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Not the Fed Tealbook October 2022*

October 31, 2022

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NOT THE FED TEALBOOK

October 2022

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

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Not the Fed Tealbook

Global Forecasting School
October 2022

EXECUTIVE SUMMARY

We first must recognize that stagflationary shocks are some of the most difficult types of shocks for central banks to manage, since the trade-offs tend to be at their steepest. Other major central banks, including the Bank of Canada and the ECB, have recently hinted at slowing, or slowed outright, the pace of its hiking cycle. That said, we believe the best policy for the Fed in the near-term is one which is still geared towards fighting persistent inflationary pressures in the economy and bringing inflation back to target over a reasonable horizon. The Fed should continue to position policy that attempts to engineer a sufficient slowdown in economic activity that will be consistent with getting core inflation on a sustainable path back to the target, but in a way that is not overly punitive.

However, we are also cognizant of the risk of relying too much on the playbook of the 1970/80s, which might be different under current conditions. Namely, increased debt levels that may make the economy more sensitive to interest rate increases is a key concern. Furthermore, there was a much longer history of persistently high inflation that preceded the restrictive policy in the 1980's policy that likely contributed to inflation becoming more easily entrenched than today. We also must recognize that despite the acute phase of Covid likely being in the rear-view mirror, we are still dealing with its aftershocks (such as volatile demand for goods and unwanted inventory buildup) and it is reasonable to expect such volatility does not necessarily require a response from an institution such as the central bank which is focused on medium-term macroeconomic stability. Thus, we are prepared at any moment to shift policy or intervene to keep financial markets functioning properly (i.e. slow the pace of interest rate hikes or reverse course if need be) at any credible sign of stress.

However, the policy of least regrets reflects our belief that the risks of not acting aggressively enough to temper inflation would lead to a loss in policy credibility that would necessitate tighter financial conditions than would otherwise be necessary to cool the economy and bring inflation to target. However, given the backdrop of lower global demand (Russia-Ukraine conflict, EU, China), there is a need to act judiciously, though not overly aggressively. We make the important caveat that we are prepared to act sufficiently aggressively be if the situation merits it, contingent on an economy that does not slow and there is no material decline in core inflation momentum relatively soon.

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." The topics we identified for this note include:

   - The labor market remains strong and wage inflation remains elevated as a results. There factors persists into next year putting upward pressure on core inflation. (Case A)
   - Europe and China are undergoing an economic slowdown. If these factors are worse than expected than it could present a significant enough drag on the domestic economy that to help keep core inflationary pressures contained through lower external demand. (Case B)
   - The Fed is behind the curve and has not made much material progress in bringing core inflation down (Case X)

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.

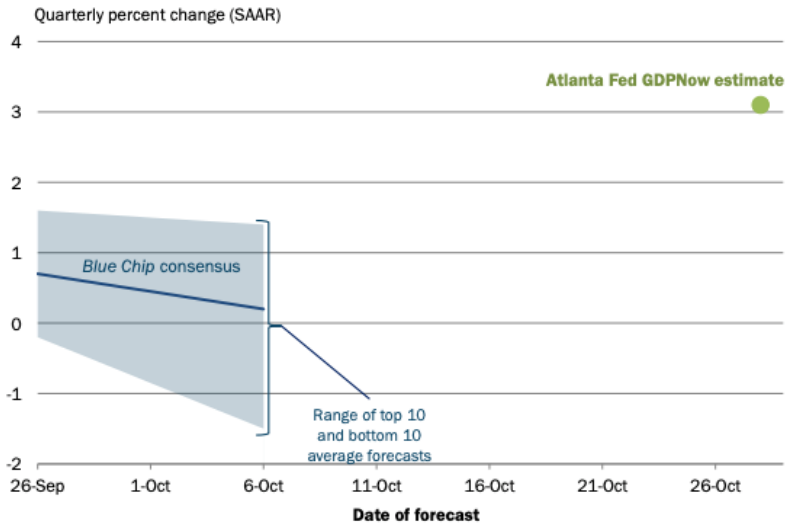
WHERE IS THE ECONOMY NOW?

Gross Domestic Product

Latest BEA data suggests GDP growth accelerating to 2.6% QoQ annualized in 2022Q3 (as per GDPNow). Main drivers:

- Exports (+14.4), equipment (10.8), and intellectual property production (6.9) strong
- Steep contractions in residential investment (-26.4) and nonresidential structures (-15.3)
- 2022Q4 Atlanta Fed GDPNow estimate of 3.1% much more optimistic than Blue Chip, which has zero growth in Q4, with equal probability of contraction. Important difference between forecasts is outlook for consumption in Q4 (Atlanta Fed at 3.7%) versus (0.7% in Blue Chip).

Figure 1.
After 2.6% QoQ Annualized Growth in 2022Q3, Q4 Forecasts for Atlanta Fed (3.1%) and Blue Chip (0.2%) Very Divergent

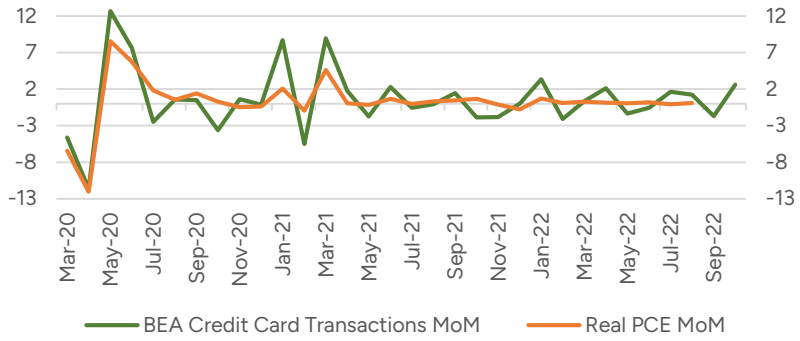


Consumption

As of October, no obvious pullback in consumption. BEA credit card data suggests there is no material decline in consumer demand commensurate with closing the output gap in a meaningful way, despite Fed's recent effort to cool economic activity.

Furthermore, there is a concern about pent-up demand in the form of excess savings that have been accumulated during the pandemic that could be an important factor that keeps consumption strong in the near-term.

