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Not the Fed Tealbook December 2022*

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*Authored by participants of the Global Forecasting School Angela Papikyan, Vahe Avagyan, Hayk Avetisyan, Meline Gevorgyan, Edgar Hovhannisyan, Haykaz Igityan, Martin Galstyan, Julian Gilbert, Hayk Karapatan, Asya Kostanyan, Douglas Laxton, Jared Laxton, Anahit Matinyan, Armen Nurbekyan and Nerses Yeritsyan.

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NOT THE FED TEALBOOK

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ABSTRACT

"Not the Fed Tealbook" simulates a state-of-the-art macroeconomic analysis and streamlined monetary policy note with limited resources. This provides a simple and accessible application of the Forecasting and Policy Analysis (FPAS) Mark II framework that incorporates uncertainty, nonlinearities, and Alan Greenspan's 2004 formulation of "monetary policy as a risk management exercise." This conceptual and analytical approach is applied to the US, given its importance in the global macroeconomy and the ready accessibility of data and analysis. The analysis features the key aspects of current stage monetary policy discussions, namely important nonlinearities in economic behaviors and the significance of endogenous policy credibility. The report also highlights the importance for central banks to be transparent about how they are effectively managing the inflation-output (employment) tradeoff in calibrating monetary policy.

AUTHORED BY THE GLOBAL FORECASTING SCHOOL

Angela Papikyan, Vahe Avagyan, Hayk Avetisyan, Meline Gevorgyan, Edgar Hovhannisyan, Haykaz Igityan, Martin Galstyan, Julian Gilbert, Hayk Karapatan, Asya Kostanyan, Douglas Laxton, Jared Laxton, Anahit Matinyan, Armen Nurbekyan, and Nerses Yeritsyan

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EXECUTIVE SUMMARY

There is a rich debate within policymaking circles about the future economic outlook in the US which spans a wide breadth of issues and potential outcomes as the economy leaves the COVID-related stagflationary shock environment including: persistent vs. transitory inflation, labor market tightness and shifts in the Beveridge curve and hard and soft landings. In our estimation, the prevailing issues facing policymakers that are likely to determine the medium-term dynamics of the US economy and consequently the policy stance include:

Bottlenecks. The COVID pandemic undoubtedly produced a series of supply-chain bottlenecks that put upward pressure on inflation after abruptly shutting down and starting back up portions of the economy. We typically view these types of bottlenecks as transitory in nature (i.e., will resolve on their own without much need for central bank intervention). The temporary shift in the demand for goods instead services on account of social distancing also contributed to a bullwhip effect putting immense strain on supply-chain networks, observed by frequent congestion in ports. This resulted in volatile fluctuations in inventories, as firms in some cases ran out of inventories and had to restock when goods and inputs became available. These types of bottlenecks are expected to subside and may become a sizeable disinflationary force within certain markets soon. We dig into various types of price indices within the "sticky-price" paradigm to get a better sense about where underlying inflation could be headed within the context of an economy running hot. The other and perhaps more pernicious bottlenecks that could have a more lasting effect on sticky-price inflation are the bottlenecks connected to the labor market. These new types of bottlenecks that are emerging from COVID and anti-globalization forces are analogous to the late 1960s and 1970s, where parts of the economy were shut down by labor disputes. The idea of the role of bottlenecks in driving inflation and steepening the Phillips Curve in regions of excess demand is based on the pioneering research by George Evans (1985). [1]

Wages. The Beveridge curve has shifted out and its current setting of low unemployment and high job openings suggests there are labor shortages, and workers are well-positioned to negotiate higher wages. This could prove problematic, as economies with a higher share of firms experiencing bottlenecks would experience an increase in the natural rate of unemployment to offset the stagflationary forces from bottlenecks. The prevailing alternative view is that the Beveridge curve can simply shift back relatively seamlessly, perhaps at the expense of global economic headwinds poised to slow external demand and finally labor demand. This looked somewhat promising in August, but job openings remain stubbornly high as of October. We still could potentially see a large decline in job openings and reduced pressure on wages without a corresponding large increase in the unemployment rate.[2]

Excess Savings. Many observers expect an imminent recession to be almost inevitable with the current policy setting, but a likely decisive factor that may prevent any steep drop-off in economic activity is the large build-up of savings across the wealth spectrum of households. As long as households remain relatively cash-rich compared to their pre-pandemic levels, then it is entirely possible that they could maintain a level of spending that will keep the economy running strong while already in a state of excess demand. This in turn could feed back into maintaining a stronger labor market for longer and exacerbate the bottlenecks emerging in that sector and thus require a stronger reaction by the Fed (Case A-type Scenario). The alternative would be that disinflation/deflation in large swaths of the economy are in full effect and the Beveridge curve shifts back to its pre-pandemic state, thus not requiring much of an increase in unemployment to reach a sustainable path for inflation. (Case B-type Scenario)

The theoretical framework we begin with to think about all these issues is the short-run output inflation trade-off as described by the augmented Phillips curve, and importantly a Phillips curve with convexity. The convexity implies that the rise in (unexpected) inflation associated with a positive output gap is greater than the fall in inflation associated with an equally-sized negative output gap. We present the framework at different times before, during and after the COVID pandemic period with important implications for the outlook and policy and test different assumptions for the NAIRU based on our current understanding of the labor market.

[1] George Evans (1985). Bottlenecks and the Phillips Curve: A Disaggregated Keynesian Model of Inflation, Output, and Unemployment.
[2] Charles Evans (October 2022). Going the Distance on Inflation Redux.

REPORT STRUCTURE

The report is comprised of three distinct sections representing the three essential ingredients of the Forecasting and Policy Analysis System (FPAS), interwoven together as part of the analysis:

1. Where is the economy today?

   This section summarizes historical data and the near-term outlook in a concise manner, synthesizing available resources to gauge the initial position of the economy from which to begin the projection.

2. What are the underlying forces?

   This section identifies key issues in today's economy that are candidates for determining the medium-term dynamics of the forecast. We then take these different underlying forces and, given the inherent uncertainty, use them as motivation for generating scenarios that flesh out the important risks to the forecast, including situations of great uncertainty and what Olivier Blanchard terms "Dark Corners."

3. How do we adjust policy instruments to achieve our objectives?

   This section synthesizes the totality of the analysis from sections 1 and 2 and describes the "policy of least regret" we believe is necessary to achieve our objectives.

Gross Domestic Product

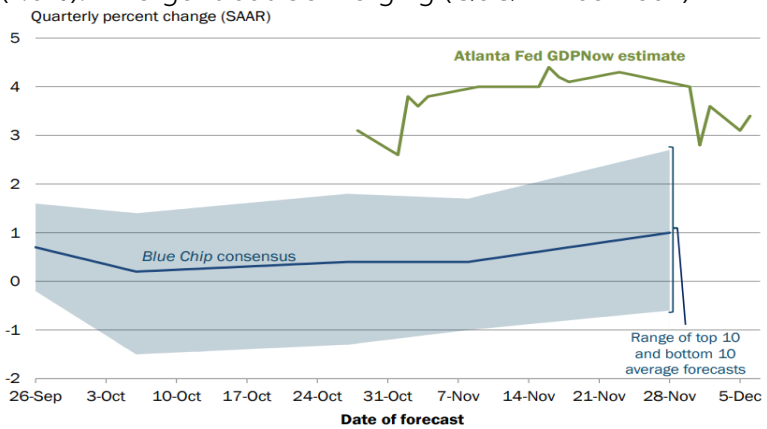
Main drivers in 2022Q4:

Atlanta Fed's GDPNow estimate of 3.4% is much more optimistic than Blue Chip, which has below-trend growth in the same period.

The Atlanta Fed continues to nowcast strong QoQ annualized consumption 3.7% while residential investment is expected to continue to contract to a large degree at -19.4% QoQ, but not enough to drag the rest of the economy down with it.

Figure 1.

2022Q4 Forecasts from the Atlanta Fed (3.4%) and Blue Chip (1.0%). Divergent but Converging (QoQ Annualized*)



* All growth estimates in this paper are QoQ annualized, unless explicitly referenced as YoY growth rates.

