US Macro Conditions and Monetary Policy

2021 Conference for Macroeconomists at
Liberal Arts Colleges
University of Richmond

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FEDERAL RESERVE BANK
OF RICHMOND
Richmond ▪ Baltimore ▪ Charlotte

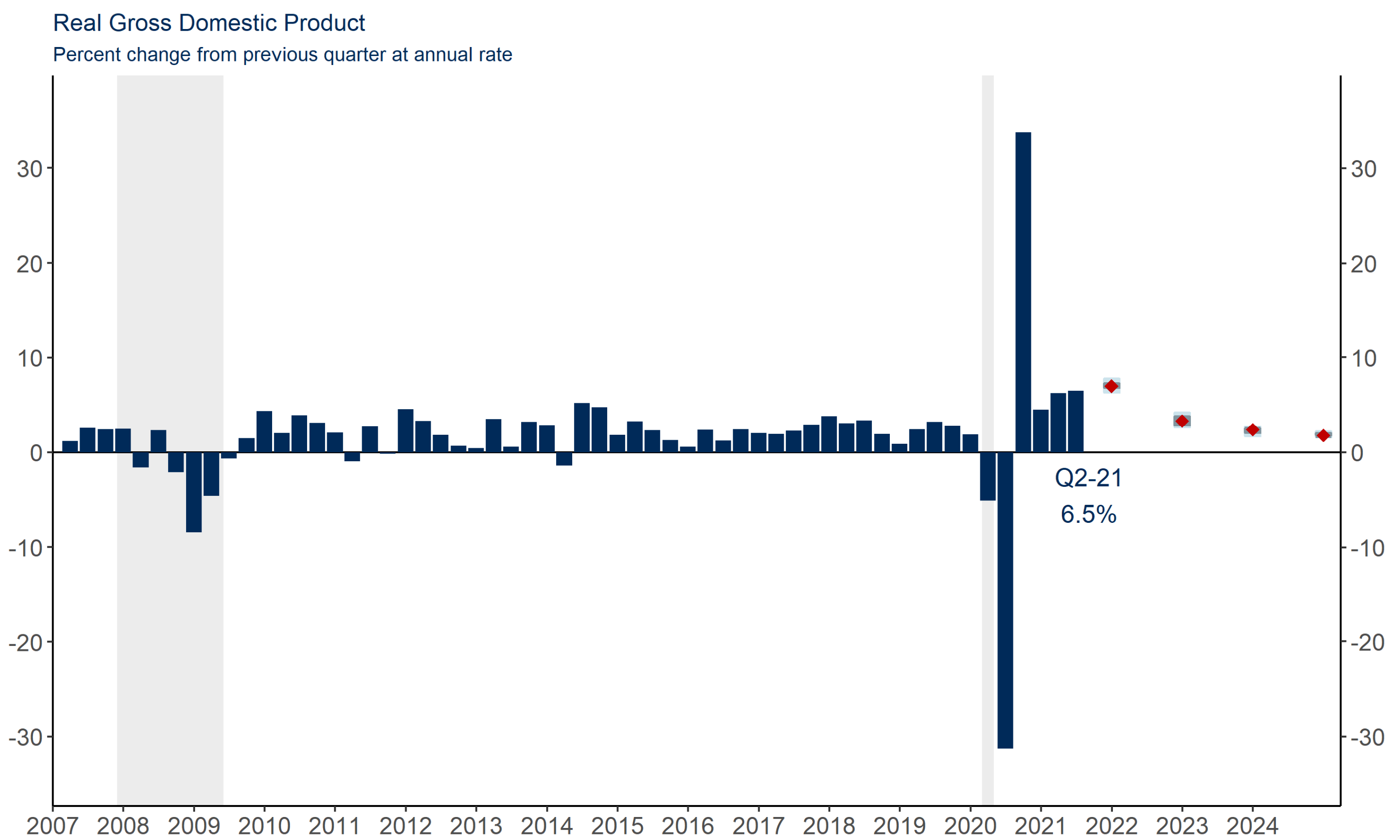
The views expressed here are those of the presenter and do not necessarily represent the Federal Reserve Bank of Richmond or the Federal Reserve System.

Agenda

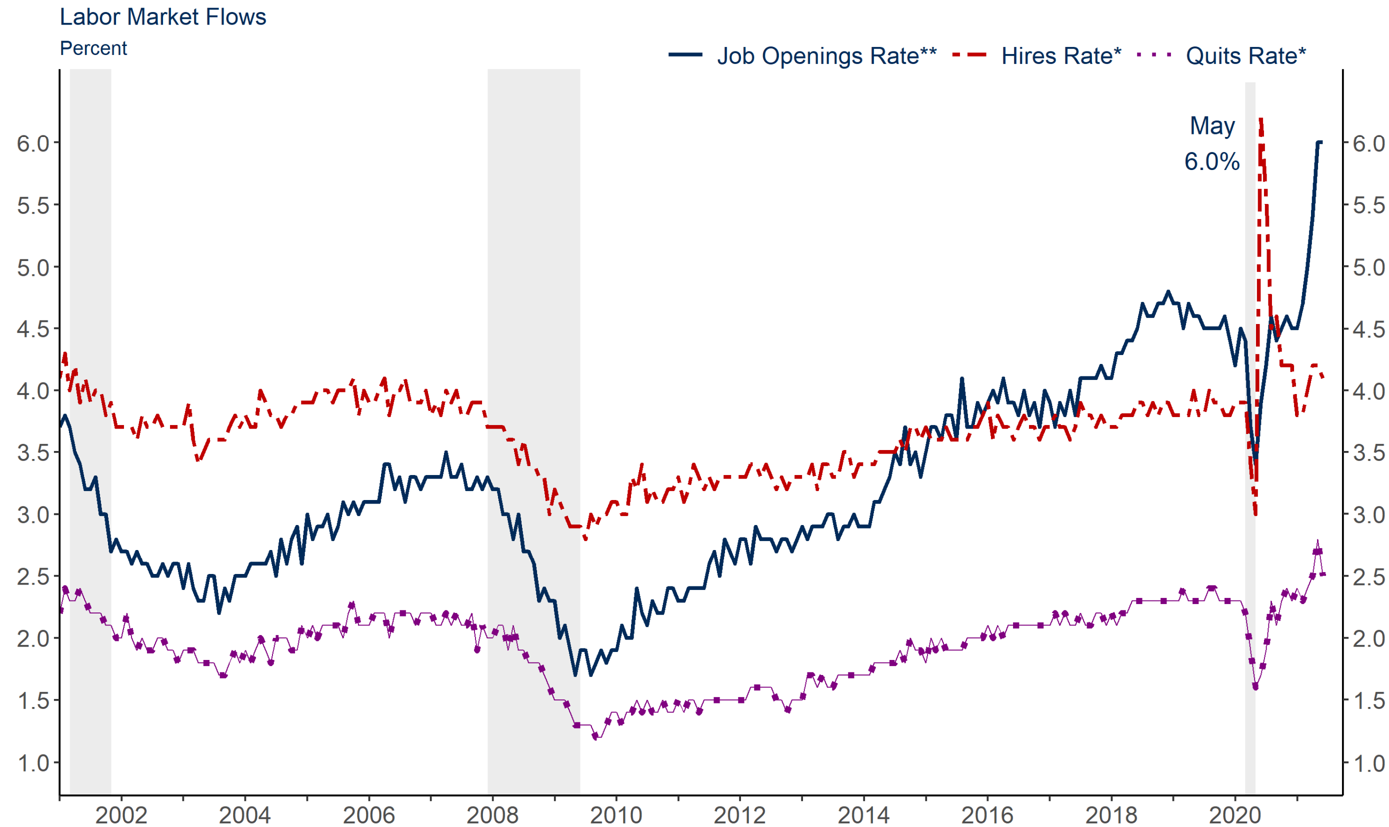
1. Current Macroeconomic Conditions
2. Monetary Policy Shift
3. Monetary Policy Implementation
4. Inflation Dynamics
5. Policy: Risks and Risk Management

What’s Happening?

Continued Strong GDP Growth

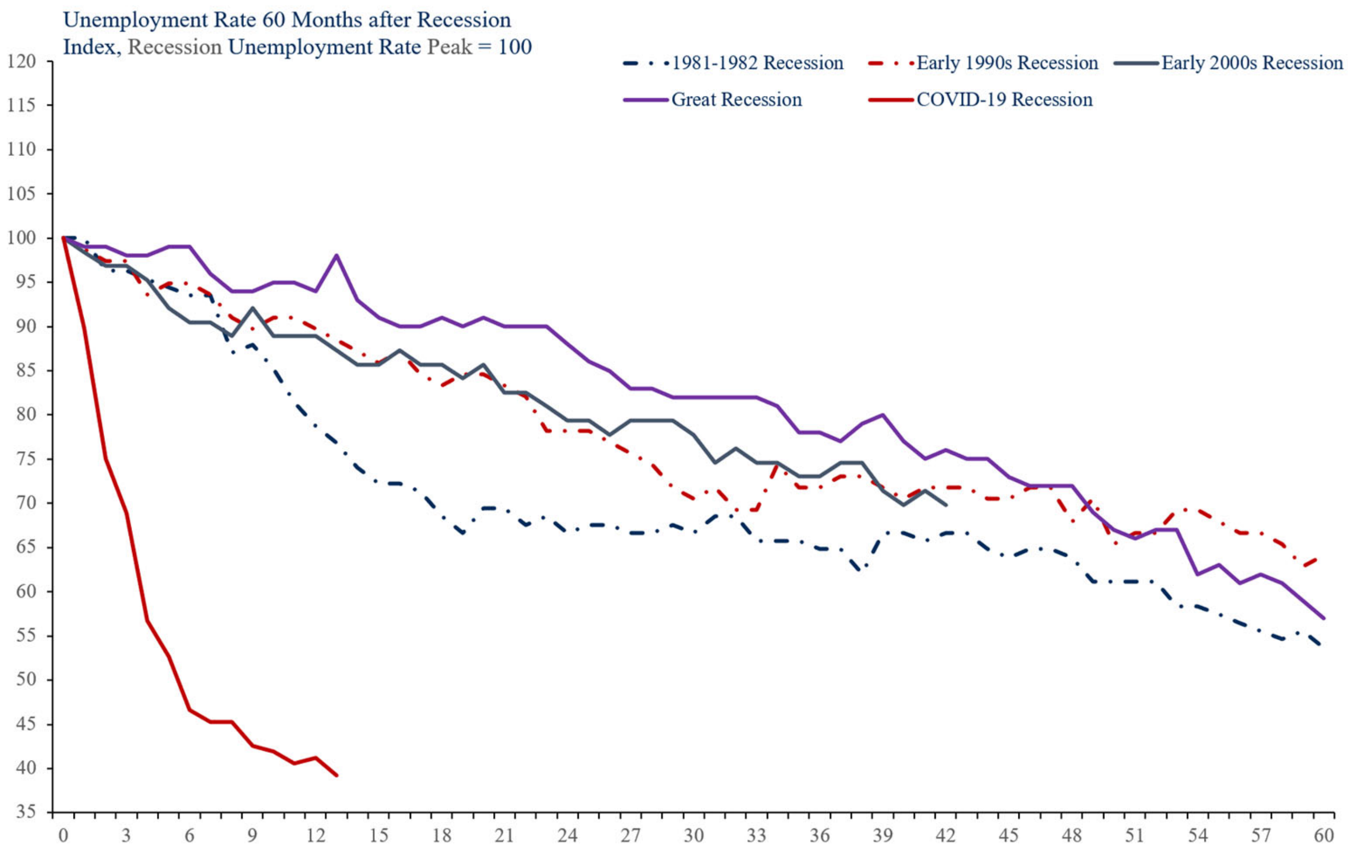


Recovery in the Flows



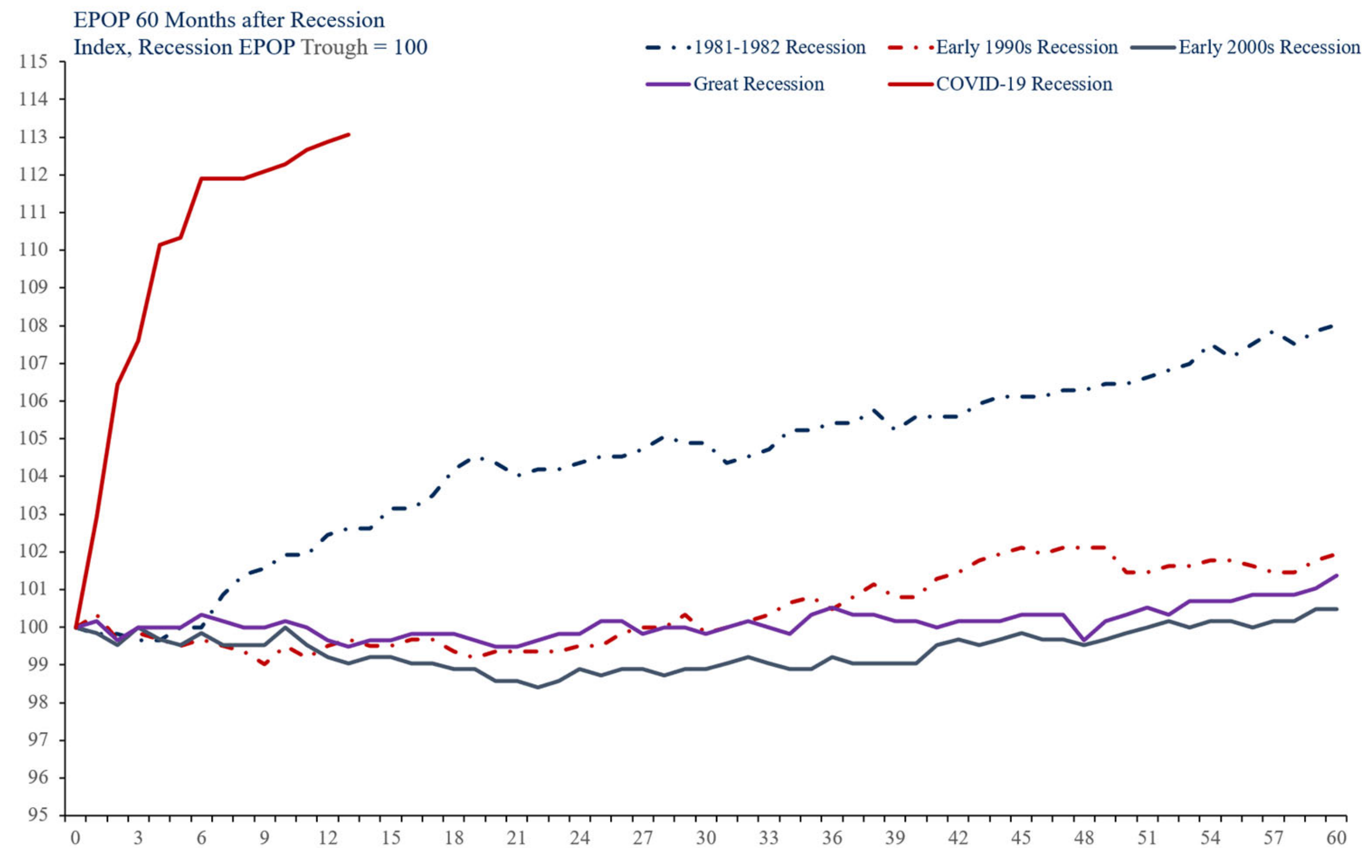
Note: *Percent of total employment. **Percent of total employment plus job openings.

