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The Framework Review: Room for Innovation on Fed Communication (Abecasis / Mericle)

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- The Fed's monetary policy framework review is underway. The FOMC will release its revised "Statement of Longer-Run Goals and Monetary Policy Strategy" (or "consensus statement") later this summer and will announce any changes it makes to its communications practices this fall.
- The last framework review in 2020 was heavily influenced by a long period of low inflation and concern that a very low neutral rate would make the zero lower bound (ZLB) a more frequent problem in the future. Two of the key ideas that came out of it were that monetary policy should respond to "shortfalls" from maximum employment but not to labor market tightness unaccompanied by signs of inflationary pressure, and "flexible average inflation targeting" (FAIT), under which the FOMC would allow inflation to modestly overshoot 2% after prolonged periods of low inflation in order to average 2% over time and keep inflation expectations anchored.
- Some critics have argued that these ideas contributed to high inflation during the pandemic by delaying the Fed's response. Chair Powell and senior Fed economists have disagreed with this judgment, but the FOMC is likely to make adjustments to its consensus statement nonetheless. It will likely return to saying that it will respond to "deviations" in both directions from maximum employment in normal times or at least water down the shortfalls language. It will also likely return to flexible inflation targeting (rather than flexible average inflation targeting) as its main strategy, though it is likely to retain the option to use a make-up strategy in some cases when the economy is at the ZLB. The FOMC could also pledge to respond forcefully to deviations of inflation in both directions, in line with the ECB's recent strategy update. Neither change is likely to have an immediate impact on monetary policy.
- It is less clear whether the FOMC will make significant changes this year to its communications practices. But participants have discussed two concrete proposals that could provide useful new information to financial markets if they are adopted later this year or in the future.
- The first proposal is to provide alternative economic scenarios to highlight risks to the outlook. Some other central banks do this, but most do not show corresponding monetary policy paths that would help investors better understand the central bank's current reaction function. The Fed staff already

provides detailed alternative scenario forecasts in the Tealbooks, but they are currently only released to the public with a five-year delay. We find that these scenarios have provided context for how the reaction function—at least, the staff's implied reaction function—has changed in different economic circumstances in the past. This context could be informative to investors if provided in real time, especially if FOMC participants began to provide alternative interest rate projections that corresponded to the staff's alternative economic scenarios. That being said, the FOMC or staff might be reluctant to publish scenarios that are either politically sensitive or that draw attention to very negative economic outcomes.

- The second proposal is to link FOMC participants' projections for the economy and interest rates, while keeping them anonymous. This would allow investors to see how each participant thinks the funds rate should be set under their economic forecast, rather than trying to infer a reaction function from committee-wide median economic and interest rate projections that often come from different individuals. We find that this information would likely be useful to investors—knowing the reaction function of the median participant inferred from their linked projections would have helped to predict monetary policy surprises in the past.

The Framework Review: Room for Innovation on Fed Communication

The Fed's 2025 monetary policy framework review is underway. The FOMC will release its revised "Statement of Longer-Run Goals and Monetary Policy Strategy" (or "consensus statement") later this summer and will announce any changes it makes to its communications practices this fall.

Rethinking the 2020 Framework Review

The last framework review in 2020 was heavily influenced by a long period of low inflation that persisted even when the unemployment rate fell to a historically low level, as well as concern that the decline in the neutral rate of interest would make the zero lower bound (ZLB) a more frequent constraint on monetary policy in the future.

One of the key ideas that came out of the 2020 framework review was that monetary policy should respond to "shortfalls" rather than "deviations" from maximum employment, meaning that it is not necessary to tighten policy solely in response to a low unemployment rate if it is not creating excessive inflationary pressure. Another key change was the introduction of "flexible average inflation targeting" (FAIT), under which the FOMC would allow inflation to modestly overshoot 2% after prolonged periods of low inflation in order to average 2% over time and keep inflation expectations anchored.

At several recent conferences on the Fed's framework, some critics have argued that these changes contributed to the pandemic inflation surge by delaying the Fed's response. Chair Powell and some Fed and outside economists have rejected this judgment, and some have argued that these changes were valuable and should be preserved (Exhibit 1).