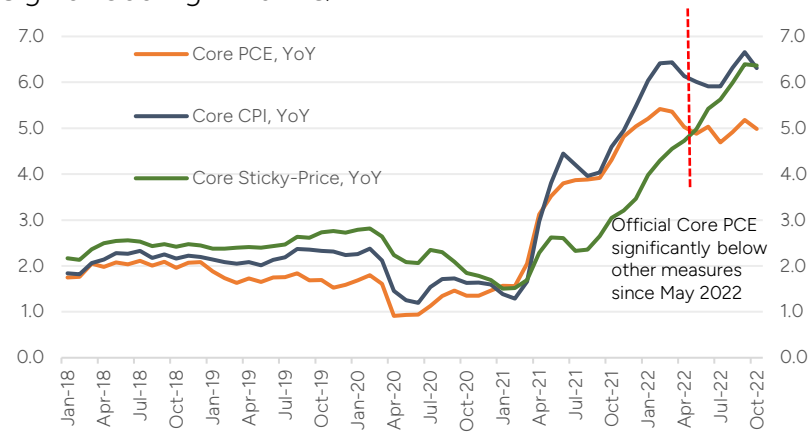
Core Inflation

The core inflation picture improved in October, with all three measures moderating, and the Cleveland Fed Nowcasts expect this to continue through the end of the year.

However, the brief slowdown in momentum may be short-lived as rent costs are likely to continue rising as new leases with higher prices are incorporated into the index. We dig into some of the components of sticky prices in Box 2, namely rent and public transportation which have been driving the sticky price index higher.

Figure 2.

Consumption Signals from Alternative Data Don't Show Any Sign of Cooling in 2022Q4



Source: FRED

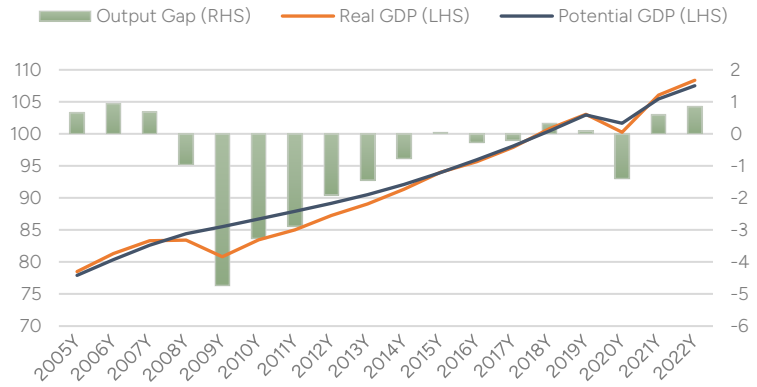
Initial position of the economy

Given the latest GDPNow estimates for the fourth quarter and the latest signals from consumption, our evaluation of the economy in the near term is a bit "hot" (materially positive output gap, i.e. demand is outstripping supply leading to inflationary pressure) and labor market bottlenecks continue to emerge, but in some cases have been averted by government action.[3]

The convexity of the Phillips curve has important implications. The larger the positive output gap becomes, disinflating the economy and returning to the 2% long-term inflation target requires greater welfare costs—in the form of a larger cumulative output gap—to achieve.

Figure 3.

Likely Going Very Hot Into 2023 After Two Consecutive Years of Modest Excess Demand



Source: Based on GFS MPMOD United States

[3] See Funk (2022).

Box 1: Convexity in the Phillips Curve

While the existing FPAS Mark I framework has long represented the "gold standard" of policymaking, the limitations of the system in dealing with—and communicating—uncertainty, and in analytically addressing the nonlinearities that govern macroeconomics, have made abundantly clear the need to inject new life into this system. An important element of the FPAS Mark II framework addresses the folly of local approximations where linear models are used to analyze a nonlinear world. As Jacob Frankel describes it, it is equivalent to driving straight on a curved road while looking backwards.

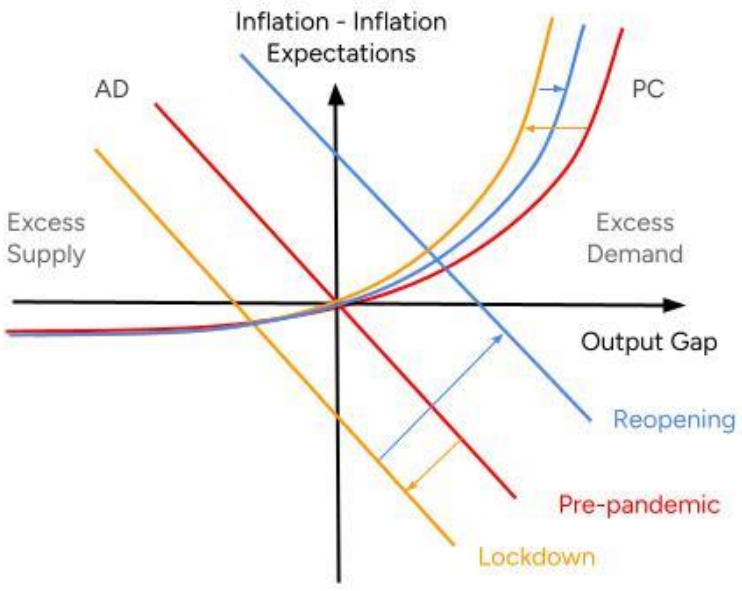
FPAS Mark II adds an important nonlinear core production model, referred to as ENDOCRED (see Kostanyan and others (2022a)), which emphasizes crucial nonlinearities: a convex Phillips Curve, endogenous monetary policy credibility, and a monetary policy loss function. This box illustrates the Phillips curve analysis within this framework in the context of the COVID pandemic:

Pre-pandemic: For the sake of argument, we assume the economy was near equilibrium right before the onset of the pandemic, i.e. Aggregate Demand (AD) = Aggregate Supply (AS). This is consistent with estimates of the output gap around zero and inflation around the target at the time.

Lockdown Stage: AD and AS fall, but AD falls a little more than AS contributing to a downward pressure on prices, initially.

Reopening Stage: Extraordinary fiscal support and easy monetary policy help boost AD. However, precautionary saving during a period of heightened uncertainty and high unemployment keep AD from getting too out of hand. Meanwhile, AS starts shifting back a little bit to pre-pandemic position, but not fully, as manufacturing plants reopen, and the labor market recovers.

The Phillips Curve Before, During and After the Pandemic



Source: Author's depiction

Going Forward: This is a question about how someone believes bottlenecks in the labor market will be resolved. Will the Beveridge curve shift back to the pre-pandemic state or remain structurally higher?

Convexity: The importance of the convexity of the Phillips curve is two-fold: it represents the reality of the short-run trade-off between output and inflation better as exemplified by the recent empirical work done by Gagnon and Sarsenbayev (2022) and it helps policymakers to justify pre-emptive policy changes in the name of avoiding unnecessary welfare costs. Central banks are under tremendous pressure to not overdo policy tightening and this pressure tends to lead policymakers down a "wait-and-see" path. Our framework helps couch the conversation about over-doing policy in a time of heightened inflation and pent-up AD pressure within a risk management approach that attempts to reduce the amount of luck required to achieve our policy objectives.

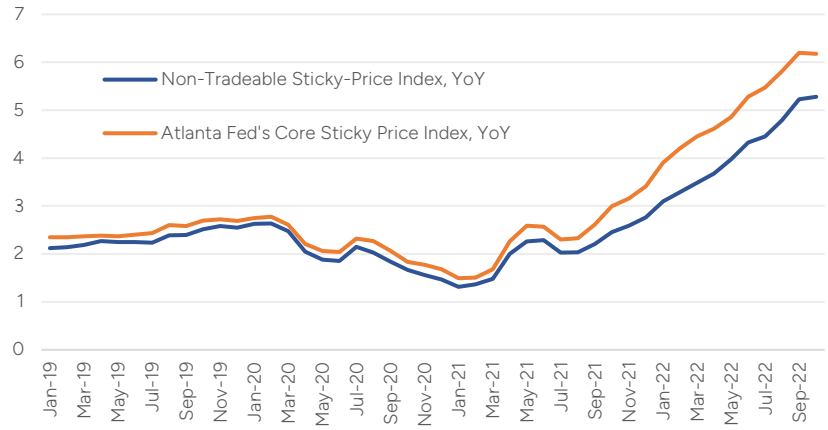
Core Sticky-Price Inflation

We take the concept of sticky price inflation one step further and separate out tradeable vs non-tradeable to control for domestically rooted inflationary pressures. This analysis suggests that while non-tradeable sticky price inflation is rising at an alarming rate, the categories responsible for the rise are highly concentrated (rent and transportation). The entrenchment of inflation does not appear, so far, to be as broad-based as initially expected.