Rapid Drop in Unemployment Rates



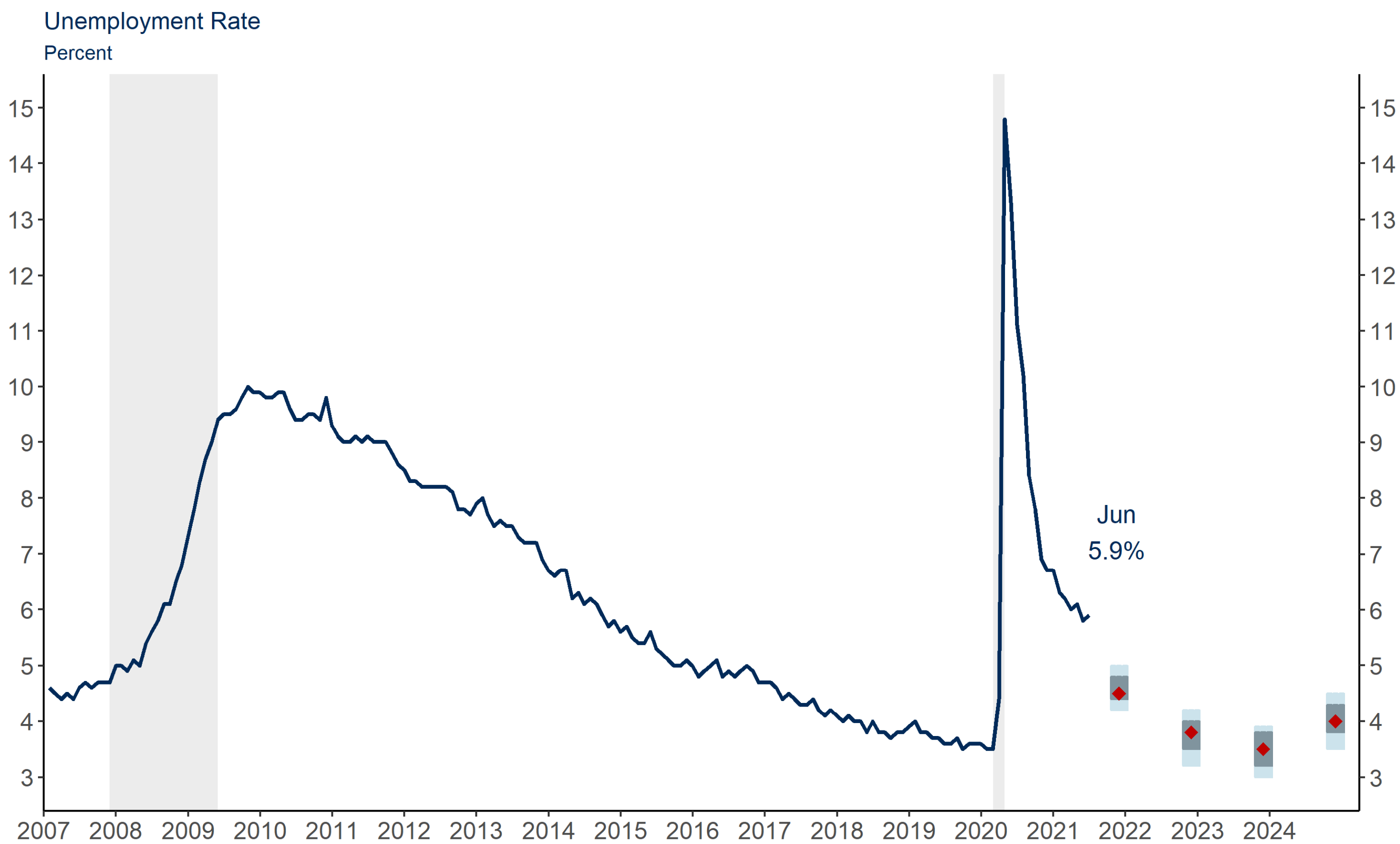
Bureau of Labor Statistics via Haver Analytics

