The Evolving Core of Usable Macroeconomics for Policymakers

By Jonas Fisher, Bart Hobijn, and Alessandro T. Villa *

Over the past fifty years, the core of usable macroeconomics for monetary policy has evolved significantly. This paper outlines the key steps in this evolution, shaped by changes in policymakers' *language*, economic *events*, and new *theories*. Despite advancements, the aggregate supply–aggregate demand (AS-AD) framework remains central. Contributions to a similar "Core of Macroeconomics" Papers and Proceedings session in 1997 were also grounded in it.

New models have refined the AS-AD framework with microfoundations in a dynamic stochastic general equilibrium (DSGE) context, making expectations endogenous and enabling analyses of dynamics and optimal policy. These models have influenced FOMC policymakers' language, which, in turn, has shaped the models.

Figure 1 provides an overview of the evolution of the usable core since 1975. It shows the frequency at which select topics are discussed by FOMC participants during their regularly scheduled meetings, the timing of important economic events, and some key milestones in the development of the academic literature. We discuss the interplay between these factors as the core of usable macro for policymakers has evolved.

Until the mid-1980s, *monetarism* was the main paradigm for policymakers. Friedman (1968) described its core in his famous presidential address to the American Economic Association as inflation being a monetary phenomenon, determined by the growth rate of the money supply in combination with nominal rigidities. As inflation surged in the late 1970s, the dominant role of monetarism in policymakers' thinking is indicated in Figure 1 by the large shaded area with the upward-sloping lines around that time. Monetarism remained an integral part of policymakers' vocabulary until the early 2000s.

Central to the monetarist view is the belief that changes in the money supply shift the AD curve along a fixed, nearly vertical AS curve, and that monetary policy has limited or no short-run effects on economic activity. However, the deep recessions of the early 1980s, during the Volcker disinflation, suggested that the AS curve was less steep than previously thought.

Kydland and Prescott (1977) (KP) argued that the AS curve's position is not fixed but depends on central bank *credibility*. Rational expectations, a concept gaining prominence at the time, link inflation expectations to policy decisions, making credibility key. KP showed that rule-based policies yield better outcomes than discretionary ones, which risk raising inflation expectations and shift the AS curve upward. This insight influenced New Zealand's decision to adopt an inflation targeting in 1989 and the Fed's in 2012.

As the figure indicates, credibility was a recurring topic during the high-inflation period of the late 1970s and early 1980s. While it is unlikely that policymakers explicitly referenced KP's logic in their discussions, they recognized that failing to act decisively to reduce inflation would undermine the Fed's capacity to achieve price stability. Credibility became an even more prominent theme in policymakers' language after Alan Greenspan took over as Fed Chair and as rational expectations became part of mainstream macroeconomic thinking.

Although *inflation expectations* were cen-

* Fisher: Federal Reserve Bank of Chicago, 230 S La Salle St., Chicago, IL 60604, USA, jonas.fisher@chi.frb.org. Hobijn: Federal Reserve Bank of Chicago, bart.hobijn@chi.frb.org. Villa: Federal Reserve Bank of Chicago, alessandro.villa@chi.frb.org. The views expressed in this paper reflect those of the authors and are neither necessarily those of the Federal Reserve Bank of Chicago nor of the Federal Reserve System.

tral to KP's argument, they were barely mentioned by FOMC participants until the early 1990s. That is when RBC models—the first to incorporate rational expectations within a DSGE framework (e.g., Kydland and Prescott, 1982)—were combined with models of nominal rigidities, particularly sticky prices (e.g., Calvo, 1983), to form the New Keynesian (NK) model.

At the core of the NK model are three equations, which are the equivalent of an AS curve, a policy rule, and an AD curve. Gertler, Gali and Clarida (1999) provide an early survey of the NK literature and discuss this three-equation model in detail. Woodford (2003) is considered the definitive NK reference.

The NK equivalent of the AS curve is known as the New Keynesian Phillips Curve (NKPC). It captures how firms that cannot adjust their prices every period set them based on current input costs and expected future price changes. Since input costs are higher when the economy is strong and the demand for factors of production is high, the NKPC implies that inflation increases with the current level of economic activity and *inflation expectations*.

It is this insight—that forward-looking price-setting decisions depend on expected inflation—that led to the increased emphasis on inflation expectations in policymakers' language in the 1990s and afterwards. Since 2005, *inflation expectations* has been the second-most mentioned topic among those we track in Figure 1.