As of now, core inflation momentum remains stubbornly high and other measures of core/sticky price inflation paint an even grimmer picture in terms of recent rate of change, reflecting the underlying forces of outpacing demand and tight labor market.

Figure 4.

Non-Tradeable Sticky-Price Inflation Not Simply a Matter of Direct COVID-related Bottlenecks



Source: FRED, Author's estimates

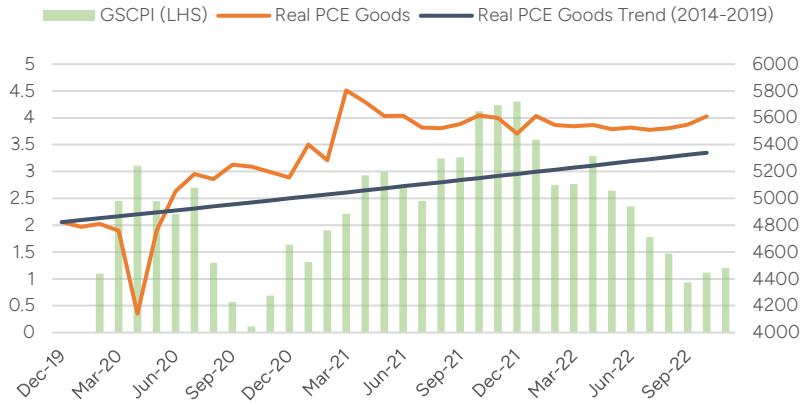
Supply-Chain Bottlenecks

The pandemic boom in the consumption of goods appears to have ended, and that moderating effect has made marked improvements in supply-chain bottlenecks. The New York gauge of global supply-chain pressure index (GSPCI) has subsided substantially from its all-time highs. However, it is important to note that it remains above its pre-pandemic level and has been rising in recent months.

At the same time, real PCE of goods has exhibited a similar dynamic. With the consumption of goods showing signs of stabilizing above its pre-pandemic trend for sustainable output, the big fear now is that the services sector is ripe for its own boom as the goods market remains hot. If this mix materializes, continued demand pressures will create challenges for getting core inflation on a sustainable path in 2023 with the current policy setting.

Figure 5.

Although Hints of the Economy Settling Above Pre-Pandemic Levels As We Enter 2023



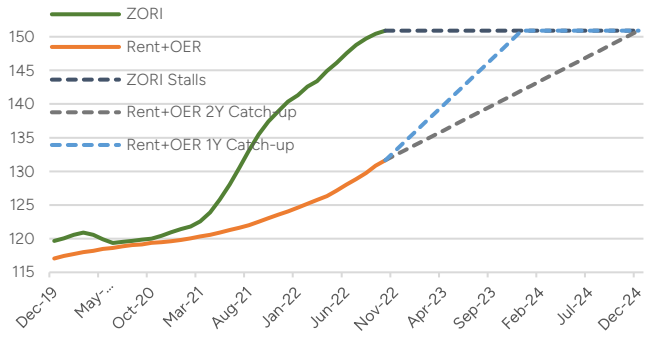
Source: FRED, New York Fed

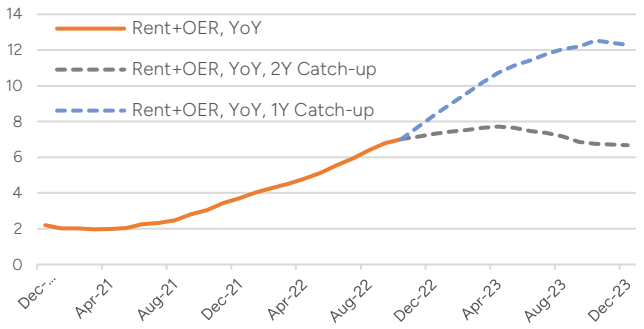
Box 2: Sticky Prices

What is the value of utilizing "sticky prices" versus other varieties of underlying inflation, such as Core PCE, Core CPI, and Trimmed Mean CPI? Measures of core inflation, which simply remove volatile categories, such as the Trimmed Mean measure for core inflation, are not particularly useful in conveying a nuanced understanding of underlying inflation. Other measures, such as Core PCE and Core CPI, simply exclude volatile food and energy prices, without appropriate reasoning that links the items in the basket. To better understand true underlying inflation, the economic concept behind "sticky" prices, or prices that are set infrequently and not as impacted by external factors such as exchange rates, provides a much better gauge for thinking about the early warning signs of inflation becoming entrenched. In this box we explore some of the sub-components included in the Atlanta Fed's sticky price index, namely rent and public transportation.

Rent

Represents a large share of the total basket (~30%) and has been highly scrutinized in the public sphere on its lagged features vs alternative private rent indices (Zillow, Apartment List, CoreLogic). A lot of analysis has been done that tries to rectify the private rent data and the rent price indices. Namely we look at the work done by Bolhuis, Cramer, and Summers[4] on the matter that show the important lags between the two series. One conclusion is that if we believe that the two series should converge over a two-year period, then continued large increases in the shelter component of CPI in 2023 are to be expected. Unless the private data for rent prices fall dramatically, only then would we expect some relief in rent inflation. While there is yet no conclusive data on this, national multifamily rent data from some private sources (RealQuest, CoStar, etc.) indicates that both asking and effective rents have been declining for the past three to four months, though to what extent this represents seasonal versus actual declines remains to be seen and deserves continued close attention.

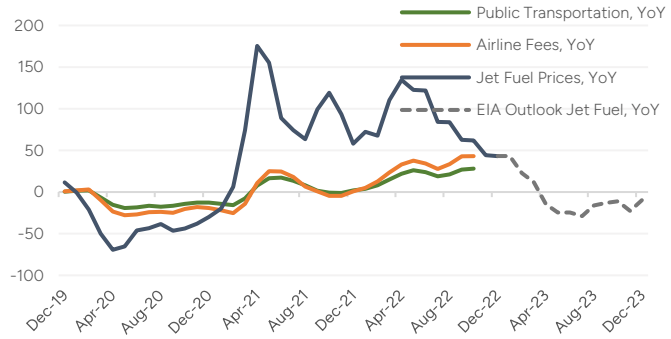


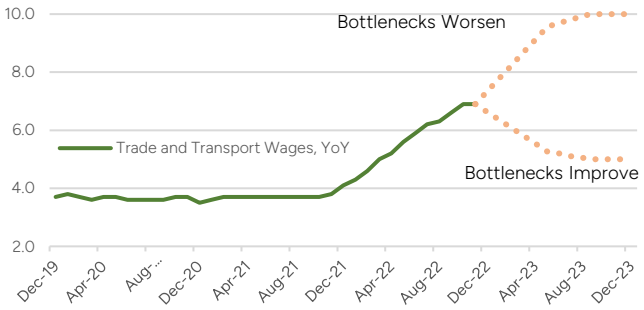


Source: FRED, Zillow, March 2015 = 100, Authors Estimates

Public Transportation

Represents a small share of the total basket (~1%) but has been a large contributor to the recent rise in the index, largely driven by airline fees. While certainly not a sticky price per se, exploring airline fees further indicates that they partly reflect jet fuel prices, since these represent 10-12% of airlines operating costs as well as labor costs (~35%). So, where is public transportation likely headed in 2023? Based on the EIA's latest short-term energy outlook, jet fuel prices are expected to moderate, which could have a deflationary impact next year. On the other hand, labor bottlenecks may emerge, especially in the context of pilot retention/hiring difficulties, which could create upward pressure on wages.