Figure 2.
Consumption Signals from Alternative Data Don't Show Any Sign of Cooling in 2022Q4



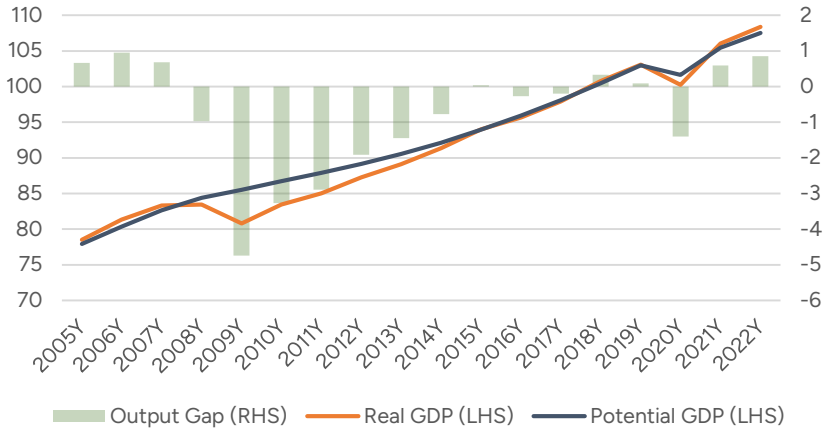
Source: BEA, FRED

Initial position of the economy

Given the latest GDPNow estimates for the third quarter and the latest signals from consumption, our evaluation of the economy in the near-term is pretty "hot" (materially positive output gap i.e. demand is outstripping supply leading to inflationary pressure).

The first signs of slowing from changes in the monetary policy stance from earlier in the year can be expected to materialize in early 2023, when we would also hope to start seeing the effects of a contraction in demand.

Figure 3.
Output Gap Decidedly "Hot" in 2022



Source: Case A Annual Scenario based on GFS MPMOD United States

Spotlight: The Output Gap

The output gap in the GFS ENDOCRED United States Model is written in terms of deviations from equilibrium values. The output gap is the deviation, in percentage points, of actual output from a measure of the potential level of GDP (a positive number indicates that output is above potential).

Why do we need to estimate "Potential GDP"? Potential GDP conceptually represents the maximum level of output that can be produced without there being a tendency to inflation to rise or fall over time.[1] We refer to this as the aggregate supply of goods and services for the economy. For our purposes, estimates of Potential GDP are important, because it is critical for us to think about how to manage the short-run output-inflation or inflation-employment tradeoff. In practice, that is the purpose why the Fed spends so many resources monitoring the labor market very closely, including the possibility that some marginal workers might have withdrawn from the labor force because of low employment prospects.

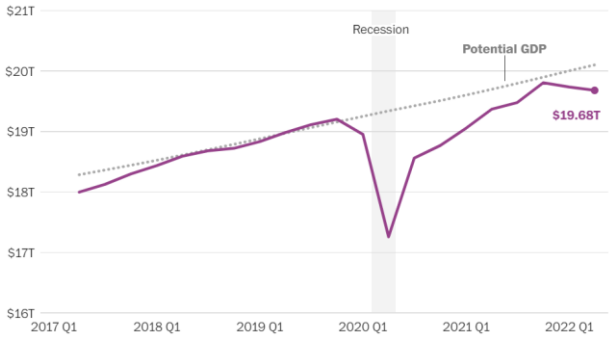
If we want to take steps to address the short-run output-inflation or employment-inflation trade-off, we need to:

(a) have a stance on where aggregate supply is (this was an especially important issue during the COVID pandemic); and

(b) a framework available to us (formal or informal) to estimate or adjust it when appropriate in support of our objective of full employment, if that is indeed the objective of the central bank in question.

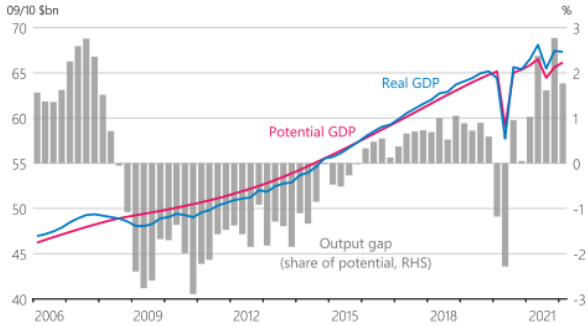
For example, the Fed is a recent adopter of a dual mandate, does not provide timely updates of Potential GDP with its regular policy communication (estimates have historically been published with a five-year lag, which is not consistent with the principle of transparent communications). While the markets responded positively to the Fed's seriousness in fighting inflation—as highlighted in Chairman Powell's simple message at Jackson Hole that, "*Reducing inflation is likely to require a sustained period of below-trend growth*"—this seriousness would be meaningfully bolstered if the Fed provided estimates for Potential GDP. Currently, the most commonly referenced estimates of potential output are provided by the Congressional Budget Office (CBO). However, even though the Fed takes a stance on potential output (part a), it appears to fail on (part b): a methodology or conceptual framework for adjusting and publishing it in a timely fashion. Recent CBO estimates can be seen below:

Figure 4. CBO Estimates of Potential GDP



Source: BEA, CBO via the Washington Post

Figure 5. RBNZ Estimates of Potential GDP



Source: Stats NZ, RBNZ estimates.

Of course, how frequently these adjustments to potential output should be made is subject to discussion, but we must recognize that institutions often have difficulty adjusting these variables in a timely fashion to support policy objectives. This could be because of a perception that these types of variables should not move very much, and policymakers fall into an "inertia trap" and leave them unchanged, despite valid economic reasoning to adjust them—perhaps by a significant margin. At the same time, we recognize that the CBO is not necessarily against adjusting potential (it made major adjustments to potential during the Global Financial Crisis), but questions of *how frequently* and *why* they make adjustments might give rise to important concerns and political issues. In the case of well-seasoned flexible-inflation targeting central banks like the Reserve Bank of New Zealand (RBNZ), the output gap is used to transparently communicate how it plans to efficiently manage the short-run output-inflation tradeoff, and consequently they must provide their best shot in the short run at developing and publishing estimates of potential output, and of course, revise them in the future in response to evidence-based research.[2]

A good illustration of this is the early stages of the Covid pandemic, when the CBO did not make adjustments to potential output despite regular shutdowns in production and significant supply-chain disruptions. We contrast this with the approach of the RBNZ, which was quick to interpret the Covid pandemic as a large shock to both supply and demand and adjusted this variable accordingly to reflect the macroeconomic realities to the best of their abilities.

[1] See Okun (1962).

[2] For a discussion of the critical role of transparency in central banking, see Kostanyan and others (2022).