Rapid Recovery of EPOP

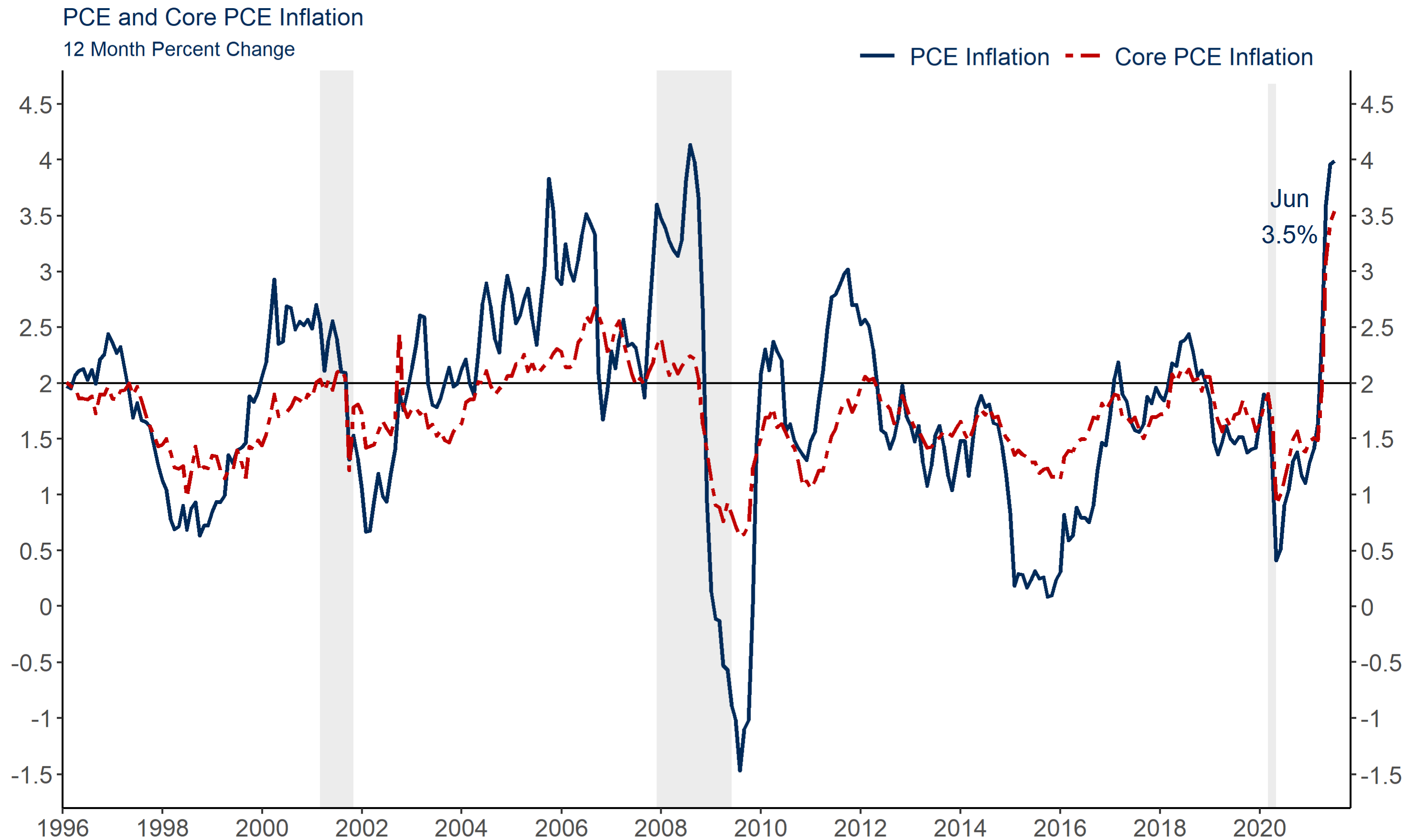


Bureau of Labor Statistics via Haver Analytics

But, Recovery in Unemployment Rate Slowing

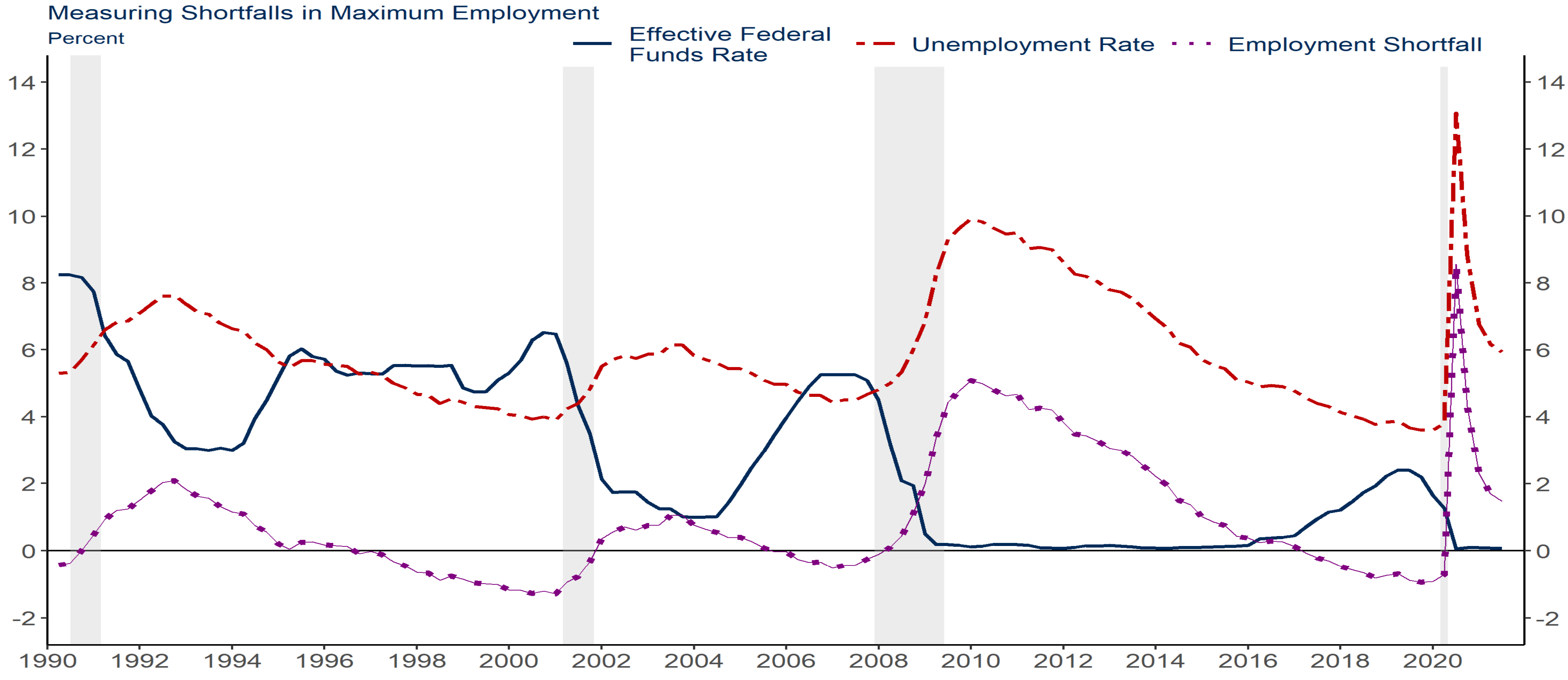


Inflation



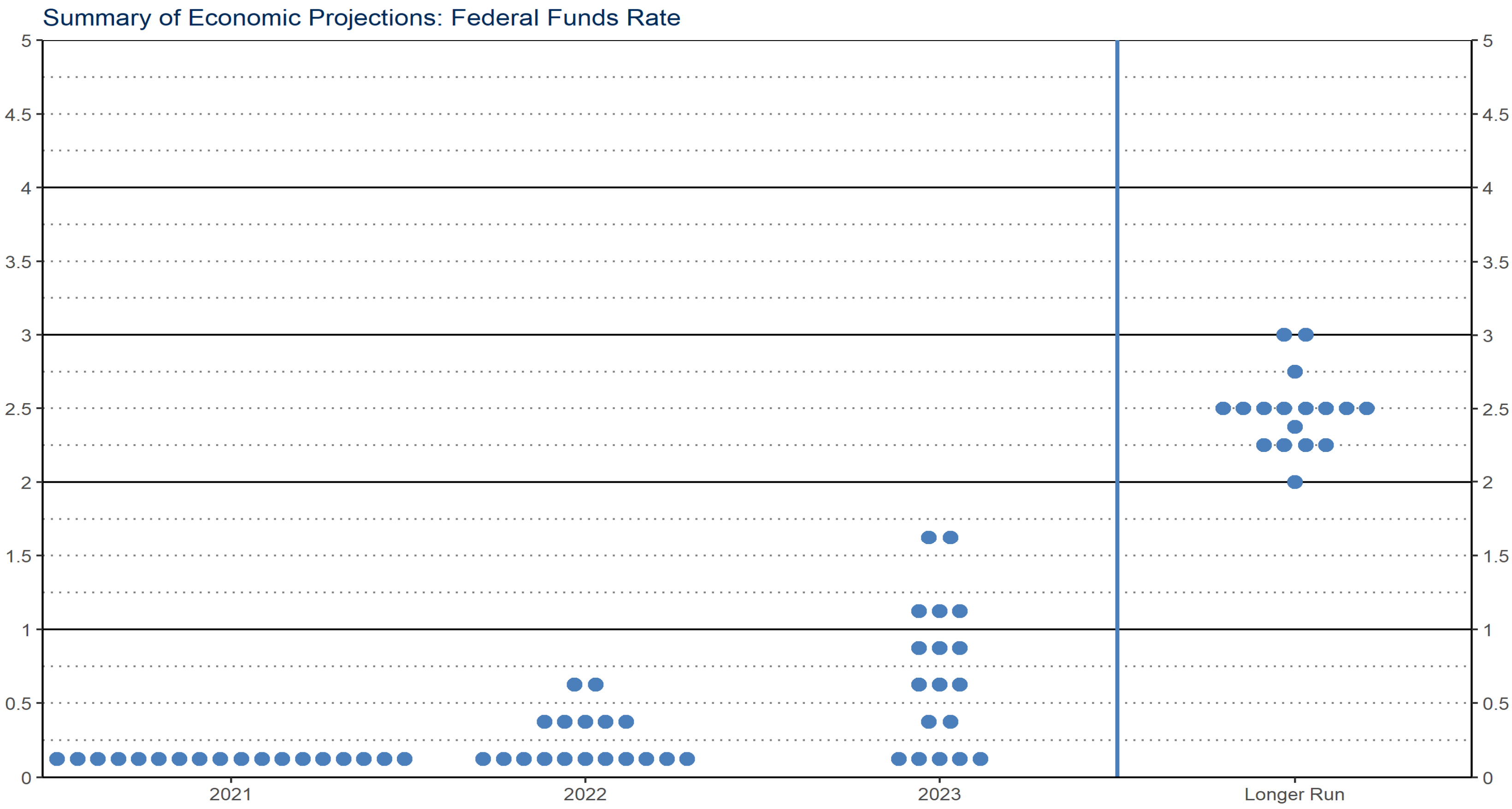
Bureau of Economic Analysis via Haver Analytics

Policy in the past….time to hike?



Sources: Federal Reserve Board of Governors, Bureau of Labor Statistics, and Congressional Budget Office via Haver Analytics

Nope.



Source: Board of Governors and June 2021 SEP

Monetary Policy Shift

Shift in FOMC Language

Target Range for the Federal Funds Rate: 0 to 1/4 Percent

July 2020

"The Committee expects to maintain this target range until it is confident that the economy has weathered recent events and is **on track to achieve** its maximum employment and price stability goals."

September 2020 and on

"The Committee…expects it will be appropriate to maintain this target range until labor market conditions **have reached** levels consistent with the Committee's assessments of maximum employment **and** inflation has risen to 2 percent **and** is on track to moderately exceed 2 percent for some time."

Source: Federal Reserve Board of Governors

August 27, 2020: “Consensus Statement”

The September 2020 FOMC meeting followed their Statement on Longer-Run Goals and Monetary Policy Strategy ("Consensus Statement”), which signaled a shift in the committee’s stance on both mandate goals:

Price stability (f-AIT)

- Changing meaning of the 2% target for inflation (**a longer-run average**)
- FOMC spelled out more how it’d deal with underruns: **targeting inflation moderately above 2%** after periods when inflation has been below 2%

Maximum Employment:

- **Broad and inclusive**
- **Shortfalls**, not deviations , will inform FOMC

Sources: Federal Reserve Board of Governors, Bureau of Labor Statistics, and Congressional Budget Office via Haver Analytics

Consensus Statement: Why?

- (Theory): ELB concerns, and worries about slippage in inflation expectations
- (Empirics): Last expansion viewed by FOMC as indicative of the ability to bring more employment gains with low inflation, esp for marginalized groups

Sources: Federal Reserve Board of Governors, Bureau of Labor Statistics, and Congressional Budget Office via Haver Analytics

Since we're all macroeconomists…

- Research regarding the zero lower bound finds it may be optimal to keep short-term interest rates at the bound longer than conventional policy would have previously
  - Reifschneider and Williams (2000) "Three Lessons for Monetary Policy in a Low-Inflation Era"
  - Eggertsson and Woodford (2003) "The Zero Bound on Interest Rates and Optimal Monetary Policy"
  - Werning (2012) "Managing a Liquidity Trap: Monetary and Fiscal Policy" working paper
  - Mertens and Williams (various): How the ELB imparts bias to expected inflation, and then, to actual.
- Classic Work:
  - Woodford (2003). NKPC is key construct.
  - Benhabib, Schmitt-Grohe, Uribe (2001) "The Perils of Taylor Rules": Active nominal rate rules can trap the economy in a deflation SS (Japan?)

Detour: Policy Implementation

Implementation

The tools and implementation of monetary policy have changed **drastically**.

1. Ample reserves

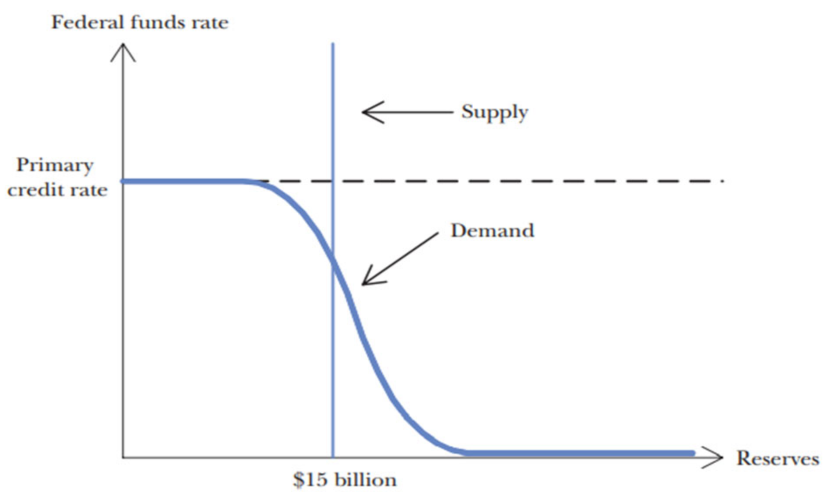
2. Interest on Reserves

3. Forward Guidance

Traditional (pre-2008) Implementation

- Set a target for the overnight interbank borrowing rate (Federal Funds Rate)
- Open market operations to purchase and sell Treasury securities, which changes the overall supply of reserves

Figure 1
Banks' Demand for and the Fed's Supply of Reserve Balances before the Financial Crisis

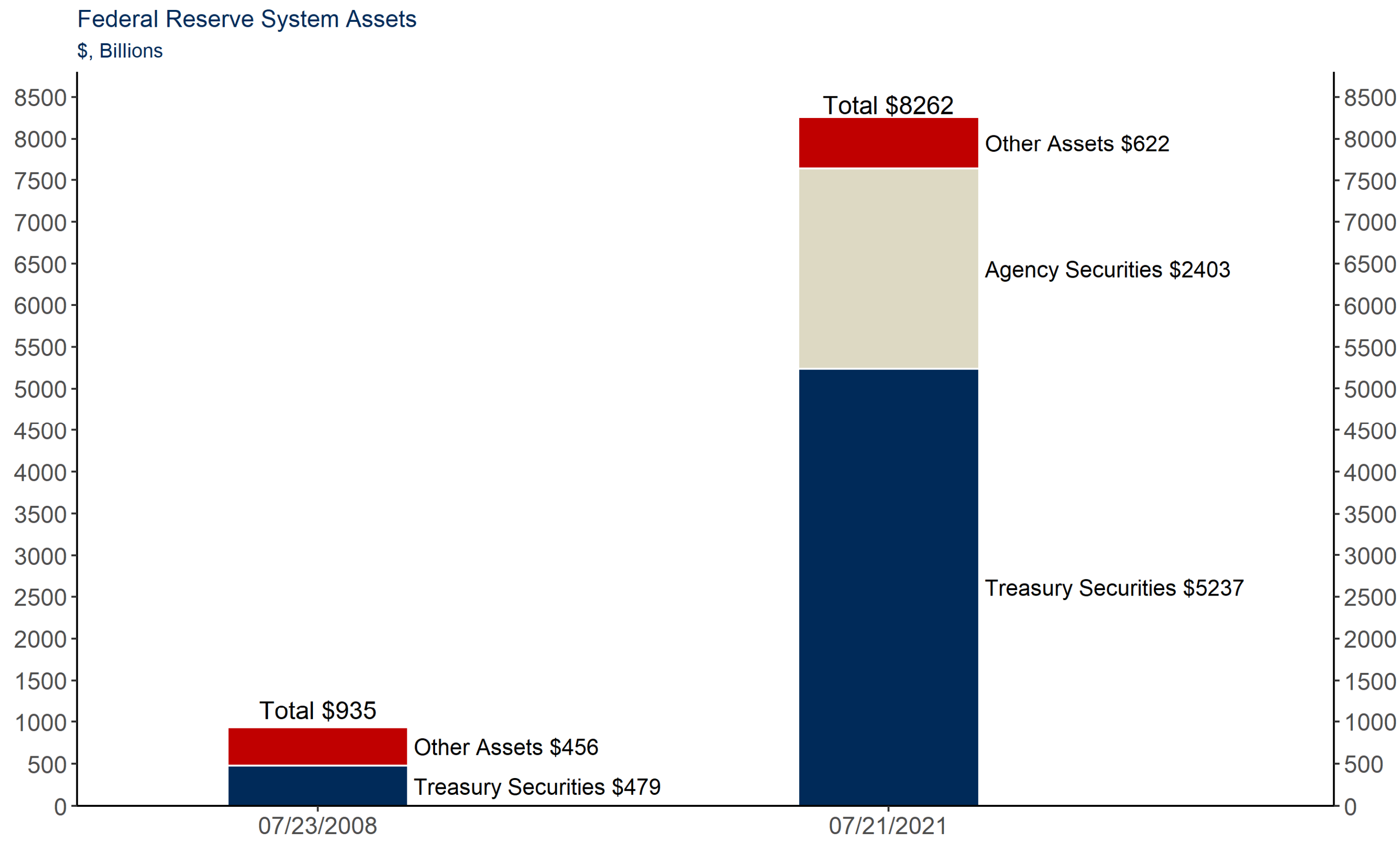


OMO-based ops rely on:

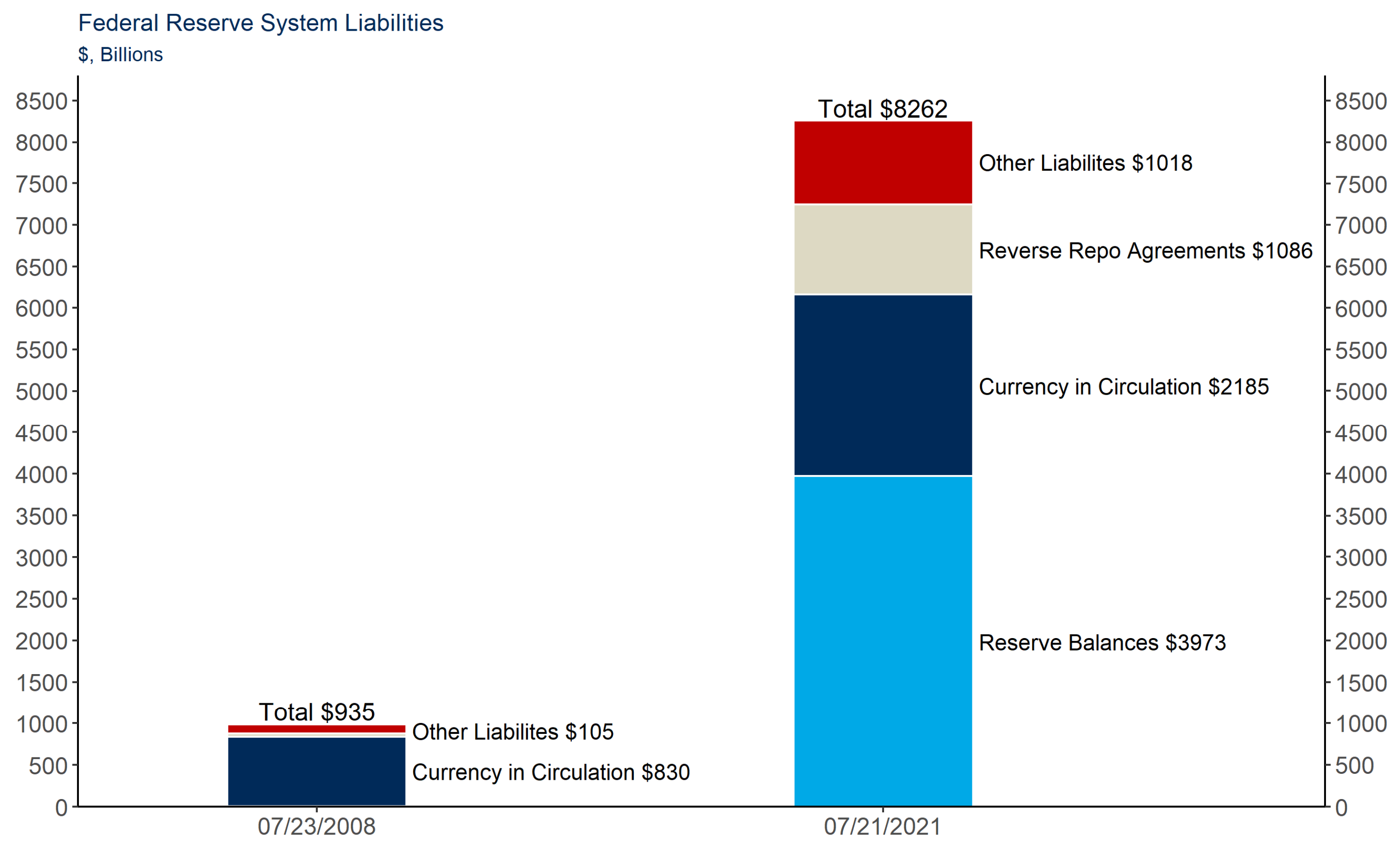
1. Banks' reserve requirements
2. Banks trying to keep reserve balances to a minimum
3. Us forcing everyone to hang out on the downward sloping part!