Source: FRED, Author Estimates

[4] https://www.nber.org/system/files/working_papers/w29795/w29795.pdf

Financial conditions

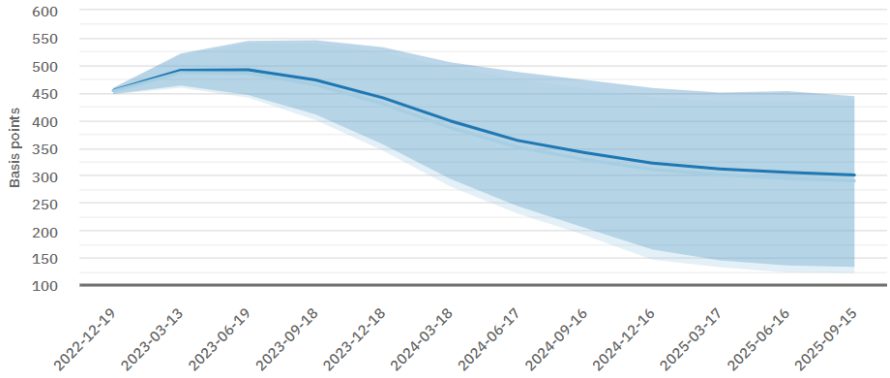
The Jackson Hole Speech by Chairman Powell has more-or-less solidified a relatively "tight" monetary policy stance to be priced in financial markets. As of December 7, the future path of the Fed Funds rate is expected to approach 5% in early 2023, unchanged since October. However, the 10-year bond rate has since declined from its highs of 4%, down about 50 basis points, pricing in expectations of larger rate cuts on the backend of the futures curve.

However, it remains up for debate in terms of what can be considered tight, when core inflation is elevated and subject to significant uncertainty. Monetary policy should be situated so that a fundamental re-evaluation of the "neutral" rate or the equilibrium real rate does not cause unnecessary pain. Underestimating upward shifts in the equilibrium real rate, or neutral short-term rate, could be another source of uncertainty facing the Fed.

Systematically falling behind such upward shifts could be another source of stagflationary risk and might require a much larger adjustment in interest rates at some future date (Case X-type Scenario).

Figure 6.

Expected Future Path of the 3-Month Average Fed Funds Rate Remains Intact Reaching About a 5% Peak



Source: Atlanta Fed

Figure 7.

Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity Has Fallen Since the Last Update. What is the Bond Market Thinking? Recession?

Source: FRED

The Labor Market & Wages

Consumers whose real incomes have declined substantially because prices have risen more than wages clearly have the incentive to demand higher wages to embody higher expectations of underlying inflation. The empirical evidence suggests that prices are a mark-up over wages, so higher wages will likely result in higher prices. Whether or not this turns into an ongoing wage-price spiral will hinge to a large extent on whether the Fed continues to fall behind the curve.

An alternative view is that the Beveridge curve shifts right back to where it was before Covid, workers stop demanding higher inflation premium in their wage increases, and the economy experiences a "soft landing." Such a view would be in line with what the Fed had been implicitly communicating in its September dot plot.

We see these factors as the primary motivation Case A-type scenarios, where monetary policy would need to react more aggressively because given the further tightness of labor market core inflation remains elevated without a further increase in the policy rate.

The labor market will likely be one of the deciding factors that will drive the medium-term dynamics of the economy.

Currently, there are many reasons to suggest that the labor market is exerting upward pressure on core prices:

- Unemployment rate below most estimates for the NAIRU
- Strong wage gains, particularly for job switchers
- Beveridge curve shifted outward
- Labor market bottlenecks from more intense labor disputes

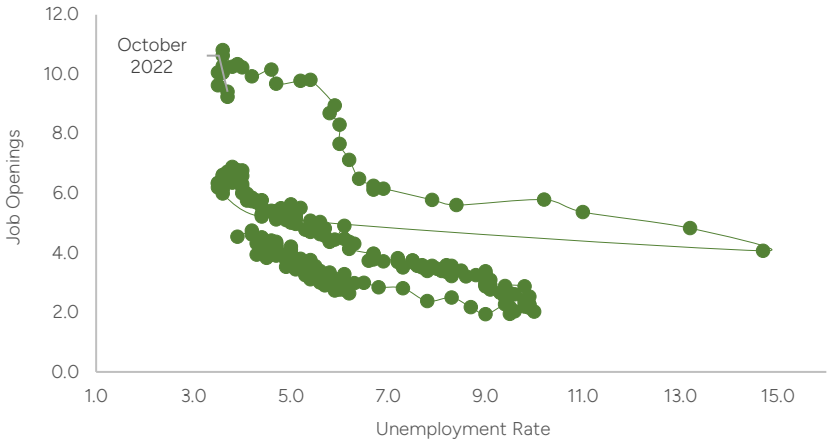
Figure 8.

Wages Between Job Switchers vs Job Stayers Lends Credence to a Hot Labor Market and Upward Pressure on Wages

Source: Atlanta Fed Wage Tracker

Figure 9.

Optimism About the Beveridge Curve Shifting Back Have Yet to Materialize



Source: FRED

External & Domestic Demand

Weakness in the global economy could be an important source of deteriorating conditions that can weigh on domestic activity.

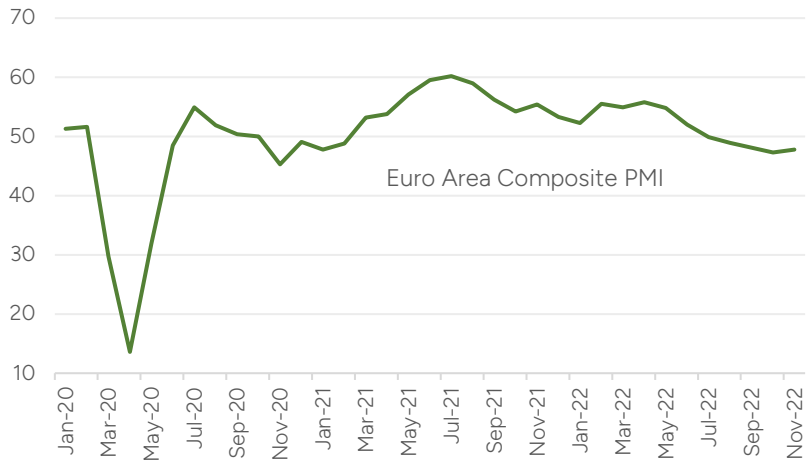
The European economies are going through a tumultuous period, given the war in Ukraine that has halted gas supplies from Russia, sharply driving up energy prices and disrupting industrial production. Many observers expect that the EU is on the precipice of a recession although this has not really shown up in hard data in any material way:
2022Q3 GDP Growth stands at 0.3% QoQ, and September 2022 Industrial Production is up 4.9% YoY.

Slowing economic growth could be induced from abroad by the slowdown in China. Continued efforts to contain the Coronavirus through an aggressive zero-Covid policy inhibits economic activity, although significant public backlash against draconian measures suggests there might be tangible reversals in these policies. Other secular forces, including a slowdown in the housing market, in combination with a perception that the authorities will not try to sustain growth with expansionary fiscal policy, could also be at play.

On the domestic front, the housing sector and equity markets have experienced significant corrections in the face of monetary policy tightening expectations. Year-on-year existing home sales in October 2022 are down 28%, according to NAR data.

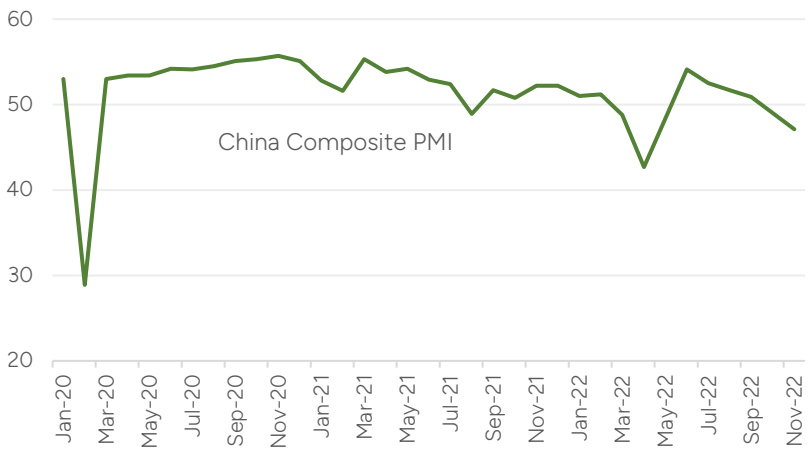
We see these factors as the primary motivation undergirding Case B-type scenarios, where monetary policy would need to change course to incorporate the tightening in financial markets (credit standards and risky spreads) that would obviously occur in a downside scenario. The Fed would potentially need to revert to being lender of last resort and ease monetary conditions to keep financial markets functioning properly.