Exhibit 1: Some Critics Have Argued That Key Changes in the 2020 Framework Review Contributed to the Pandemic Inflation Surge, While Some Fed Officials and Other Economists Have Disagreed

Author(s)/Speaker(s)	Date	Venue	Recommendation(s)
John Taylor	5/2/2024	Hoover Institution conference	The Fed fell behind the curve in tightening policy in 2022. Adhering more closely to a Taylor-rule-based policy rate would improve monetary policy outcomes.
Jon Steinsson	5/2/2024	Hoover Institution conference	The Fed's approach of looking through supply shocks during and after the pandemic stood a better chance of avoiding recession. That said, it still failed to prevent goods inflation from spilling over into other prices. The Fed should respond preemptively to a hot labor market even under a "plucking model" of unemployment.
Athanasios Orphanides	5/2/2024	Hoover Institution conference	The Fed should be more systematic and less discretionary. It should follow policy rules more closely and stop publishing the SEP dots.
Mickey Levy and Charles Plosser	5/2/2024	Hoover Institution conference	The Fed should abandon asymmetric interpretations of the dual mandate, flexible average inflation targeting (FAIT), and forward guidance, and follow policy rules more closely. It should develop a better understanding of inflation dynamics and pay particular attention to nominal GDP.
Michael Kiley, Michael Kiley and Frederic Mishkin	6/14/2024, March 2024 and March 2025	Brookings Institution conference, NBER and FEDS papers	Adhering too closely to a Taylor rule can result in bad outcomes like unnecessarily tight policy after the financial crisis. The zero lower bound (ZLB) is a significant risk even under fairly high neutral rates. Shortfalls approach is not an adequate response to ZLB risks because it raises inflation and therefore increases economic volatility. A make-up strategy like FAIT that compensates for previous deviations from optimal policy is more effective. Central banks should avoid pursuing goals outside of price stability and maximum employment.
Michael Bauer	6/14/2024	Brookings Institution conference	Responding to shortfalls may raise inflation expectations but that could help deter ZLB-related risks. Responding to shortfalls also improves welfare under a "plucking" model of unemployment.
Bill English and Brian Sack	9/26/2024	Brookings Institution conference	The Fed should change the "shortfalls" language in the framework so it can respond to a hot labor market even if inflation is not yet moving higher. The FAIT language was too vague and could be confusing after a period of high inflation. Forward guidance should be conditioned carefully to avoid constraining the FOMC from responding to unexpected developments.
Christina Romer and David Romer	9/26/2024	Brookings Institution conference	The previous framework was designed for a specific set of circumstances that did not capture the whole range of possible scenarios the Fed might plausibly encounter. FAIT should only apply at the zero lower bound. The Fed should not seek a hot labor market and should respond to deviations on both sides of maximum empoyment.
Charles Evans	9/26/2024	Brookings Institution conference	FAIT is meant to offset asymmetry at the zero lower bound. The 2020 framework did not constrain the Fed, and changing the framework significantly could make the Fed's job harder if rates go back to the ZLB.
Ben Bernanke	5/15/2025	Fed Board's Thomas Laubach conference	The Fed should publish a quarterly economic review discussing current economic conditions and including economic analyses. It should publish a baseline forecast and alternative scenarios that are all internally coherent to highlight the Fed's decisionmaking process and stress that monetary policy guidance is not unconditional.
Carl Walsh	5/15/2025	Fed Board's Thomas Laubach conference	The framework should be robust to different shocks. When the Fed falls behind the curve, it needs to respond more aggressively. Forward guidance is a contingent promise and should not constrain the Fed. The Fed should use scenario analysis more extensively.
Ricardo Caballero	5/15/2025	Fed Board's Thomas Laubach conference	The Fed should target financial conditions rather than interest rates, and it could make forward guidance more effective by publishing an "FCI plot" where participants project financial conditions rather than the policy rate.

Source: Goldman Sachs Global Investment Research, Hoover Institution, Brookings Institution, Federal Reserve

Recent comments from FOMC participants and the minutes to the March and May FOMC meetings suggest that the Committee is likely to make some adjustments to its consensus statement in the current framework review that will at least partially reverse the changes from 2020 (Exhibit 2).

The FOMC will most likely drop the "shortfalls" language and return to saying that it will respond to "deviations" in both directions from maximum employment in normal times, or at least water down the shortfalls language, which Powell has said the FOMC "thought it would be appropriate to reconsider."

It will also likely return to flexible inflation targeting (rather than flexible average inflation targeting) as its main strategy. The minutes to the May meeting noted that participants see this as the more robust approach, and many participants have emphasized the importance of the FOMC's strategy being robust to a wide range of economic circumstances in light of the large surprises of recent years. However, we think the FOMC is likely to retain the option to use a make-up strategy in some cases when the economy is at the ZLB. After all, even if the FOMC judges the neutral rate to be somewhat higher today than it did in 2020, the ZLB is still likely be a constraint on monetary policy at times in the future, and there is little reason to give up tools that might be useful in addressing it in some contexts. The FOMC could also pledge to respond forcefully to deviations of inflation in both directions, in line with the ECB's recent strategy update.

