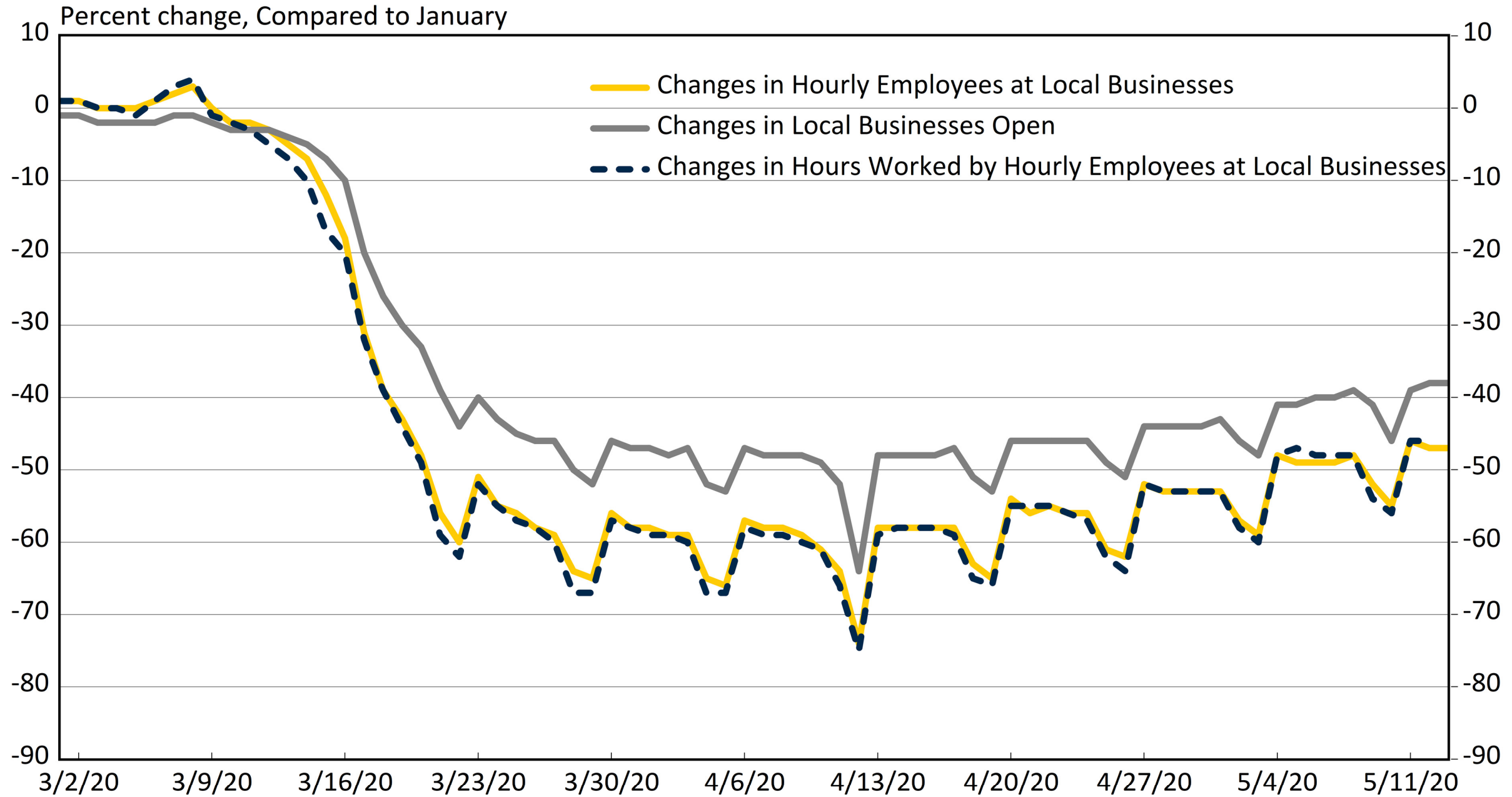


Source: STR

TSA Total Traveler Throughput

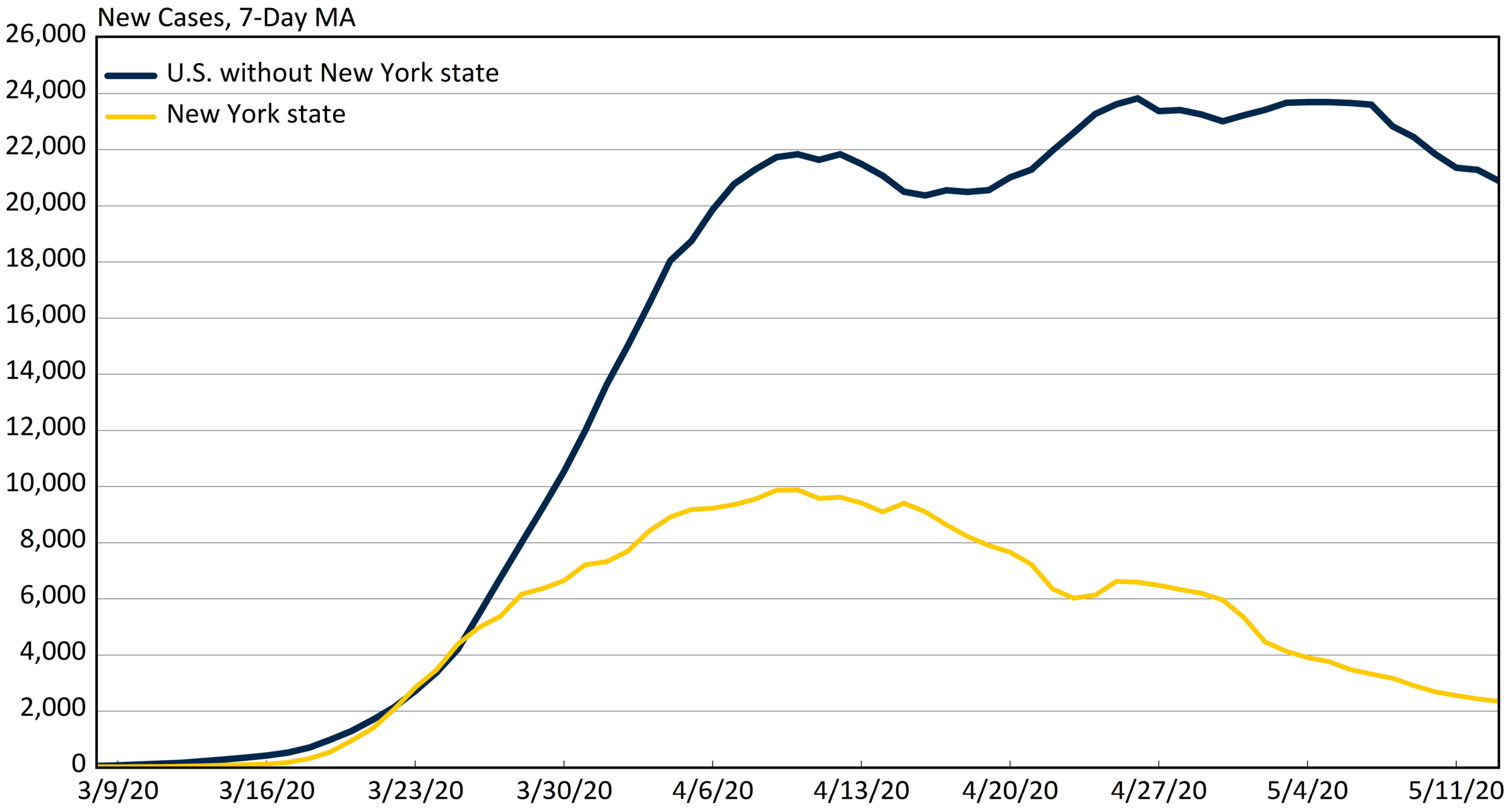


Homebase Small Business Trends (U.S.)



Source: Homebase

7-Day Moving Average of Daily New Cases of COVID-19 (U.S.)



Source: New York Times

U.S. Economic Outlook

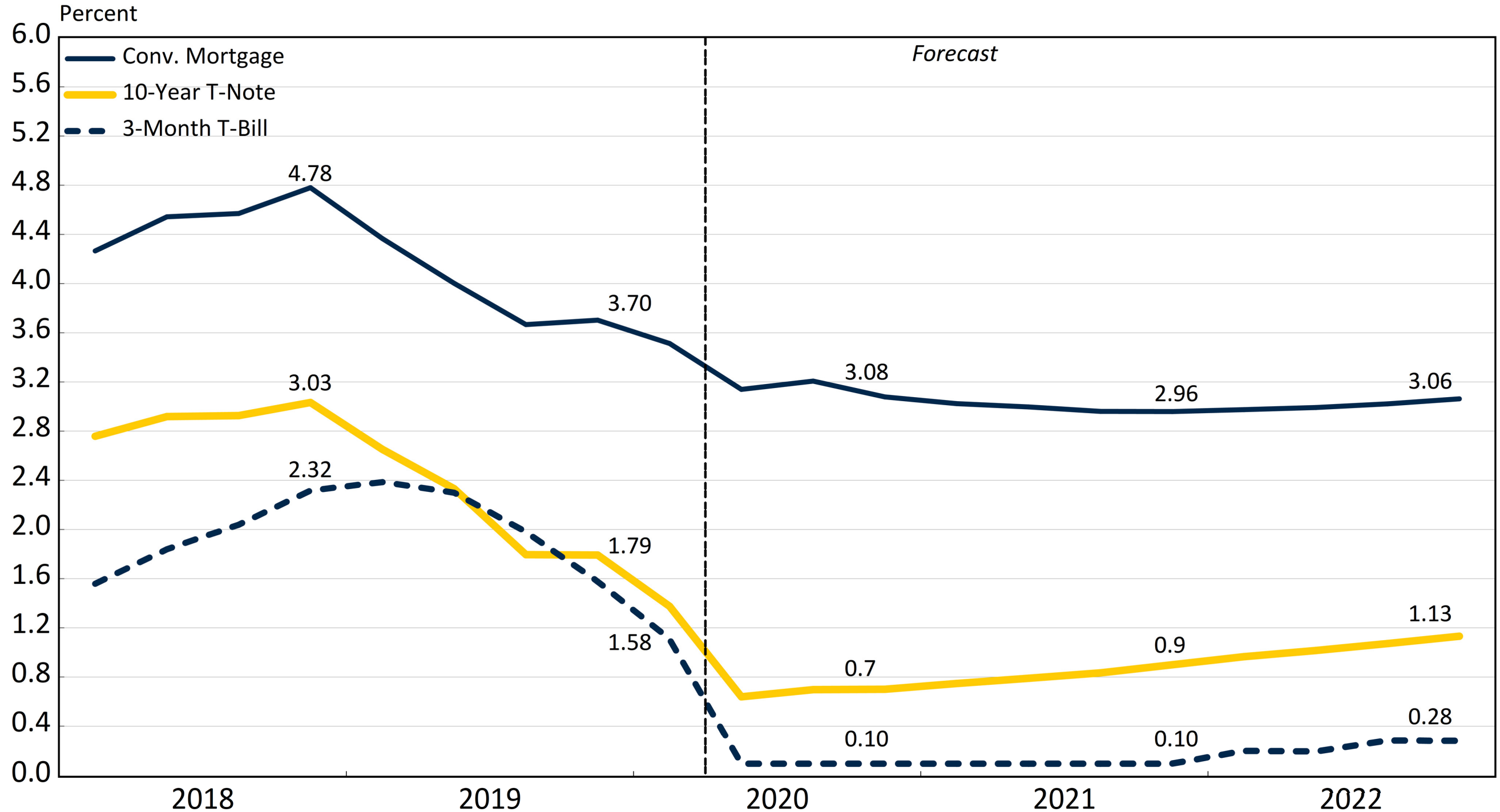
Epidemiological and Public Health Policy Assumptions

