DIVISION OF
International
Finance

Research and Structural Macroeconomic Modeling at the Federal Reserve

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Three Ways How Research Informs Monetary Policy

Lead the structural modeling teams in the Division of International Finance

- Generate alternative scenarios to the baseline forecast to support FOMC deliberations
- Prepare analytical work on issues relevant for monetary policy
- Conduct research

Distinguish three dimensions how research enters into policy work:

1. **Forecast/Modeling:** structural model; balance academic frontier with needs of policy
2. **Methodology:** efficient solution methods; econometric techniques
3. **Current issues:** studies on current/emerging policy issues

Policy work draws from a diverse body of research literature to satisfy a variety of policy demands. Turning to specific examples …

Macroeconomic Models and Monetary Policy Decisions

FRS staff informs policymakers through a range of analytical tools (**econometric models, semi-structural models**, calibrated and estimated **DSGE models).**

Key macro models in the FRS

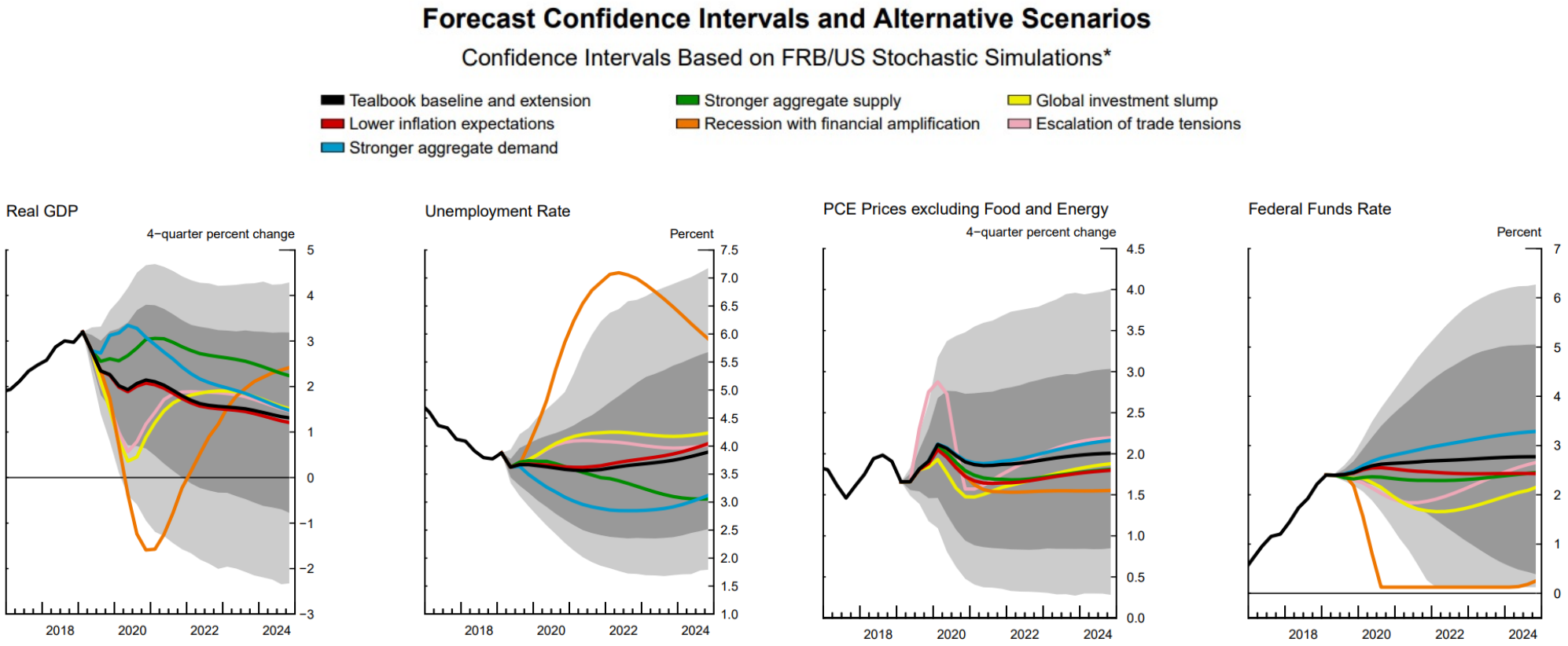
- FRB/US model (Board): large-scale estimated GE model, similar to but more flexible than DSGE models
- GEMUS/SIGMA (Board): estimated multi-country DSGE model
- DSGE models of the U.S. economy at the regional reserve banks, including FRBNY DSGE model, PRISM, Chicago Fed DSGE model
- Examples: "Endogenous Labor Supply in an Estimated New-Keynesian Model: Nominal versus Real Rigidities," (Cairo et al. 2023); "Global Flight to Safety, Business Cycles, and the Dollar," (Bodenstein et al 2025). "Risk-Adjusted Optimal Policy for Scenario Analysis," (Cairo et al. 2025)