Neither of these two changes is likely to have an immediate impact on monetary policy.

Exhibit 2: FOMC Participants Have Said That They Will Revisit the "Shortfalls" and Average Inflation Targeting Language, and a Few Have Suggested Adding Scenario Analysis to Fed Communications

Speaker/Source	Date	Comment(s)
Powell	6/18/2025	When it comes to changing communications ... I would only ... implement things that have very broad support. And also, you want to be really careful, because I think our communications are pretty well received, they're not broken, so more is not necessarily better, but better is better.
Logan	6/3/2025	1. We should also make the monetary policy framework robust to a wider range of scenarios. 2. It seems more appropriate to me to focus on achieving our inflation target going forward, rather than trying to make up for past shortfalls of inflation. 3. I am inclined to pay more attention to increases of employment above the maximum sustainable level, not just shortfalls from that level. 4. [Communications should convey] key risks and uncertainties and how monetary policy would respond to them.
Powell	5/15/2025	1. [FOMC] participants have indicated that they thought it would be appropriate to reconsider the language around shortfalls. And at our meeting last week, we had a similar take on average inflation targeting. 2. Although getting stuck at the lower bound is no longer the base case, it is only prudent that the framework continue to address that risk. 3. In periods with larger, more frequent, or more disparate shocks, effective communication requires that we convey the uncertainty that surrounds our understanding of the economy and the outlook.
FOMC Minutes	5/7/2025 (published 5/28/2025)	Participants indicated that they thought it would be appropriate to reconsider the average inflation-targeting language in the Statement on Longer-Run Goals and Monetary Policy Strategy.They viewed flexible inflation targeting as a more robust policy strategy capable of correcting persistent deviations of inflation from either side of the Committee's 2 percent longer-run objective. Participants also noted that the Committee's strategy should reflect its willingness to make forceful use of all available tools as appropriate should the risks of hitting the ELB again materialize.
FOMC Minutes	3/19/2025 (published 4/9/2025)	Participants indicated that they thought it would be appropriate to reconsider the shortfalls [from maximum employment] language.
Cook	7/1/2024	The path of the economy is so uncertain--which means that our response to it, a change in monetary policy, may also be uncertain--so why not entertain various scenarios? That could be a very useful tool.
Musalem	6/18/2024	It is critical to communicate both about the most likely scenario and about less likely scenarios that could be consequential if they materialize. Communicating about a range of scenarios, rather than only the most likely, is an important component of robust policymaking.
Goolsbee	5/3/2024	We could go a long way by publishing the matrix [linking forecasts across the SEP.] … Another, more direct form of state-contingent information might be to add something like the stress test scenarios that are done for banks or the alt sims in the Tealbook.

Source: Goldman Sachs Global Investment Research, Federal Reserve

Room for Innovation on Fed Communication

It is less clear whether the FOMC will make significant changes this year to its communications practices. Chair Powell has said that he would only want to implement changes to communications that had "really broad support" and that he thinks the FOMC's current communications are "pretty well received."

But participants have discussed two concrete proposals that could provide useful new information to investors if they are adopted now or in the future.

Proposal #1: Publishing Alternative Scenarios

The first proposal is to provide alternative economic scenarios to highlight risks to the outlook. This idea gained some popularity after former Fed Chairman Bernanke proposed it as part of the Bank of England's policy review. More recently, several Fed officials including Powell, Governor Cook, and Presidents Logan and Musalem have highlighted the importance of communicating clearly about uncertainty about the economic outlook and how the FOMC would respond to scenarios different from its baseline.

Some other central banks already provide alternative economic scenarios in their public communication, as described in Exhibit 3. But with the exception of the Riksbank, they generally do not show alternative monetary policy paths that correspond to the alternative economic scenarios, which could be quite useful in helping investors better understand the central bank's reaction function.

Exhibit 3: Other Central Banks Publish Alternative Economic Scenarios, Though Only the Riksbank Also Provides Corresponding Monetary Policy Paths

Central Bank	Scenario Publication Timing and Venue	Include Weights Placed on Each Scenario?	Include Policy Rate Projections?	Who Prepares or Publishes Scenarios?	Scenarios Change Each Time?	Scenario Example
United Kingdom	Occasionally in the Quarterly Monetary Policy Report. BoE has given an overview of scenarios in meeting minutes.	No	No	Staff, representing the "best collective judgement" of the Committee	Yes	Weaker demand and lower inflationary pressure worth 0.3pp on inflation.
Canada	Quarterly Monetary Policy Report	No	No	Staff and Governing Council	Yes	Tariff scenario with 12% tariffs on Canada and Mexico and 25% on other countries, with trade, GDP, and inflation outcomes.
Sweden	Quarterly Monetary Policy Report	No	Yes	Staff and Executive Board	Yes	Qualitative description of a more protracted trade war with higher inflation in Sweden.
Australia	Quarterly Monetary Policy Statement	No	No	Staff and Board	Yes	US imposes higher tariffs in 2025 followed by still-higher "liberation day" tariffs in 2026. Show GDP, inflation, FX, and unemployment outcomes.