- Assumptions, not recommendations!
- Around 80% of deaths are among those over 65
 - A shift in strategy likely in favor of helping the vulnerable isolate
 - Ease restrictions on businesses gradually, with new safety protocols and capacity constraints in place
- We expect/hope no largescale rebound in cases or “second wave”
- Service industries with the highest perceived risk of infection won’t rebound until customers feel safe
 - Sit-in restaurants, air travel, public transportation, concerts, sporting events, etc.
 - We project these industries to return to ‘business as usual’ by mid-2021
- We are cautiously optimistic about K-12 schools reopening in-person this fall/winter (with precautions)
 - Otherwise, there is likely to be large-scale absenteeism from work
 - Children’s susceptibility to severe illness from COVID-19 appears much lower than adults’
 - Children appear unlikely to be super-spreaders of COVID-19

Monetary Policy: “Whatever It Takes”

- Treasury and agency mortgage-backed security purchases
- Fresh alphabet soup of programs:
 - Commercial Paper Funding Facility, Primary Dealer Credit Facility, Money Market Mutual Fund Liquidity Facility, Primary Market Corporate Credit Facility, Secondary Market Corporate Credit Facility, Term Asset-Backed Securities Loan Facility, Paycheck Protection Program Liquidity Facility
- Latest additions:
 - Main Street Lending Program, Municipal liquidity facility
- No negative interest rates in our forecast

Market Interest Rates



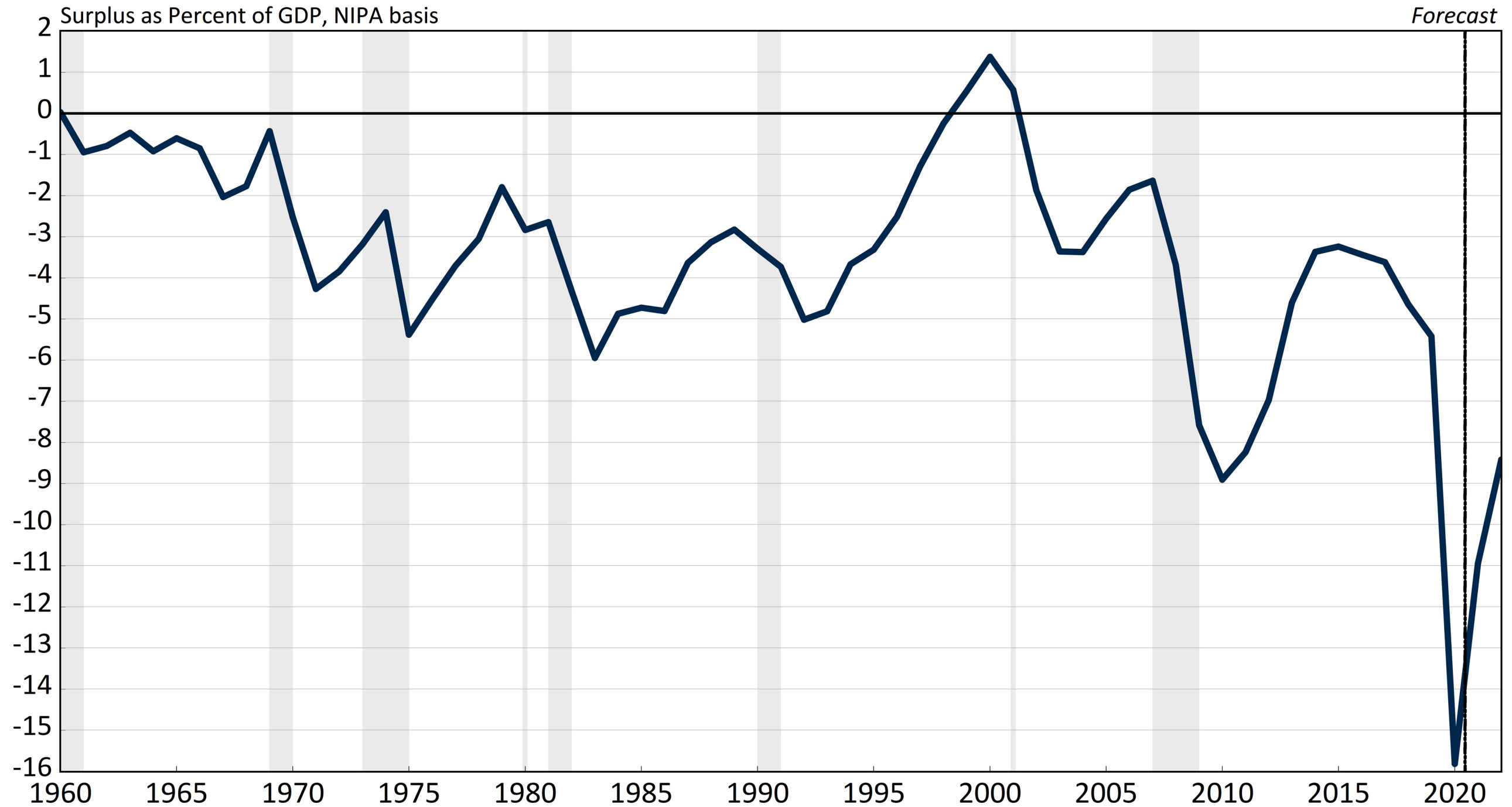
Fiscal Policy – Three Major COVID-19 bills so far

- H.R. 6201, Families First Coronavirus Response Act, about \$200 bln
 - Key economic provisions: Medicaid match, UI tweaks, SNAP
- CARES Act, about \$2.2 trln headline cost, \$1.7 trln CBO estimated cost
 - Key provisions: personal tax rebates, major UI eligibility and benefit expansion, Paycheck Protection Program, aid to states for COVID-19 expenses, Employer payroll tax deferral, Funds for Treasury to backstop Fed's risky lending
- Paycheck Protection Program and Health Care Enhancement Act, \$480 bln CBO estimated cost
 - PPP funds nearly doubled, \$100 bln to reimburse hospitals for expenses and lost revenues

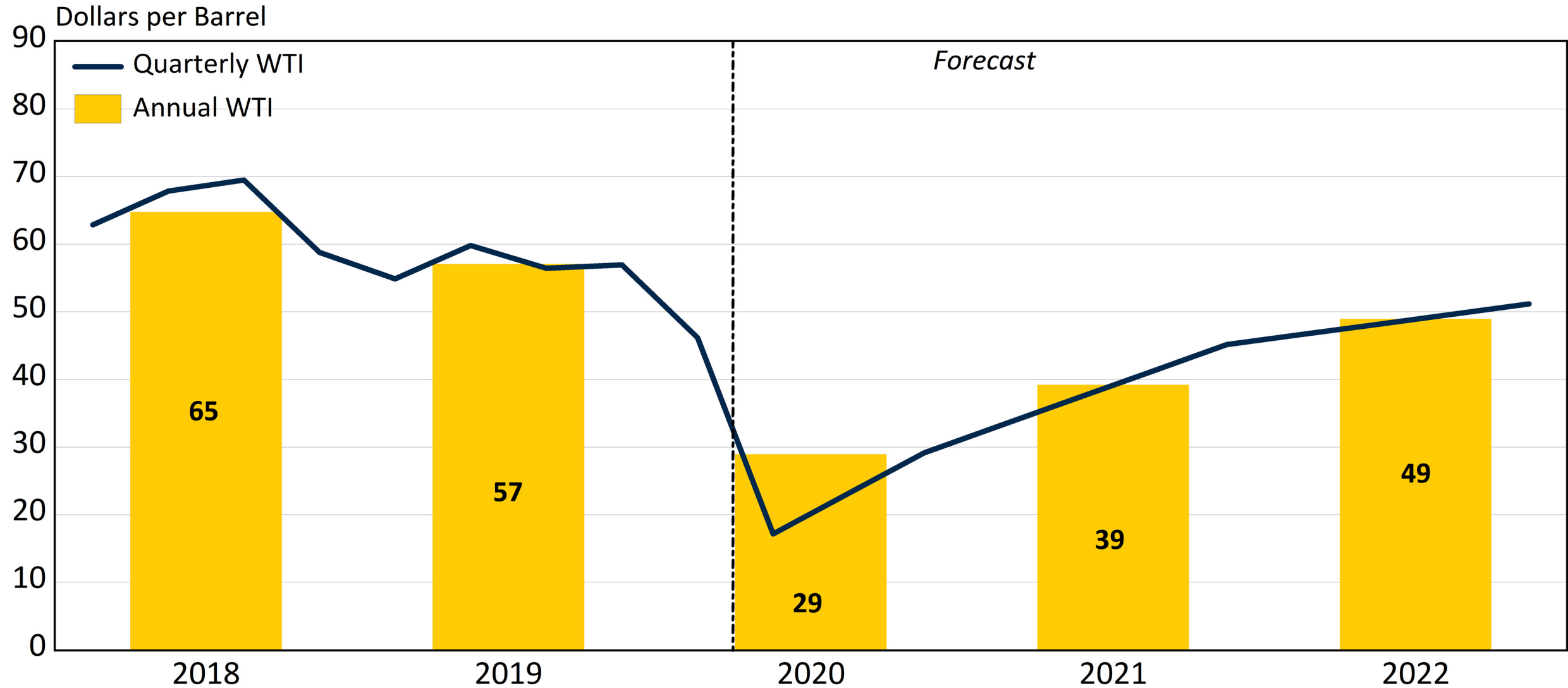
Fiscal Policy – Further Assumptions

- Paycheck Protection Program extension/modification is likely
 - We expect another 8 weeks of coverage, more non-payroll costs covered
- State and Local governments urgently need substantial help
 - We expect about \$600 bln of aid through fiscal 2022
- Unemployment benefits will need to be extended at least for 2021
- President Trump wants a payroll tax cut
 - We expect a 2% payroll tax holiday split evenly between employers and employees
 - From mid-2020q3 through 2021

Federal Budget Balance



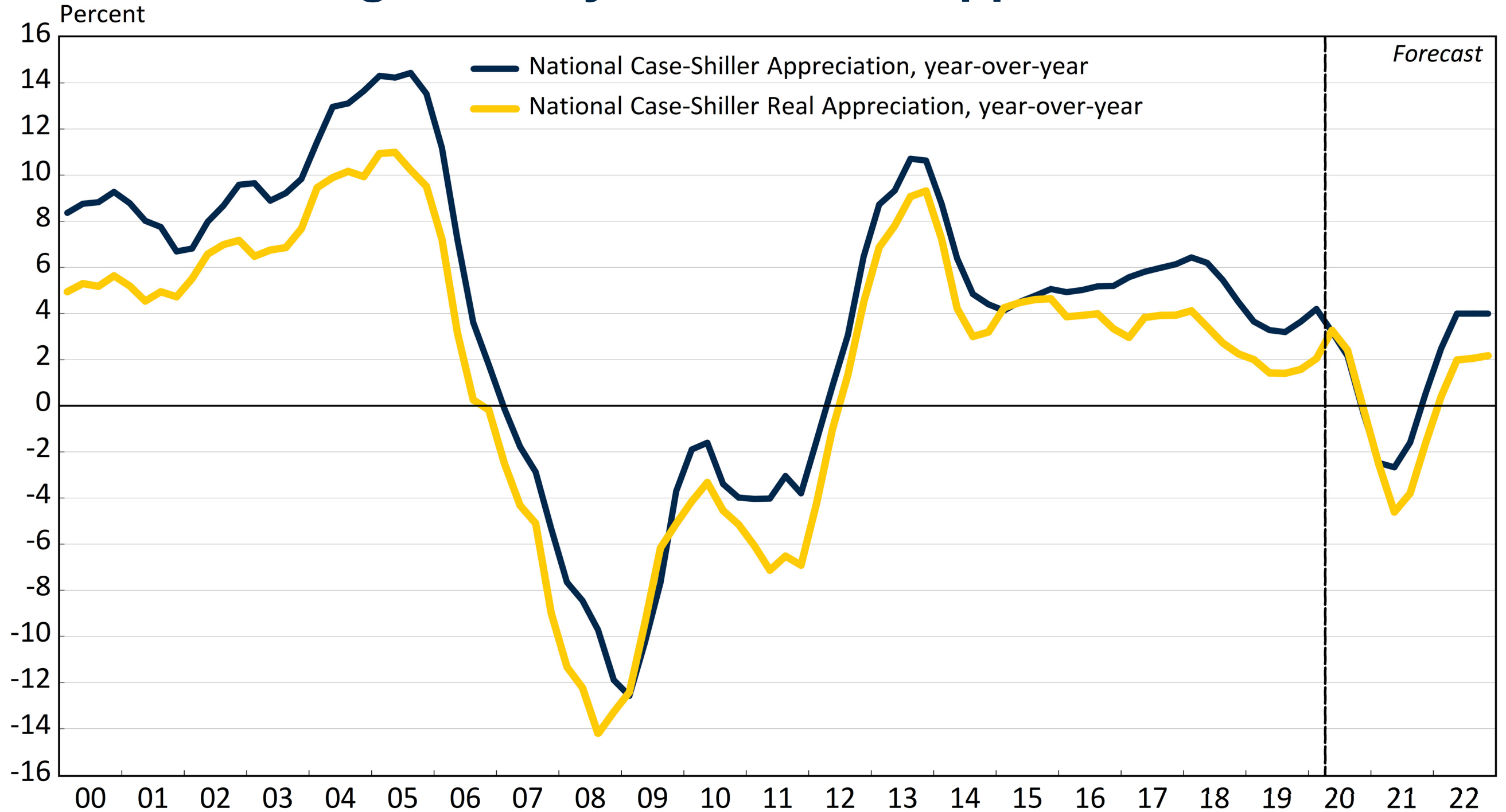
Oil Prices (West Texas Intermediate Crude)