Source: Ihrig, Meade, and Weinbach 2015

But then we bought a lot of assets (Emergency+LSAPS)!



And we paid for the assets with…reserves!



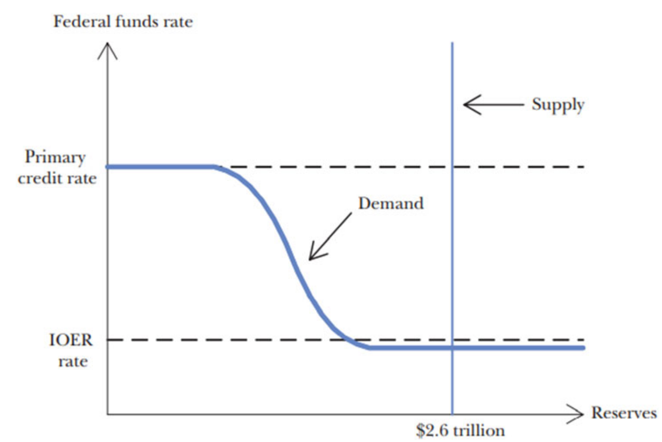
With humongous reserves, how to control rates?

Important changes:

1. Large level of reserve balances after the asset purchase programs ($935 billion → $8,262 billion)
   a) Shifts the reserve supply far to the right
2. Financial Services Regulatory Relief Act (2006) and Emergency Economic Stabilization Act (2008) necessitate that the Federal Reserve pay interest on banks' reserve balances
   a) Due to arbitrage, flattens the banks' demand near the interest rate on excess reserves

Figure 4

Banks' Demand for and the Fed's Supply of Reserve Balances Today



Source: Ihrig, Meade, and Weinbach 2015

Implementation

- New acronyms
  - **IOR**: Interest on Reserves
  - **ONRRP**: Overnight Reverse Repurchases
  - **MMMFs**: Money Market Mutual Funds
  - **TGA**: Treasury General Account
  - **SRF**: Standing Repo Facility

Plus: Bonus jargon—Implementation notes!

Belts and Suspenders

1. **ONRRP** facility to seal leaky floor—**IOR** not enough.

   But **TGA** activity and **MMMFs** as recipient of overnight money led to “tech adjustments.” (5bps at ONRRP now) to keep FF in target range.

2. **SRF** for USTs and MBS to prevent leaky spikes

   Repo bleeds into FF rate—Sept 2019, March 2020

Notice that Fed is involved in both unsecured overnight markets (reserves) and secured (repo) ones too, all with objective of keeping an unsecured rate (FF) at target. (But FF activity mainly FHLB-to-Banks in IOR-arbitrage)

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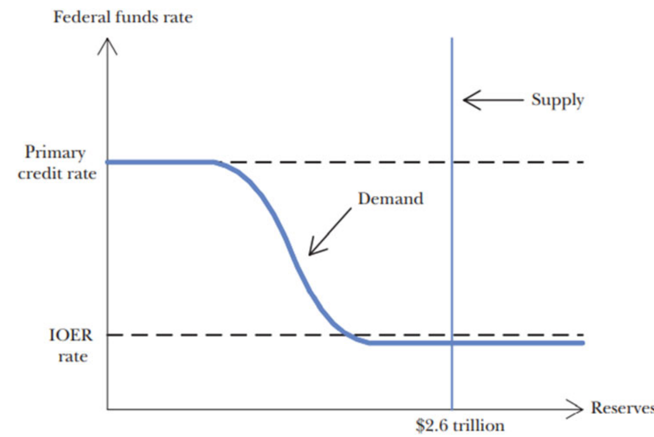


But what's in the texts and the tests?

"Most of the past textbook descriptions of how monetary policy works will not be accurate for years to come"

(Ihrig, Meade, and Weinbach 2015, 2)

- Ihrig and Wolla (2020):
  - Only a couple of all texts cover monetary policy as currently implemented.
  - AP tests also outdated

What’s to like about ample, interest-bearing reserves?

- Lower interbank deadweight loss from reserve-management
    - Friedman rule (don’t tax useful stuff you can make for free!) now more of a thing.
- Around the world, “Floor Systems” work well--achieve *really* good rate control.
    - US money mkts have some quirks, so as I showed you two slides ago, we have duct tape and Bondo going on…
- Decouples rates and size of balance sheet (think about in coming years!)

High Reserves and Inflation (I)

- You'd think blowing up the balance sheet would be inherently inflationary….
- But not so automatic under current implementation framework:
  - Because nominal rate control is what matters. Think about the Fisher Equation.
    - And we can still do that just. Better than before even…
  - We pay IOR! So if we hike at the "right" time, we should be good.

High Reserves and Inflation (II)

– Our asset purchases, esp USTs, now swap *like-for-like*—no longer replacing an interest-bearing asset (UST/MBS etc) with one that doesn't (*Non*-interest-bearing reserves).

  • Quantity theory frame: "Money Multipliers" shrink/collapse.

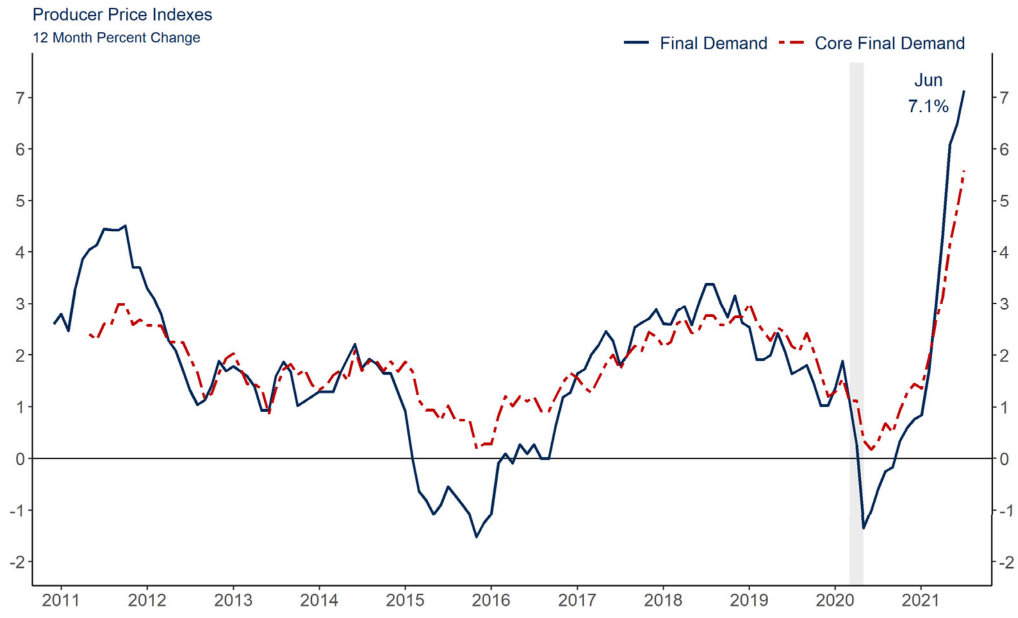
– So far, Fiscal policy not on an unsustainable path: at least some talk about reining in primary deficits.

  • Big pic: Don't have any explosion of unbacked/poorly backed assets

Returning to Regularly Scheduled Programming: Inflation Dynamics

Inflation Signals Have Become Stronger

- **Producer-price indices**
- Aggregate wages
- Sectoral wages
- Inflation expectations



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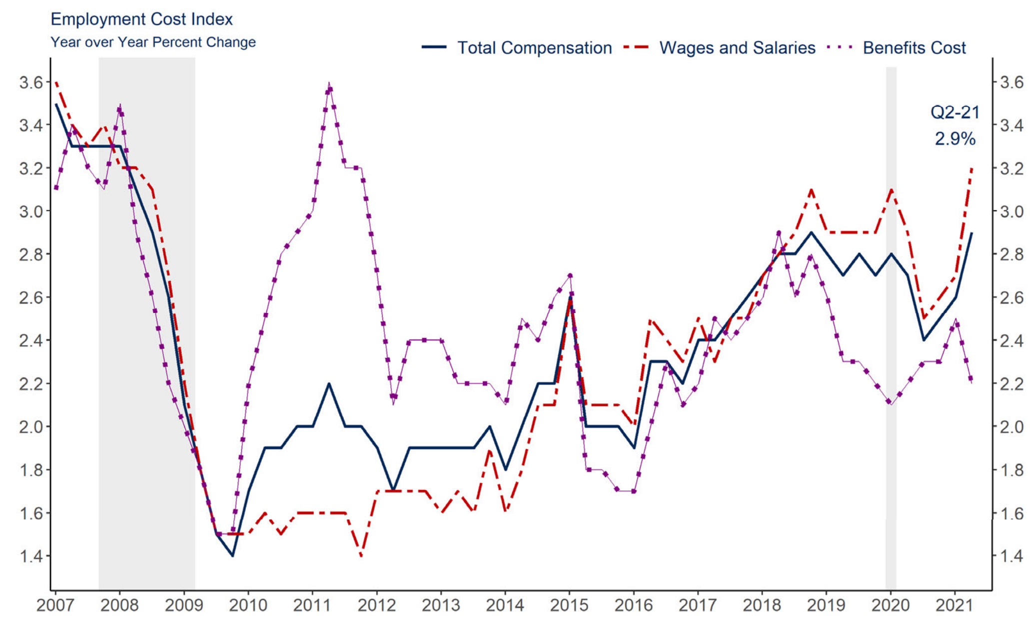

Bureau of Labor Statistics via Haver Analytics

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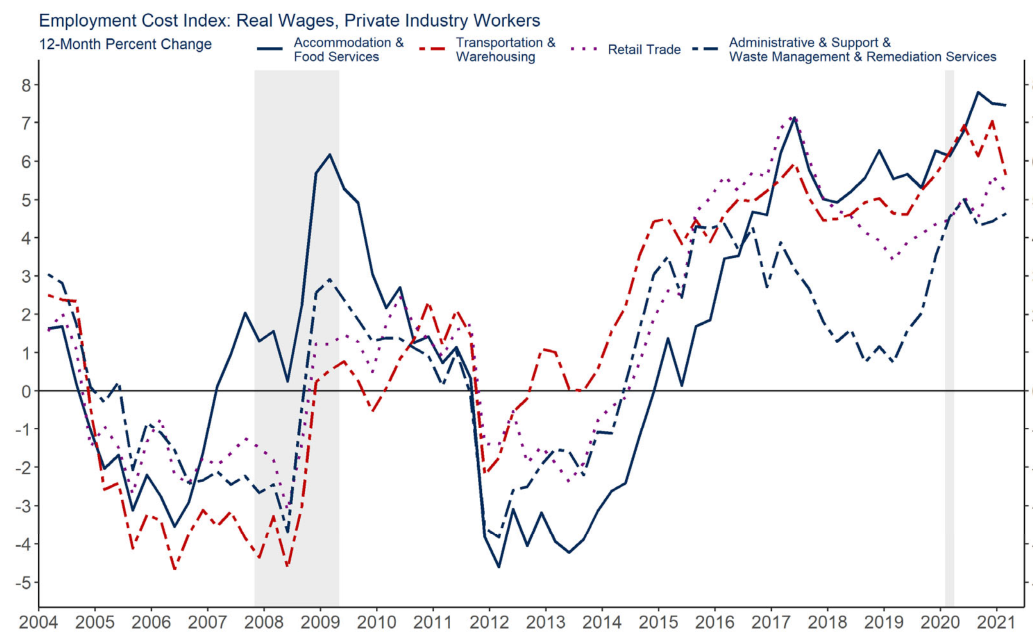