Figure 10.
Euro Area Edging Closer to Recession? How Big?



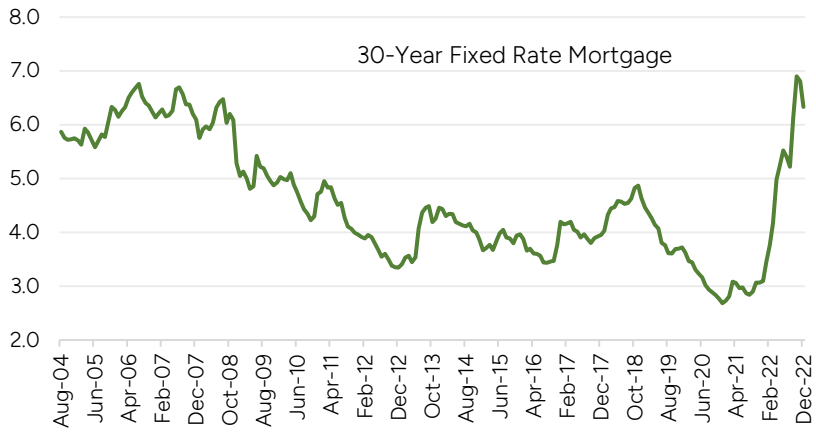
Source: S&P Global

Figure 11.
China Entering a Growth Slowdown but the End of the Zero-COVID Policy Looms



Source: S&P Global

Figure 12.
Tighter Financial Conditions Can Be Well Observed in the Mortgage Market

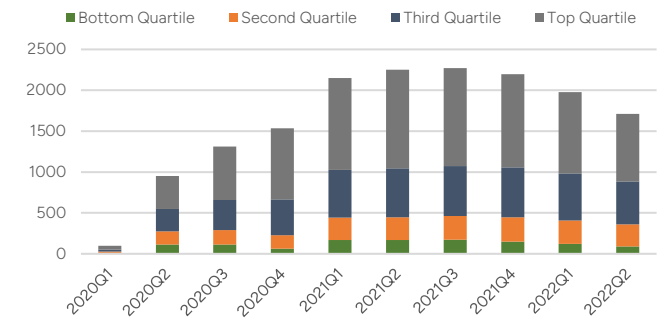


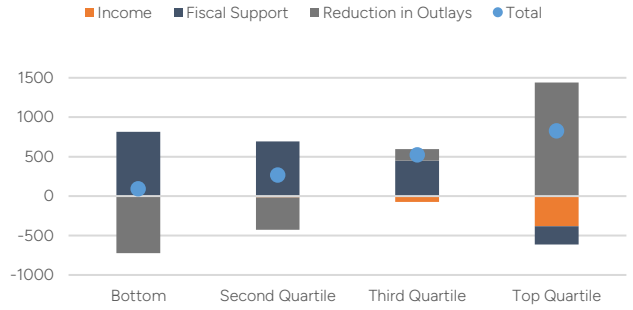
Source: FRED

Box 3: Excess Savings

As long as households remain relatively cash-rich compared to their pre-pandemic levels, then it is entirely possible that they could maintain a level of spending that will keep the economy running strong, while already in a state of excess demand. This, in turn, could feed back into maintaining a stronger labor market for longer and exacerbate the bottlenecks emerging in that sector, thus requiring a stronger reaction by the Fed (Case A-type Scenario). The alternative being that disinflation/deflation in large swaths of the economy are in full effect, the Beveridge curve shifts back to its pre-pandemic state, thus not requiring much of an increase in unemployment to reach a sustainable path for inflation (Case B-type Scenario).

A recent note by the Fed points to the magnitude of excess savings at around $1.7 trillion in 2022Q2. Given the low saving rate in the second half of the year, we can probably expect a further drawdown in household excess savings. However, it is highly likely that we will enter 2023 with excess savings remaining well above their pre-pandemic level and the concerning issue is how effective of monetary tightening will be under such conditions and when can we expect a material impact on consumption.

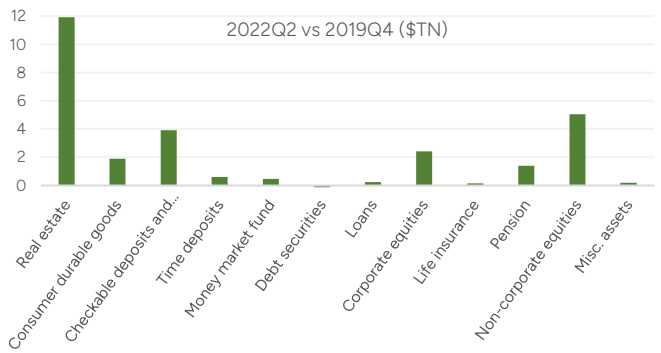


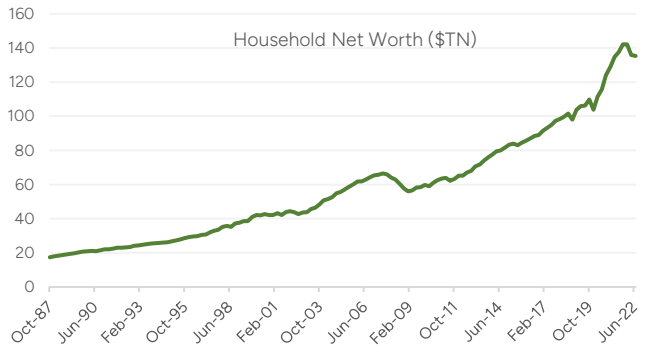


Source: Aladangady, Cho, Feiveson, and Pinto

The Fed note also points to alternative datasets such as the Distributional Financial Accounts that also show a sizeable rise in excess savings across the different income distributions, although the data may have methodological issues that make it less reliable than the flow analysis provided.

Besides highly liquid assets, as of 2022Q3, there has also been a substantial increase in household wealth accumulated during the pandemic. Despite the correction in both equity and real estate markets up to this point, household wealth remains uncomfortably high, given how one would expect wealth to evolve during a global pandemic where the economy was only temporarily shut down but still incurred a permanent loss of output.





Source: Fed

The accumulation of real wealth during the pandemic is yet another force that will make the Fed's job of slowing the economy down to control inflation more difficult. In a forthcoming paper we generate results for the consumption function using real wealth as an input for explaining household expenditures and elucidate the concept of pent-up demand during the pandemic and what it may mean for consumption as we exit the COVID affected economy (see Tchanturia and others (2023)).

CASE SCENARIOS

Case A: The Case for Higher Interest Rates

Consumption remains strong through the end of 2022 as wage inflation and excess savings remain elevated. A modest deceleration in output begins in 2023Q1, as the effects of external shocks begin to pass through, and growth moderates a bit.

With no immediate or material pullback in consumption, and without discernible slack in the labor market, core inflation stays elevated in the short run and declines only gradually as the economy weakens and unemployment rises sufficiently to contain these inflationary forces.

To bring core inflation down to the 2% target in a reasonable time horizon under these conditions, the Fed funds rate needs to rise further—by about 125 basis points more than what is currently priced in financial markets. Real rates would be raised sufficiently to contain demand pressures and ensure underlying inflation can be brought down, before returning to their neutral position.

Case B: The Case for Lower Interest Rates

Tightening in monetary policy up to this point, coupled with lower external demand from a global slowdown in economic activity, begins to feed into lower growth by the end of 2022, resulting in a modest recession in 2023H1.