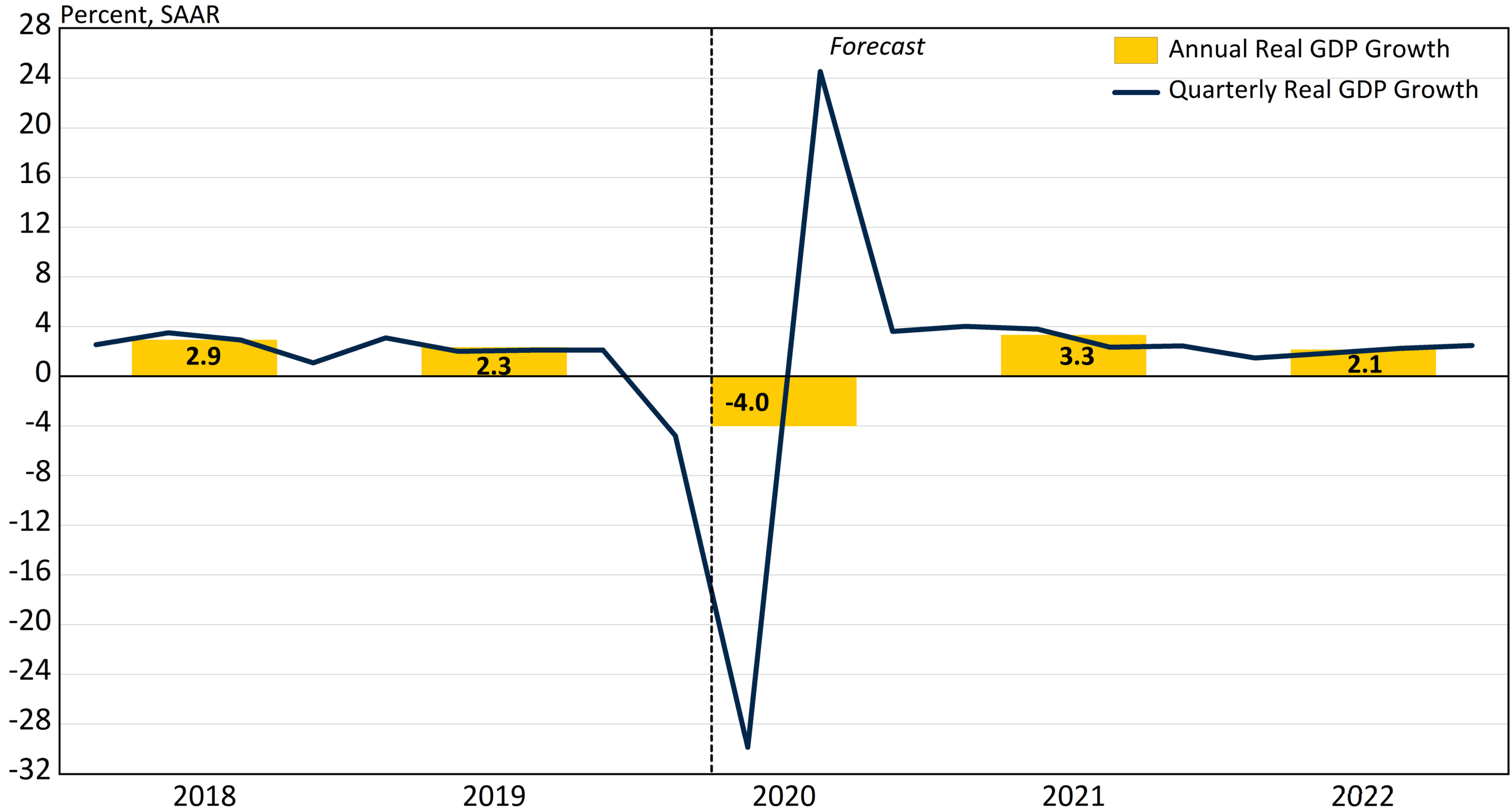
		4th Quarter to 4th Quarter % Change			
WTI	6.2	-3.1	-48.8	54.8	13.3
Imports*	14.6	-7.4	-48.0	52.3	13.1

