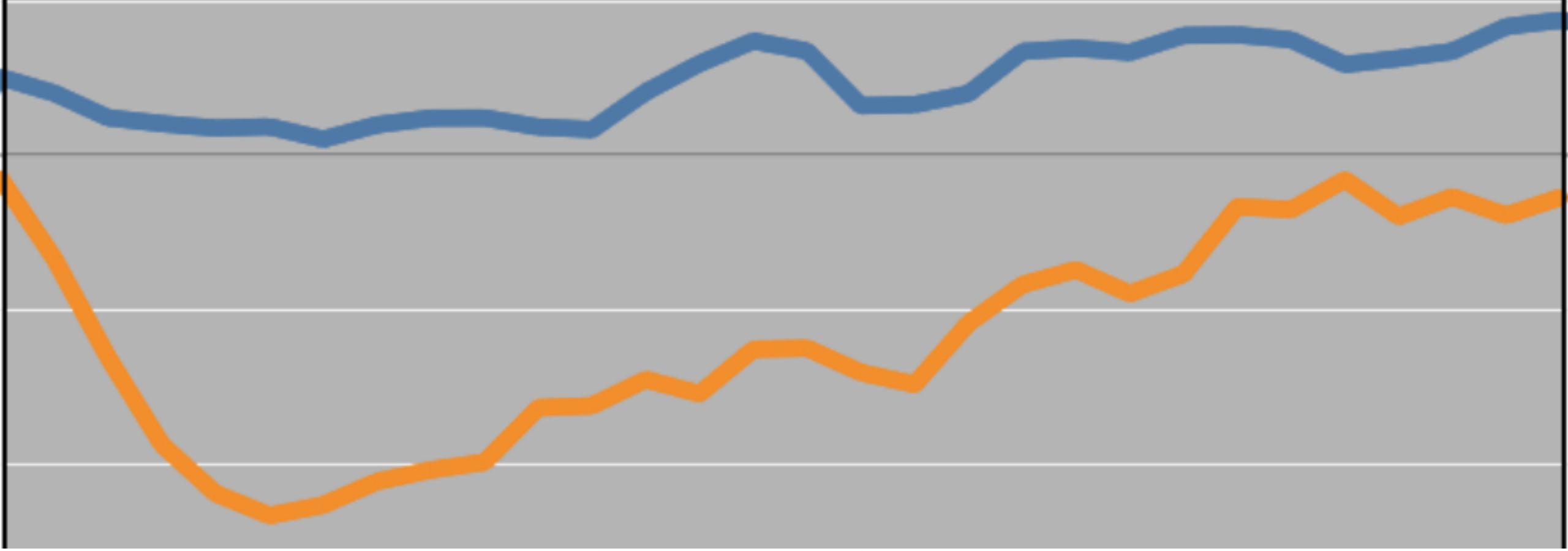




CHMURA



# Using Job Postings Data to Analyze the Labor Demand Impact of COVID-19

JobsEQ RTI Expected Volume Model

# Meet Our Speakers



**Chris Chmura, Ph.D.**  
CEO & Chief Economist



**James Stinchcomb**  
JobsEQ Economist

# Who is Chmura?



Offices in Richmond and Cleveland

We provide labor market data and analysis, so our clients can make informed decisions to help their communities thrive.

We are driven by client satisfaction and success.



Founded in 1998 by Christine Chmura, PhD.



We are economists, data scientists, statisticians, and business professionals who care about helping your community grow.



Excellence is our first priority-- in customer service and data quality.



