

Lecture 25: The Great Recession and COVID-19

ECON 30020: Intermediate Macroeconomics

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Readings

GLS Ch. 37

Great Recession

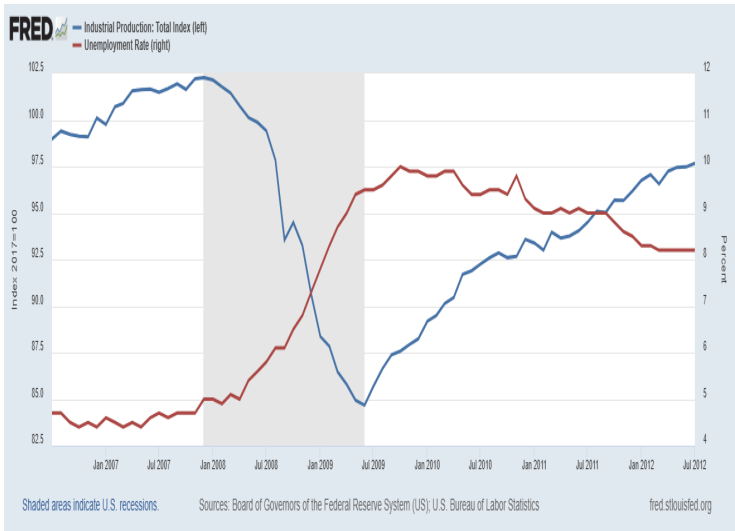
Officially, the US was in recession from December 2007 through June 2009

Worst economic contraction post-Great Depression

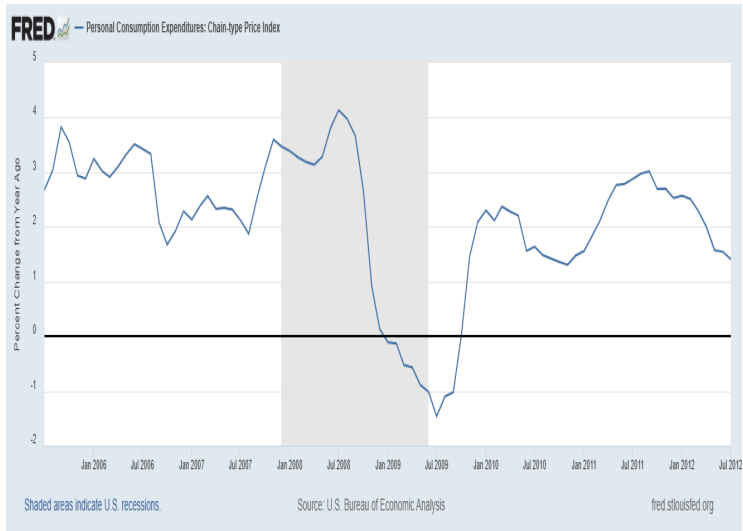
Economy hit the ZLB towards the end of 2008 and there were numerous “unconventional” policy reactions

Also called the Great Financial Crisis (GFC) because the recession had its origins in the financial sector

Economic Activity



Inflation



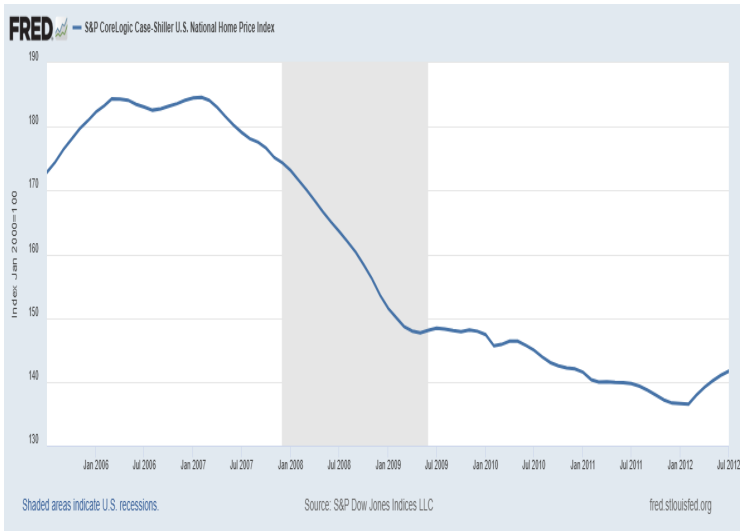
Background: Housing Prices

Traditional story is that the GFC had its origins in the housing market

House prices in US fell substantially starting in late-2006

This might have had some small adverse demand effects (via wealth effect on consumption), but shouldn't have caused a major blow up on its own