Source: Goldman Sachs Global Investment Research, Bank of England, Bank of Canada, Riksbank, Reserve Bank of Australia (RBA)

Perhaps the best example of a scenario analysis exercise that combines economic and interest rate projections is actually what the Fed staff has already been doing for many years in the Tealbooks, described in Exhibit 4. The staff currently writes down as many as seven scenarios that highlight risks that are particularly relevant at the moment and provides forecasts for GDP growth, inflation, and the unemployment rate in each scenario, as well as a corresponding path for the funds rate. This sort of information could help markets understand how monetary policy might respond in different economic circumstances. But at present, the Tealbooks are only released to the public with a five-year lag.

Exhibit 4: The Fed Staff Has Published Alternative Economic Scenarios for Years in the Tealbooks, but They Are Currently Only Released to the Public with a Five-Year Lag

Fed Staff's Tealbook/Greenbook Economic Scenarios Presented to the FOMC

	High-Level Scenario Characteristics
Started being included systematically in …*	November 1997
Average number of scenarios per meeting	Started out with 2-3 scenarios, more recently averaged 7 scenarios per meeting.
Scenario frequency	Every FOMC meeting.
Example scenario names	Easing of trade tensions, lower r-star (with and without policymaker misperceptions), weaker labor demand, foreign growth slowdown.
General methodology	The staff uses different models and parameters (including the reaction function) it sees as appropriate for each scenario.

Presentation of Economic Indicators

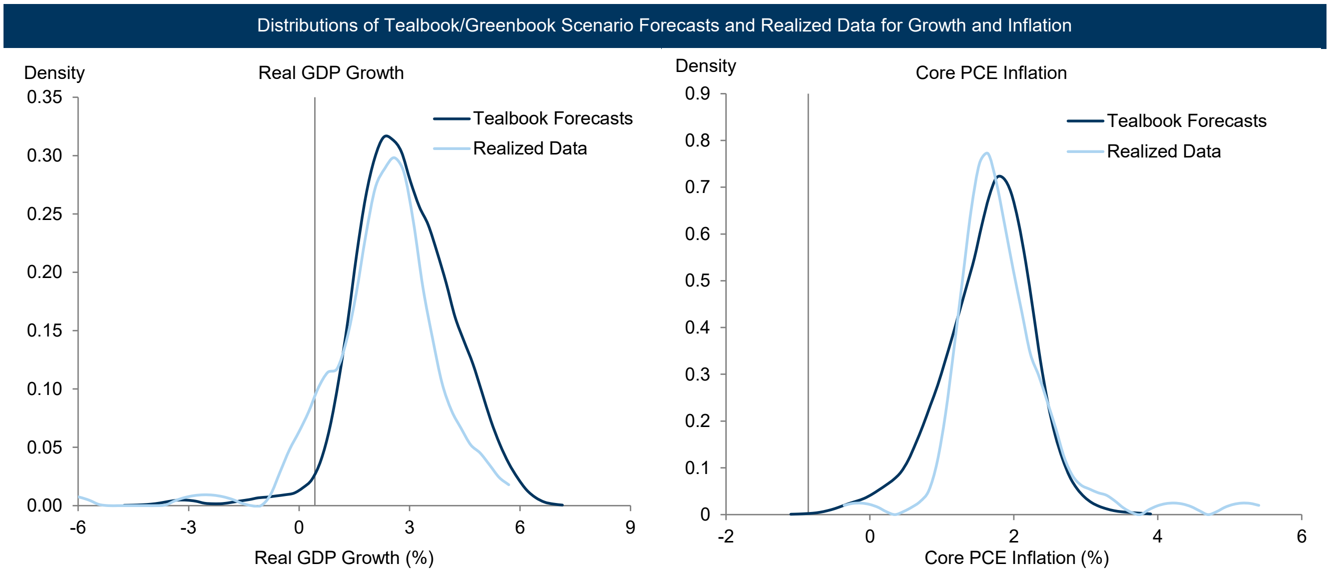
	Real GDP	**Core Inflation**	**Unemployment Rate**	**Fed Funds Rate**
First included in the Tealbook in…	Nov-97	Nov-97	Nov-97	Mar-06
Average absolute range across scenarios, pp	2.0	0.8	1.4	2.0
Average absolute range across scenarios relative to average baseline absolute forecast error**	1.5	1.8	1.8	1.6

* We focus on alternative scenarios that are not just simulations of alternative monetary policy decisions but consider different economic scenarios facing the Committee. The staff has included simulations with alternative fed funds rate paths before November 1997.
** Excluding 2020 and 2021.