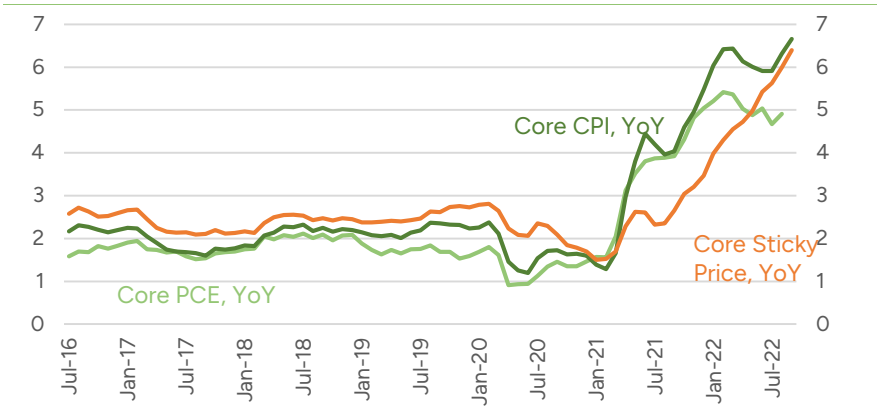
Core PCE inflation

Experienced a brief respite in July, but this was short-lived, as Core PCE inflation edged up toward other core or sticky measures of inflation in August and expected to remain elevated in September and October (as per the Cleveland Fed).

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 pace, reflecting the underlying forces of outpacing demand and tight labor market

Figure 6.

Different Measures of Core/Sticky Prices Paint a Grimmer Picture than the Preferred Core PCE Measure



Source: FRED

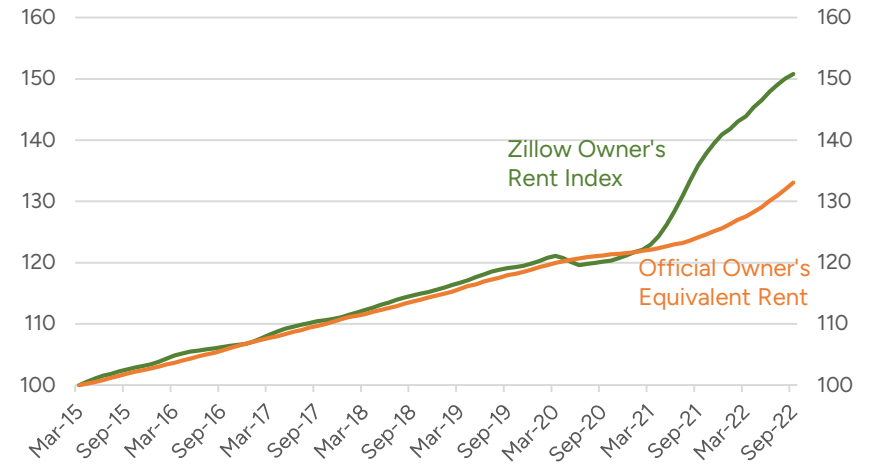
Housing inflation feeds into Core PCE

We can expect some inertia (for methodological reasons) from housing to continue to feed into Core PCE, of which housing is a significant component (nearly 40%).

Furthermore, the alternative Zillow data is still registering 6% MoM annualized inflation as of September. There needs to be observable declines in the Zillow data for it to make sense to think the Zillow would fall back to the official data. Otherwise, we can expect that the official housing data would continue to play catch-up since the official data is calculated with a substantial lag in it.

Figure 7.

Inertia Between the Official Owner's Equivalent Rent (OER) and the Alternative Zillow Owner's Rent Index (ZORI)



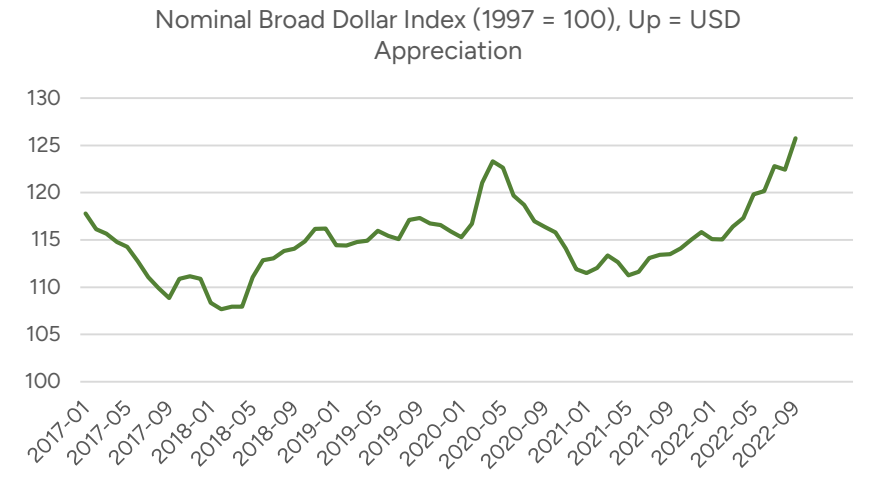
Source: FRED, Zillow, March 2015 = 100

Some disinflationary factors imported from the external environment

However, there are disinflationary forces at work. The Fed has been relatively more aggressive than their counterparts in other advanced countries, and the interest rate differential has contributed to a stronger dollar and thus lower imported prices. External factors, including a slowdown in global demand as well as the interplay between higher interest rates in the US and the rest of the world, will play an important role in the tail risk scenario, where US monetary policy has gone too far, too quickly.

Figure 8.

Policy Working via the Exchange Rate



Source: Federal Reserve

Financial conditions tightened further

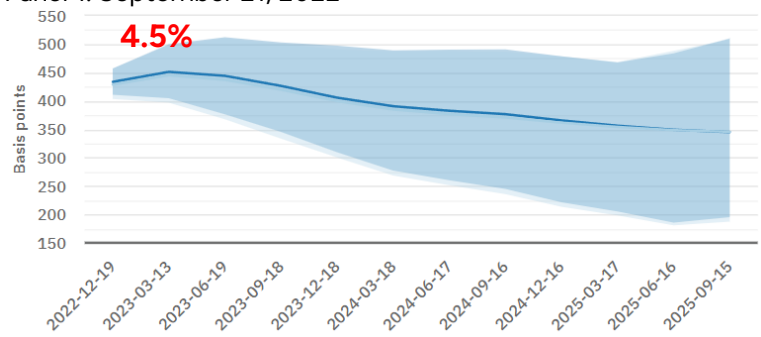
The Jackson Hole Speech by Chairman Powell has more-or-less solidified a relatively "tight" monetary policy stance to be priced in financial markets. As of October 20, the expected future path of the Fed Funds rate is approaching 5% in early 2023, up 50 basis points from estimates one month prior. The 10-year bond rate is at highs of 4%, up about 100 basis points from late August, pricing in expectations of a more aggressive Fed.

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 persistently could be another source of stagflationary risk, and might require a much larger adjustment in interest rates at some future date.