House Prices



House Prices and the Financial System

The reason things blew up is because housing was the collateral behind new short-term financing agreements (e.g., repurchase agreements) between large institutional investors

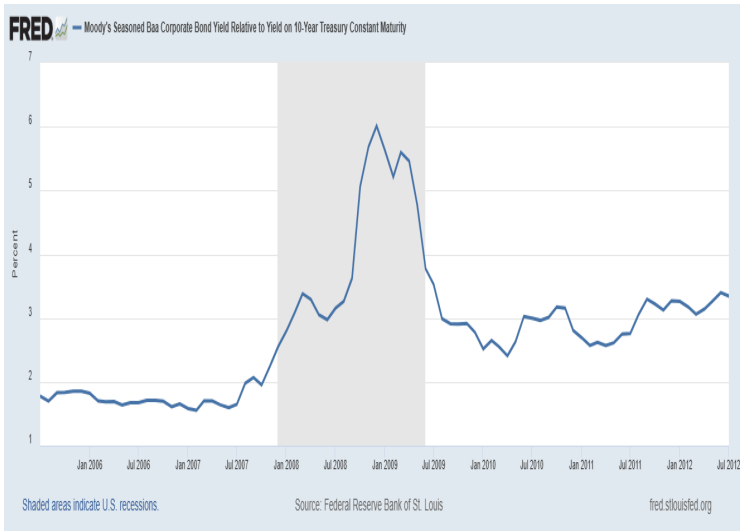
When house prices declined, particularly given the nature of many mortgages from the early-2000s, this made the value of the backing collateral questionable

Further, given the bundling of mortgage debt into securities, it was hard to know where the “bad” stuff was

As a result, credit markets froze – firms stopped lending to one another and there was a “flight to safety” (financial firms wanted out of risky securities)

This resulted in reduced demand (lower prices, higher yields) on risky assets and increased demand (higher prices, lower yields) on comparatively short-term, riskless stuff.

Credit Spreads



Mapping into the AD-PC Model

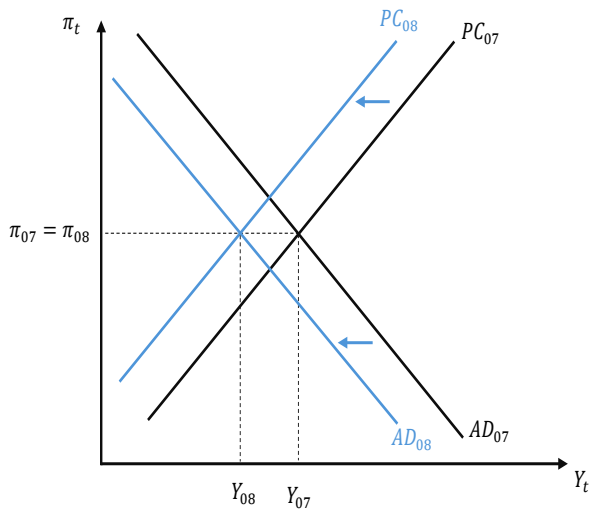
The flight to safety resulted in an increase in credit spreads ($\uparrow f_t$)

This would shift the AD inwards

At the same time, from the end of 2007 through middle of 2008, there was a large increase in oil prices (basically, from \$3 a gallon at end of 2007 to \$4 a gallon by middle of 2008). This was a price shock in the PC.

Net effect: some reduction in economic activity, not much change in inflation

Early Stages of Great Recession



Late-Summer/Early Fall of 2008

Things went from bad to worse in the late summer of 2008

Was essentially a “run” on the “shadow banking” system

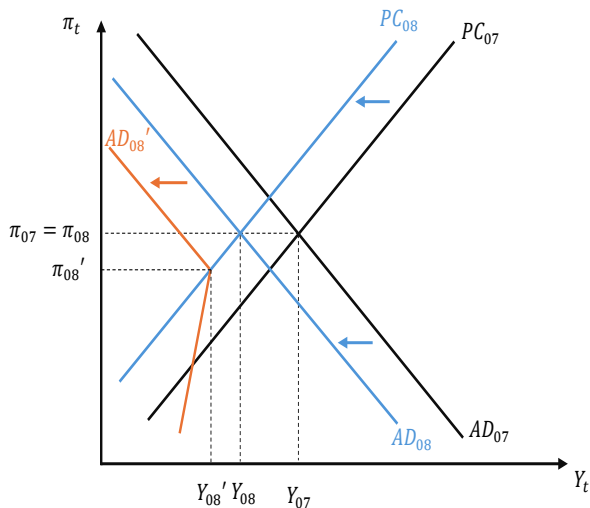
Run: short-term creditors don't roll-over short-term lending to leveraged financial institutions

“Shadow banking” system: financial intermediaries performing bank-link functions (credit supply) outside of the traditional, regulated banking system. Reliant on short-term, collateralized funding

- Money market funds, repo-funded broker-dealers (e.g., investment banks), securitization vehicles, hedge funds, and finance companies

The “run” meant that these institutions had to cut back on lending. Further $\uparrow f_t$!