In the NK model, the policy rule is expressed using the interest rate, rather than the money supply, as the monetary policy instrument. Most policy rules are grounded in the rule proposed by Taylor (1993) that was remarkably successful at capturing the Fed's historical interest rate choices. It prescribes that the Fed Funds rate increases more than one-for-one with inflation, such that the real interest rate rises when inflation increases. Additionally, the rule calls for the Fed Funds rate to increase with output to counteract upward pressures on prices and costs resulting from strong demand and reduced resource slack.

The extent to which an increase in the interest rate reduces demand in the NK model is determined by households' intertemporal substitution, captured by the Consumption Euler equation. It determines the slope and position of the NK model's equivalent of the AD curve.

The three-equation NK model described above is at the core of most modern macroeconomic models of monetary policy. It is a microfounded DSGE model that provides clear insights into what determines the position of the AS and AD curves and how they are affected by the central bank's policy rule.

It has been extended in many different ways. For example, Erceg, Henderson and Levin (2000) added capital and wage stickiness to it. Christiano, Eichenbaum and Evans (2005) added more features to develop the canonical empirical NK model that grounds models used at central banks around the world, including at the Fed, for monetary policy scenario analyses.

Such scenario analyses allow for the subjective quantitative assessment of the *balance of risks* to the Fed's full employment and price stability mandates. Monetary policy scenarios, known as "Alternative Scenarios," have become part of the materials prepared by Federal Reserve Board staff before every FOMC meeting. They were developed in response to the increased use of language about *risk management* by policymakers in the second half of the 1990s. In many ways, that language is still ahead of theoretical models that provide a less subjective assessment of asymmetries that are central to the discussion of the risk management. Some progress has been made (e.g. Evans et al., 2015) but research in this area is still in its early stages.

As useful as the three-equation NK model has been as a quantitative theoretical framework for policy discussions and analyses, events that have occurred since its introduction in the mid-1990s have led researchers to reconsider and alter each of its three equations.

The Taylor rule does not take into account that central banks cannot set the nominal interest rate (much) below zero.

However, in response to the deflationary pressures after the Japanese financial crisis of the early 1990s, the Bank of Japan lowered its interest rate to 0.5 percent in the fall of 1995.

This led economists to consider policy options in case lowering the interest rate to stimulate the economy and increase inflation—and, through that, inflation expectations—was not possible due to the Zero Lower Bound (ZLB). The main concern was that doing nothing at the ZLB would result in a liquidity trap (Krugman, 1998), a deflationary spiral in which households hold on to their money rather than spend it because price declines mean its purchasing power will be higher in the future than it is now.

Eggertsson and Woodford (2003) demonstrated, in the context of the NK model, that one way to prevent this from happening is through the central bank's use of *forward guidance*. When monetary policy options are constrained by the ZLB, the central bank can commit to future actions that raise inflation expectations. In turn, via the NKPC, higher inflation expectations lead to an increase in current inflation. A specific strategy involves pledging to maintain interest rates at the ZLB for an extended period, even after economic recovery and a rise in inflation have occurred.

This was the strategy the FOMC adopted when the Federal Funds rate hit the ZLB after the Global Financial Crisis (GFC) in 2008 and inflation declined. The statement that the FOMC has released after meetings since 1994 turned out to be a useful communication tool for this purpose. The way in which the committee communicated its commitment to keeping rates low evolved over time. Initially, the statement included language about accommodative policy for an "extended period." In 2011, the committee became more specific about the length of this period, while in 2012, it adopted the "Evans rule" and provided the economic conditions necessary for a liftoff of the Fed Funds rate from zero. Forward guidance remained a prominent topic in policymakers' language through 2016, as inflation continued to run below the committee's target.

What turned out to be problematic was the quantitative analysis of the effect of forward guidance in the NK model. In the baseline version it is an extremely powerful tool, with its impact increasing the further ahead the central bank provides such guidance (Del Negro, Giannoni and Patterson, 2012). This is because the Consumption Euler equation, which is the foundation of the AD curve in the NK model, implies that households are highly forward-looking in their response to expected changes in future interest rates.

This led researchers to consider models that include a fraction of households whose consumption and savings decisions are less responsive to interest rates because they are borrowing-constrained, and whose consumption depends instead on the amount of available liquid assets they have. The HANK model of Kaplan, Moll and Violante (2018) is the most prominent example of this. It not only addressed the Forward Guidance Puzzle but also showed how NK models with heterogeneity across agents in the economy can be solved and used to provide insights into the impact of the distribution of income and wealth on the transmission of monetary policy through its effect on the AD curve.