*Implicit deflator for petroleum & products

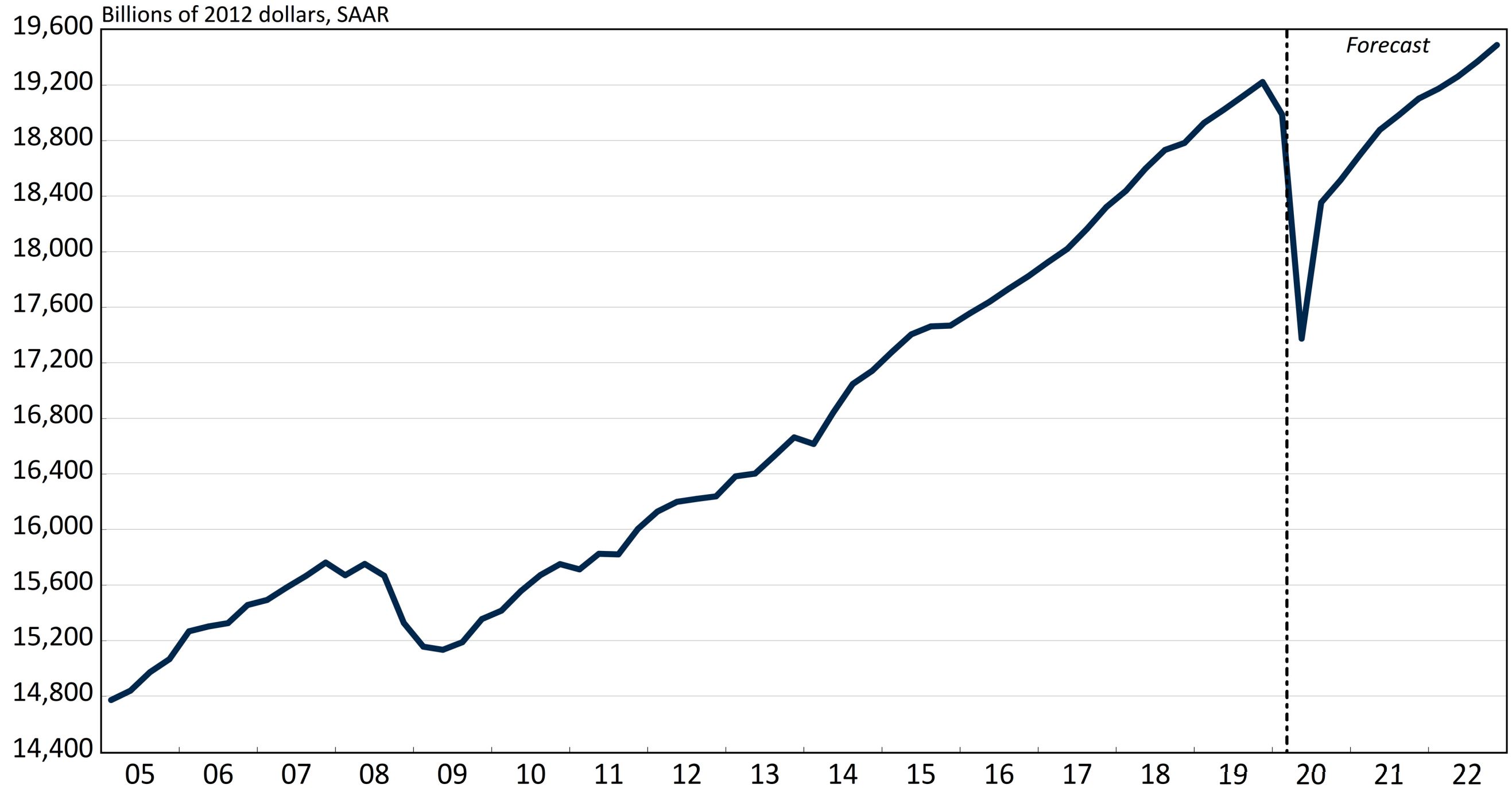
Single-Family Home Price Appreciation



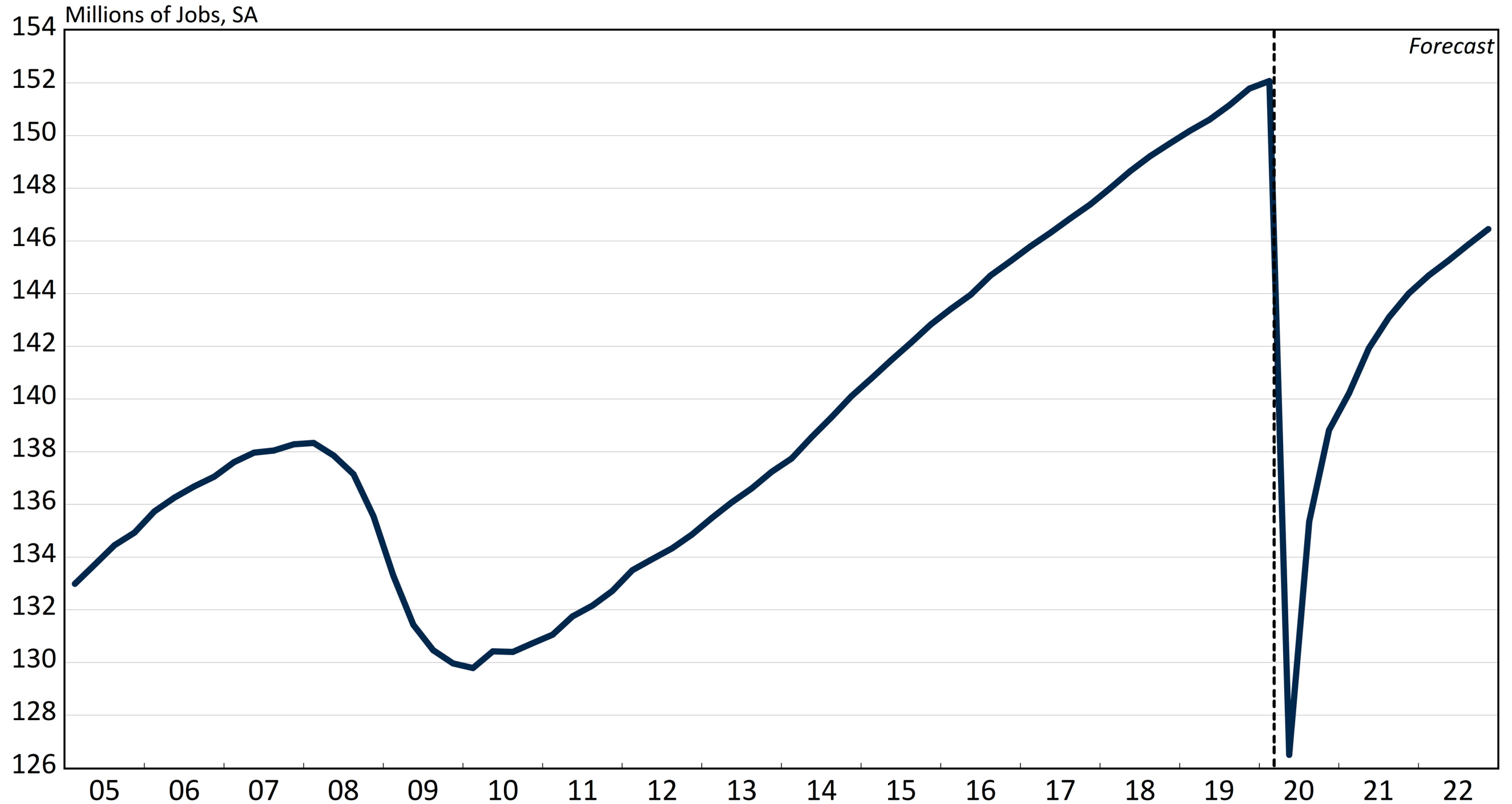
Real GDP Growth



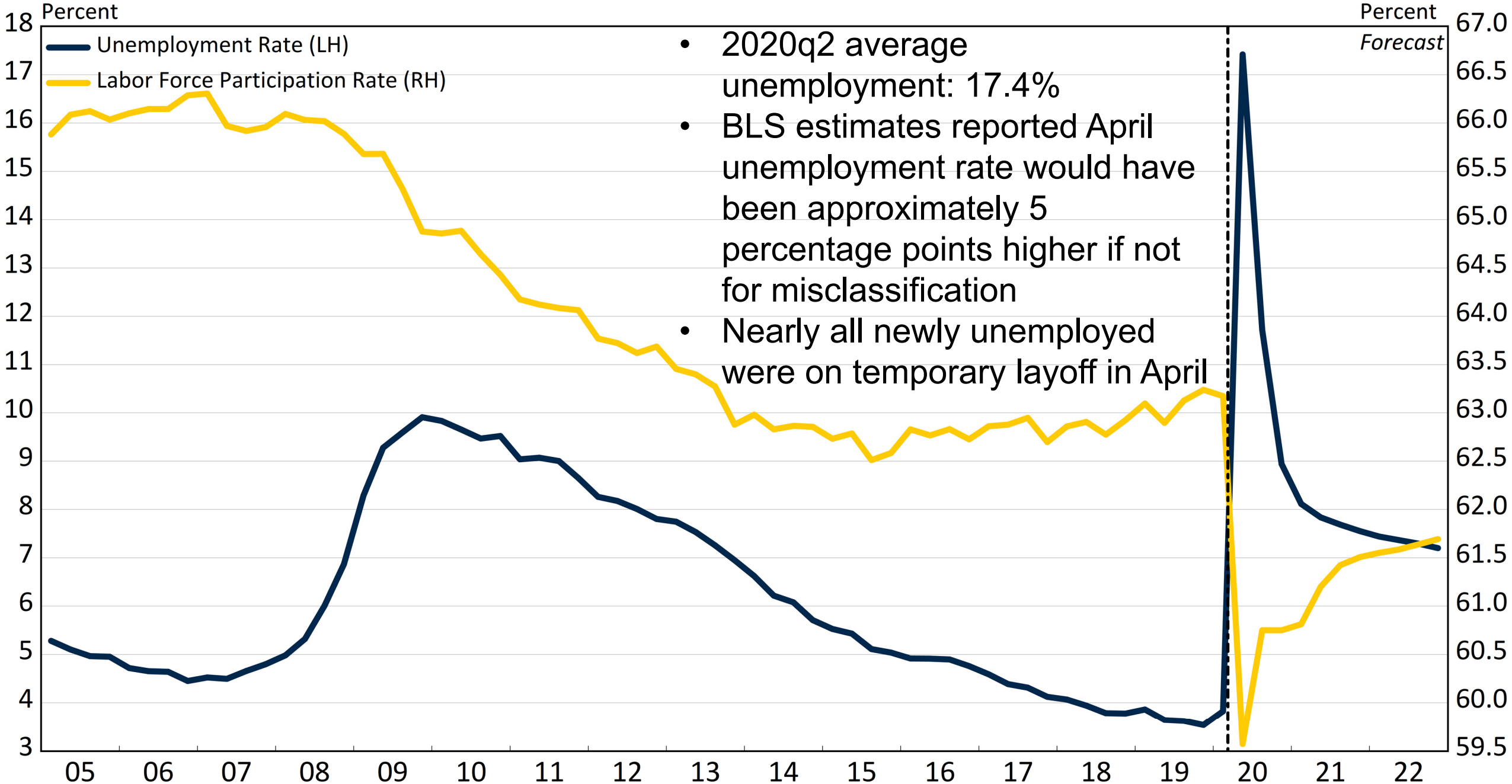
Quarterly U.S. Real GDP



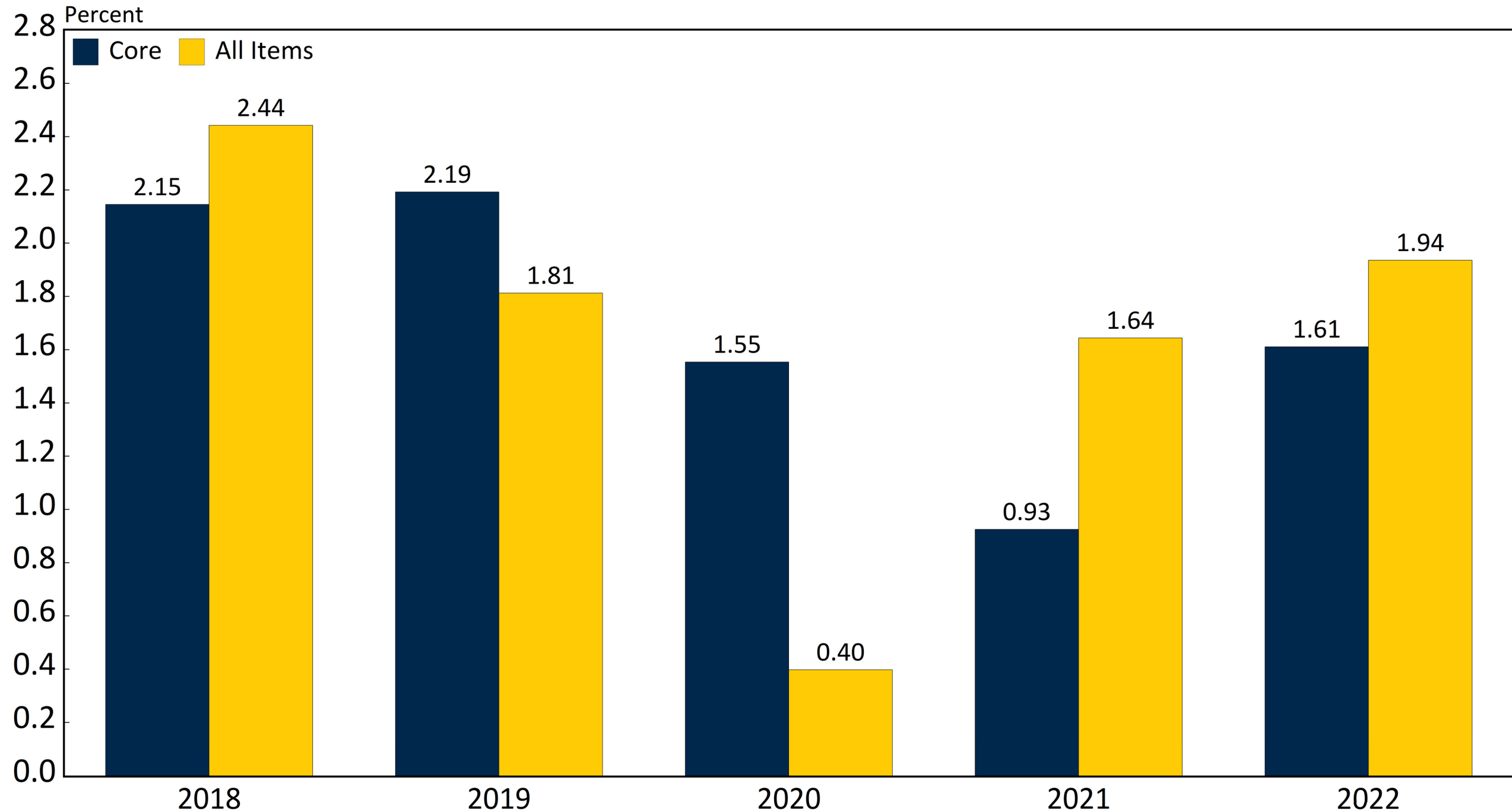
Quarterly U.S. Payroll Employment



Quarterly U.S. Unemployment Rate and Labor Force Participation Rate

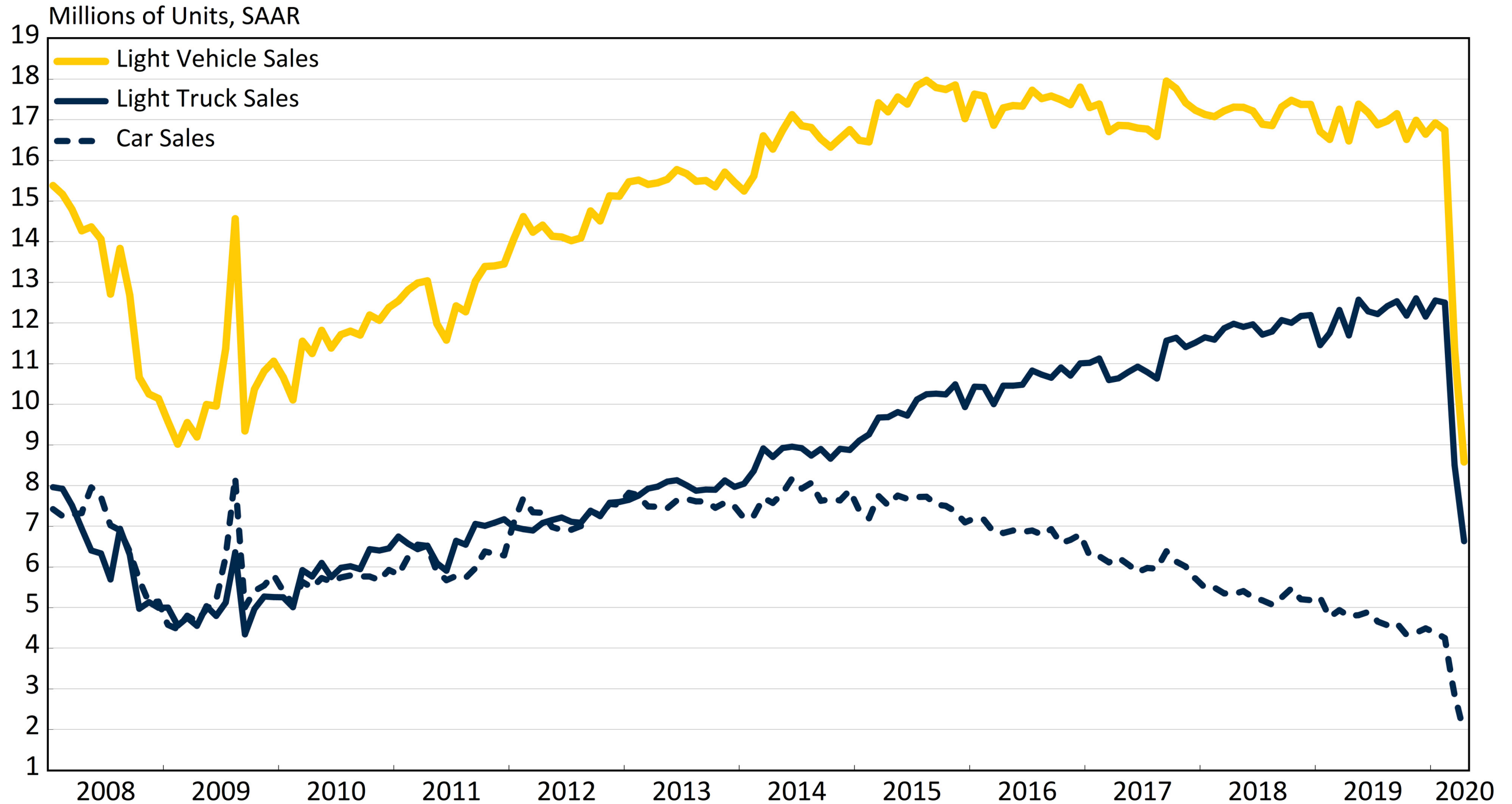


Consumer Price Inflation (CPI-U)