Source: Goldman Sachs Global Investment Research, Federal Reserve

Historically, the distribution of the Fed staff's scenarios has been relatively close to the distribution of actual economic outcomes (Exhibit 5). However, the staff's scenarios have not covered more extreme negative outcomes—low GDP growth or high inflation—quite as often as they occurred. This highlights one concern policymakers might have about providing alternative scenarios—that they could make themselves vulnerable to criticism either for being alarmist or for underestimating risks to the outlook. That being said, the FOMC or staff might be reluctant to publish scenarios that are either politically sensitive or that draw attention to very negative economic outcomes.

Exhibit 5: The Fed Staff's Scenarios Have Captured the Range of Actual Economic Outcomes Well, Though They Have Not Considered Weak GDP Growth or High Inflation Outcomes Quite as Often as They Occurred



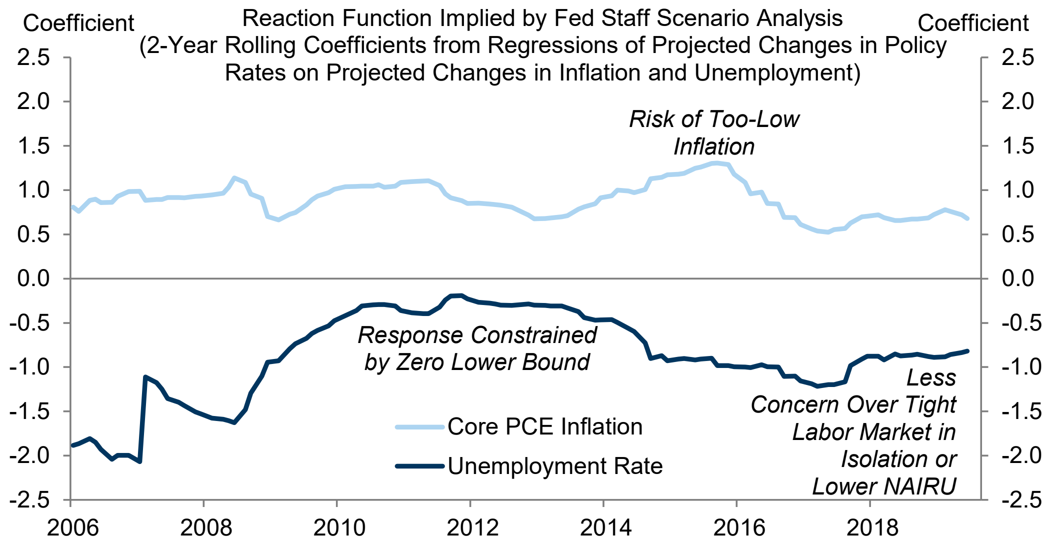
Note: Projections made through 2019. We exclude 2020 and 2021 from both the forecast and realized distributions.

Source: Goldman Sachs Global Investment Research, Federal Reserve

But the potential advantage of providing a set of alternative economic scenarios and corresponding interest rate projections is that it could help markets better understand how the FOMC would respond in different circumstances and how its reaction function might be a bit different than usual at a given time.

Exhibit 6 shows how the staff's reaction function implied by the Tealbook scenarios has evolved in the past. Using the staff's scenarios, we estimate the implied Taylor rule coefficients at a given time using rolling regressions of projected changes in the funds rate on projected changes in inflation and the unemployment rate. The exhibit shows, for example, that at the end of last cycle, the staff appeared to put less weight on changes in the unemployment rate, presumably capturing either its openness to the possibility that NAIRU might be very low or the idea that tightening monetary policy in response to a low unemployment rate in isolation unaccompanied by excessive inflationary pressure was unnecessary.