# COVID-19

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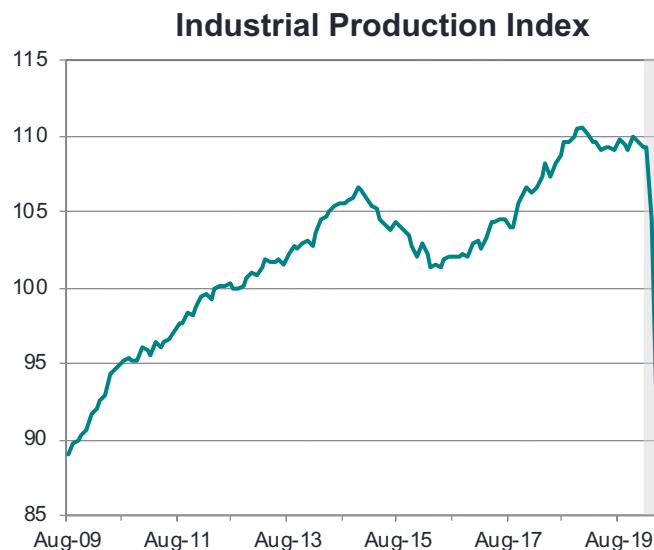
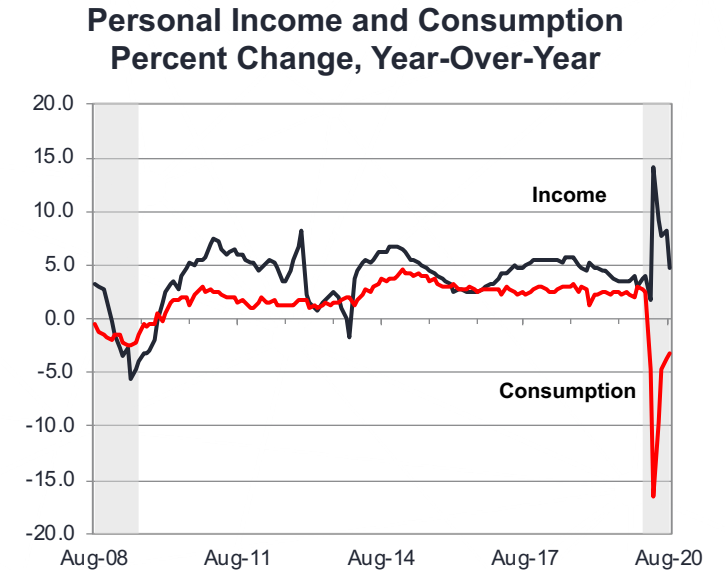
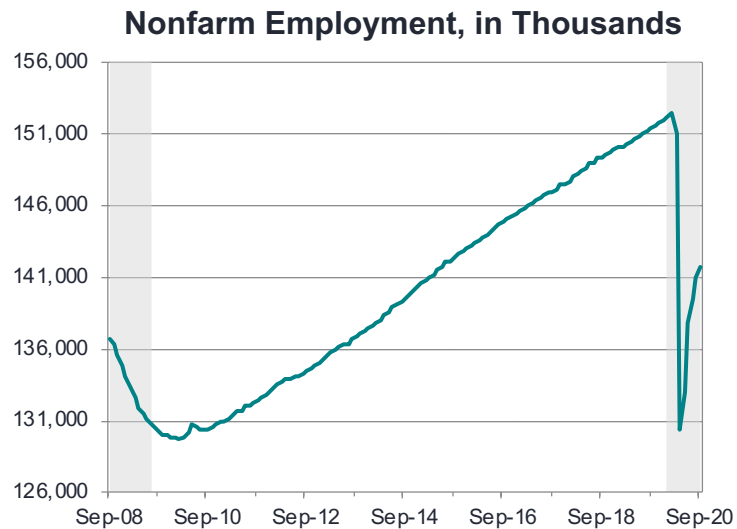
- National Economy
  - Recession started in February
  - GDP rebounds in 3<sup>rd</sup> quarter
  - Pre-COVID employment levels dependent on vaccine and vary by industry
- Using Job Postings Data to Measure COVID-19s Impact