Tempering consumption, along with broad disinflationary forces from imported prices, bring underlying inflation within striking distance of the target by the end of 2023.

This is essentially the "soft-landing" scenario that has permeated many narratives in financial markets, including what the Fed has been implying in its communications. Inflation remains above the 2% target by the end of 2023, but low enough to where it is clearly on a path to 2%. The Fed can soften its approach to avoid a more severe recession, thus effectively managing the inflation-output tradeoff.

Case X: Tail Risk for higher Interest Rates

Consumption does not materially slow for reasons stated in Case A and in fact continues to be robust heading into 2023, spurred by pent-up demand and past increases in financial wealth (equity and housing). The labor market does not materially soften well in response.

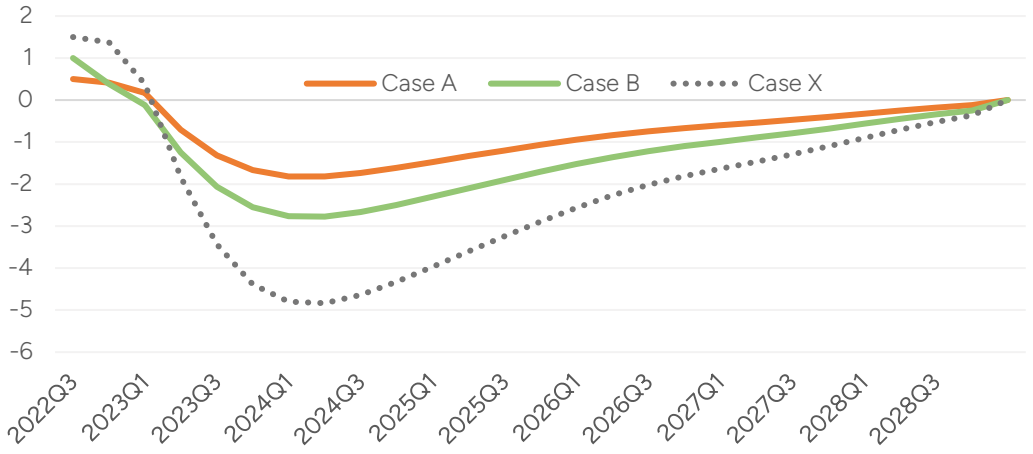
With still robust consumption and a strong labor market, and with the Fed continuously updating its view about the tightness of the demand and labor conditions it appears significantly behind the curve, thus pushing up core inflation, markedly diminishing central bank credibility while the medium-term and longer-term inflation expectations ratchet upwards. Higher inflation raises term premiums and could result in another 20% correction in equity prices and much larger fall in home prices (further 10%) than what is currently priced into financial markets.

Requiring a re-evaluation of policy sometime in 2023Q1/Q2, where the neutral rate is considered to be much higher than previously judged.

Realizing that monetary policy is behind the curve, the interest rate path consistent to reduce demand sufficiently to achieve the 2% target is revised substantially upwards.

Figure 13.

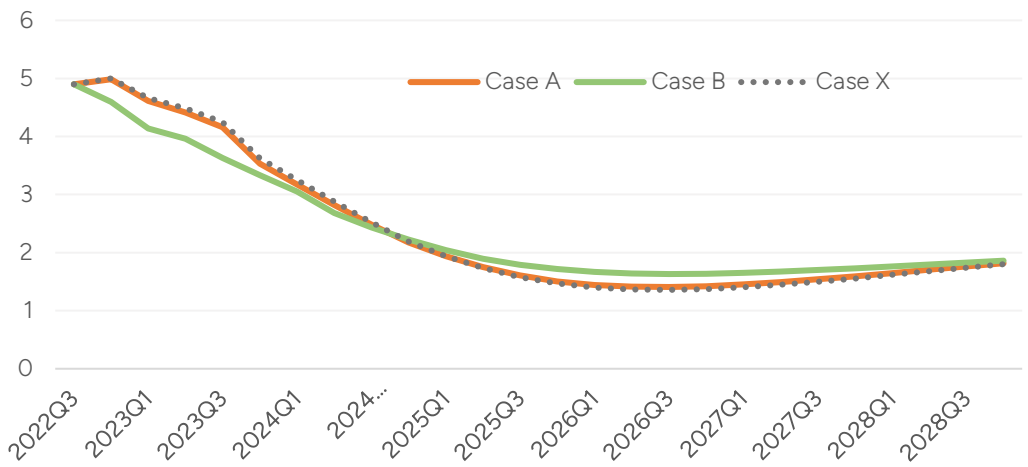
Output Gap Reflects the Need for Below Trend Growth Regardless of Why to Achieve the Policy Objective



Source: GFS ENDOCRED United States

Figure 14.

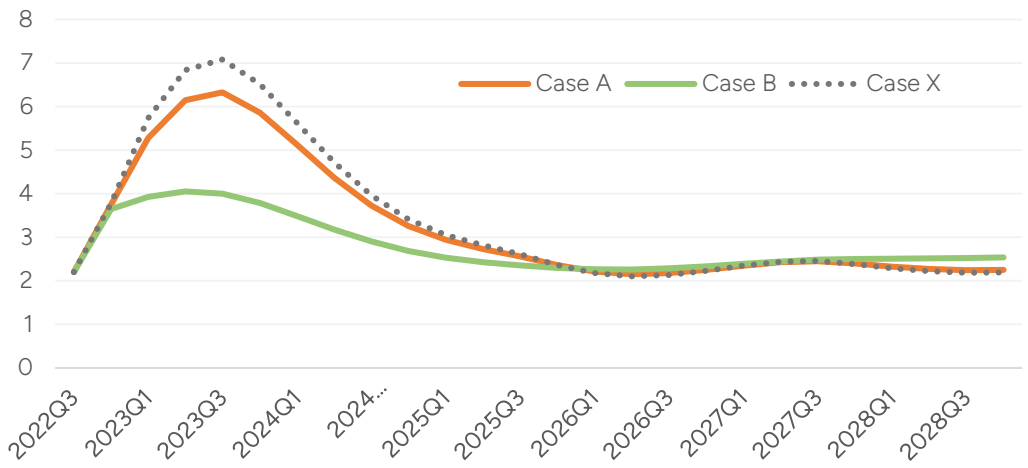
Core Inflation Either Remains Elevated from Persistent Labor Market Bottlenecks or Comes Down as Fast as COVID-related Bottlenecks Appeared and Now Disappear



Source: GFS ENDOCRED United States

Figure 15.

Our Case X Scenario Reflects Avoiding the Dark Corner of Hyperinflation Given the Current Position of the Economy and the Inflation Situation Underpinning the Bias in the Policy Setting



Source: GFS ENDOCRED United States

HOW TO ADJUST POLICY SUFFICIENTLY TO ACHIEVE THE FED'S OBJECTIVES?

Considering the totality of the circumstances across the different scenarios presented in this report, our "mock open-market committee" (MOMC) believes it is more prudent to have policy on a more hawkish footing. Given present economic conditions (with demand continuing to outstrip supply) as well as the underlying forces (tight labor market, wage inflation, etc.), the risks to policy being too loose outweigh the risks of being overly tight. This is because the risks of not acting sufficiently aggressively today could cause a catastrophic entrenchment of inflation and inflation expectations, significantly increasing the costs of having to react much more aggressively at a future date. In any case, regardless of whether interest rates need to rise or fall to bring inflation back to the target, one thing is clear: as stated by Chairman Powell during his Jackson Hole speech, below-trend growth will be required to achieve the dual mandate of full employment and inflation on its 2% target.

> The students of the Global Forecasting School recommend the Fed frontload the necessary increases in the policy rate by increasing the policy rate by 75 basis points to 4.75%.

Such an increase would guard against the risk that inflation expectations will become entrenched and require a much higher terminal rate in the future. It also helps guard against the Fed underestimating the neutral interest rate, which is another source of significant uncertainty in the Fed's dot plot. Finally, the market has already priced-in a terminal Fed Funds rate of 5% in early 2023, getting there faster should not really disrupt financial markets. The move does not necessarily a shift up the expectations of the Fed Funds rate as in the Case A/X scenarios but simply a faster progression to the terminal rate so that the central bank can better evaluate the impact it is having on the economy, given long and variable lags in the transmission.