Exhibit 6: The Fed Staff's Alternative Economic and Interest Rate Scenarios in the Tealbook Give a Sense of How the Staff's Reaction Function Would Have Varied in Different Circumstances in the Past



Source: Goldman Sachs Global Investment Research, Federal Reserve

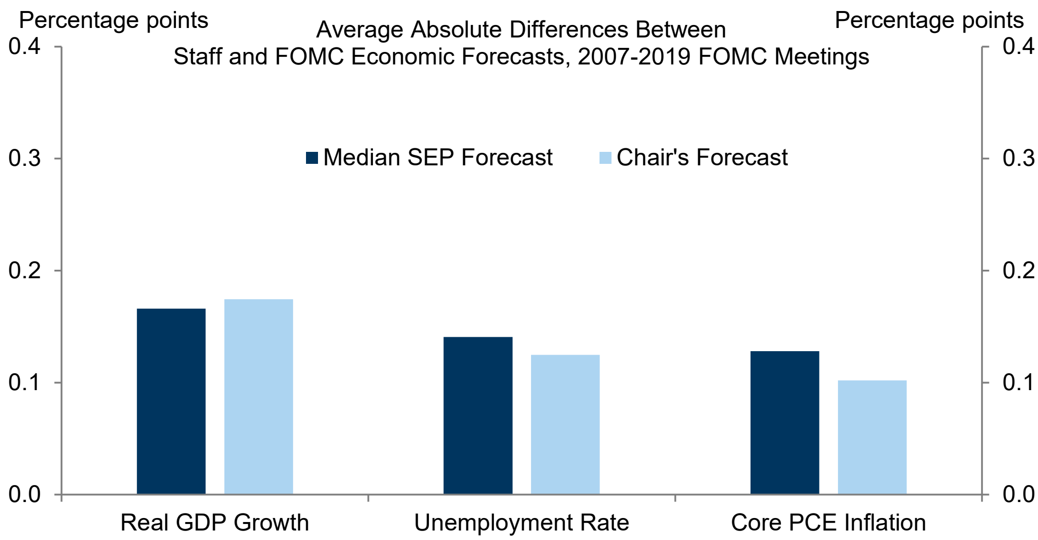
How might providing alternative scenarios work in practice if the FOMC chose to go this route?

The staff could continue to produce the alternative economic scenarios—after all, the FOMC currently does not even provide one collective baseline forecast, and it might be too complex for the Committee to agree on a whole range of economic scenarios. This approach should be fine because historically, differences between the economic forecasts of the staff and the FOMC have been modest (Exhibit 7).

But if the scenarios became official real-time FOMC communication, then FOMC participants rather than the staff would likely have to provide the monetary policy projections for each scenario. This should be feasible because participants already do this for their own baseline economic projection in the dot plot.

While we do not expect all of this to come about in the current framework review, we think it would be workable and could provide useful new information to financial markets.

Exhibit 7: FOMC Participants' Forecasts Are Usually Similar to the Fed Staff's Forecasts



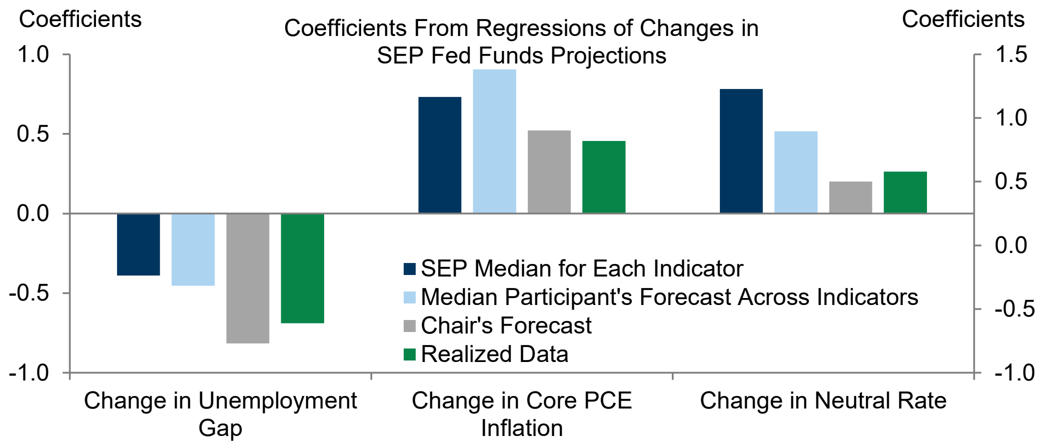
Source: Goldman Sachs Global Investment Research, Federal Reserve

Proposal #2: Linking Individual Economic and Interest Rate Projections

The second proposal is to link FOMC participants' projections for the economy and interest rates, while keeping them anonymous. This would show how each participant thinks the funds rate should be set under their economic forecast and should provide a better sense of participants' reaction functions than the only option currently available to market participants—trying to infer a reaction function from the committee-wide median economic and interest rate projections that often come from different people.