Forward guidance is not the only policy option when short-term rates are at the ZLB. The central bank can also purchase long-maturity assets and, through that, lower longer-term interest rates. This unconventional form of monetary policy is known as *Quantitative Easing* (QE). The Fed embarked on three rounds of QE after the GFC, and many other central banks implemented similar programs during that period.

The challenge for macroeconomic theory was that, in the baseline NK model, longer-term interest rates are directly determined by the expected path of the short-term rate set by the central bank. Thus, the central bank cannot influence them separately from its choice of policy rule and forward guidance. To understand the impact of QE on economic activity and inflation, researchers developed models where this direct link is broken, allowing QE to have an impact

beyond conventional monetary policy measures (e.g. Gertler and Karadi, 2013).

Since 2020, the focus has shifted from concerns about low inflation and the liquidity trap to explaining the surge and rapid decline in inflation post-Covid. Some researchers are exploring novel interactions between demand and supply, while others are reconsidering the NKPC and developing microfoundations for nonlinearities in it (e.g. Harding, Lindé and Trabandt, 2023). Though this work is still in its infancy, it will likely be a key part of the next step in the evolution of the core of usable macroeconomics for policymakers.

REFERENCES

Calvo, Guillermo A. 1983. "Staggered prices in a utility-maximizing framework." *Journal of Monetary Economics*, 12(3): 383–398.

Christiano, Lawrence J., Martin Eichenbaum, and Charles L. Evans. 2005. "Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy." *Journal of Political Economy*, 113(1): 1–45.

Del Negro, Marco, Marc Giannoni, and Christina Patterson. 2012. "The forward guidance puzzle." *FRBNY Staff Report*, 574.

Eggertsson, Gauti B., and Michael Woodford. 2003. "The Zero Bound on Interest Rates and Optimal Monetary Policy." *Brookings Papers on Economic Activity*, 34(1): 139–235.

Erceg, Christopher J., Dale W. Henderson, and Andrew T. Levin. 2000. "Optimal monetary policy with staggered wage and price contracts." *Journal of Monetary Economics*, 46(2): 281–313.

Evans, Charles, Jonas Fisher, François Gourio, and Spencer Krane. 2015. "Risk Management for Monetary Policy Near the Zero Lower Bound." *Brookings Papers on Economic Activity*, 141–196.

Federal Open Market Committee. 2025. "FOMC Transcripts." *accessed on January 10th, 2025*, https://www.federalreserve.gov/monetarypolicy/fomc_historical_year.htm.

Friedman, Milton. 1968. "The Role of Monetary Policy." *American Economic Review*, 58(1): 1–17.

Gertler, Mark, and Peter Karadi. 2013. "QE 1 vs. 2 vs. 3. . . : A Framework for Analyzing Large-Scale Asset Purchases as a Monetary Policy Tool." *International Journal of Central Banking*, 9(1): 5–53.

Gertler, Mark, Jordi Gali, and Richard Clarida. 1999. "The Science of Monetary Policy: A New Keynesian Perspective." *Journal of Economic Literature*, 37(4): 1661–1707.

Harding, Martín, Jesper Lindé, and Mathias Trabandt. 2023. "Understanding post-COVID inflation dynamics." *Journal of Monetary Economics*, 140: S101–S118. Inflation: Drivers and Dynamics 2022.

Kaplan, Greg, Benjamin Moll, and Giovanni L. Violante. 2018. "Monetary Policy According to HANK." *American Economic Review*, 108(3): 697–743.

Krugman, Paul R. 1998. "It's Baaack: Japan's Slump and the Return of the Liquidity Trap." *Brookings Papers on Economic Activity*, 29(2): 137–206.

Kydland, Finn E, and Edward C Prescott. 1982. "Time to Build and Aggregate Fluctuations." *Econometrica*, 50(6): 1345–1370.

Taylor, John B. 1993. "Discretion versus policy rules in practice." *Carnegie-Rochester Conference Series on Public Policy*, 39(1): 195–214.

Woodford, Michael. 2003. *Interest and prices.* Princeton, NJ [u.a.]:Princeton Univ. Press.