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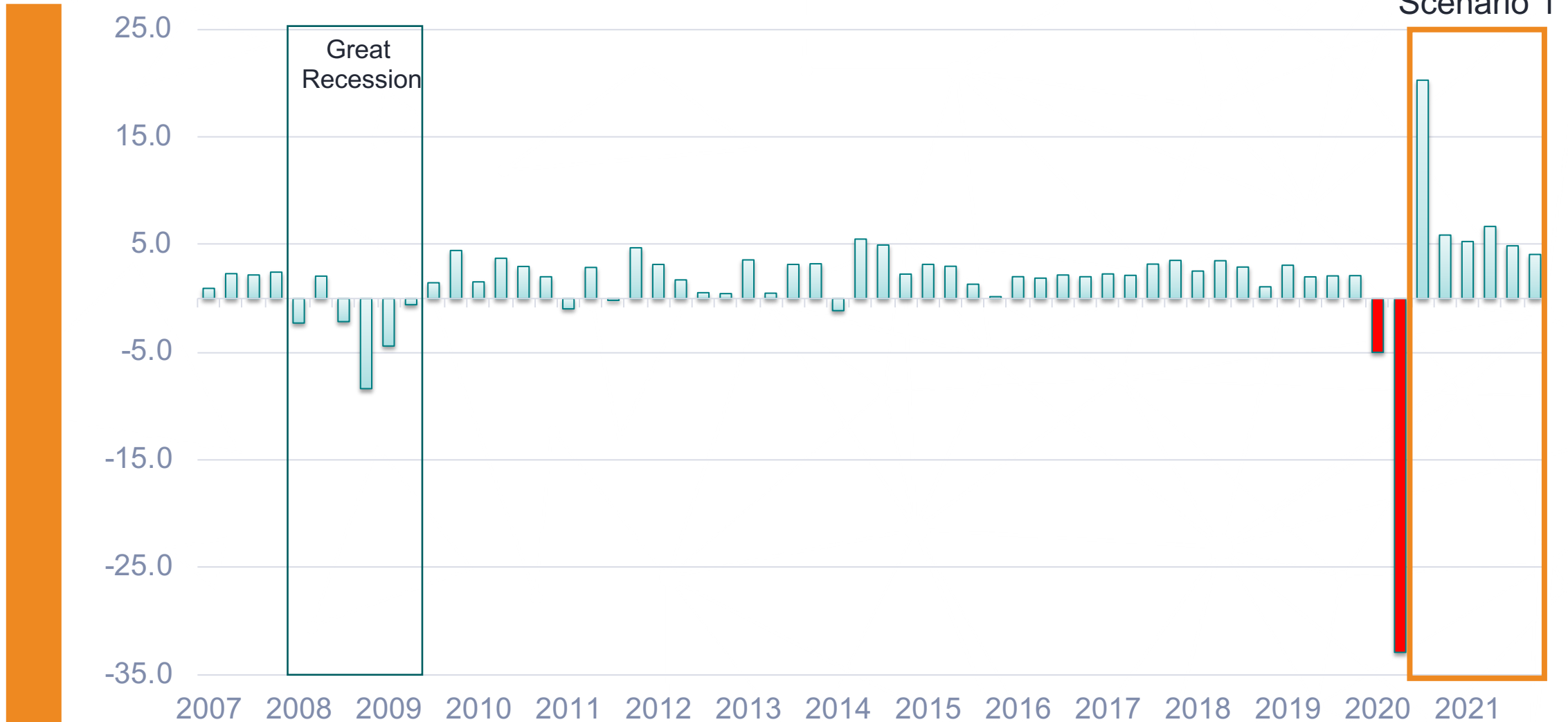
# National Overview

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# Pre-COVID Economy Was Fundamentally Sound; NBER Defines Recession Dates