Intensification: Late-Summer / Early-Fall 2008



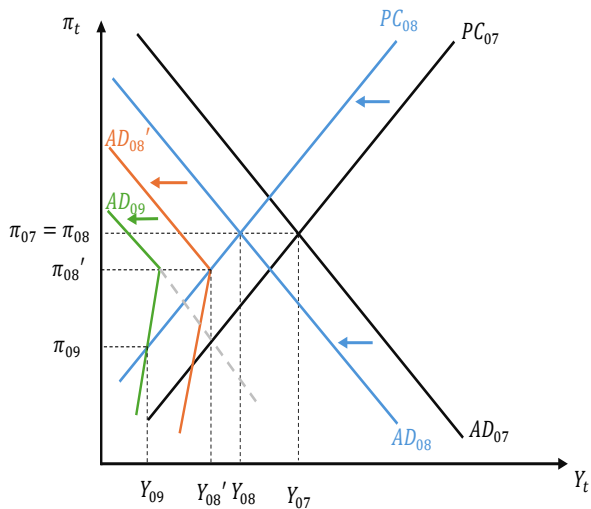
The ZLB

By the end of 2008, the Fed had lowered the FFR all the way down to zero

The binding ZLB meant we were in the upward-sloping region of the AD curve

As credit market conditions continued to worsen, this had the effect of exacerbating the economic impact of the decline in aggregate demand.

Late 2008 / Early 2009



Policy Responses

The Fed, in conjunction with Treasury and Congress, responded to the crisis with a number of policy actions

These all made some sense in light of the AD-PC model:

1. Emergency lending (lender of last resort): $\downarrow f_t$
2. Fiscal stimulus: $\uparrow G_t$ and $\downarrow T_t$
3. Unconventional monetary policy (quantitative easing and forward guidance): $\downarrow f_t$

Lender of Last Resort

The Great Depression (1929-1933) featured a run on demand deposits, leading to financial market collapse and credit markets that didn't function

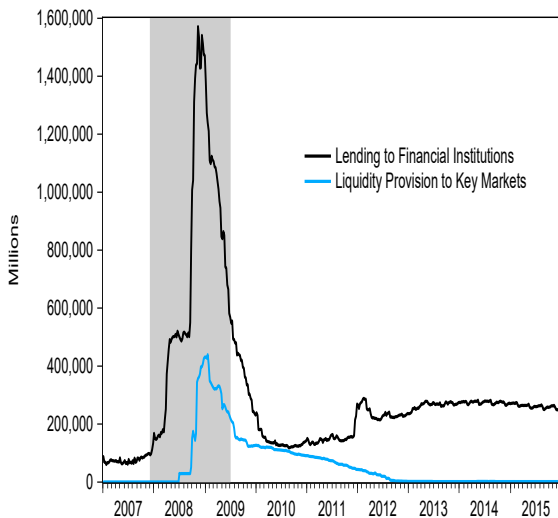
Fed largely failed in serving its original function as a “lender of last resort” (Friedman and Schwartz, 1963)

The GFC also featured run, but this time on short-term wholesale financing (repurchase agreements, commercial paper) by institutions (whereas Great Depression was run on retail deposits by households)

Complication: the run didn't involve traditional banks, which the Fed has power to lend to, but non-bank financial firms, which the Fed doesn't really have legal authority over

Fed came up with very creative ways to lend to non-bank financial firms (idea: $\downarrow f_t$)

Emergency Fed Lending



Fiscal Stimulus

Significant fiscal stimulus

- Economic Stimulus Act of 2008 (tax rebates to households and business tax breaks)
- American Recovery and Reinvestment Act (ARRA) 2009 (infrastructure spending, aid to states, tax credits, etc.)