Main areas of application of macro models

- Risk and Uncertainties: explore scenarios as alternative baselines or less-likely events
- Monetary policy strategies: explore range of outcomes under different policy assumptions

Model Application: Risks and Uncertainty Section

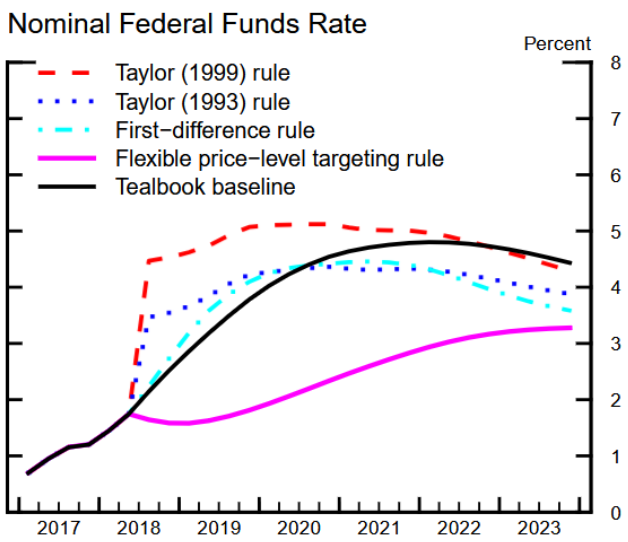
Tealbook A, July 2019:
https://www.federalreserve.gov/monetarypolicy/files/FOMC20190731tealbooka20190719.pdf