# COVID-19 Economic Impact: Sharp and Short; Not Sustained (Real GDP)



# Economic Recovery is Dependent on Vaccine

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- 9 vaccine candidates in Phase 3 trials; 7 funded in part by U.S. government
    - Each Study 30,000 People
      - Experimental vaccine
      - Placebo
    - Trials Yield Results 6-8 Months From Start (vaccine early 2021; widely available 2<sup>nd</sup> quarter 2022)
  - HHS and DoD announce agreement with Moderna to manufacture and deliver 100 million doses of vaccine with goal of delivery by year end. August 11, 2020
  - CDC now planning for distribution of vaccine which may be as early as November, USA TODAY, September 6, 2020  
<https://www.usatoday.com/story/news/health/2020/09/06/covid-vaccine-complex-distribution-supply-chain-follow-approval/5712053002/>
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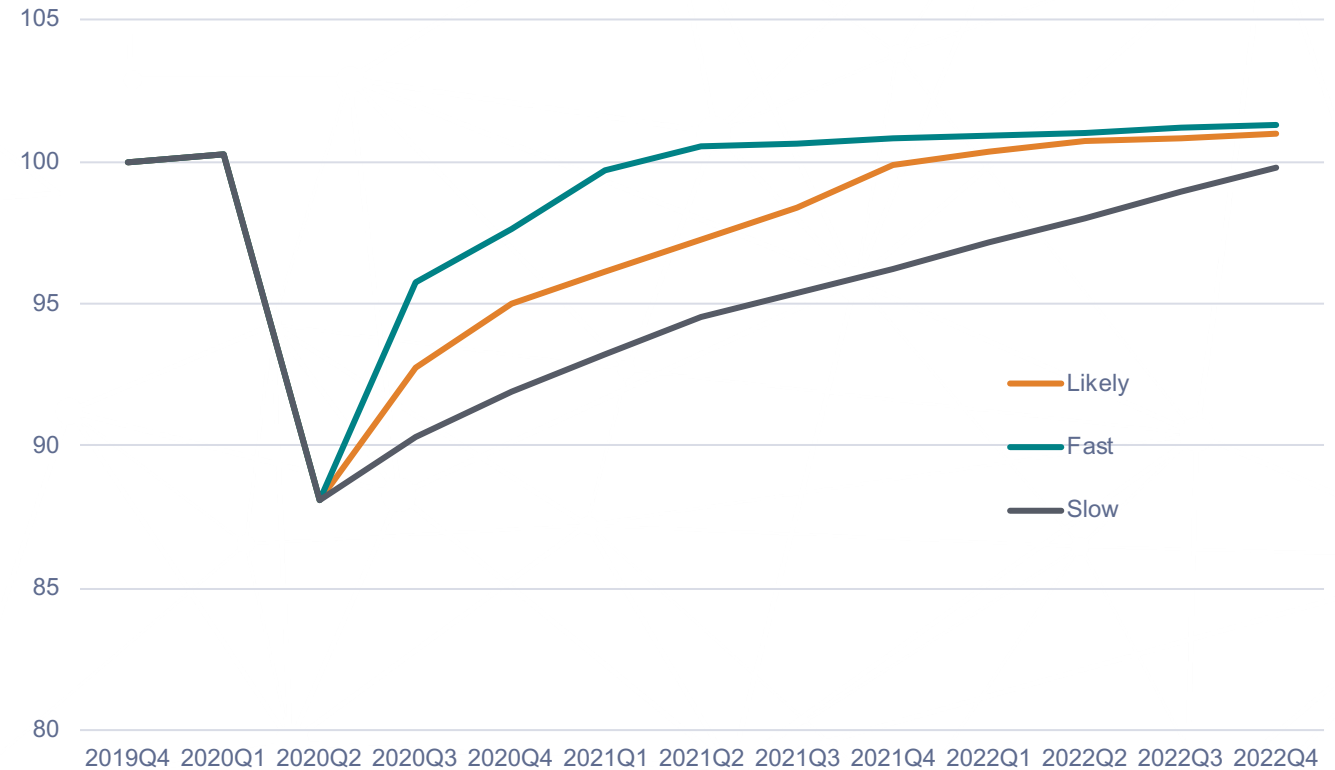
# 3 Scenarios

**Likely:** Q2-2021 vaccine, no further shutdown; Employment pre-COVID 2-3 qtrs. later

**Slow:** Q4-2022 vaccine, heightened infection in Q3-2022, and slow recovery for the rest of this year. Employment pre-COVID Q1 or Q2, 2023

**Fast:** Q1-2021 vaccine. Employment pre-COVID Q2 2021

Overall National Employment, Indexed 2019Q4=100



# COVID-19 Won't Change Us Forever

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- Ken Budd, The Atlantic
- July 5, 2020

- Within 3 years after 9/11, the airline industry set a record high for passengers
  - The 1918 pandemic was followed by the Roaring Twenties
  - In 1919, year after flu pandemic killed 675,000 Americans, major league baseball set an attendance record
  - We rebuild after disasters
    - San Francisco after 1906 earthquake
    - Chicago after the great fire of 1871
    - Warsaw, Hiroshima, Nagasaki
  - Trauma can be transformative
    - Post-traumatic growth (PTG) – people thrive after enduring negative life change events
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# Weekly Economic Update

## WEEKLY ECONOMIC UPDATE

### Summary

U.S. stocks rallied on Friday on news of potential progress in negotiations between the White House and congressional Democrats for a comprehensive COVID relief package, ending the week higher. The three major U.S. stock indexes all ended the week in the green with the Dow Jones Industrial Average increasing 3.3%, the S&P 500 rising 3.3%, and the NASDAQ climbing 4.6%. Last week's economic reports were light and mixed. Initial unemployment claims for the

week ending October 3 decreased 9,000 to 840,000 but remain extremely elevated in more labor market news, the Job Openings and Labor Turnover Survey (JOLTS) report showed the number of job openings declined while the number of hires rose modestly in August and the quits rate was little changed at 2.0%. The services sector expanded in September according to the ISM Services Index. The index rose 0.8 points to 57.8. The U.S. trade deficit climbed to

\$67.1 billion in August as imports rose more than exports. Wholesale inventories were up 0.4% in August, missing expectations, and wholesale sales climbed 1.4%. Consumer credit fell \$7.2 billion in August compared with expectations for a \$14.1 billion expansion as revolving credit (mainly credit cards) declined for the sixth straight month while nonrevolving credit (mainly student and auto loans) increased modestly.