Fiscal stimulus is a response to most recessionary episodes

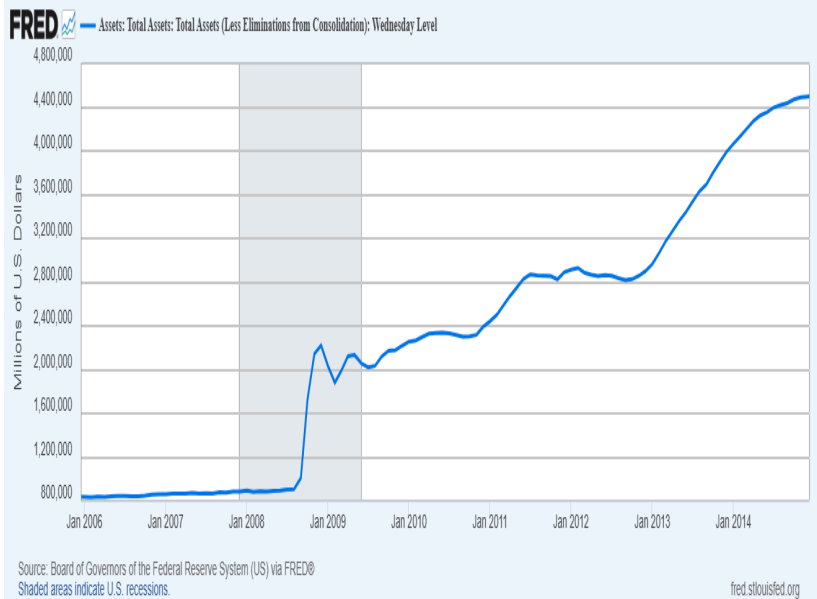
Makes particular sense when the ZLB is binding: because interest rate is fixed, no crowding out, meaning a bigger fiscal multiplier

Unconventional Monetary Policy

Took two forms:

- Quantitative Easing (buy long-term bonds with intent of lowering term premia)
 - QE1 (2008): stabilizing housing markets by buying mortgage-backed securities (MBS)
 - QE2 (2010): buy long-term Treasuries
 - QE3 (2012): buy both MBS and long-term Treasuries each month to support recovery
- ▶ Forward Guidance: promise low short-term rates (with intent of lowering long-term rates via the Expectations Hypothesis):
 - “Economic conditions, including low rates of resource utilization, subdued inflation trends, and impaired financial markets, are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013” (2011)

Federal Reserve Balance Sheet



Reprise

Did these policy actions work?

Hard to say – we don't know the counterfactual

Things didn't seem to get as bad as people feared in late-fall of 2008

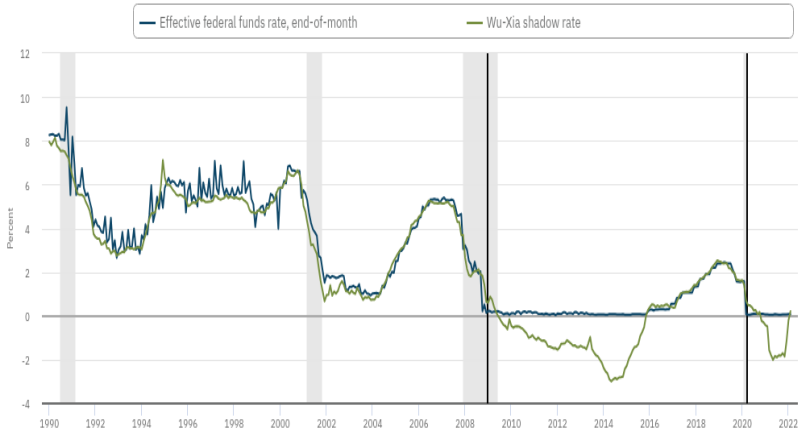
Economy began to recover in 2009, although recovery was slow and inflation remained below target (and the ZLB remained in place) for several years

Unconventional monetary policy does seem to have had some effect

- Shadow rate: hypothetical, short-term policy rate that summarizes the equivalent stimulating effect of unconventional monetary policy when the short-term rate is constrained by zero

Shadow Federal Funds Rate

Wu-Xia Shadow Federal Funds Rate



Note: The black vertical lines at December 2008 and March 2020 indicate months where the Federal Open Market Committee lowered the target range for the federal funds rate to 0 to 1/4 percent.