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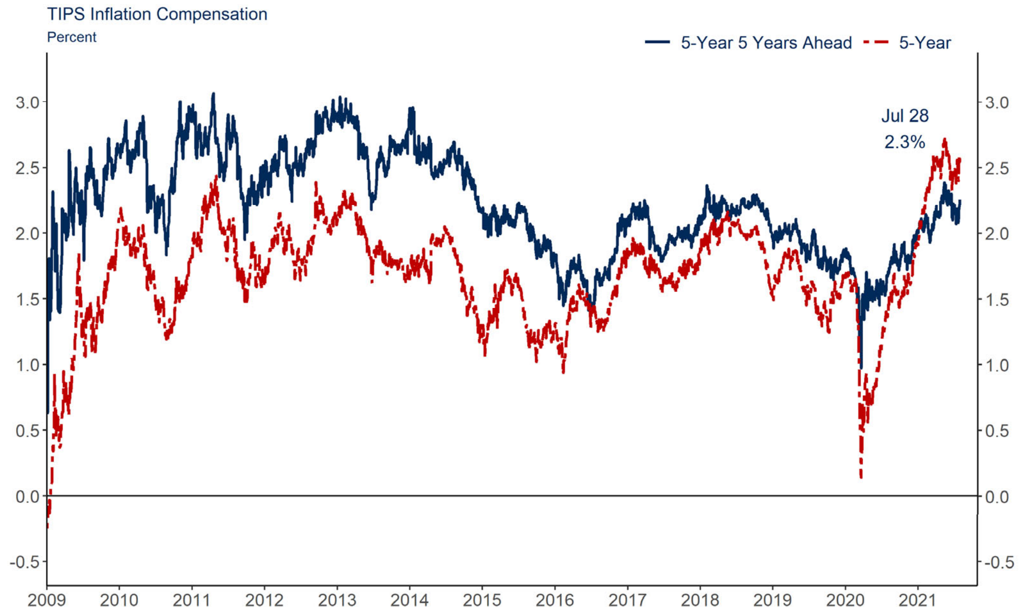
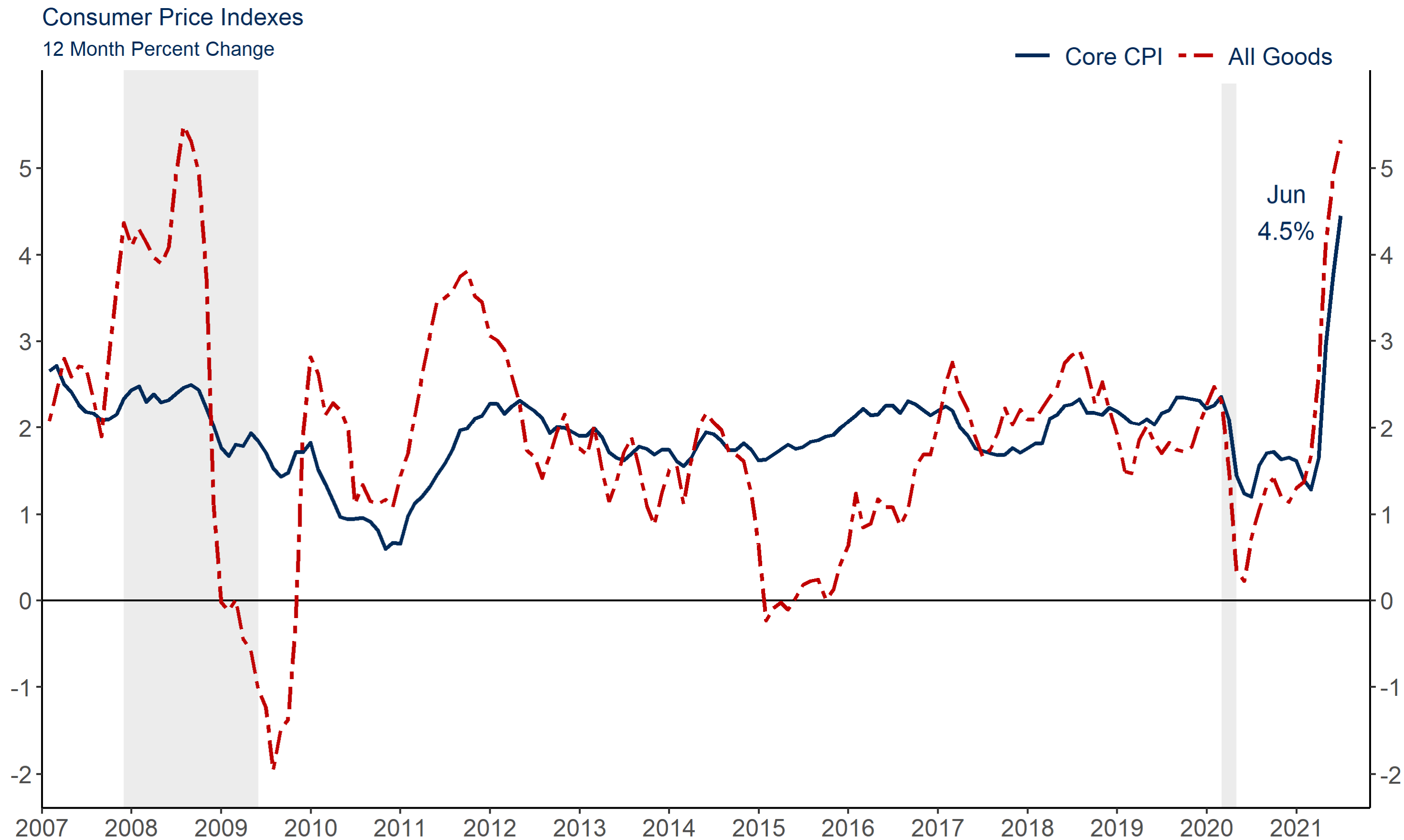
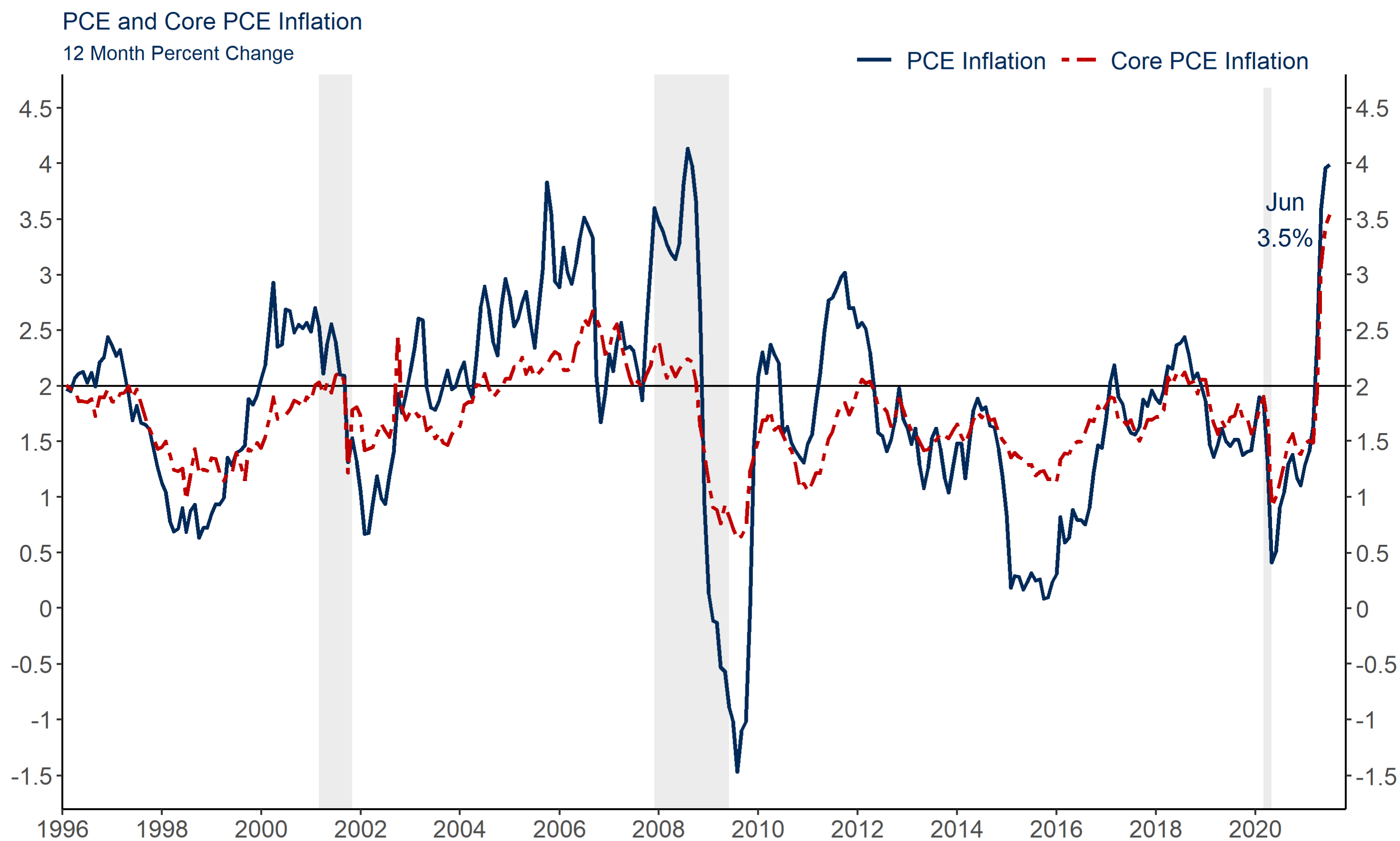


Rising Consumer Price Inflation



Bureau of Labor Statistics via Haver Analytics

Whither PCE Inflation?

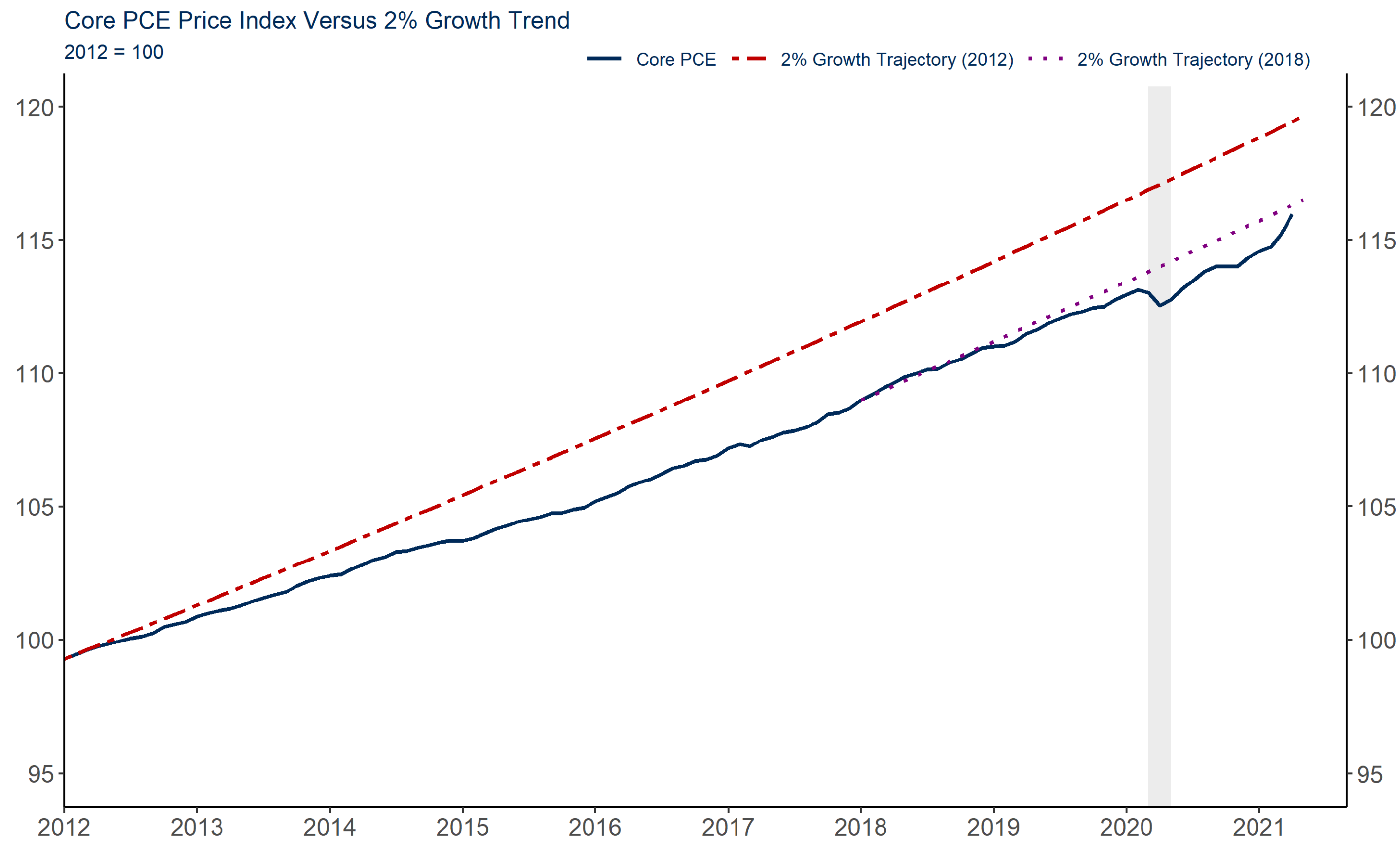


Bureau of Economic Analysis via Haver Analytics

The Inflation Picture

- Inflation readings have ticked up considerably
  - June CPI at 5.4%, core CPI at 4.5%
  - June PPI 7.1%, core PPI at 5.6%
  - June PCE at 4.0%, core PCE at 3.5%
  - May PCE at 3.9%, core PCE at 3.4%
- Transitory factors?
  - supply constraints: used and new car prices
  - demand pressures: rents (incl. owners' equivalent rents)
- CPI vs PCE:
  - PCE is Fed's preferred measure because it is broader (indirect expenditures), and has varying weights in consumption baskets
  - over a longer term, CPI tends run 50bp higher than PCE (core 30bp)