### ECONOMIC RELEASES

Last Week Indicator	Number Reported	Consensus Expectation*	Comment
ISM Services (Sep - Mo 10:30)	57.8	55.6	New orders index jumped 4.7 points to 61.5
Trade Balance (Aug - 1u 8:30)	-\$67.1 <span style="color:red">📉</span>	-\$66.2 <span style="color:red">📉</span>	Imports climbed more than exports
JOLTS - Job Openings (Aug - 1u 10:00)	6,493 M	NA	Hires rose modestly while openings fell
Consumer Credit (Aug - We 3:00)	-\$7.2 <span style="color:red">📉</span>	+\$14.1 <span style="color:green">📈</span>	Revolving credit fell \$9.4 billion, 6 <sup>th</sup> straight decline
Initial Unemployment Claims (10/2 - 1h 8:30)	840 K	830 K	4-week moving average decreased 13,250 to 857 K
Continuing Claims (9/25 - 1h 8:30)	10,976 M	NA	
Wholesale Inventories (Aug - Fr 10:30)	+0.4%	+1.0%	Wholesale sales climbed 1.4%
Upcoming Weeks Indicator	Consensus Expectation*	Last Period	Comment
Consumer Price Index (Sep - 1u 8:30)	+0.2%	+0.4%	
Core Consumer Price Index (Sep - 1u 8:30)	+0.2%	+0.4%	
P/Producer Price Index (Sep - We 8:30)	+0.1%	+0.3%	
Core P/Producer Price Index (Sep - We 8:30)	+0.3%	+0.4%	
Initial Unemployment Claims (10/10 - 1h 8:30)	830 K	840 K	
Continuing Claims (10/3 - 1h 8:30)	NA	10,976 M	Not available
Retail Sales (Sep - Fr 8:30)	+0.6%	+0.6%	
Retail Sales ex-auto (Sep - Fr 8:30)	+0.3%	+0.7%	
Industrial Production (Sep - Fr 9:15)	+0.6%	+0.4%	
Capacity Utilization (Sep - Fr 9:15)	71.9%	71.4%	
Michigan Sentiment (Oct - Fr 10:00)	82.0	80.4	Preliminary estimate

\*Sources: www.bls.gov and www.federalreserve.gov

## WEEKLY ECONOMIC UPDATE

### Economic Review

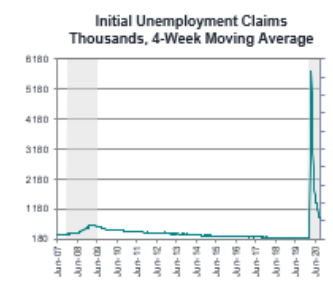
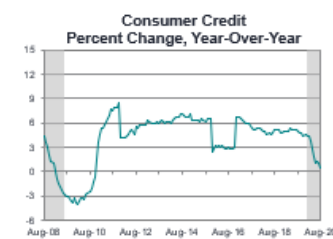
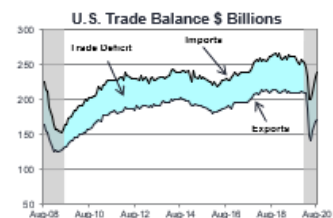
The U.S. trade deficit increased more than expected in August as imports rose more than exports. The INTERNATIONAL TRADE DEFICIT climbed to \$67.1 billion in August from a downwardly revised \$62.4 billion in July. Exports increased \$3.6 billion to \$171.9 billion in August. Goods exports rose \$3.5 billion and exports of services were up \$0.1 billion. Imports climbed \$7.4 billion to \$239.0 billion; goods imports advanced \$6.5 billion and imports of services increased \$0.8 billion. Compared with a year ago, the total deficit expanded \$16.3 billion with exports falling \$38.6 billion or 18.3% and imports declining \$22.3 billion or 8.5%.