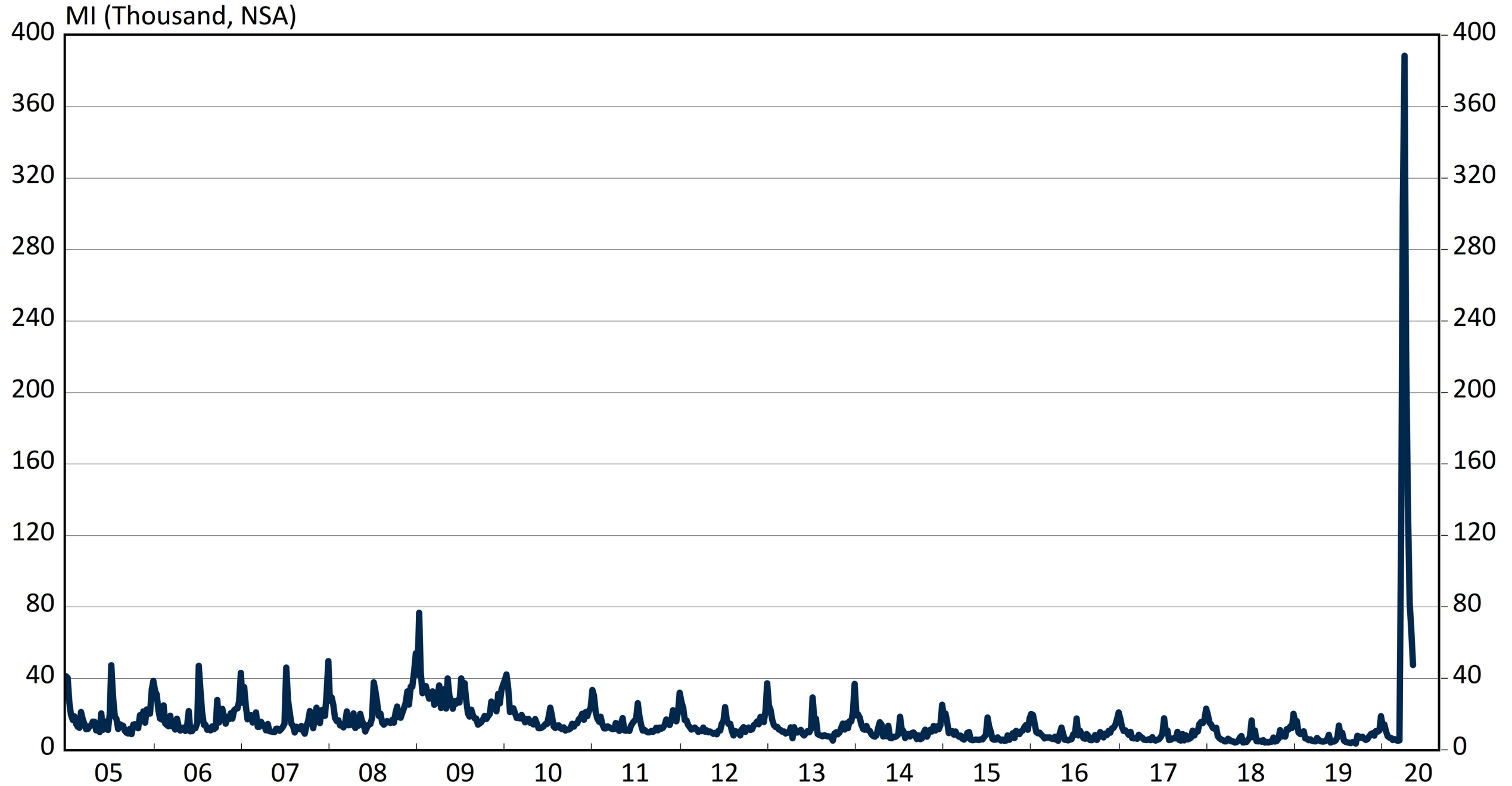


High-Frequency Indicators: Michigan

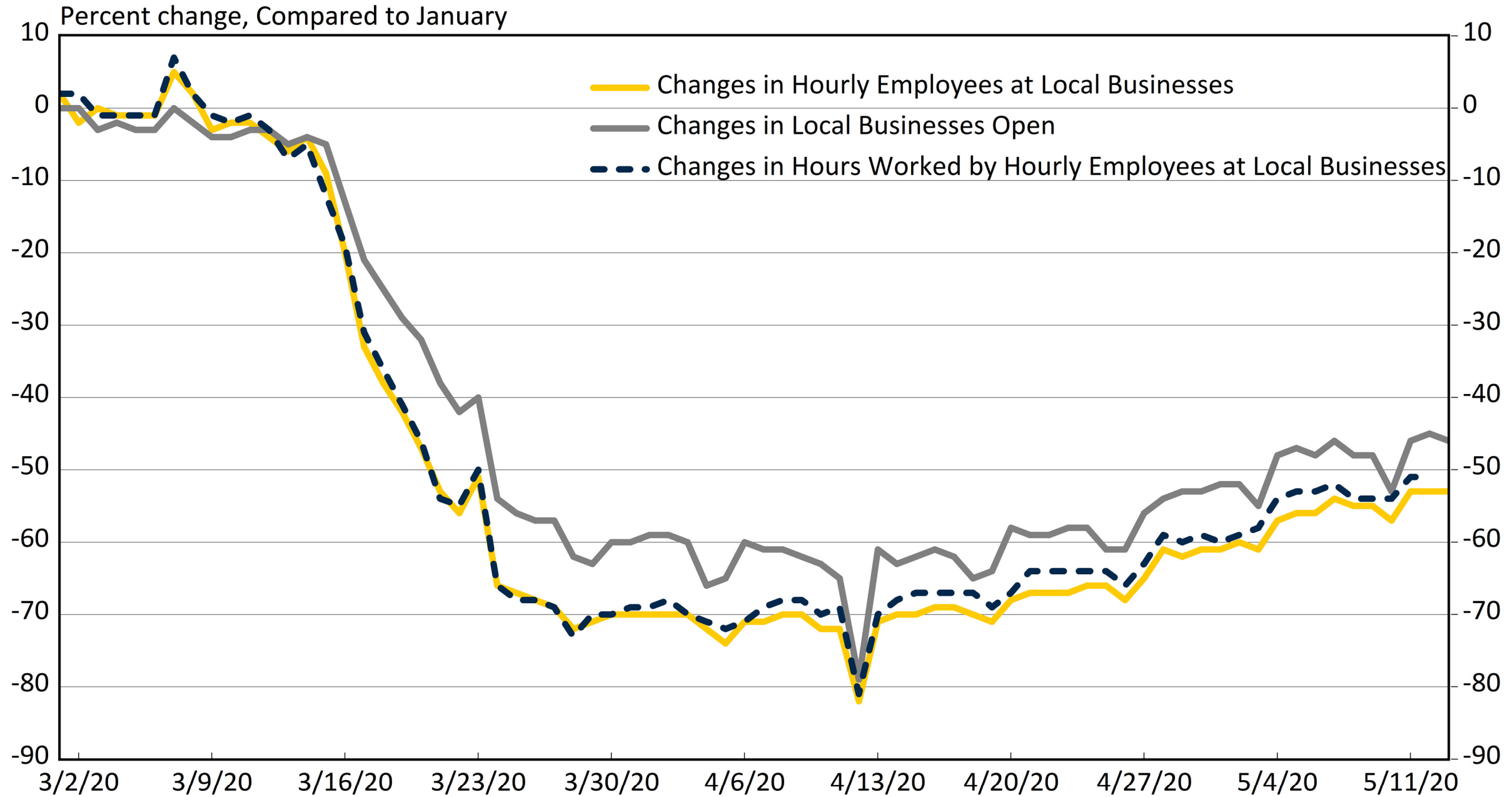
Monthly U.S. Light Vehicle Sales



Weekly Initial Unemployment Insurance Claims (Michigan)

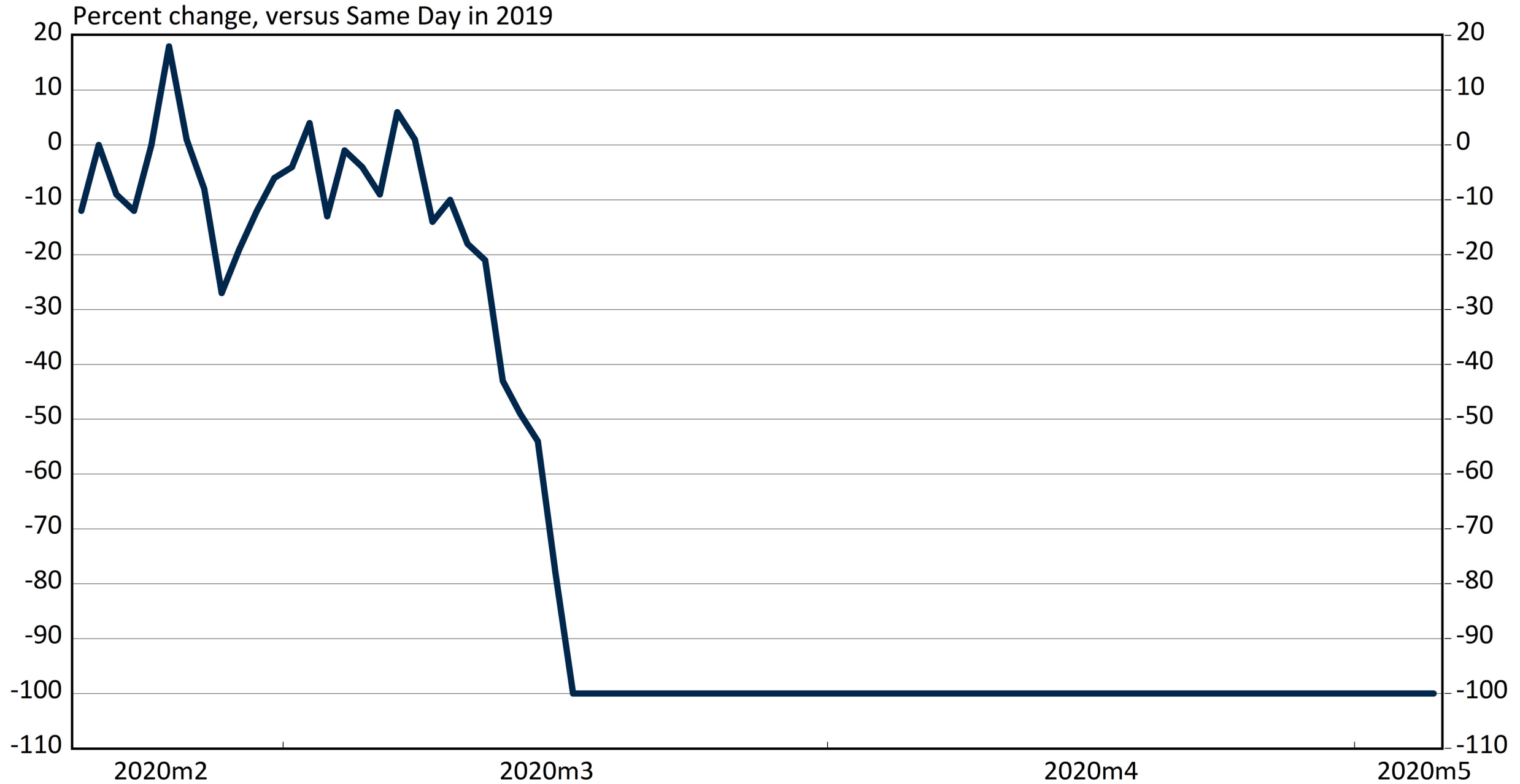


Homebase Small Business Trends (Michigan)