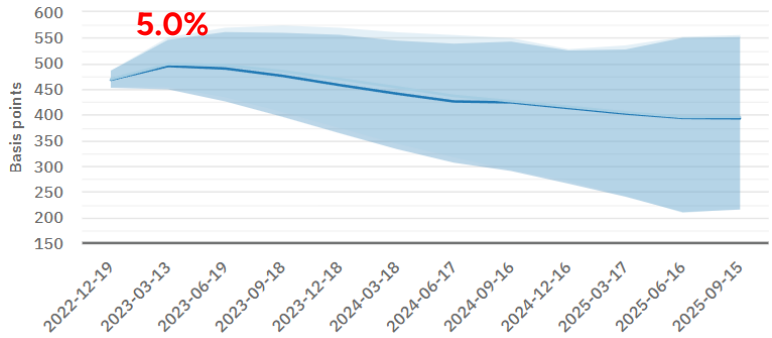
Figure 9.

Expected Future Path of the 3-Month Average Fed Funds Rate

Panel 1. September 21, 2022



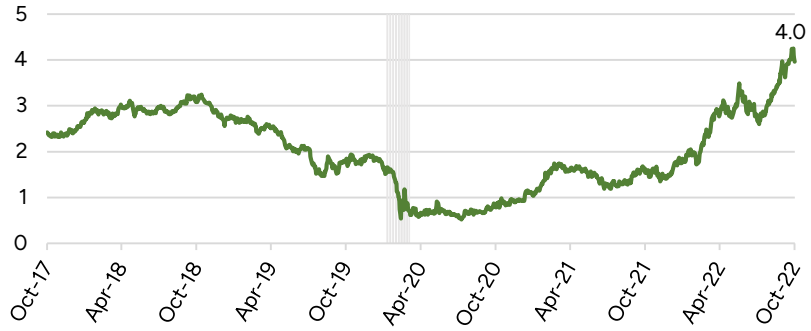
Panel 2. October 20, 2022



Source: Atlanta Fed

Figure 10.

Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity, Quoted on an Investment Basis



Source: FRED

Summary: Where is the Economy Now?

To summarize, in consideration of current economic developments and heading into 2022Q4:

- The economy continues to be in an overheated position, with no clear signal that consumption is cooling sufficiently. Obviously, given the bounce-back in GDP in Q3, this is consistent with developments in the labor market, which haven't shown any meaningful signs of softening. The near-term Q4 projections are divergent, reflecting to a large extent different outlooks for consumption in Q4. This considerable uncertainty about consumption is a key factor: does the US consumer become pessimistic, or does spending continue on the heels of past increases in financial wealth and pent-up demand?
- Year-on-year Core PCE inflation remains elevated, between 5-6%. While the extent of true underlying inflation remains uncertain, other measures of core inflation, including sticky-price inflation, paint a similar picture about high underlying inflation now and potentially over the next few months.
- Financial conditions reflect modest increases in interest rates and expectations of tightening monetary policy. Of course, these conditions could change rapidly, but the above indicators of inflation and the real economy mean that material declines in both consumption and inflation would be needed in order to adjust the future path of the policy rates down.

WHAT ARE THE UNDERLYING FORCES? THE LABOR MARKET & WAGES

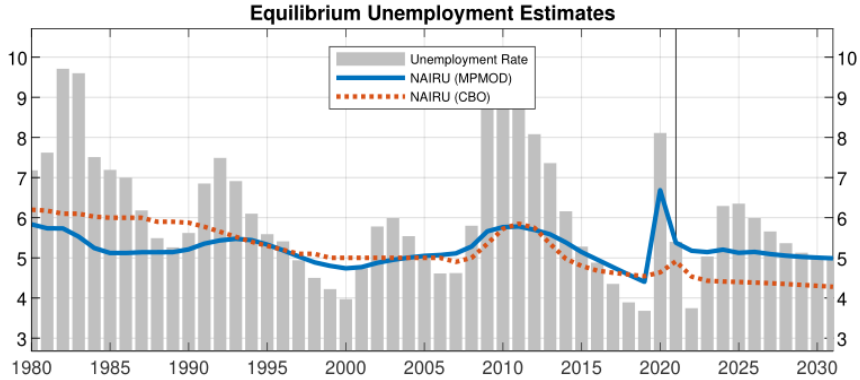
The labor market will likely be one of the deciding factors that will drive the medium-term dynamics of the economy.

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

Figure 11.

Unemployment Rate Historically Low and Well-Below Most Notions of NAIRU

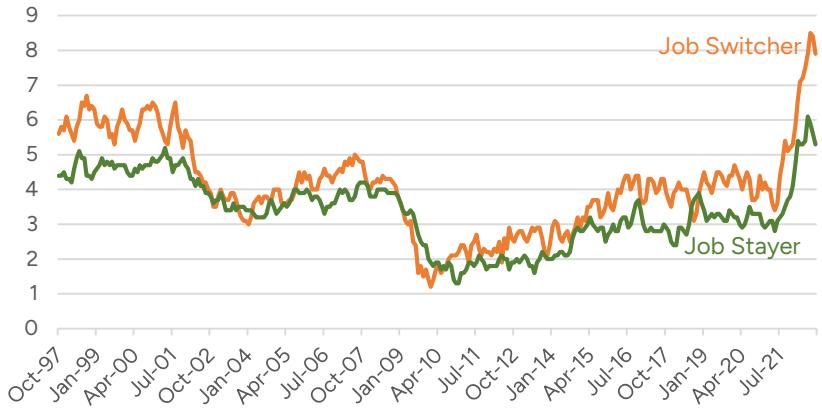


Source: FRED; CBO; GFS MPMOD United States

We are clearly in the first phase of a potential wage-price spiral. 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 or not the Fed continues to fall behind the curve.

Figure 12.

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



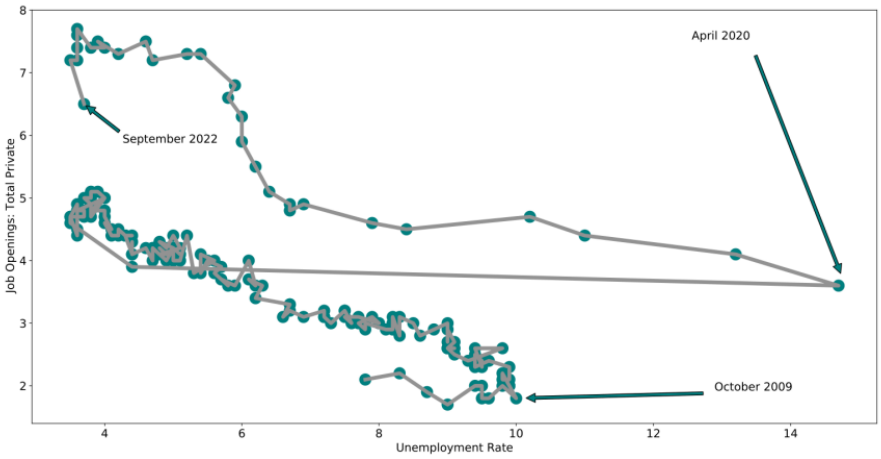
Source: FRED

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 undergirding 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.