Consumer credit declined unexpectedly in August. CONSUMER CREDIT OUTSTANDING decreased \$7.2 billion in August compared with expectations for a \$14.1 billion increase, after rising an upwardly revised \$14.7 billion in July. At a seasonally adjusted annualized rate, consumer credit fell 2.0%. Non-revolving credit (mainly auto and school loans) expanded \$2.2 billion in August; revolving credit (mainly credit cards) decreased \$9.4 billion and has contracted for six straight months.

First-time jobless claims declined modestly last week but remain extremely elevated. INITIAL UNEMPLOYMENT CLAIMS decreased 9,000 to

840,000 for the week ending October 3. The four-week moving average of initial claims was down 13,250 to 857,000. CONTINUED BENEFITS tumbled 1,003,000 to 10,976,000 for the week ending September 26. The four-week moving average, a better measure of underlying trends, dropped 642,000 to 12,112,250.

The Job Openings and Labor Turnover Survey (JOLTS) report showed the number of job openings declined while the number of people hired rose modestly in August. According to the report, there were 6,493 million job openings (seasonally adjusted) in August compared with 6,697 million openings in July. From a year earlier, the number of openings decreased 9.4%. The health care and social assistance (-70,000 openings), construction (-68,000), and retail trade (-68,000) sectors experienced the largest decreases in openings in August. Hires inched forward 0.3% in August and were up 1.4% on a year-over-year basis. The quits rate, which increases when workers have confidence to leave one job for another, was little changed from July at 2.0%.



## WEEKLY ECONOMIC UPDATE

### Fed Speeches

Federal Reserve Chair Jerome Powell spoke at the National Association for Business Economic Virtual Annual Meeting last week. During his speech, Chair Powell said fiscal and monetary policy have helped to moderate the impact of the pandemic on the U.S. economy.

*“Taken together, fiscal and monetary policy actions have so far supported a strong but incomplete recovery in demand and have—for now—substantially muted the normal recessionary dynamics that occur in a downturn.”*

Federal Reserve Chair Jerome Powell

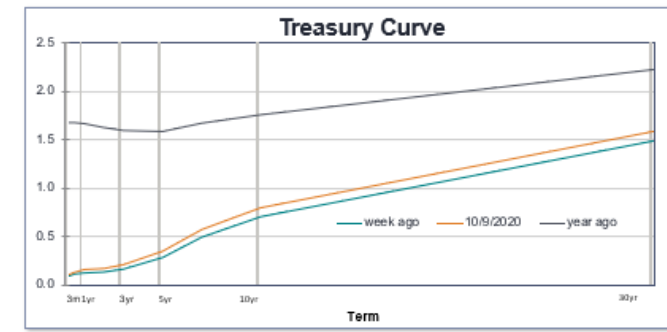
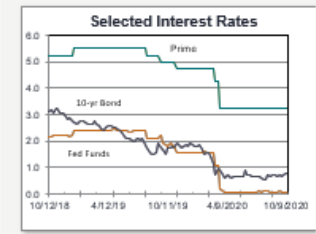
Taken together, fiscal and monetary policy actions have so far supported a strong but incomplete recovery in demand and have—for now—substantially muted the normal recessionary dynamics that occur in a downturn. In a typical recession, there is a downward spiral in which layoffs lead to still fewer demand,

and subsequent additional layoffs. This dynamic was disrupted by the infusion of funds to households and businesses. Prudent and forward policy actions were also likely responsible for reducing risk aversion in financial markets and business

decisions more broadly. Chair Powell concluded his remarks by saying the U.S. economy continues to need both fiscal and monetary support: “The recovery will be stronger and more lasting if monetary policy and fiscal policy continue to work side by side to provide support to the economy until it is clearly out of the woods.”

### Financial Markets

U.S. stocks closed higher last week with the Dow Jones Industrial Average increasing 3.3%, the S&P 500 advancing 3.8%, and the NASDAQ climbing 4.6%. Treasury yields were higher across the curve with the 10-year yield rising 9 basis points (bps) to 0.79% and the 30-year yield advancing 10 bps to 1.55%. Oil prices jumped 9.7% and ended the week at \$40.54 per barrel. The U.S. dollar rose 0.2% against the Japanese yen while the euro increased 1.0% against the greenback last week.