Exhibit 8, which uses past projections from individual participants that have now been released through 2019, shows that the median reaction function—defined as the median weights put on inflation, the unemployment rate gap, and the neutral rate that come from calculating each participant's reaction function—looks somewhat different from a reaction function estimated from the median projections. The exhibit also shows that the Chair's reaction function is also a bit different and more similar in some respects to how the FOMC ended up acting (the reaction function implied by realized data rather than projections), suggesting that this could be valuable information if investors could figure out which projections come from the Chair.

Exhibit 8: Individual Participants' Linked Economic and Interest Rate Projections Could Provide a Clearer Sense of Their Reaction Functions Than Committee-Wide Medians That Often Come from Different People



Note: We use estimates from forecasts two and three years ahead to mitigate biases from the zero lower bound. For realized data, we use the Wu-Xia shadow rate

Source: Goldman Sachs Global Investment Research

New Fed Communications Could Provide Useful Information for Markets

How much could these potential additions to Fed communications tell investors? To find out, we assess in Exhibit 9 whether knowing the staff's time-varying reaction function (from Exhibit 6) or the median participant's reaction function or the Chair's reaction function (both from Exhibit 8) would have helped historically to predict monetary policy surprises—that is, changes in interest rates in short windows around FOMC meetings. We consider both raw surprises (first row of Exhibit 9) and a measure of surprises net of what should have been predictable based on macroeconomic fundamentals developed by economists Michael Bauer and Eric Swanson (second row of Exhibit 9).

We find that all three types of information would have had some predictive power for surprises in the past. This suggests that either of the proposed innovations to Fed communication could potentially tell investors something that they have not fully understood in the past about the Fed's reaction function. However, publishing alternative scenarios could be less effective at mitigating surprises if the FOMC or the staff are reluctant to publish scenarios that are either politically sensitive or draw attention to negative outcomes.

Exhibit 9: Historically, Insight Into the Reaction Function Gleaned from Both the Staff's Scenario Analysis and the FOMC's Linked Individual Projection Would Have Helped to Predict Monetary Policy Surprises

	Regressions of Monetary Policy Shocks on Change in Fed Funds Rate Implied by Different Reaction Functions		
	Staff's Rolling Reaction Function	Median Participant's Forecast Across Indicators	Chair's Forecast
Dependent Variable:			
Bauer-Swanson Unorthogonalized Monetary Policy Shocks	0.20***	0.20	0.26***
Portion of Monetary Policy Shocks Explained by Macroeconomic Fundamentals^	0.25***	0.27*	0.33**

* p-value < 0.10, ** p-value < 0.05, *** p-value < 0.01. ^ Fitted values from Bauer-Swanson VAR used to purge high-frequency shocks. The coefficients show estimates of standardized data. The sample is 2006-2019.

Source: Goldman Sachs Global Investment Research

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The US Economic and Financial Outlook

THE US ECONOMIC AND FINANCIAL OUTLOOK

(% change on previous period, annualized, except where noted)