Figure 13.

Beveridge Curve Not Budging



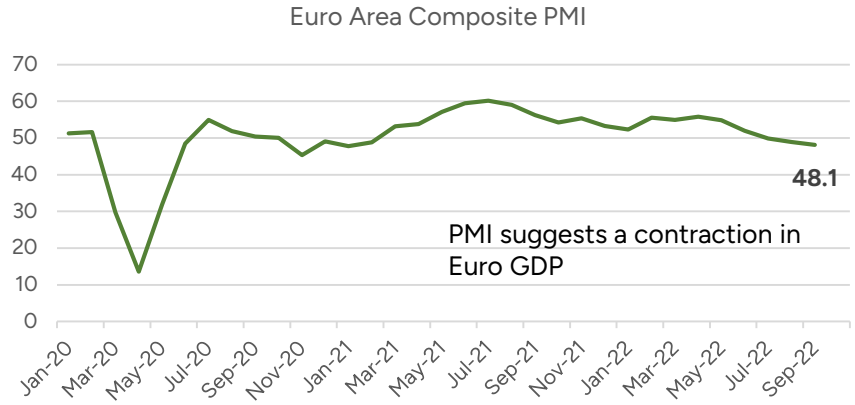
Source: FRED

WHAT ARE THE UNDERLYING FORCES? 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.

Figure 14.
Euro Area Edging Closer to Recession. How Big?



Source: S&P Global

Adding to slowing economic growth from abroad is the slowdown in China. Continued efforts to contain the Coronavirus through an aggressive zero-Covid policy inhibits economic activity. 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.

Figure 15.
China Entering a Growth Slowdown

Source: S&P Global

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 September 2022 are down 24%, 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 16.
Tighter Financial Conditions Can Be Well Observed in the Mortgage Market

Source: FRED

Spotlight: What Might be Driving the Economy?

Possible Ingredients for Illustrative Case Scenarios

In consideration of the discussed possible underlying forces for future economic developments, below we present a high-level snapshot of some of the ingredients that could be used to inform thinking in formulating potential scenarios. The pages that follow present three **illustrative** case scenarios, that consider cases where the policy rate would need to be higher (Case A) or lower (Case B) than what the market expects, as well as considering "dark corner" risks.

Robust Consumption Growth

Asset prices stabilize at current levels

Consumption growth remains solid in response to past expansionary fiscal policies

Weakening External Demand

Larger lagged effects of strong US dollar result in weaker exports

Underlying Inflation Remains High

Core PCE rises to rates consistent with sticky price inflation

Market Corrections

Weaker housing market and higher shelter prices

Corrections in housing and equity markets

Larger Downturn in the Global Economy

Geopolitical risks, higher energy prices, and China-specific issues

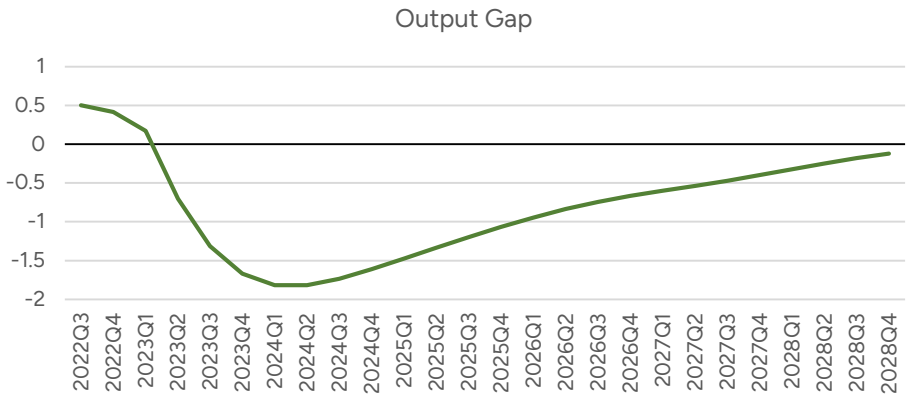
Weakening Domestic Demand

Higher oil prices, lower consumer confidence driven partly by correction in equity prices

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 2023H1, as the effects of external shocks begin to pass through and growth moderates a bit.

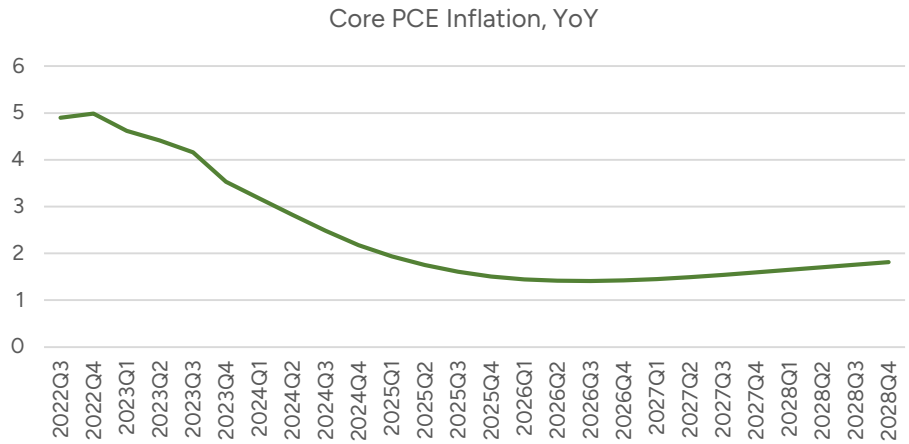
Figure 17.
Demand Stays Above Potential Output in the Near-term



Source: GFS ENDOCRED United States

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.