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# **JobsEQ Real Time Intelligence (RTI)**

Frequently Updated Job Postings Data

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# JobsEQ RTI

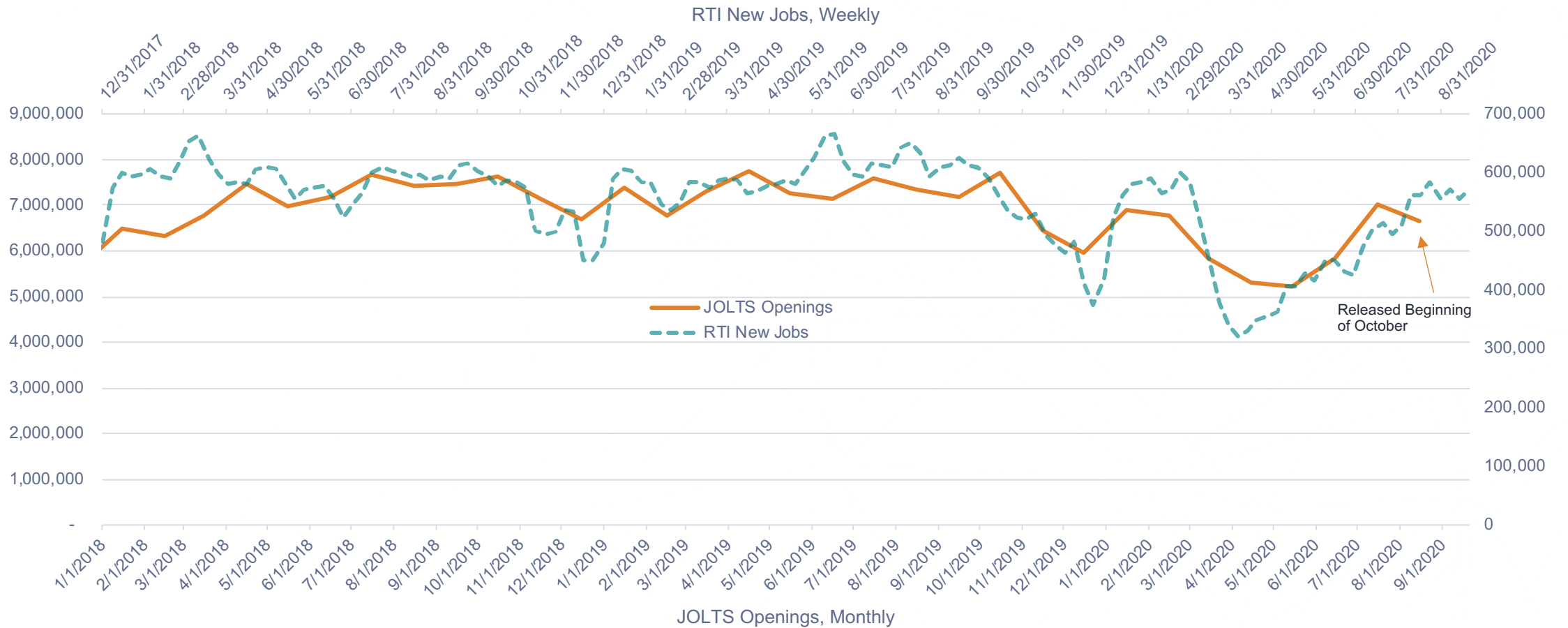
## High Frequency Job Postings Data

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- Approximately 45,000 online job site sources
  - Company career sites
  - Specialty job boards
  - Staffing agencies
  - Aggregator sites
- Updated daily
  - Most immediate LMI data source
- Classified do identity relevant data points
  - Location
  - Detailed occupation code (8-digit Onet SOC)
  - Education, certification and skill requirements
  - And much more
- Strong correlation with official employment series from BLS