Sources: Board of Governors of the Federal Reserve System and Wu and Xia (2016)

COVID-19 Recession

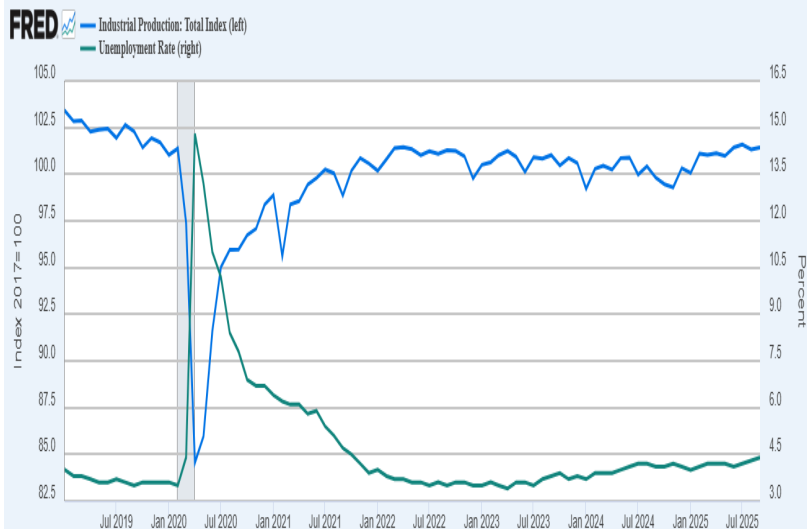
There was a short but sharp economic contraction associated with the COVID-19 pandemic

Average length of post-WWII contraction: 10.3 months

NBER dates COVID-19 contraction as just two months (shortest on record)

Following contraction, high and persistent inflation

Economic Activity

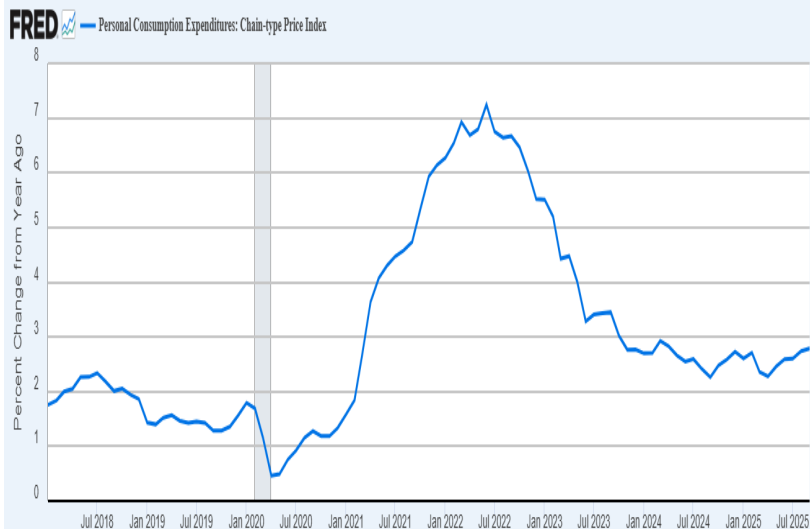


Sources: Board of Governors of the Federal Reserve System (US); U.S. Bureau of Labor Statistics via FRED®

Shaded areas indicate U.S. recessions.

fred.stlouisfed.org

Inflation



Source: U.S. Bureau of Economic Analysis via FRED®

Shaded areas indicate U.S. recessions.

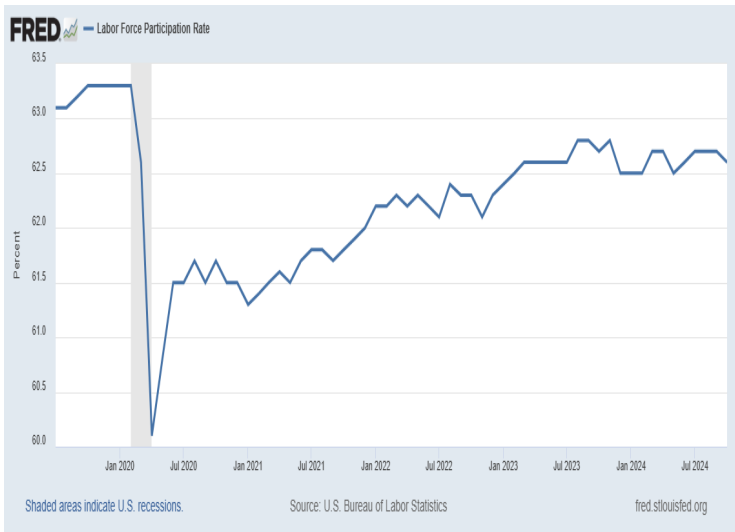
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How to Model COVID-19?