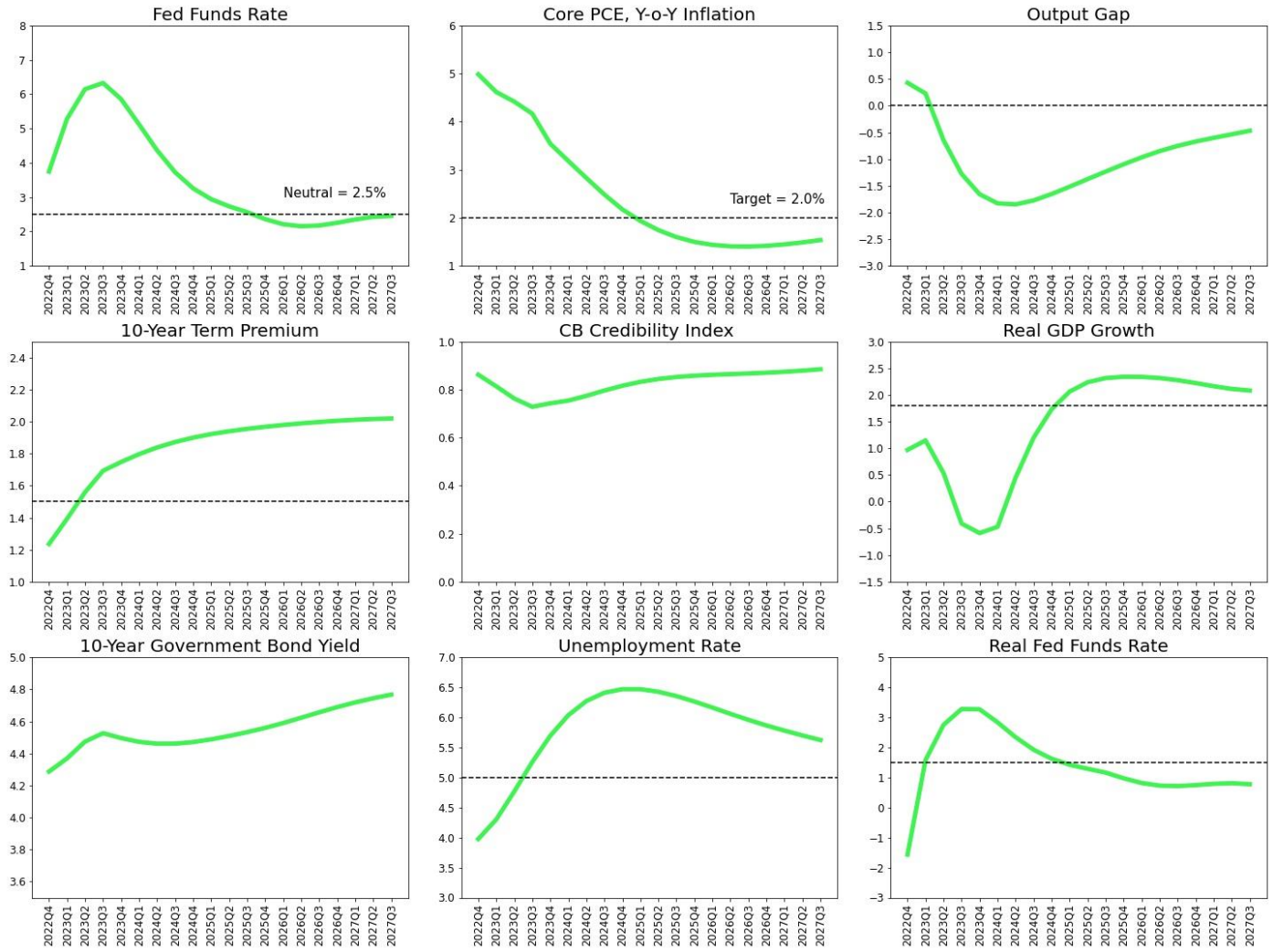
If there is no material decline in consumption or core inflation heading into the January meeting, a more aggressive policy stance would likely be necessary under such conditions. We reiterate our commitment to achieving the objectives of the central bank of full employment and inflation on target in the welfare of its constituents.

APPENDIX

ENDOCRED US RESULTS

Figure 22.

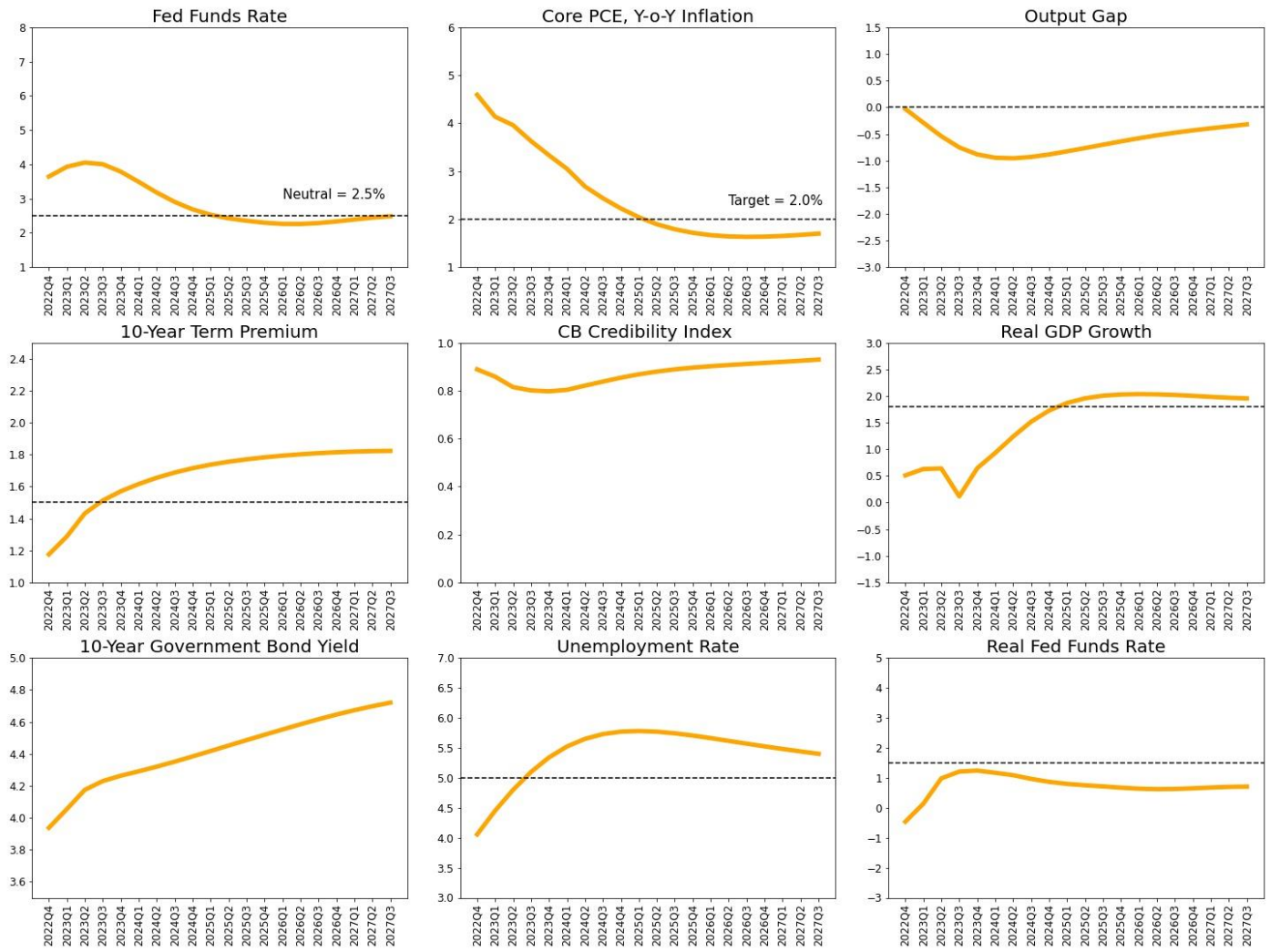
Case A



Source: GFS ENDOCRED United States

Figure 23.