Inflation Rates and the Price Level Path



Source: Bureau of Economic Analysis via Haver Analytics

Current Policy

July 28th FOMC Statement

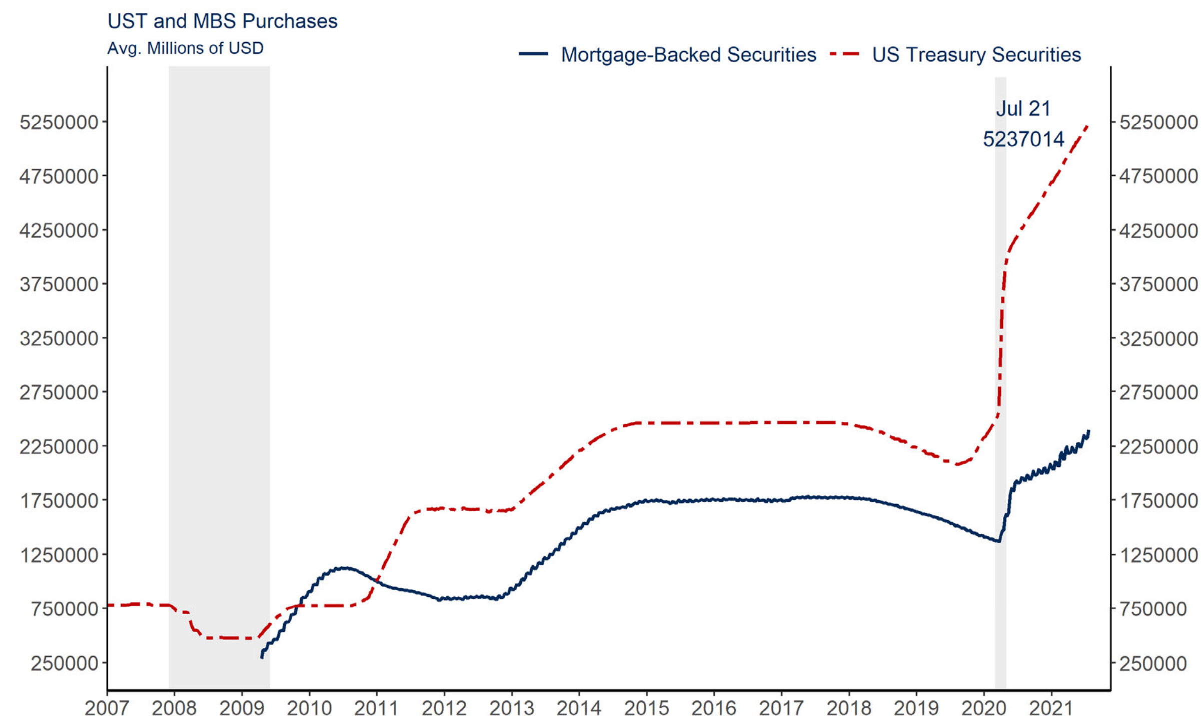
*"The Committee decided to keep the target range for the federal funds rate at 0 to 1/4 percent and expects it will be appropriate to maintain this target range until labor market conditions **have reached** levels consistent with the Committee's assessments of maximum employment **and** inflation has risen to 2 percent **and** is on track to moderately exceed 2 percent for some time."*

- **Inflation**: "… the Committee will aim to achieve inflation moderately above 2 percent for some time so that inflation averages 2 percent *over time* and *longer-term* ***inflation expectations*** *remain well anchored at 2%*."
- **Asset Purchases**: "Last December, the Committee indicated that it would continue to increase its holdings of Treasury securities… until substantial further progress has been made toward its maximum employment and price stability goals. Since then, *the economy has made progress toward these goals*, and the Committee will continue to assess progress in coming meetings."
- **Risks**: "The Committee would be prepared to adjust the stance of monetary policy as appropriate if risks emerge that could impede the attainment of the Committee's goals."
  - Readings on public health, labor market conditions, inflation pressures and inflation expectations, and financial and international developments

Source: Federal Reserve Board of Governors

Current Policy: UST and MBS Purchases

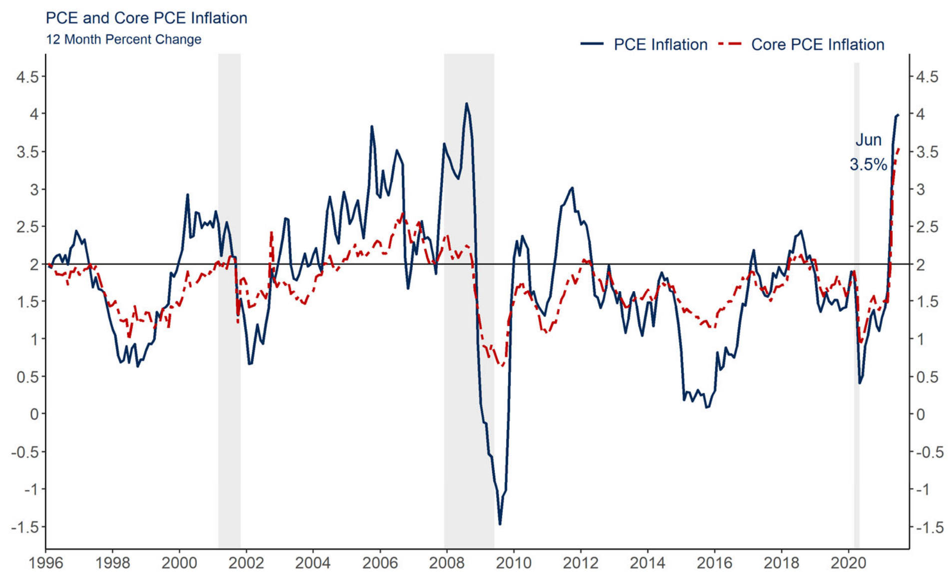
- Treasury Purchases
  - Plan to purchase $80 billion from 7/15/21 to 8/12/21
  - Consistent with the Desk's purchase program since last December
- Mortgage-Backed Security Purchases
  - Plan to purchase $54 billion from 7/29/21 to 8/12/21

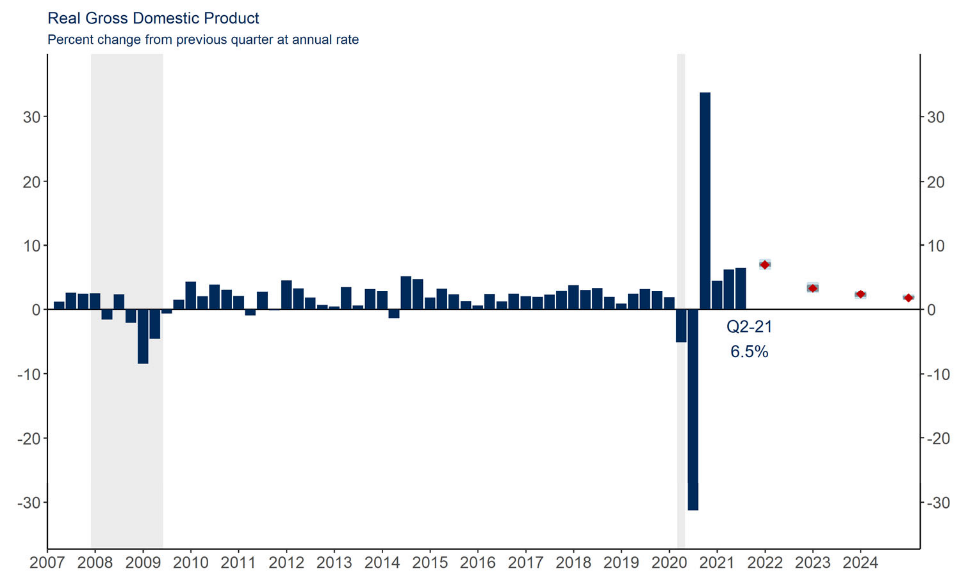


Source: Federal Reserve Board via Haver Analytics

Risks?

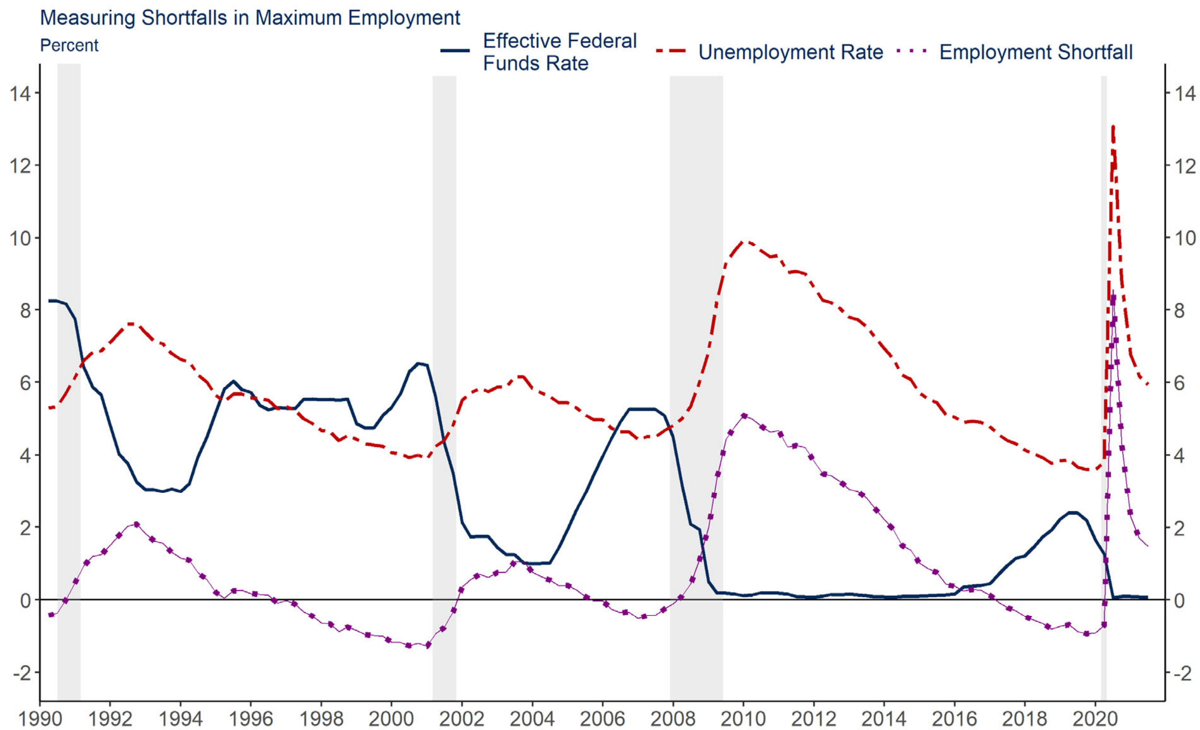
- R* measures vs. nominal short rates.
- We have high inflation, and the economy seems to be booming





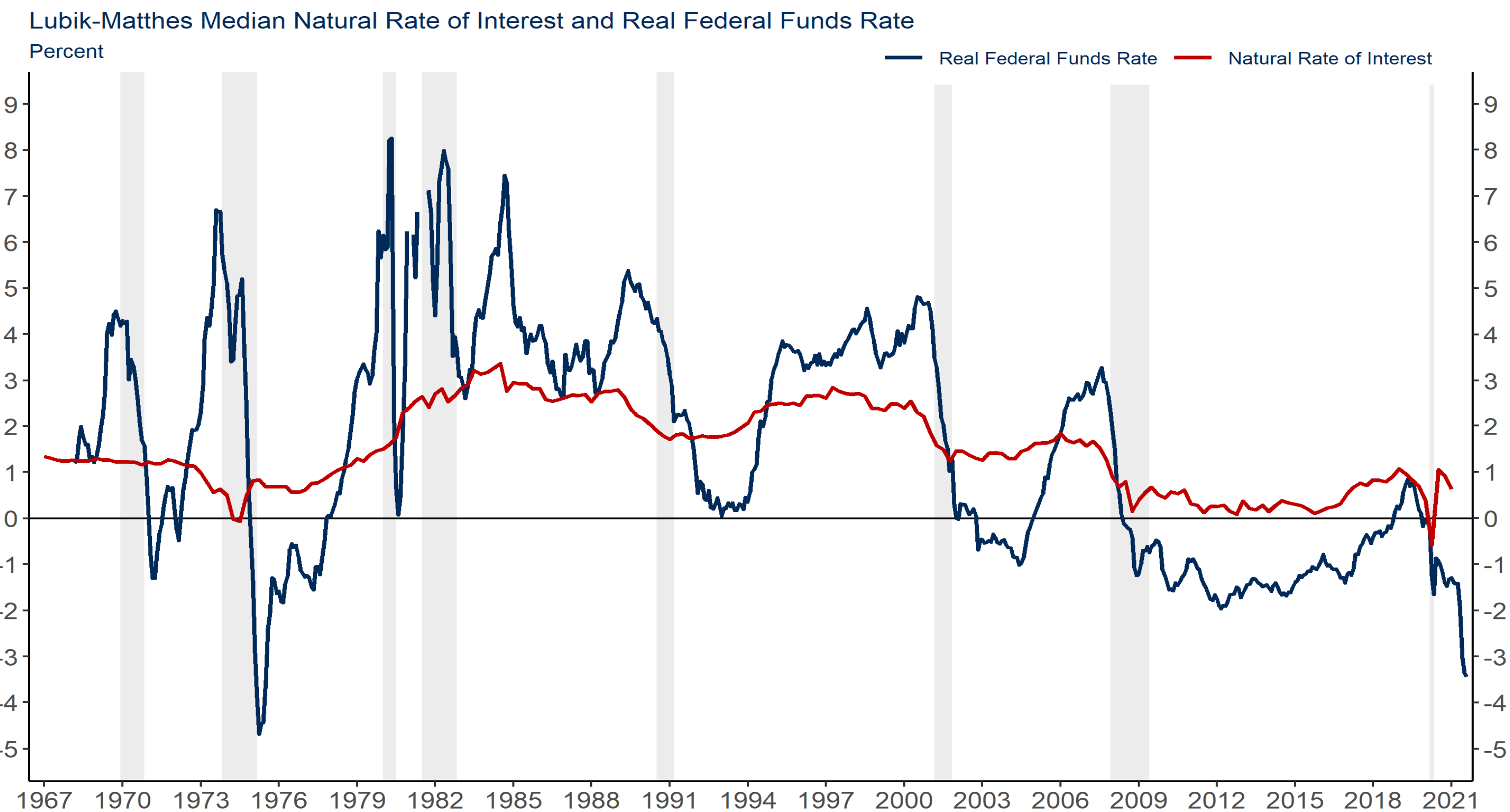
And we didn't used to do this, but…

- Deviation from previous approach leads to unanchored inflation?
- But, the committee acknowledges inflationary pressures and **inflation expectations** as a factor that would lead to an adjustment of monetary policy