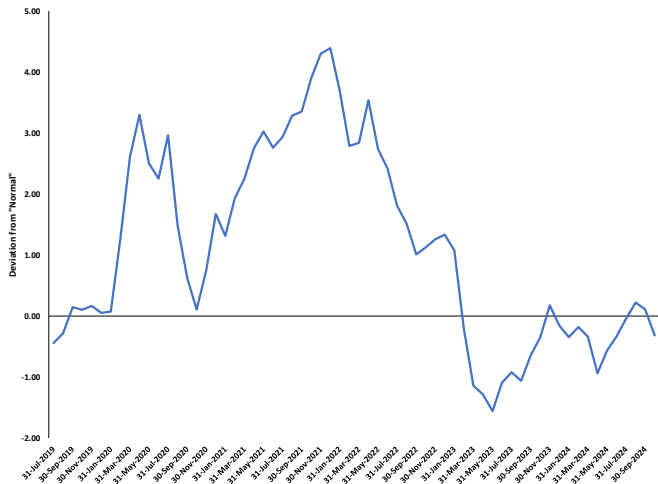
Initially, a combo negative supply shock (e.g., increase in θ_t and increase in ps_t) and adverse demand shock (e.g., reduction in Y_{t+1} , increase in f_t , increase in uncertainty)

Initial combined effect was large reduction in output and a reduction in prices/inflation

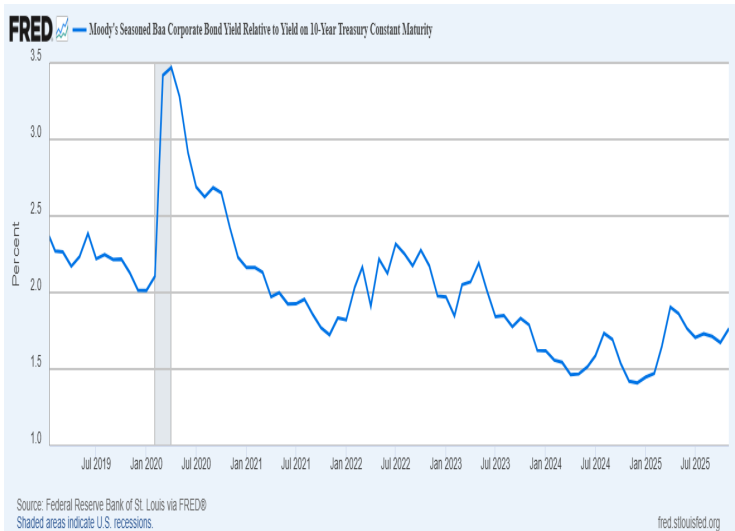
Labor Force Participation



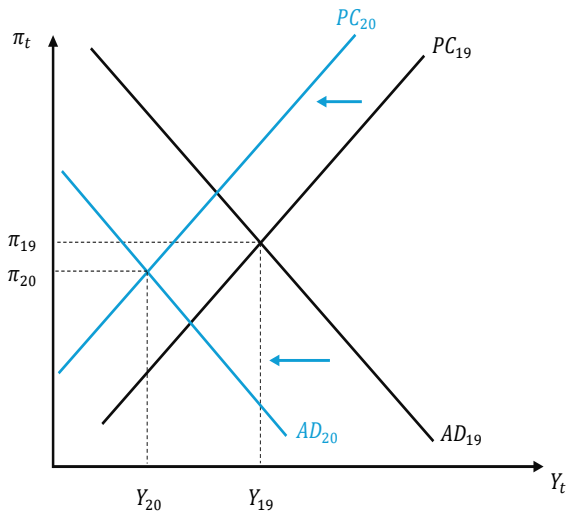
Global Supply Chain Pressure Index



Interest Rate Spreads



2020: AD-PC Analysis



Policy Responses

Policy response was large and swift

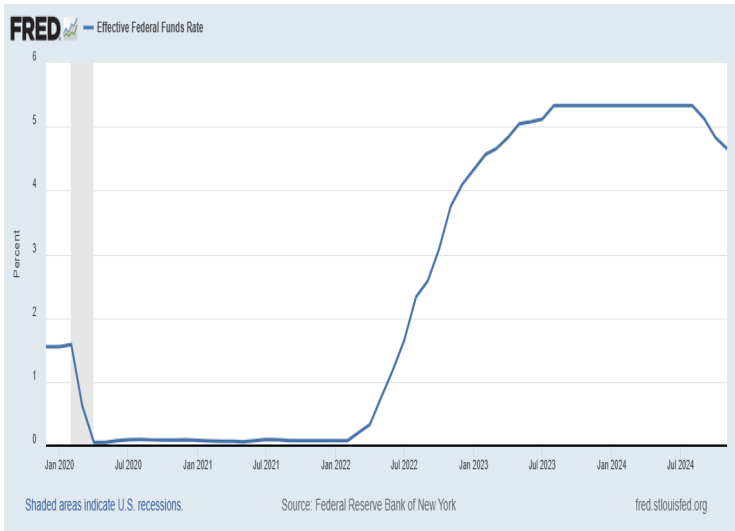
Federal Reserve resuscitated many of its Great Recession tools:

- Lowered policy rate to zero (ZLB)
- Massive quantitative easing policy (“QE Infinity”)

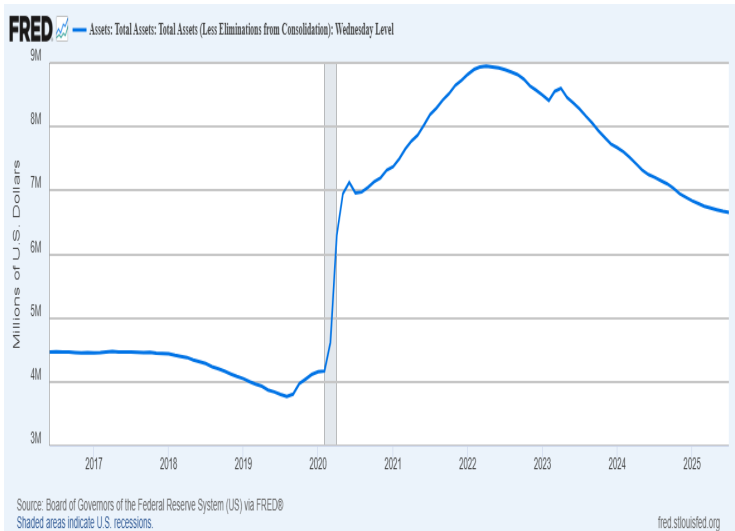
Massive fiscal expansion, too

- CARES Act, COVID-Related Tax Relief Act, in 2020
- American Rescue Plan in 2021