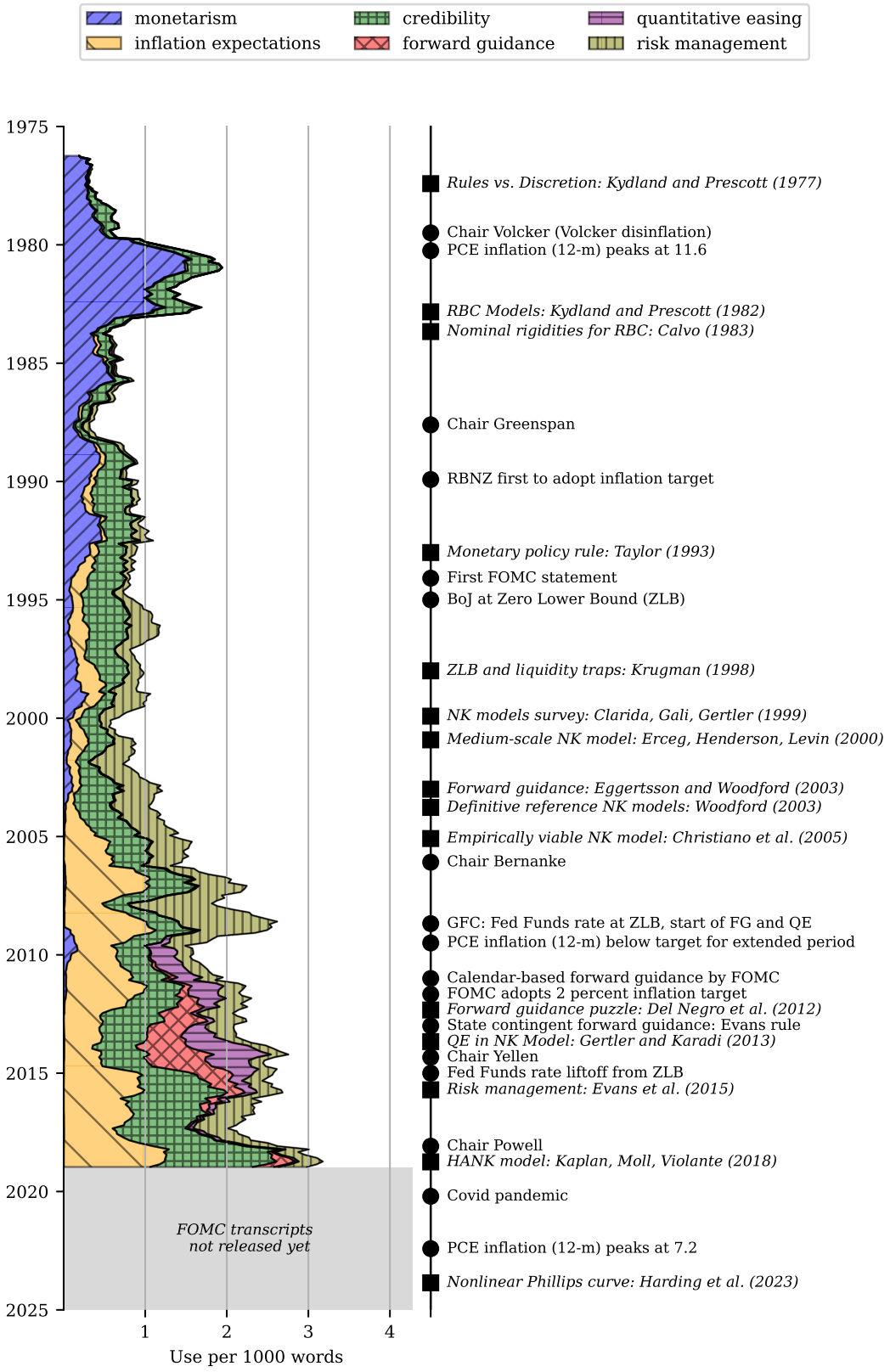

FIGURE 1. EVOLVING CORE OF MACRO FOR MONETARY POLICYMAKERS: LANGUAGE, EVENTS, AND RESEARCH.

Note: Stacked area plot on the left contains the 365-day moving average of the frequency with which terms related to the topics in the legend were mentioned by FOMC participants during FOMC meetings. The specific words used to identify the topics are provided in the online appendix. The timeline on the right contains the timing of events (●) and the publication of cited papers (■).
Source: FOMC transcripts from Federal Open Market Committee (2025) and authors' calculations.