Sources: Federal Reserve Board of Governors, Bureau of Labor Statistics, and Congressional Budget Office via Haver Analytics

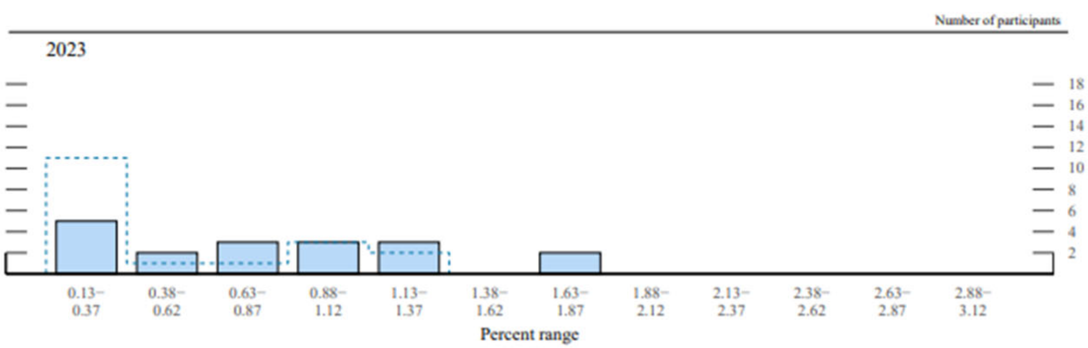
But another perspective says accommodation is big:

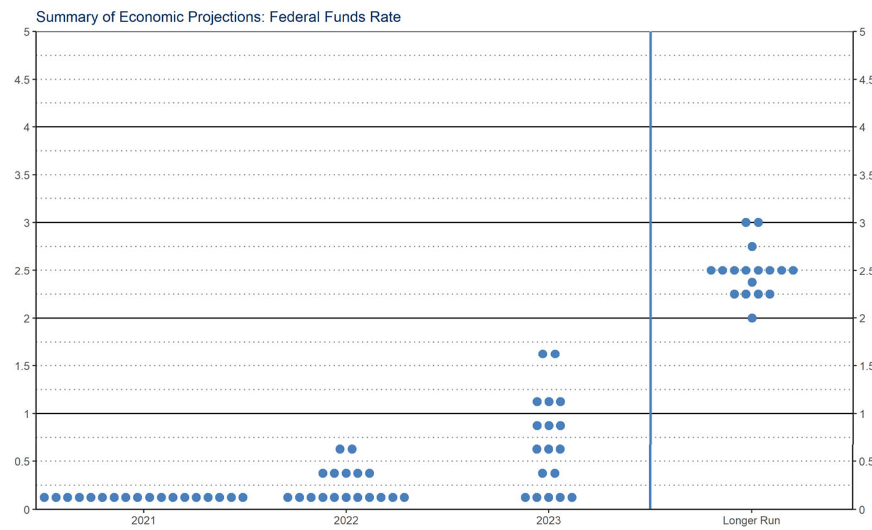


Sources: Federal Reserve Board of Governors, Bureau of Labor Statistics, and Congressional Budget Office via Haver Analytics

Yet hikes aren't imminent…

- Each dot in the chart represents the value of an FOMC participant's judgment of the midpoint of the appropriate target range (or the appropriate target level) for the federal funds rate at the end of the calendar year.
- Compared to the March SEP, more participants projected an increase in the FFR to occur sooner (esp. 2023)

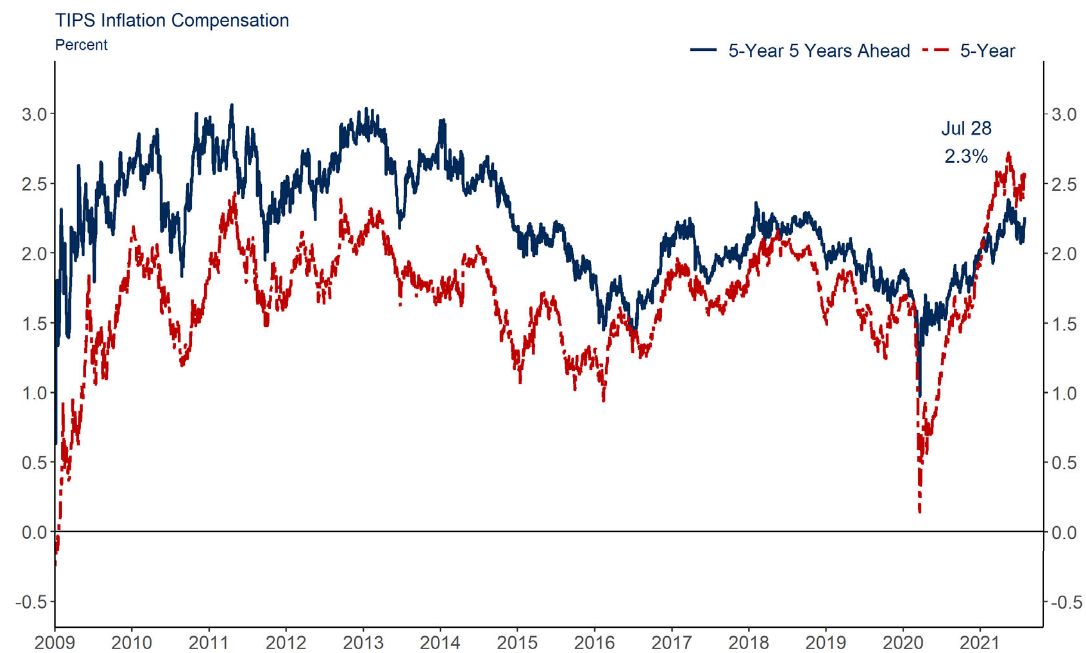




Source: Board of Governors and June 2021 SEP

Risk Management

- Risk management and history matter once you don't know for sure:
  - Sept FOMC: we will keep labor mkt tight
  - Want to get **sustained inflation**
  - We have been in a period for >25yrs of stable $\boldsymbol{\pi}$ and stable E($\boldsymbol{\pi}$)
    - Relative to an earlier period, we no longer have to move just to signal that we're on the case—public believes that we are on the case.

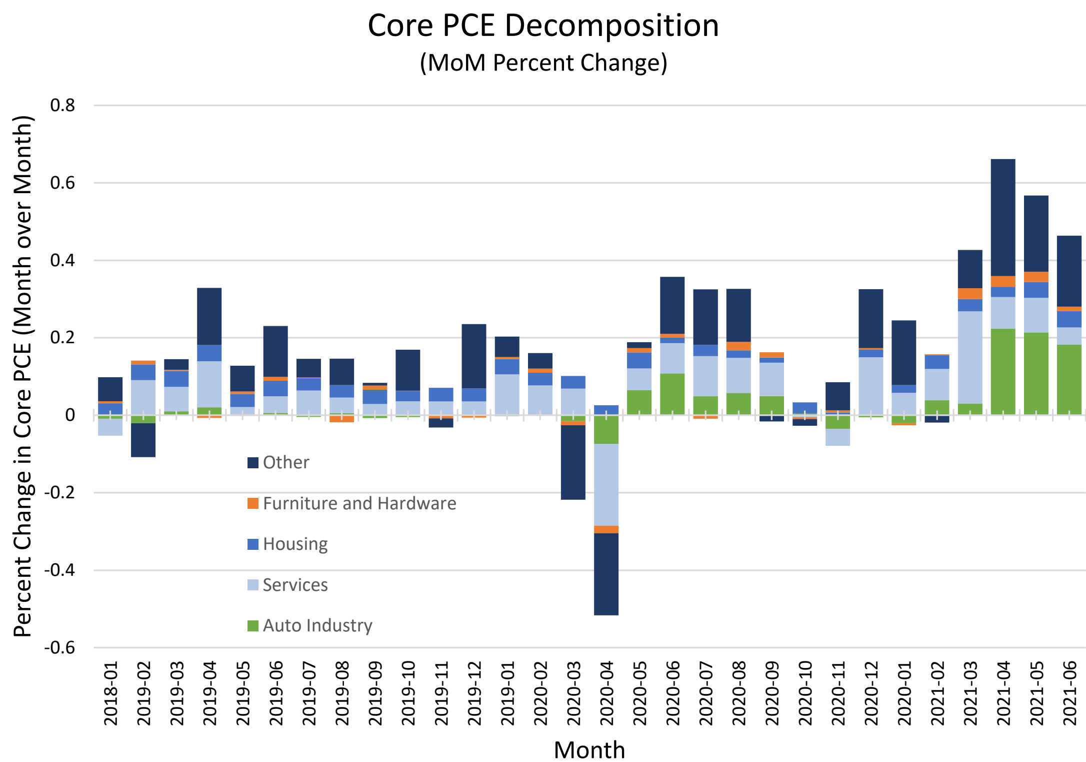


Bureau of Economic Analysis via Haver Analytics

Looking Ahead

Looking Ahead – Inflation

- Inflation dynamics—transitory vs persistent
  - It is an unfolding thing, and there are identifiable factors that have caused extreme changes in relative prices—which can plausibly feed into SR inflation.
  - cannot be sure of the right policy path,
  - need to be cognizant that we may need in some states to adjust policy in ways not expected at this moment.



Source: Bureau of Economic Analysis underlying detail tables 2.4.4.U & 2.4.5.U

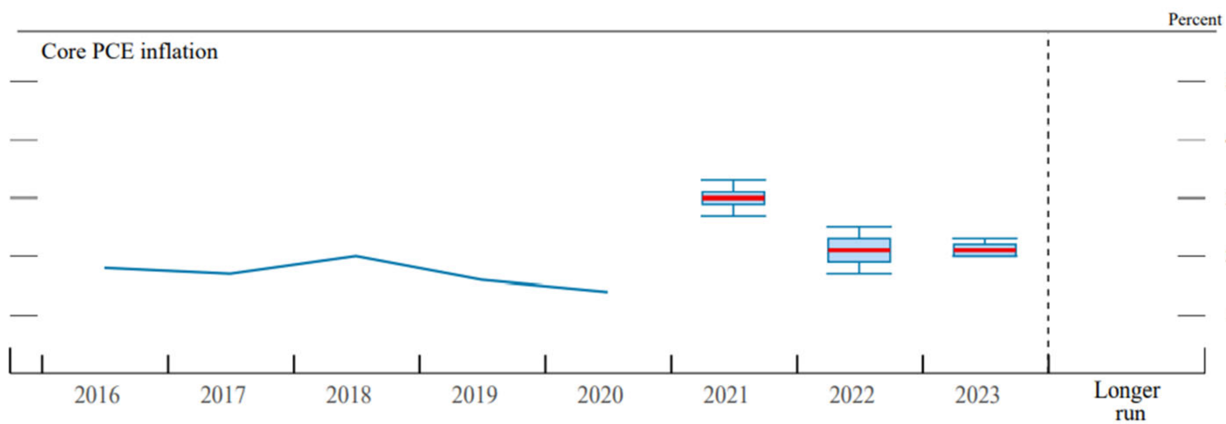
Summary of Economic Projections: Inflation

For Core PCE inflation projections for 2021, 2022, and 2023 respectively:

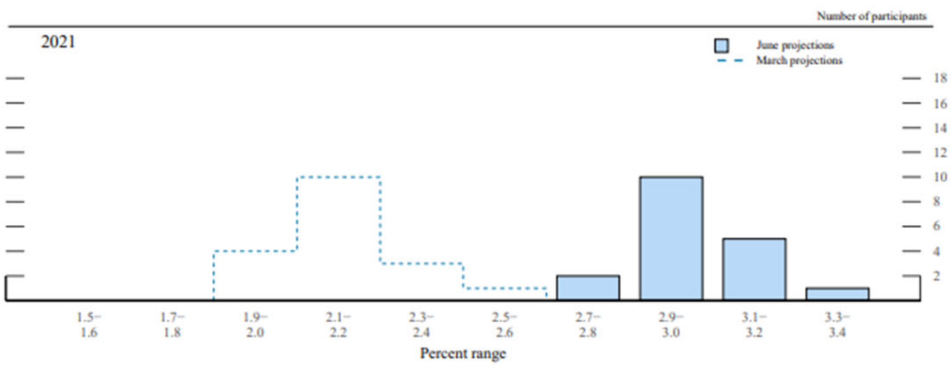
- Median projections: 3.0%*, 2.1%, and 2.1%
- Central Tendency: 2.9–3.1%, 1.9–2.3%, and 2.0–2.2%
- Range: 2.7–3.3%, 1.7–2.5%, and 2.0–2.3%