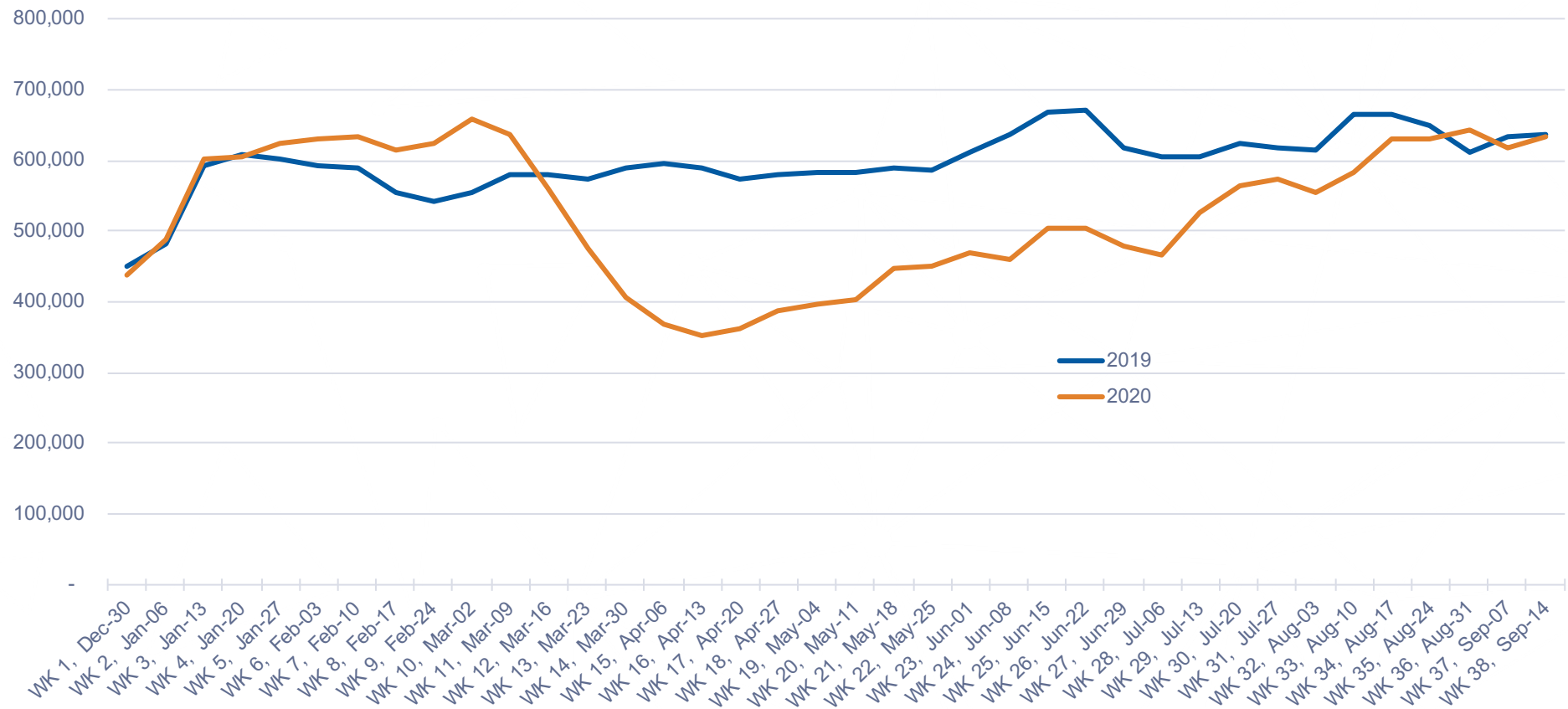
# Comparing RTI to BLS Data

## JOLTS Job Opening Survey Compared to RTI New Jobs



# New Job Postings, 2019 & 2020

Figure 1: Weekly Job Postings, 2019 and 2020 Through Mid-September  
Three Week Moving Average



# RTI State Recovery Model

Measuring the Impact of the  
COVID Pandemic and the Rate of  
Recovery

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- Chmura has developed a model to predict what new RTI volume would be for each week of 2020 under a scenario where the COVID-19 pandemic had never occurred – what we call "expected volume."
  - The two most important variable in predicting volume are seasonal trends and historical volume changes.
- By comparing observed volume to expected volume, we can better understand how much volume changes are directly related to the pandemic and recovery, allowing us to better track the recovery and understand how labor demand has been impacted by the COVID-19 pandemic.

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# RTI State Recovery Model Website

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# Conclusion

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# Takeaways

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- COVID-19 and the subsequent shutdown orders caused job postings volume to fall by 40% - 50% in most states, reaching a trough in early to mid April
- States that are more reliant on tourism have been the hardest hit and the slowest to recover
- Volume grew steadily over the summer in most states, have a handful of state nearing or surpassing expected volume by the end of the summer
- There is evidence the recovery may be slowing, but it may also be tied to the typical drop in postings during the fall



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# Questions?

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