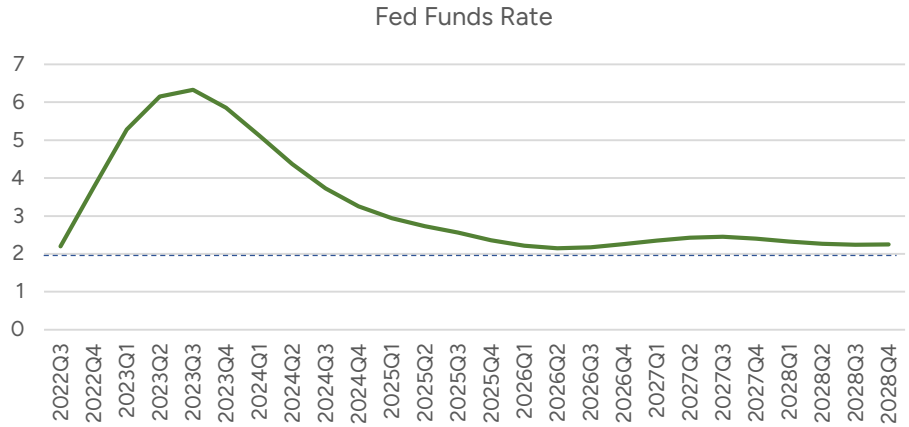
Figure 18.
Core Inflation Remains Elevated in the Near-term



Source: GFS ENDOCRED United States

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.

Figure 19.
More Aggressive Policy Required to Lower Demand and Put Core Inflation on a Path to the 2% Target

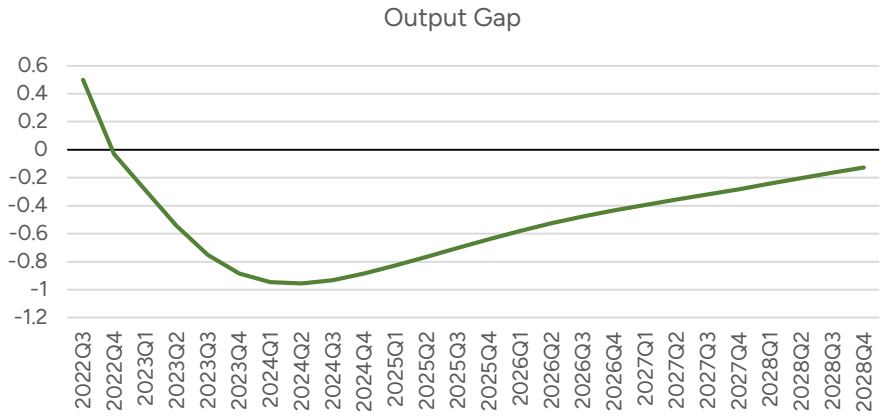


Source: GFS ENDOCRED United States

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.

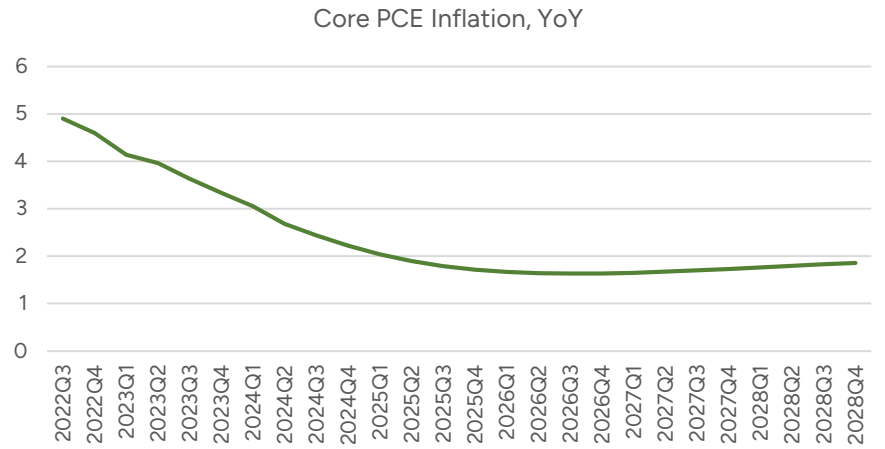
Figure 20.
Economic Slack Emerges, Driven by External Forces and Lagged Effects From Policy Tightening



Source: GFS ENDOCRED United States

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

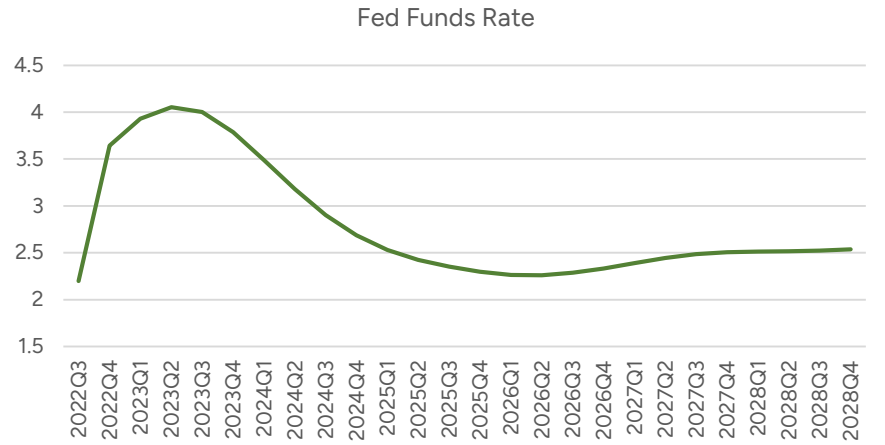
Figure 21.
Hints of Core PCE Inflation Already Being on a Path to the Target



Source: GFS ENDOCRED United States

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.

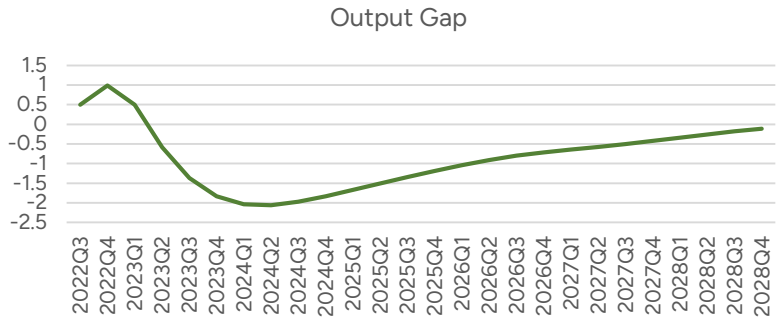
Figure 22.
Signs of the Economy and Inflation Slowing, Requiring a Less Aggressive Policy Stance



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 the holiday season, spurred by pent-up demand and past increases in financial wealth (equity and housing). The labor market does not materially soften well into 2023.