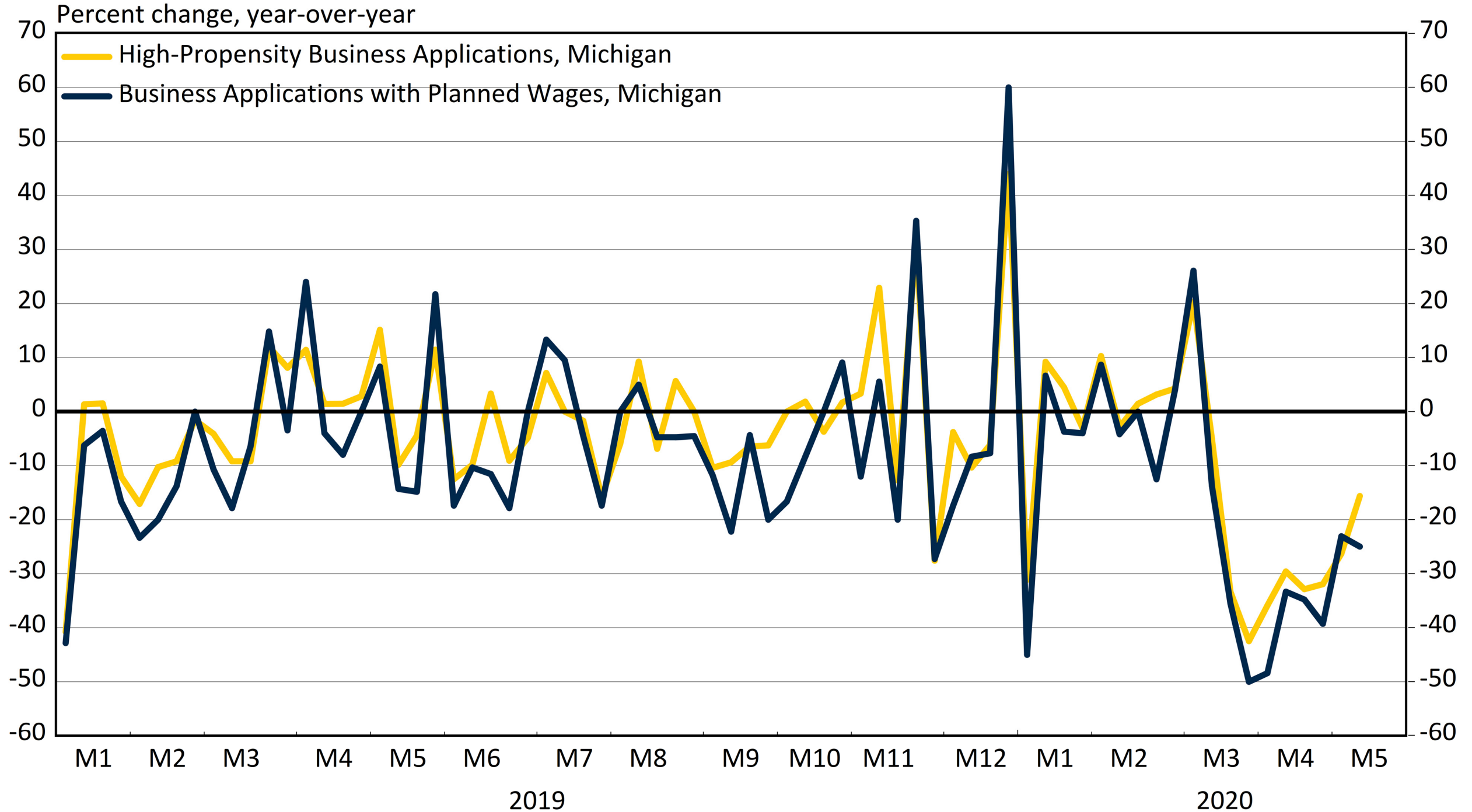
Source: Homebase

Seated Diners at OpenTable.com Restaurants (Michigan)

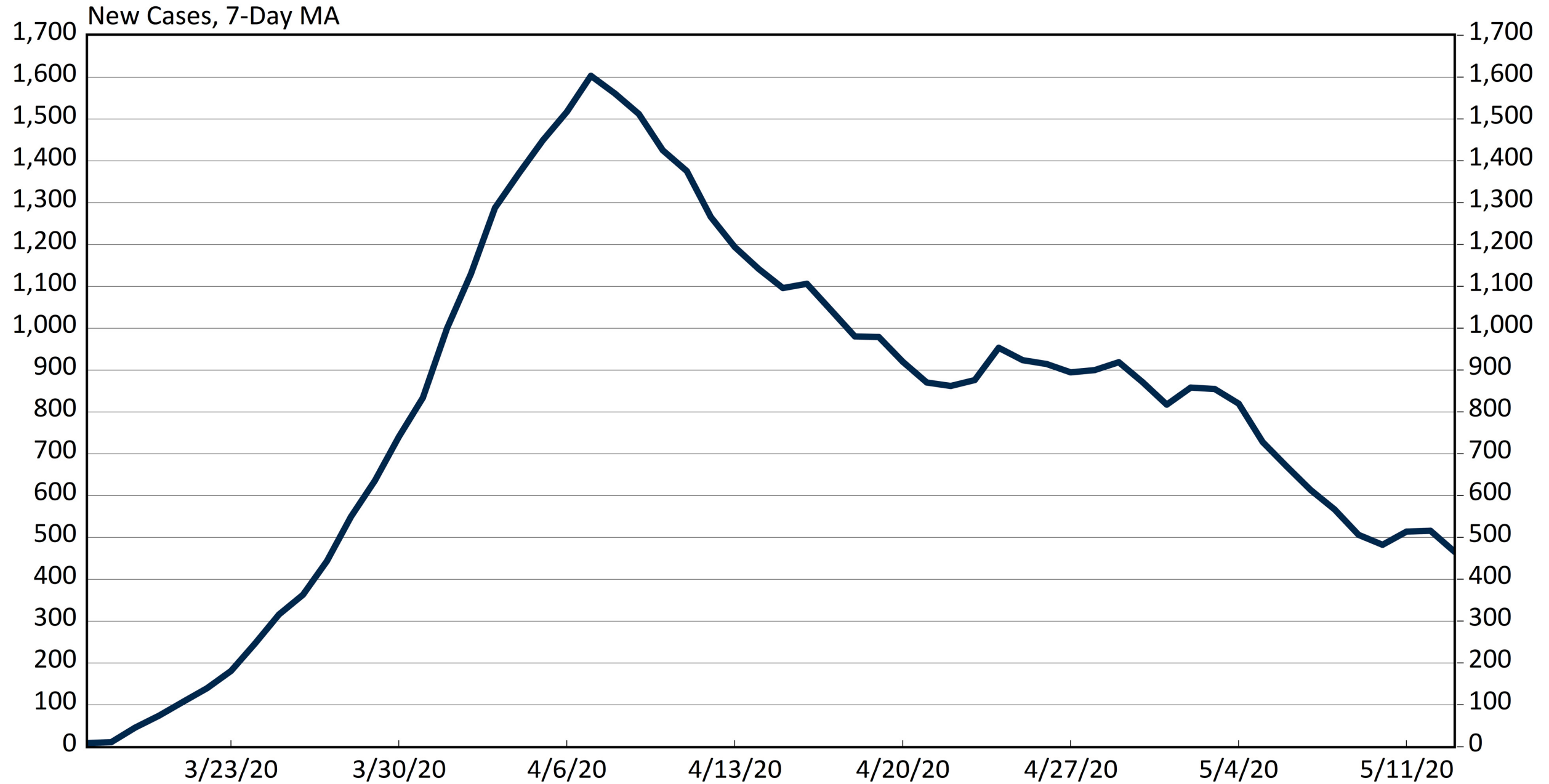


Source: Opentable

Business Formation Statistics (Michigan)



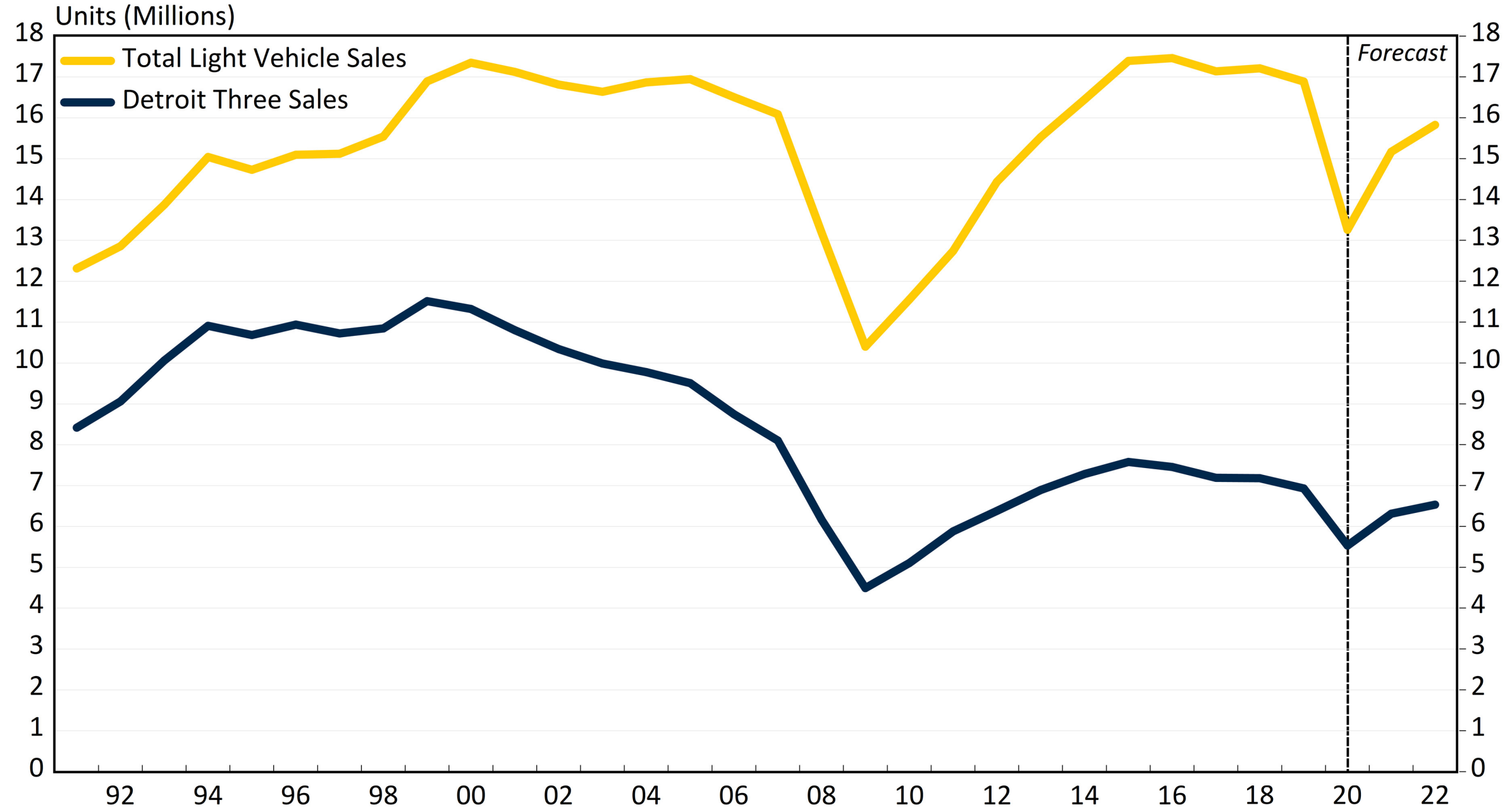
Daily New Cases of COVID-19 (Michigan)