	2022	2023	2024	2025	2026	2027	2024 Q1	2024 Q2	2024 Q3	2024 Q4	2025 Q1	2025 Q2	2025 Q3	2025 Q4
OUTPUT AND SPENDING														
Real GDP	2.5	2.9	2.8	1.7	1.6	2.1	1.6	3.0	3.1	2.4	-0.5	3.9	0.6	0.9
Real GDP (annual=Q4/Q4, quarterly=yoy)	1.3	3.2	2.5	1.2	1.8	2.1	2.9	3.0	2.7	2.5	2.0	2.0	1.4	1.0
Consumer Expenditures	3.0	2.5	2.8	1.9	1.6	2.1	1.9	2.8	3.7	4.0	0.5	1.1	0.8	1.3
Residential Fixed Investment	-8.6	-8.3	4.2	-2.6	1.3	2.4	13.7	-2.8	-4.3	5.5	-1.3	-12.6	-2.0	3.0
Business Fixed Investment	7.0	6.0	3.6	1.8	1.7	4.0	4.5	3.9	4.0	-3.0	10.3	-2.3	-2.8	-0.4
Structures	3.6	10.8	3.5	-2.4	-0.4	3.0	6.2	0.2	-5.0	2.9	-2.4	-5.8	-4.0	-2.0
Equipment	4.4	3.5	3.4	3.4	0.7	3.6	0.3	9.9	10.8	-8.7	23.7	-5.2	-7.5	-2.5
Intellectual Property Products	11.2	5.8	3.9	2.7	3.8	4.9	7.5	0.7	3.1	-0.5	6.0	2.5	2.5	2.5
Federal Government	-3.2	2.9	2.6	0.5	-0.6	0.6	-0.4	4.3	8.9	4.0	-4.6	0.0	-2.0	-2.0
State & Local Government	0.2	4.4	3.9	1.8	0.4	1.2	3.1	2.3	2.9	2.5	2.0	1.6	0.2	0.2
Net Exports ($bn, '17)	-1,042	-933	-1,034	-1,050	-915	-954	-977	-1,036	-1,069	-1,053	-1,359	-1,007	-927	-906
Inventory Investment ($bn, '17)	119	33	39	44	51	61	18	72	58	9	161	32	0	-15
Nominal GDP	9.8	6.6	5.3	4.4	5.0	4.3	4.7	5.6	5.0	4.8	3.2	4.9	4.4	4.4
Industrial Production, Mfg.	2.7	-0.5	-0.5	0.2	1.1	2.9	-0.9	1.4	-0.8	-1.7	4.1	-1.0	-2.0	-0.8
HOUSING MARKET														
Housing Starts (units, thous)	1,552	1,421	1,371	1,422	1,479	1,491	1,415	1,343	1,338	1,387	1,401	1,403	1,431	1,454
New Home Sales (units, thous)	637	665	685	728	778	800	677	685	707	671	654	737	757	763
Existing Home Sales (units, thous)	5,083	4,103	4,067	4,132	4,380	4,554	4,143	4,023	3,937	4,163	4,127	4,024	4,146	4,229
Case-Shiller Home Prices (%yoy)*	7.5	5.3	3.8	3.7	4.8	4.8	6.5	5.9	4.4	3.8	3.8	3.8	3.9	3.7
INFLATION (% ch, yr/yr)														
Consumer Price Index (CPI)**	6.4	3.3	2.9	2.8	2.6	2.2	3.2	3.2	2.7	2.7	2.7	2.4	2.9	2.9
Core CPI **	5.7	3.9	3.2	3.2	2.7	2.2	3.8	3.4	3.3	3.3	3.1	2.8	3.1	3.2
Core PCE** †	5.0	3.0	2.9	3.4	2.6	2.0	3.0	2.7	2.7	2.8	2.8	2.7	3.1	3.3
LABOR MARKET														
Unemployment Rate (%)^	3.5	3.8	4.1	4.4	4.2	4.0	3.9	4.1	4.1	4.1	4.2	4.3	4.4	4.4
U6 Underemployment Rate (%)^	6.6	7.2	7.5	8.1	7.7	7.4	7.3	7.4	7.7	7.5	7.9	7.9	8.1	8.1
Payrolls (thous, monthly rate)	380	216	168	102	132	117	196	133	133	209	111	129	78	90
Employment-Population Ratio (%)^	60.1	60.1	60.0	59.6	59.6	59.6	59.9	59.0	59.1	59.0	59.9	59.7	59.6	59.6
Labor Force Participation Rate (%)^	62.3	62.5	62.5	62.3	62.2	62.1	62.7	62.6	62.7	62.5	62.5	62.4	62.4	62.3
Average Hourly Earnings (%yoy)	5.4	4.4	3.9	3.8	3.3	3.2	4.2	3.9	3.8	3.9	3.9	3.9	3.8	3.6
GOVERNMENT FINANCE														
Federal Budget (FY, $bn)	-1,376	-1,694	-1,833	-1,850	-1,950	-2,150	--	--	--	--	--	--	--	--
FINANCIAL INDICATORS														
FF Target Range (Bottom-Top, %)^	4.25-4.5	5.25-5.5	4.25-4.5	3.5-3.75	3-3.25	3-3.25	5.25-5.5	5.25-5.5	4.75-5	4.25-4.5	4.25-4.5	4.25-4.5	4-4.25	3.5-3.75
10-Year Treasury Note^	3.88	3.88	4.58	4.50	4.55	4.65	4.20	4.36	3.81	4.58	4.23	4.50	4.50	4.50
Euro (€/$)^	1.07	1.11	1.04	1.20	1.25	1.25	1.08	1.07	1.11	1.04	1.08	1.14	1.17	1.20
Yen ($/¥)^	132	141	157	138	127	120	151	161	143	157	150	144	142	138

* Weighted average of metro-level HPIs for 381 metro cities where the weights are dollar values of housing stock reported in the American Community Survey. Annual numbers are Q4/Q4.
** Annual inflation numbers are December year-on-year values. Quarterly values are Q4/Q4.
† PCE = Personal consumption expenditures. ^ Denotes end of period.
Note: Published figures in bold.
Source: Goldman Sachs Global Investment Research.

Source: Goldman Sachs Global Investment Research

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Reg AC

We, Jan Hatzius, Alec Phillips, David Mericle, Ronnie Walker, Manuel Abecasis, Elsie Peng and Jessica Rindels, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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