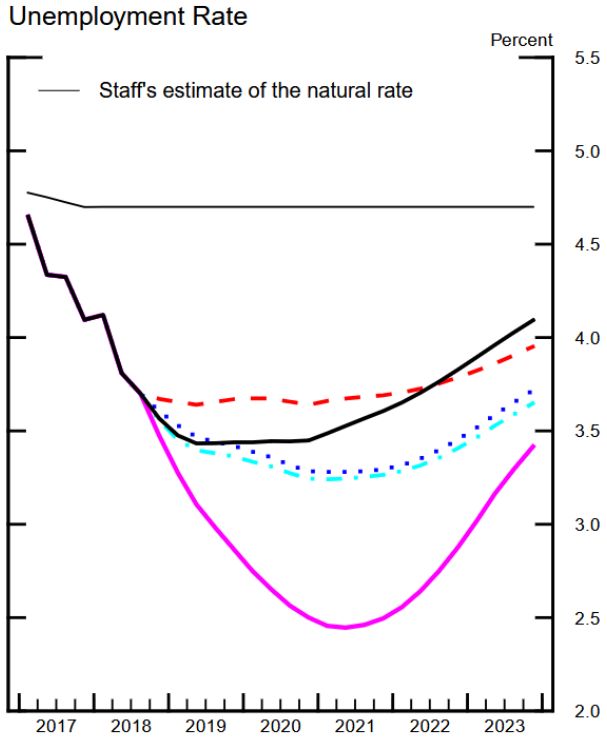


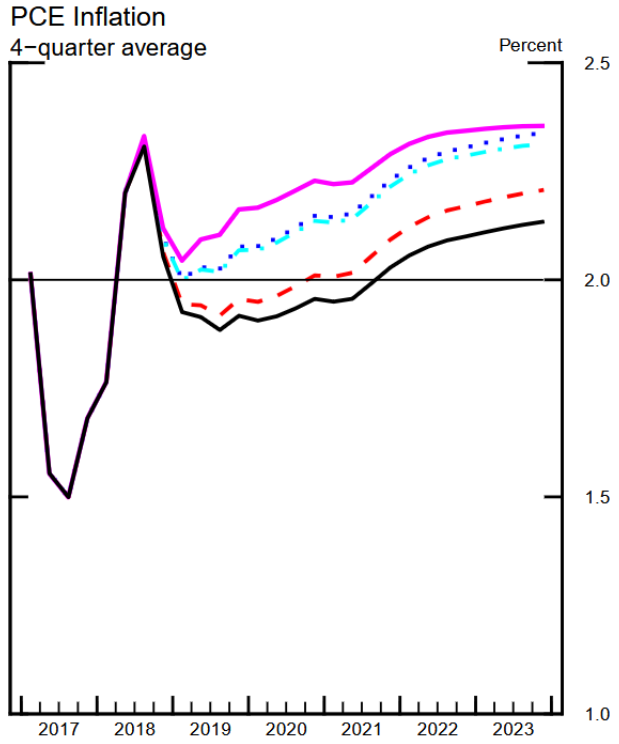
Model Applications: Monetary Policy Strategy Section

Tealbook A, June 2018: simple rules and optimal control exercises

https://www.federalreserve.gov/monetarypolicy/files/FOMC20180613tealbooka20180601.pdf







Modeling Apparatus and Research

- Policy Modeling tends to strike a balance
  - Key features to deliver satisfying answers to routine questions; vary across models by purpose
  - Flexibility to map different narratives to the model; guidance from econometric and ad hoc macro models
  - Simplicity for maintenance and communication
  - No single macro model fits all purposes; suite of models
- Model features are frequently revisited
  - No formal process
  - Estimation with updated data series
  - Academic research by staff and the profession at large
  - Policy needs
- Examples of relevant research
  - General equilibrium models, real versus nominal frictions, firm and household heterogeneity, labor markets, trade and financial linkages, international spillovers, role of the dollar, transmission of monetary and fiscal policy
  - Efficient solution methods for (large-scale) macro models, estimation of DSGE models

Current Issues and Research

Policy models reflect established transmission channels; need for additional research to understand new economic developments.

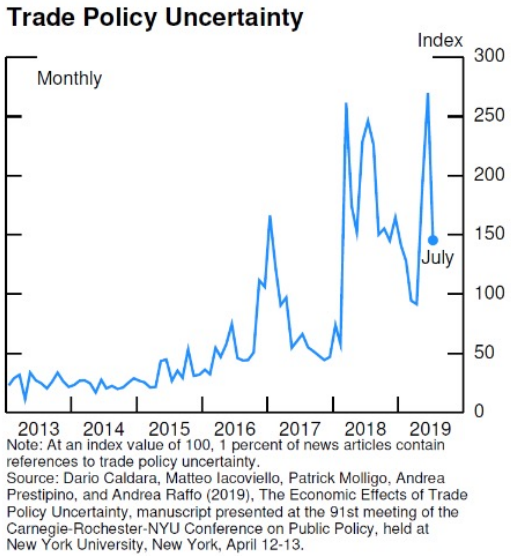
Illustration using trade policy

- Trade tensions 2018/19
  - Effects of actual changes in trade policy: pass-through of tariffs to import and consumer prices ("The Production Relocation and Price Effects of U.S. Trade Policy: The Case of Washing Machines," Flaaen et al. 2020; "Tariff Pass-Through at the Border and at the Store: Evidence from US Trade Policy," Cavallo et al. 2021.
  - Effects of uncertainty about trade policy: "The economic effects of trade policy uncertainty," Caldara et al 2020.
- Trade tensions 2025 onward
  - Develop consistent framework to assess the implications of trade policy for monetary policy: tariff pass-through to import and consumer prices, tariffs on final versus intermediate goods, uncertainty about tariffs (timing, magnitude, duration, retaliation), (optimal) monetary policy response, reorientation of trade (trade diversion, trade substitution, sourcing), financial market response
  - **Implications for future trade patterns and global value chain, financial markets, the role of the dollar, global (im-) balances, policy?**