Source: New York Times

Michigan Economic Outlook

Annual Light Vehicle Sales, 1991–2022



The Short-Run Impact on Michigan Payroll Employment

- We estimate 54% of Michigan workers able to work onsite in April, increasing in May and June
- We estimate 33% of Michigan workers can perform jobs remotely (Dingel and Neiman 2020)
- Together, nearly 70% of workers able to do their jobs in April
- Additional 550,000 workers out of work because of decline in demand (“second round effects”)
- Approximately 725,000 workers not working but continued to be paid
 - Using sick or vacation leave, covered by Paycheck Protection Program, large firms avoiding layoffs
- Second quarter payroll employment decline of 23.5 percent (1,050,000 jobs)
 - Reflects ongoing resumption of economic activity in May and June
 - Consistent with pattern of initial unemployment insurance claims

Estimating the Pace of Recovery: Sources of Persistent Employment Shortfall

➤ Small business failures

- Small Business Association of Michigan: nearly one in seven small businesses in Michigan do not expect to survive
- Cross-tabs: smallest businesses most likely to expect to fail (consistent with other data sources)
- Extrapolating to larger businesses, approximately 4.9 percent of employees worked at businesses expected to fail

➤ Shortfall in business formation

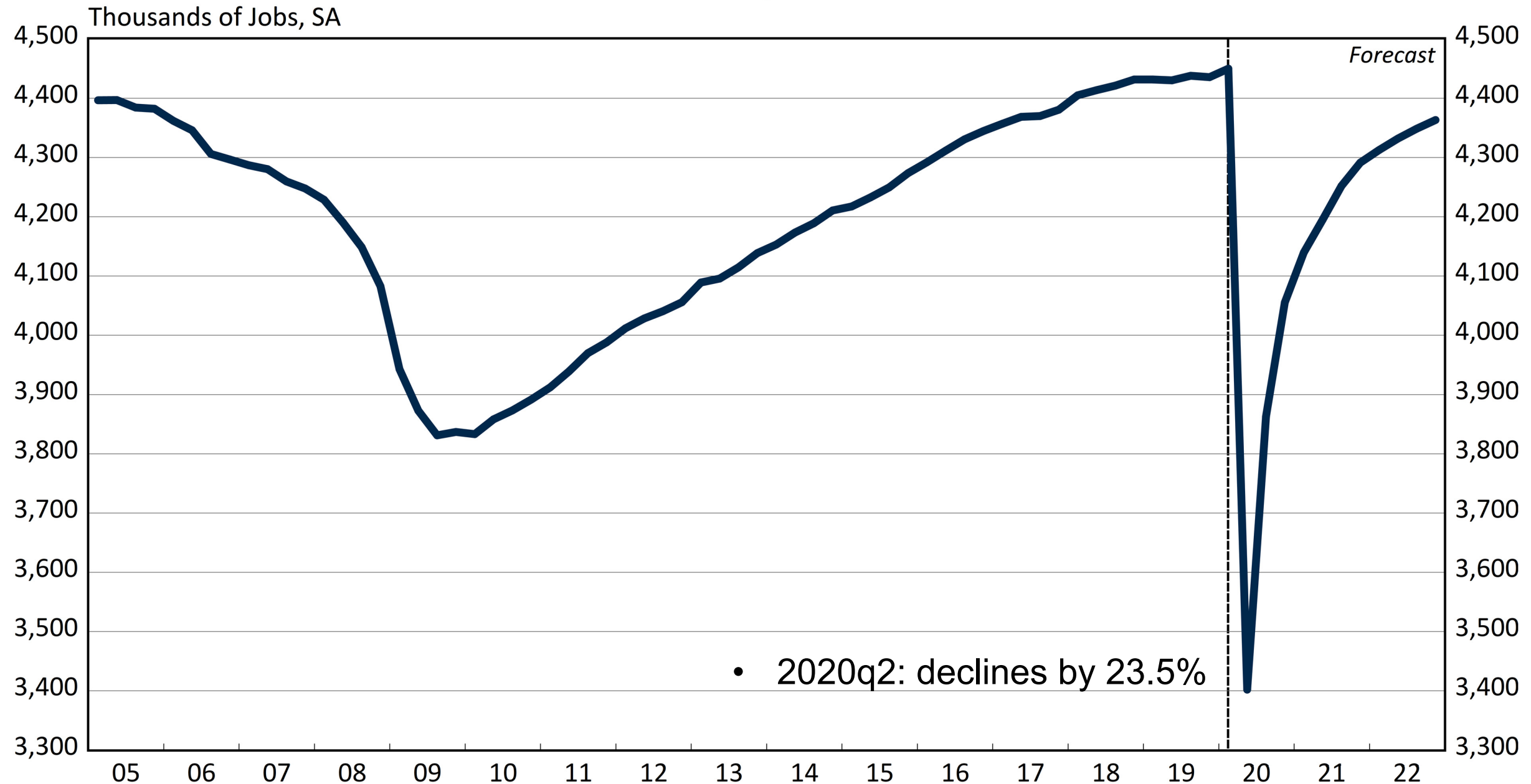
- Census Bureau's Weekly Business Formation Statistics: "High Propensity Business Applications" have been approximately 34% lower during crisis
- With assumptions, estimate total annual employment shortfall from missing business formation of 1.8 percent

➤ Reduced labor demand at continuing establishments (hardest to estimate, but they are all hard)

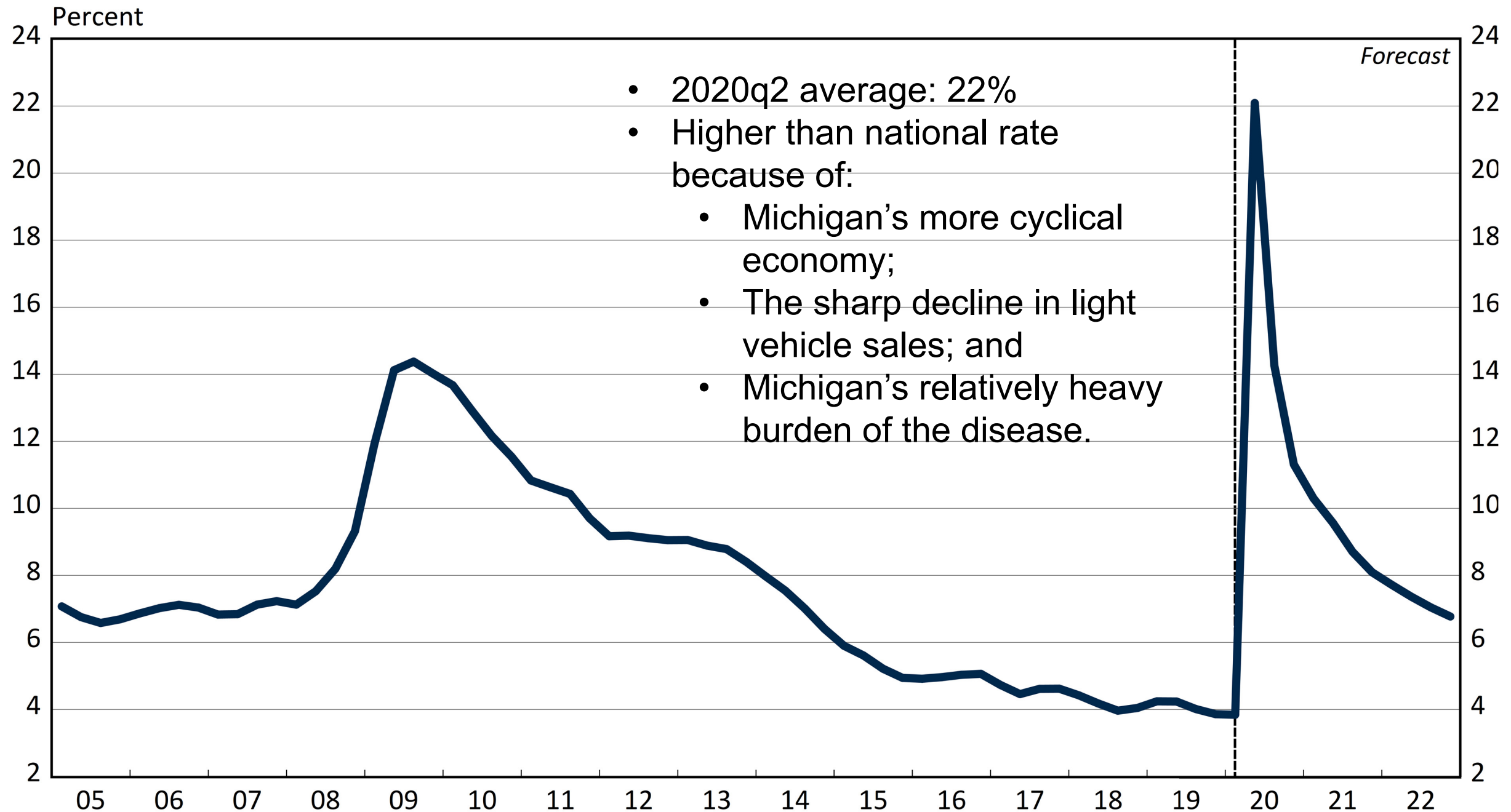
- Nationally, most layoffs so far are expected to be temporary