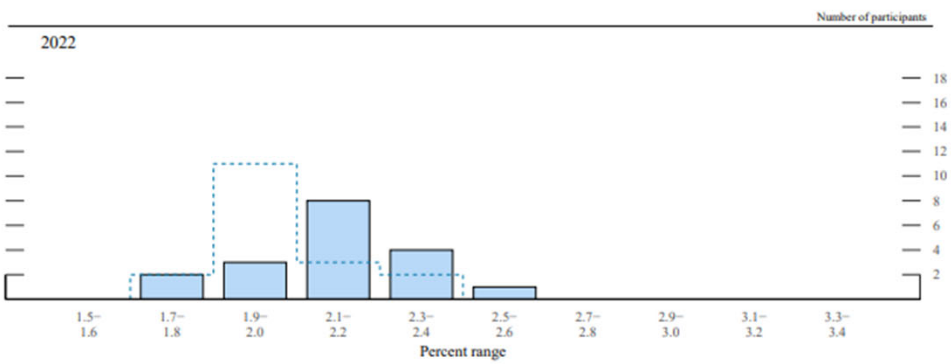
*0.8 higher than the March Projection

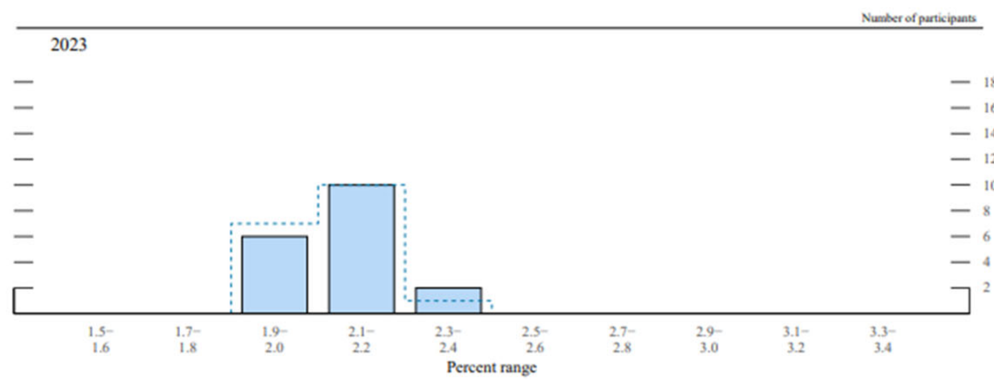
Medians, central tendencies, and ranges of Core PCE inflation, 2021–23 and over the longer run



FOMC members generally see glide path







Source: June 16, 2021 Summary of Economic Projections

Looking Ahead – Labor Markets

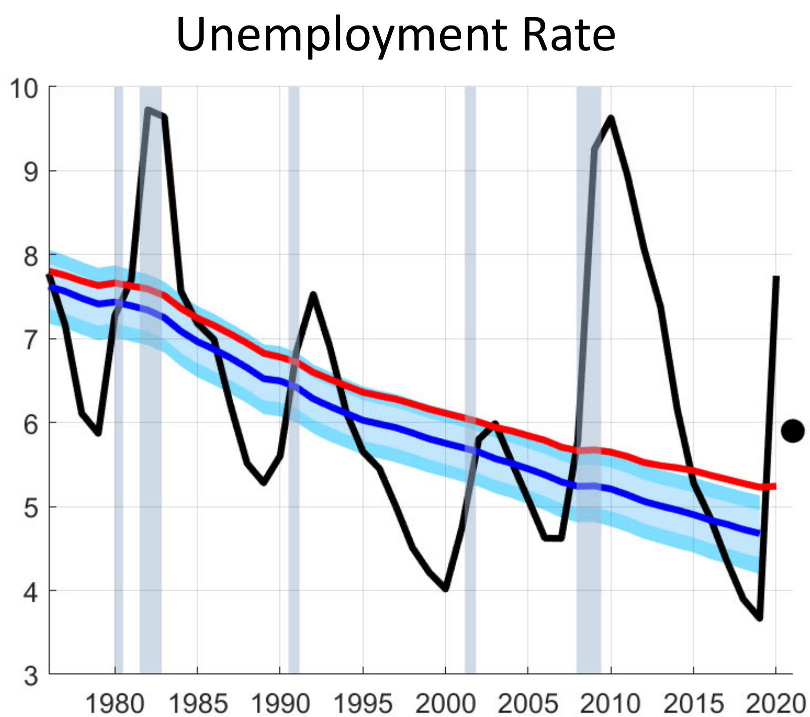
- The sharp increase of the 2020 U rate was somewhat unusual for a recession, but …

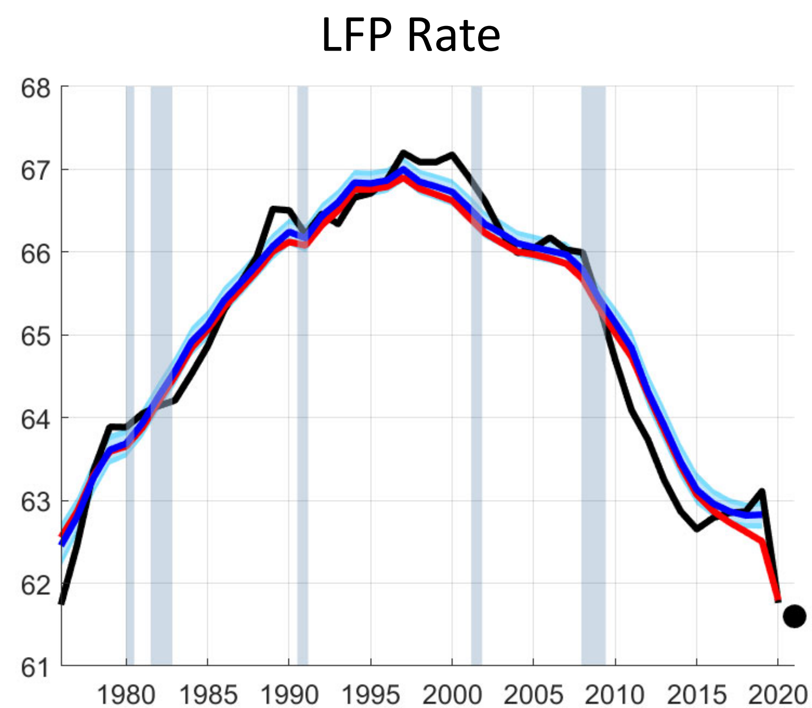
- … the sharp decline in the 2020 LFP rate was very unusual!

- How does 2020 affect the estimates of labor market trends? Compare 1976-2020 trend estimates with trend estimate excluding 2020.

- And new framework says *broad* and include and is asymmetric on *shortfalls*, so…

Does COVID change our view of trends? Yes and No.

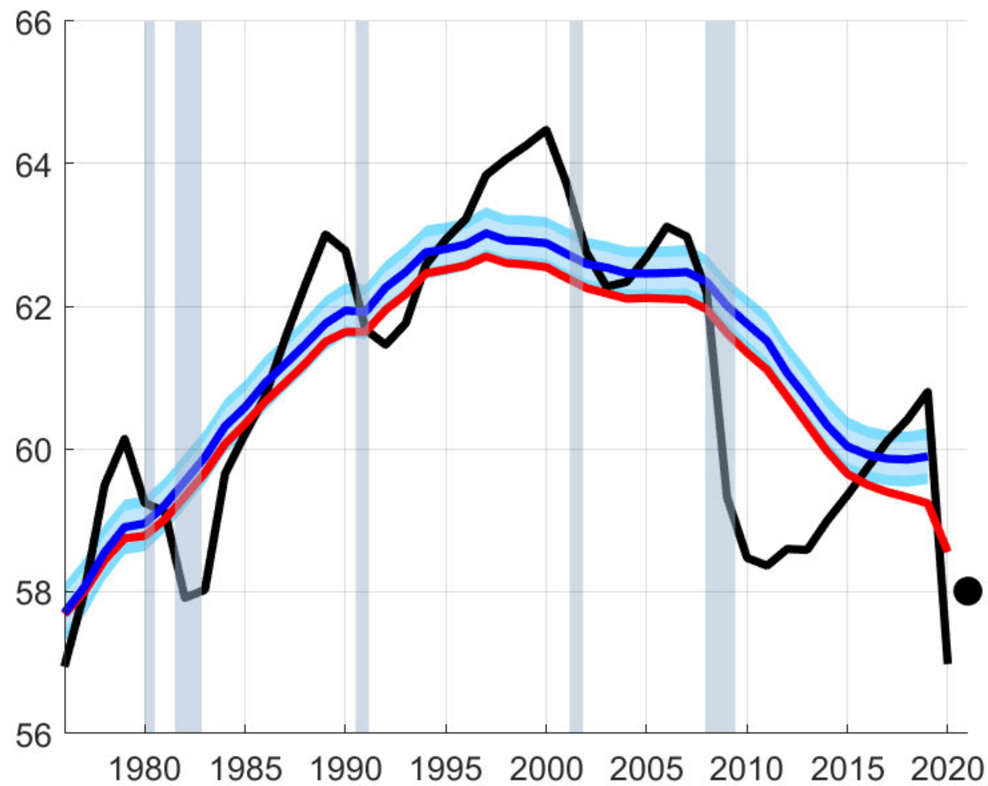




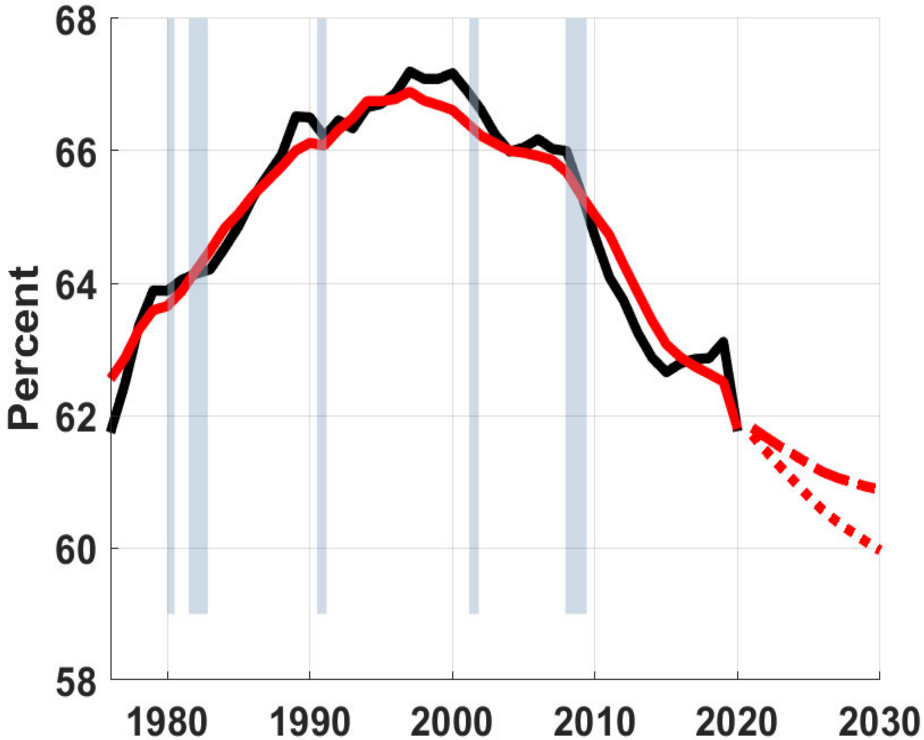
Trend using data from 1976-2019 vs. data from 1976-2020

Bureau of Labor Statistics and FRBR calculations

For EPOP, COVID matters



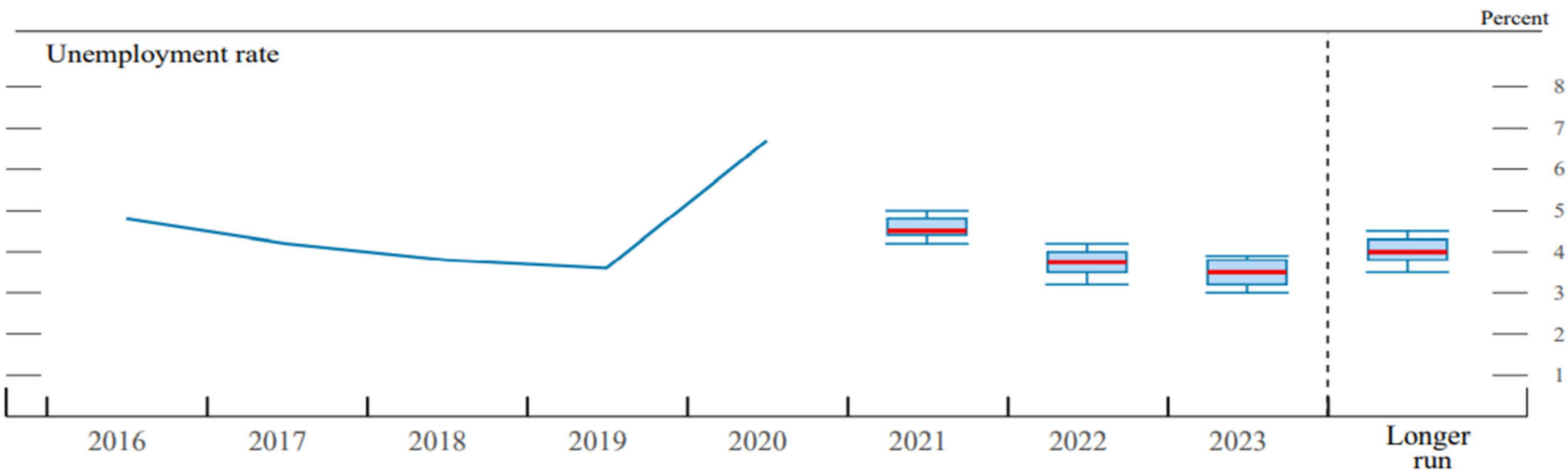
A downward trend of LFP, despite educational trends



- Forecast assumes that *group* LFP rates remain at their 2020 trend values
- Ageing only, dotted line: -2 ppts
  - Age-contingent education shares fixed at 2020 values
- Ageing, but more educated population, dash-dot line: -1 ppts
- Alternative trend forecast, e.g., ignoring 2020 data point, moves the start point, but not the shape of decline
- Similar results for U rate

Summary of Economic Projections: Unemployment

Medians, central tendencies, and ranges of Unemployment Rate, 2021–23 and over the longer run



Thank You!