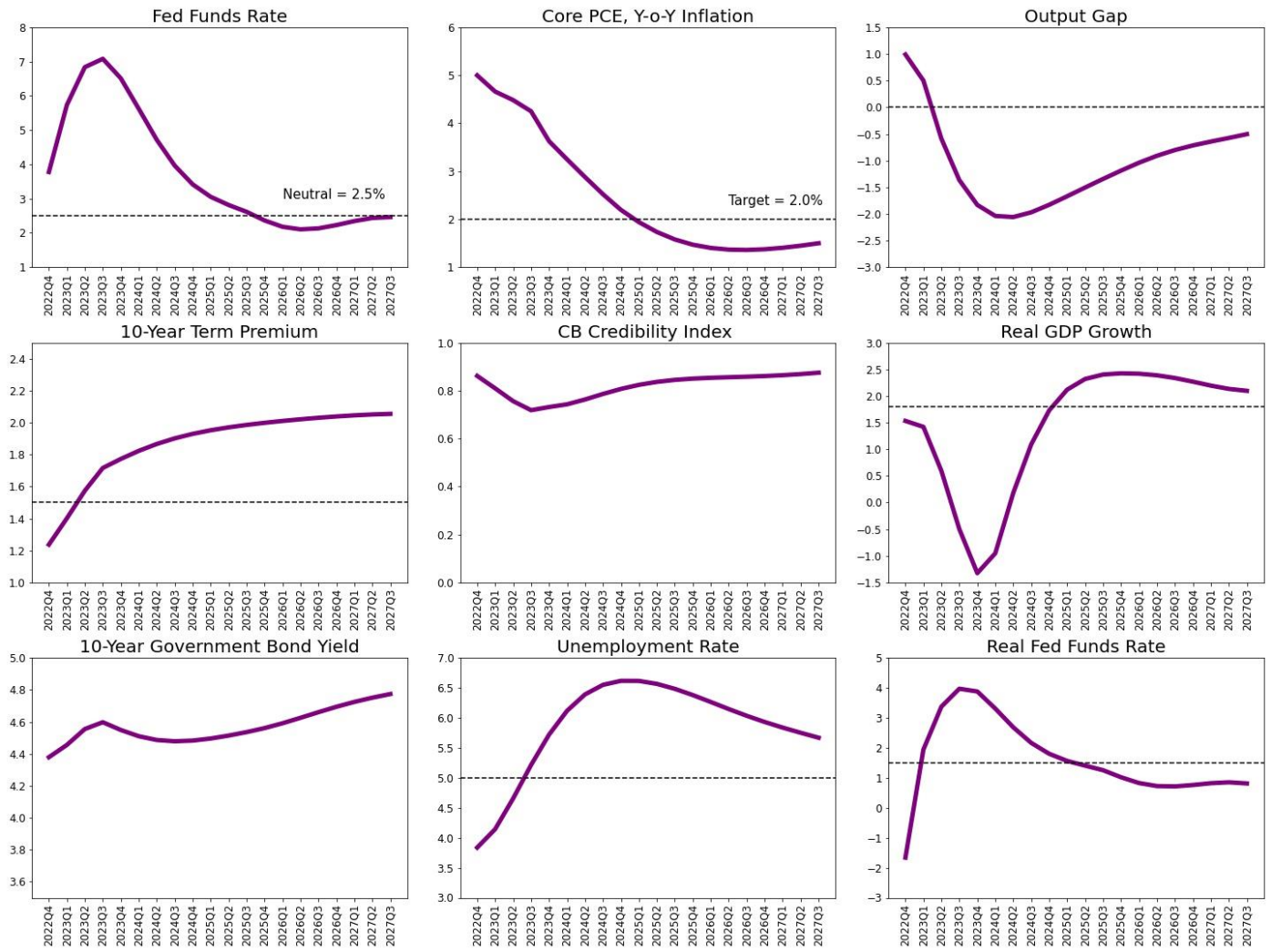
Case B



Source: GFS ENDOCRED United States

Figure 24.

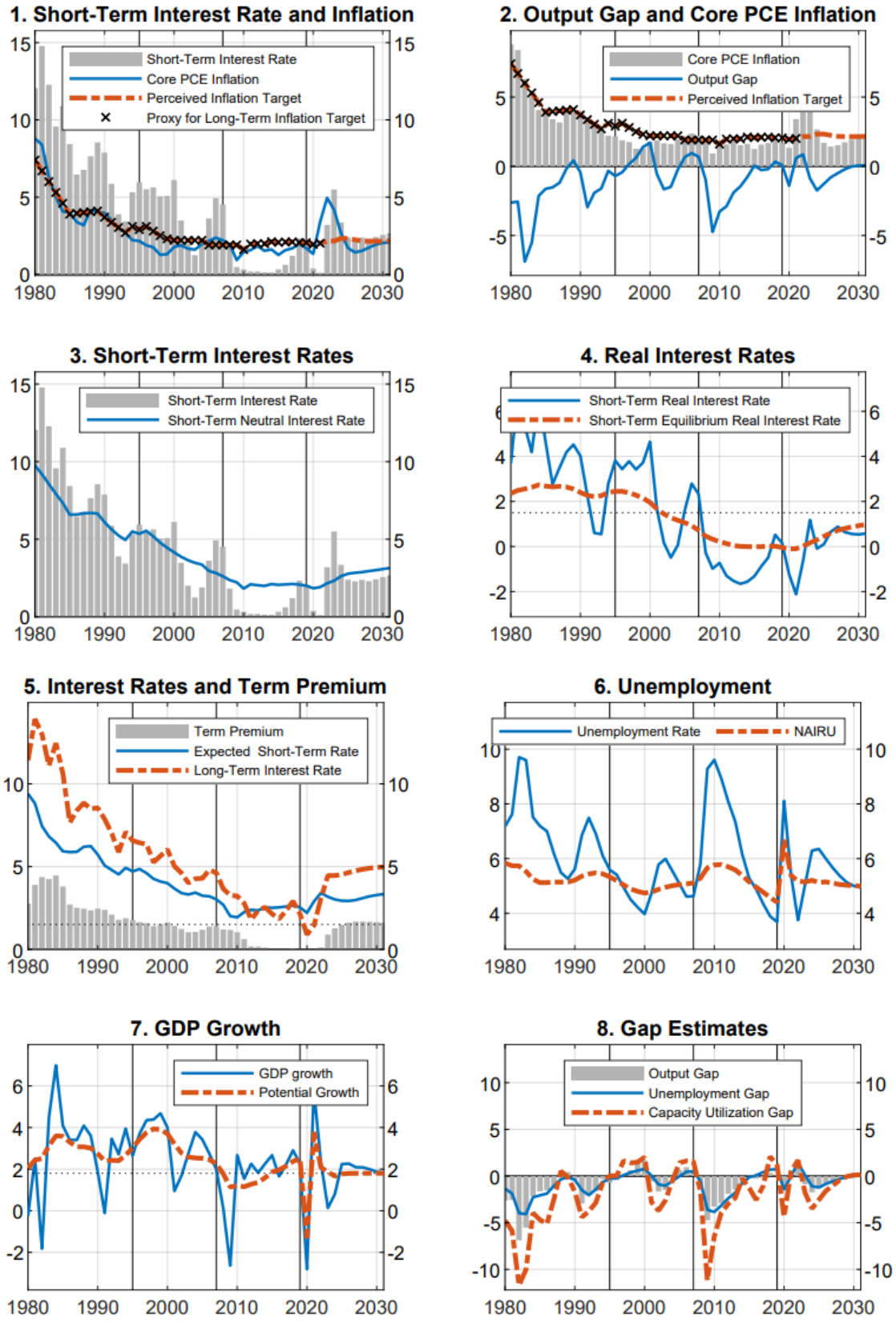
Case X



Source: GFS ENDOCRED United States

Figure 25.

MPMOD US Annual Historical Interpretation Report



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