➤ Estimate payroll employment shortfall of 9 percent by end of 2020

Michigan Payroll Employment, 2005q1–2022q4



Michigan Unemployment Rate, 2005q1–2022q4

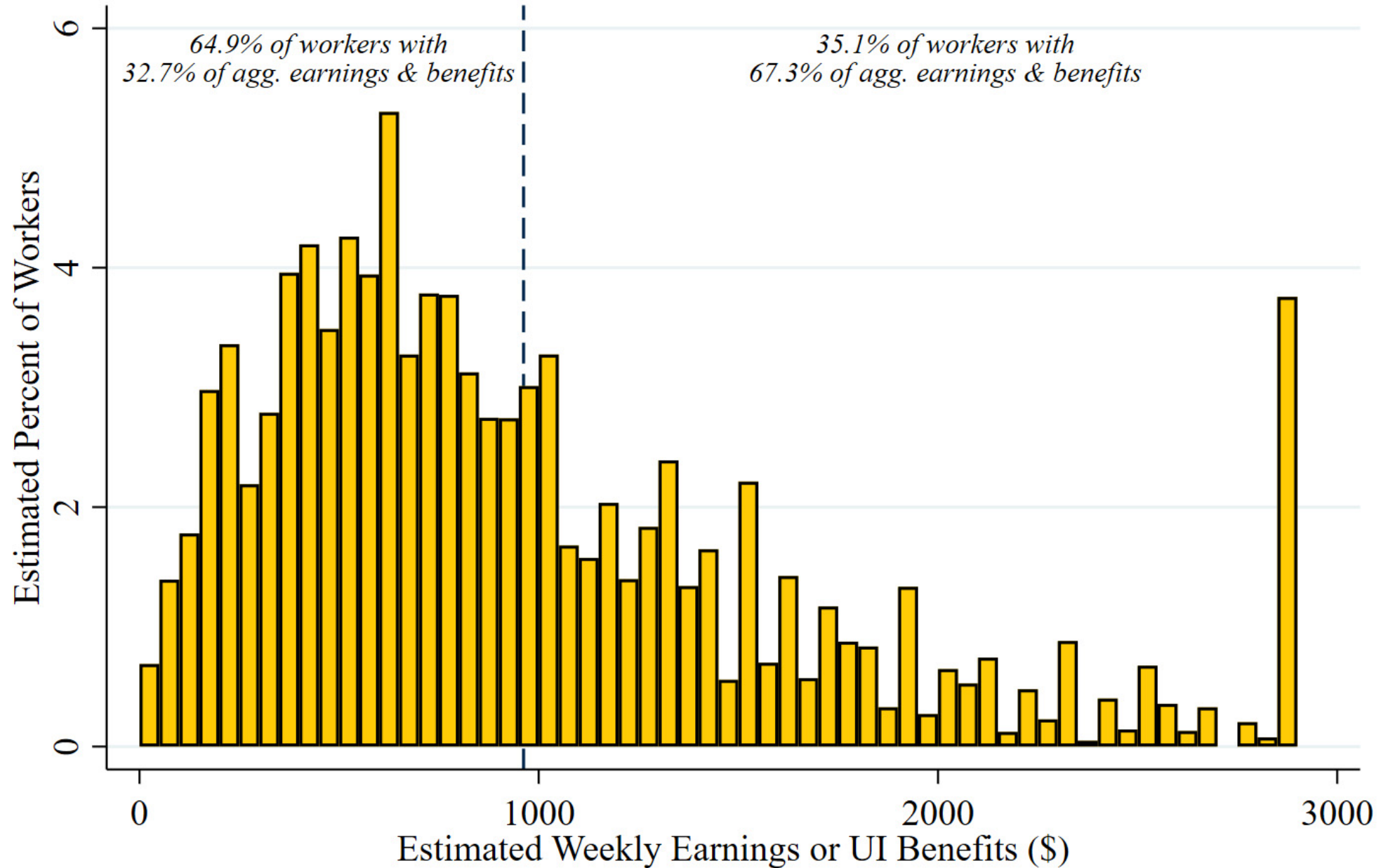


- 2020q2 average: 22%
- Higher than national rate because of:
 - Michigan's more cyclical economy;
 - The sharp decline in light vehicle sales; and
 - Michigan's relatively heavy burden of the disease.

Outlook for Michigan Personal Income

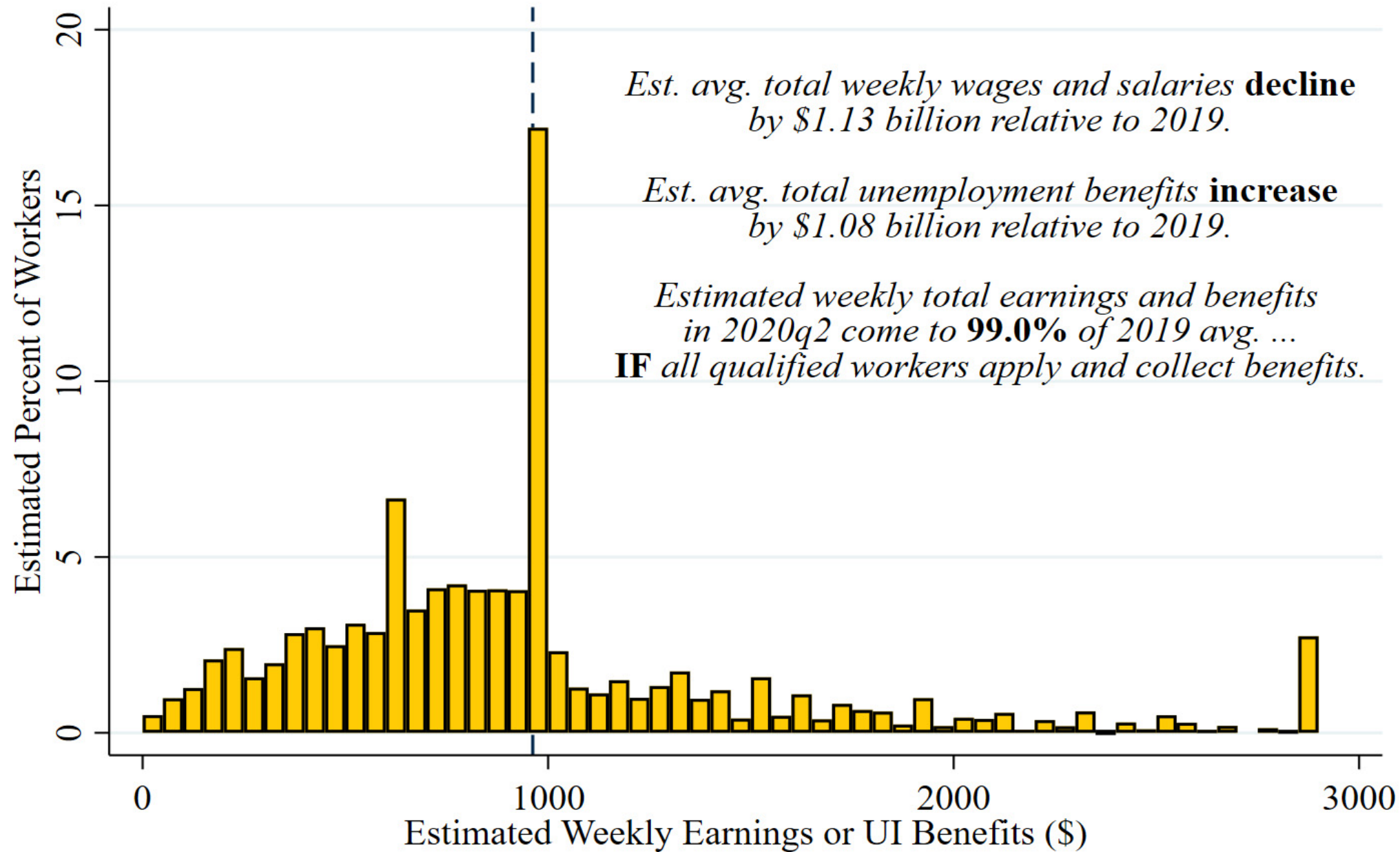
- The CARES Act contains multiple provisions to shield incomes from the downturn in employment
- Economic impact payments (“\$1,200 checks”)
 - Estimate just over \$8 billion to Michigan residents
- Pandemic Unemployment Assistance/Compensation
 - Flat \$600 benefit in addition to normal UI benefits available through July
 - Maximum weekly benefit now \$962 in Michigan (normally \$362 per week)
- Access to UI benefits expanded
 - Maximum duration increased by 13 weeks
 - Job search requirements waived
 - Eligibility extended to self-employed and independent contractors

Estimated Distribution of Weekly Earnings & Potential UI Benefits in Michigan, 2019 Average



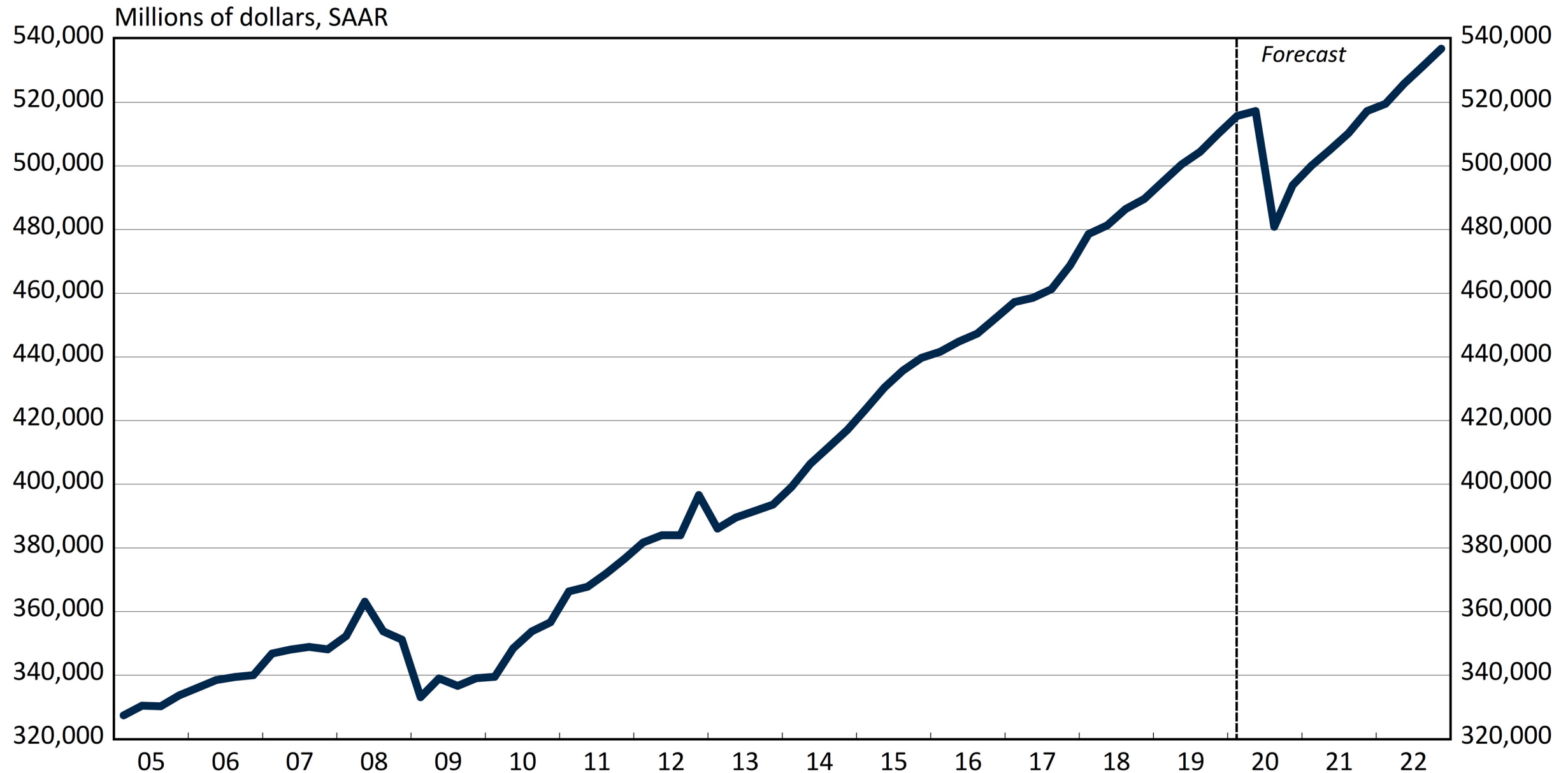
RSQE analysis of Current Population Survey microdata using usual weekly earnings. Weekly earnings are topcoded at \$2,884.61. Dashed line represents maximum weekly unemployment insurance benefit under Pandemic Unemployment Assistance and Compensation of \$962 per week.

Estimated Distribution of Weekly Earnings & Potential UI Benefits in Michigan, 2020q2



RSQE analysis of Current Population Survey microdata provided by IPUMS using usual weekly earnings. Weekly earnings are topcoded at \$2,884.61. Dashed line represents maximum weekly unemployment insurance benefit under Pandemic Unemployment Assistance and Compensation of \$962 per week.

Michigan Personal Income, 2005q1–2022q4





lsa.umich.edu/econ/rsqe