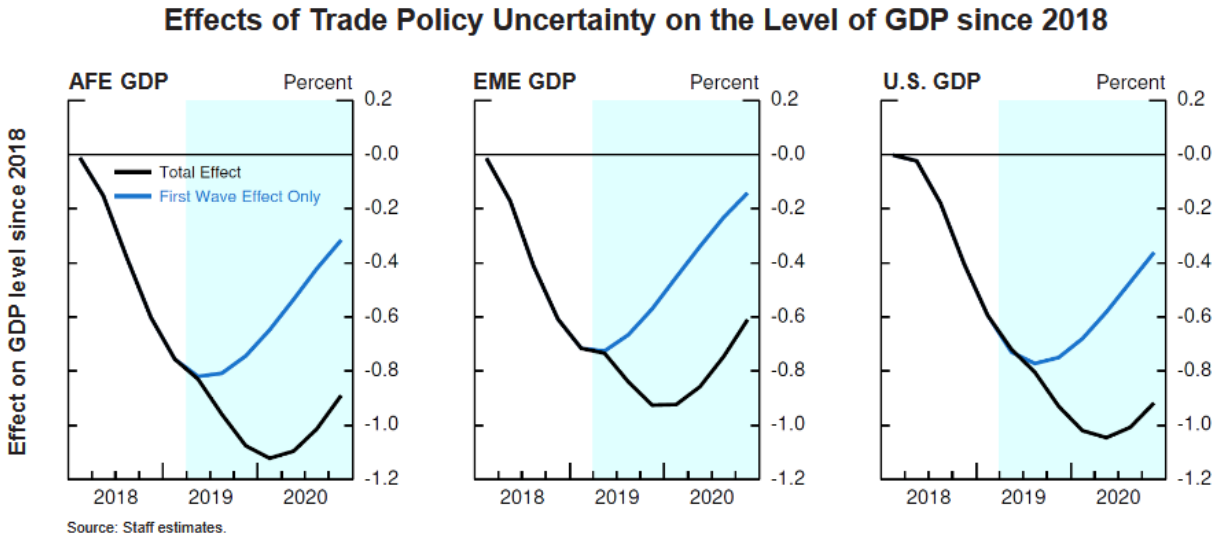
Current Issues and Research

FOMC briefing on Trade Tensions 2018/19:
https://www.federalreserve.gov/monetarypolicy/files/FOMC20190731material.pdf

Trade Policy Uncertainty (TPU): Going from staff research to alternative scenario



- Structural VAR model (1985-2019): IP, TPU, the dollar, world imports, stock prices, world imports, stock prices, financial spreads, and actual tariffs.
- Effects of TPU on IP converted to GDP effects.
- Trade tensions subtract about 1 percent from the level of GDP.



Current Issues and Research

Examples of relevant papers

- "Trade Costs and Inflation Dynamics," Cuba-Borda et al. 2025
- "Tariffs and Retaliation: A Brief Macroeconomic Analysis," Auray et al 2025
- "Monetary stabilization of sectoral tariffs," Bergin and Corsetti 2025
- "The Optimal Monetary Policy Response to Tariffs," Bianchi and Coulibaly 2025
- "Tariffs as Cost-Push Shocks: Implications for Optimal Monetary Policy," Guerrieri 2025
- "Importers Big and Small: The Heterogeneous Impacts of U.S.-China Tariffs on Sourcing and Prices," Javorcik et al. 2025
- "Tariffs and Goods-Market Search Frictions," Krolikowski and McCallum 2025
- "Trade Wars and Rumors of Trade Wars: The Dynamic Effects of the U.S.–China Tariff Hikes," Hoang and Mix 2024
- "Who Pays for Tariffs Along the Supply Chain? Evidence from European Wine Tariffs," Flaaen et al 2025

... and many more.