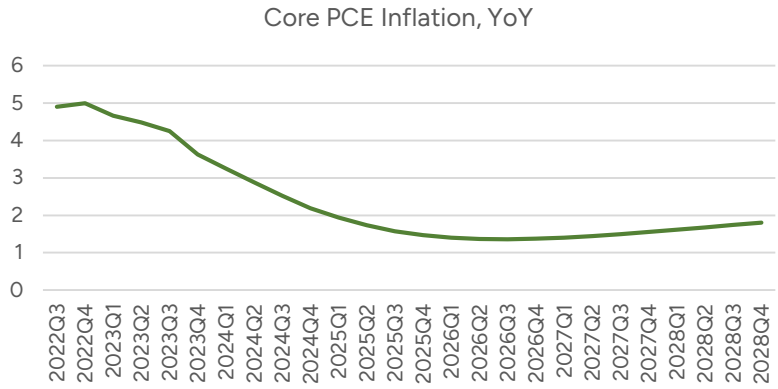
Figure 23.
Positive Output Gap Persists into 2023



Source: GFS ENDOCRED United States

With still robust high 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.

Figure 24.
Core Inflation Stays Elevated for Longer



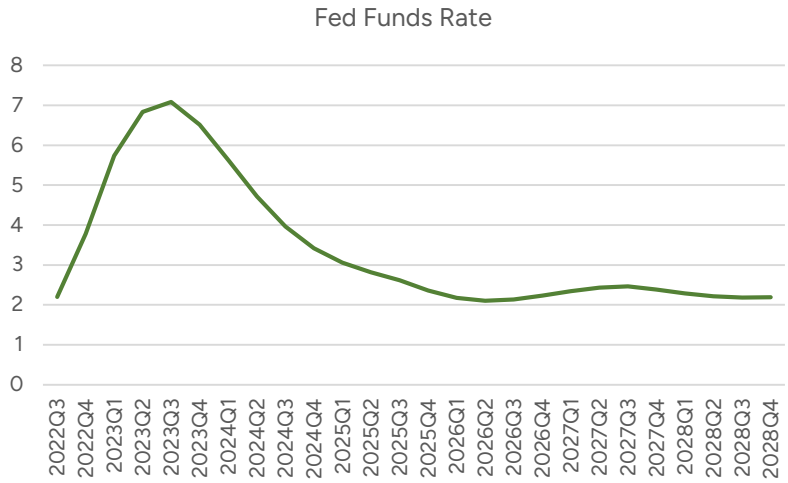
Source: GFS ENDOCRED United States

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.

A possible alternate view to this (representing a potential Case Y dovetail scenario) is that because the high-interest rate environment is driven by stagflation, this results in a further collapse in asset prices, creating the conditions for a potential financial crisis and big losses in the Fed's credibility as it tries to address concerns about how it manages the output-inflation tradeoff and concerns about financial stability.

Figure 25.
Fed Behind the Curve Needs to Compensate with Even Higher Rates



Source: GFS ENDOCRED United States

HOW TO ADJUST THE FED FUNDS RATE SUFFICIENTLY TO ACHIEVE POLICY

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 4.0%.

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.

If there is no material decline in consumption or core inflation heading into the December 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 26.

Case A

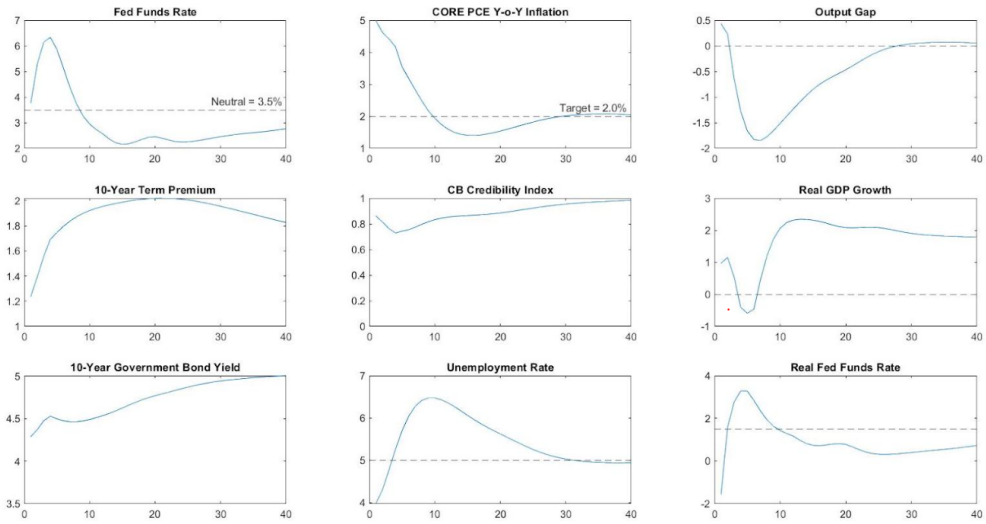


Figure 27.

Case B

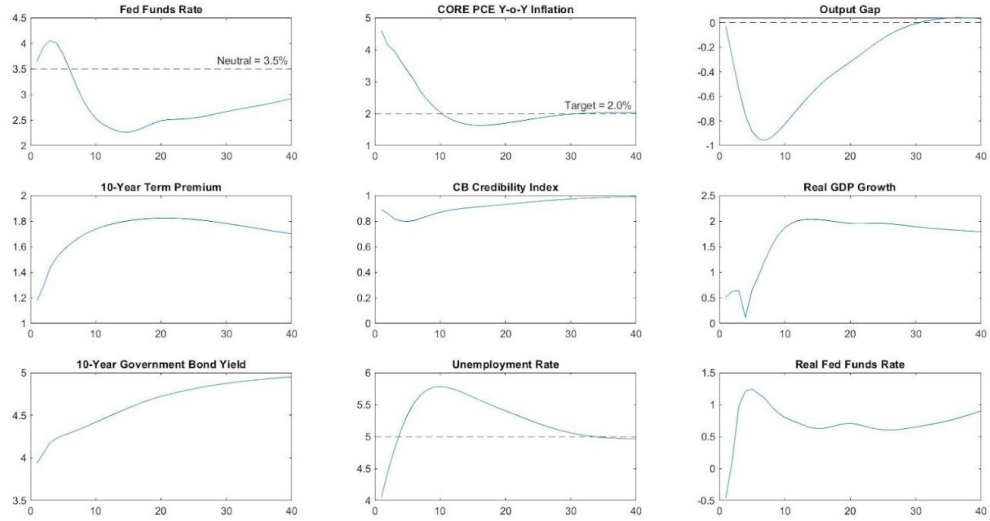
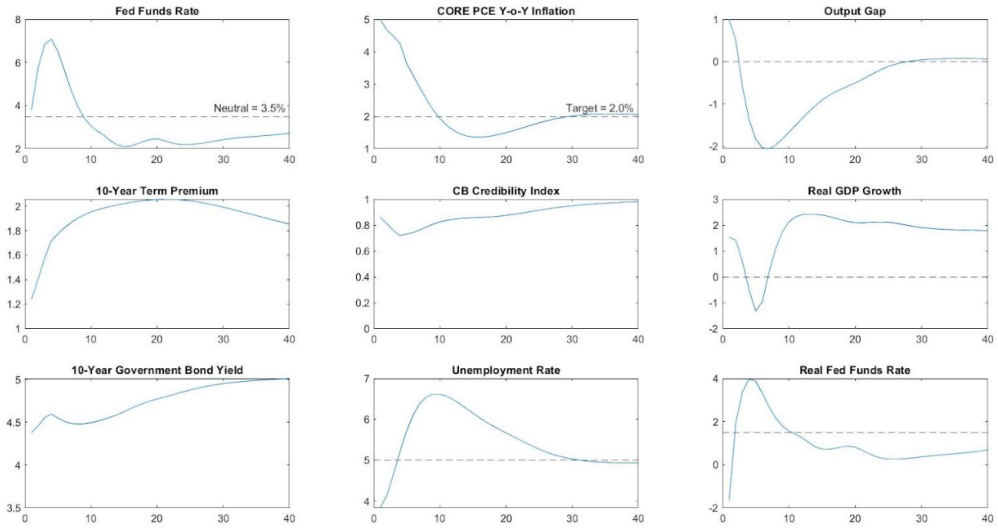