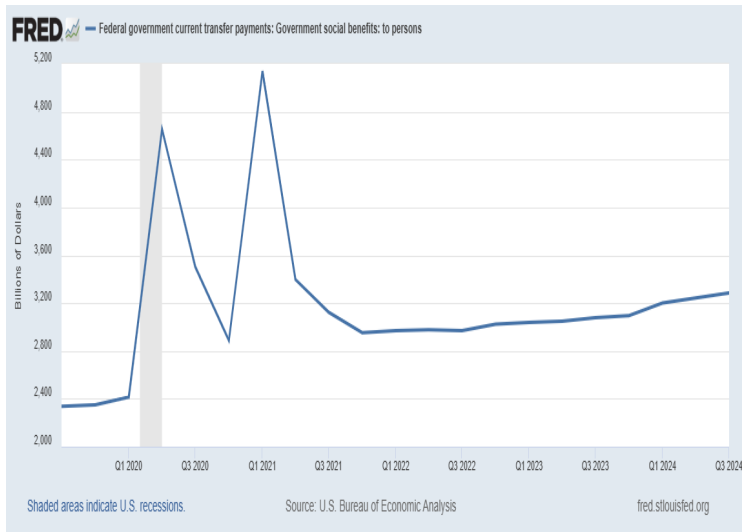
Federal Funds Rate



Federal Reserve Balance Sheet



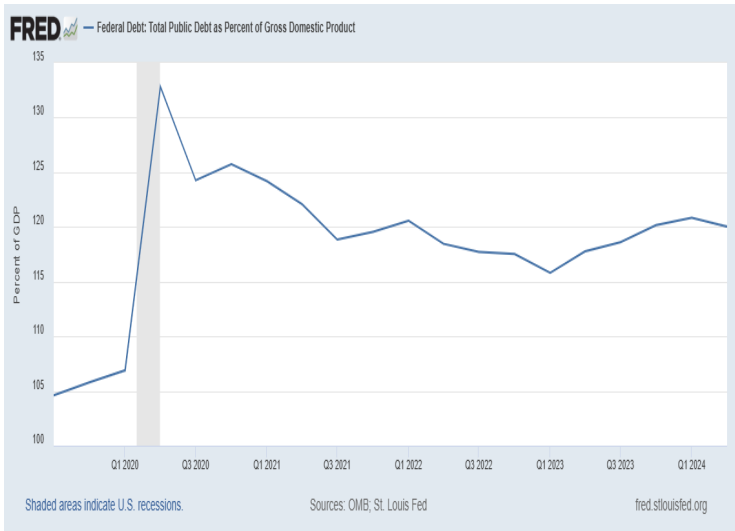
Government Transfers



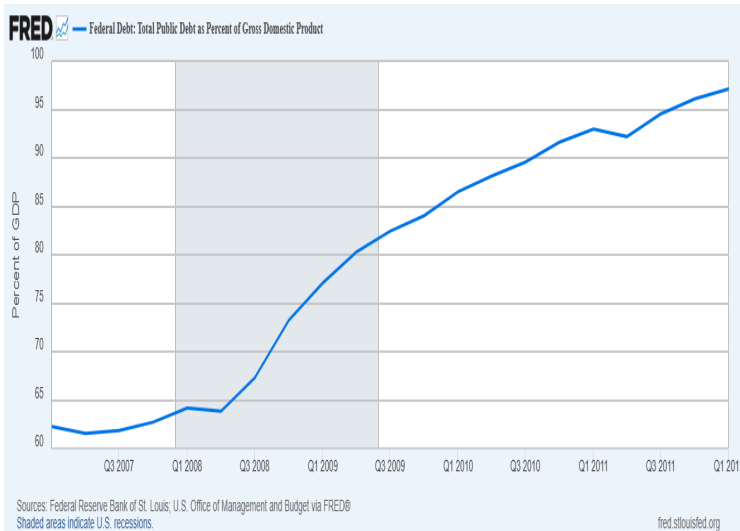
Government Consumption Expenditures



Debt-GDP Ratio



Comparing to Great Recession



My Own Take

Initially, recession was a mixture of supply and demand, with demand dominating (inflation down)

But, due to learning more about the nature of the disease, pent-up demand, and aggregate policies, demand was basically back to normal by 2021. Supply remained somewhat constrained through 2022

Relative to Great Recession, policy responses were large and persistent, whereas the adverse shock itself turned out to be rather short-lived

Reprise

Stimulus was likely overdone

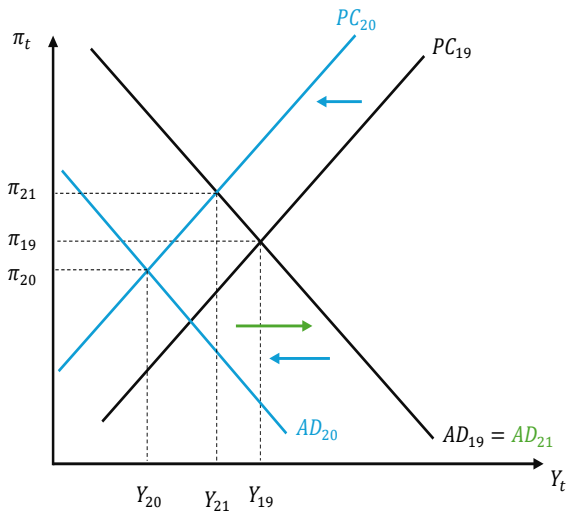
By the middle of 2021, unemployment and industrial production were basically back to pre-COVID levels, as were indicators of financial distress

Yet Fed kept FFR at zero until March 2022 and kept expanding its balance sheet until roughly the same time

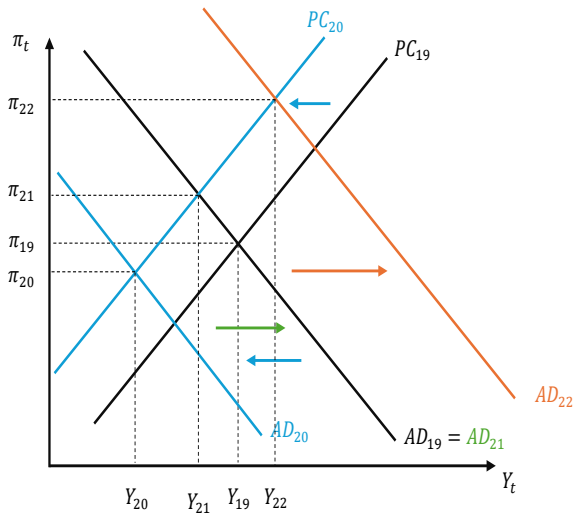
Further, fiscal stimulus from American Rescue Plan was just starting to take hold in late 2021 and into 2022

Net result: we overdid demand stimulus, leading to peak inflation in 2022

2020 into 2021



2021 into 2022



Lessons

Important lesson: not all crises are the same

Underlying cause of the Great Recession was quite different from COVID-19

While mixture of policy responses to Great Recession seemed (more or less) appropriate, I think policymakers felt they did too little and were too slow to act

The basic macro policy response to COVID was to repeat the playbook from Great Recession, only to do more and do it faster

In retrospect, this was a mistake, and led to the persistent, high inflation