Figure 28.

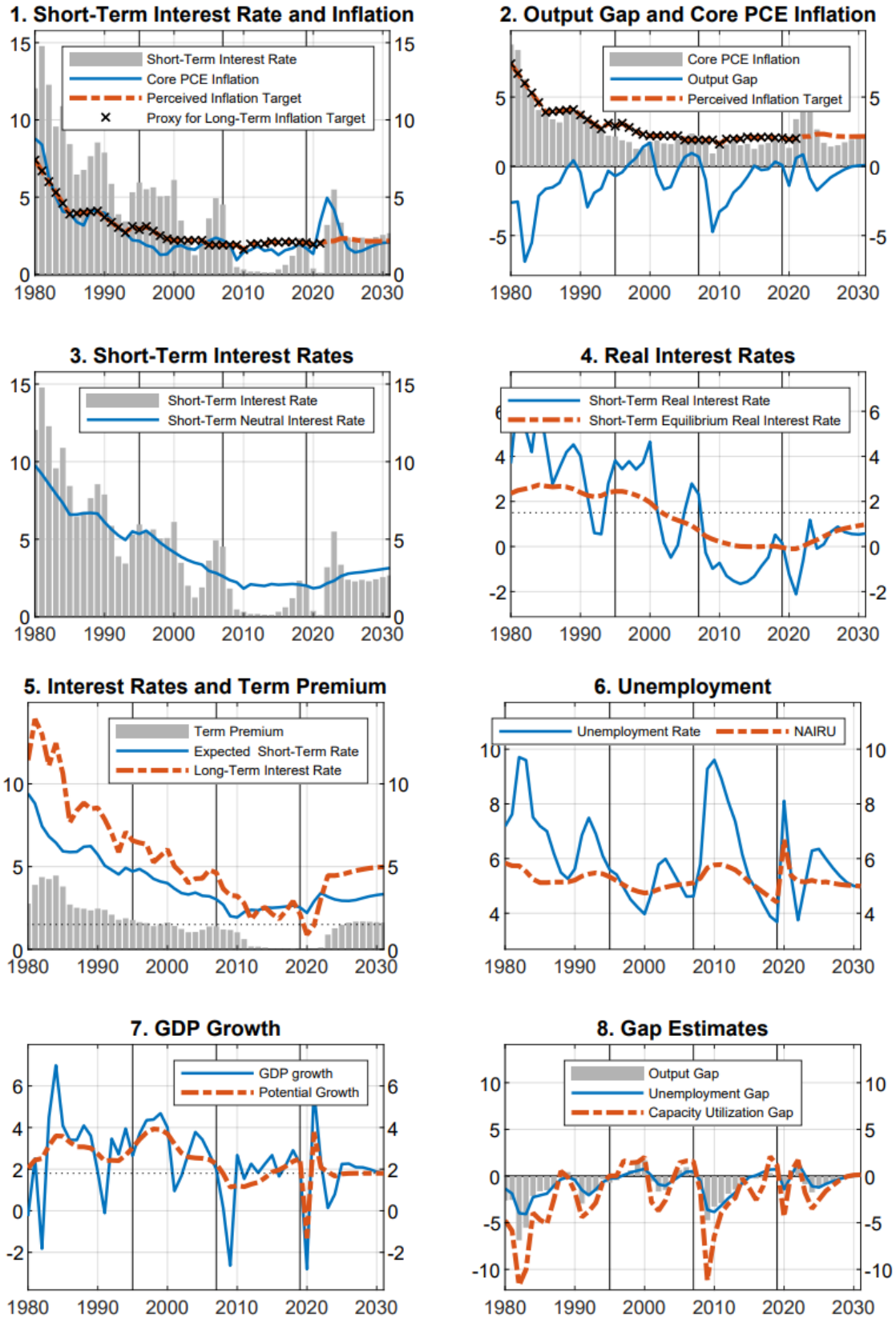
Case X



MPMOD US RESULTS

Figure 29.

MPMOD US Annual Historical Interpretation Report



Martin Galstyan
CBA Governor

Nerses Yeritsyan
CBA Deputy Governor

Ever tried. Ever failed.
No matter. Try again.
Fail again. Fail better.

—Samuel Beckett, Westward Ho (1983)

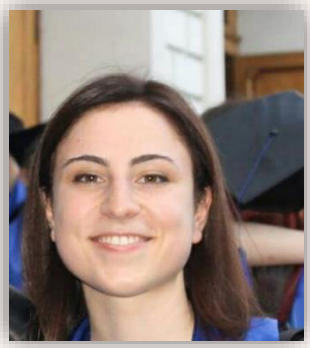
Douglas Laxton
Better Policy Project

Armen Nurbekyan
CBA Head of Macro Directorate

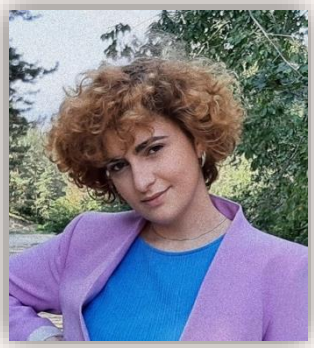
Hayk Avetisyan
CBA Head of MP Dept.

Asya Kostanyan
Better Policy Project

Mariam Tchanturia
NBG



Angela Papikyan
CBA



Jared Laxton
AMPM

Anahit Matinyan
CBA

Vahe Avagyan
CBA

Haykaz Igityan
CBA

Edgar Hovhannisyan
CBA

Hayk Karapetyan
CBA