How the World Achieved Partial Consensus on Monetary Policy[1]

James Bullard
President and CEO, Federal Reserve Bank of St. Louis

Shadow Open Market Committee Meeting
Current Monetary Policy: The Influence of Marvin Goodfriend
New York, N.Y.
March 6, 2020

In 2007, Marvin Goodfriend published a paper titled "How the World Achieved Consensus on Monetary Policy" in the *Journal of Economic Perspectives*. It is an excellent summary of the sequence of economic ideas influencing and eventually dominating actual monetary policy from Lucas (1972) up to the eve of the global financial crisis. Goodfriend's explanations and summaries are so lucid, and his examples and thinking so familiar to me that in rereading the article I had the sensation that my life was flashing before my eyes. In the article, Goodfriend builds up the key idea in central banking of the last 50 years—namely, successful monetary policy requires a credible commitment on the part of the central bank to careful, systematic future policy choices. At the end of the article, he allows for some unfinished business and some open issues, among them the question of why credible central banks may end up with inflation that is too low when compared to an intended target.

In retrospect, the "World Consensus" article appears a bit triumphal and somewhat premature. The events since its publication seem to suggest that the consensus that appeared to exist at that moment has its own problems. As we meet here today, many central banks have consistently missed their stated inflation targets to the low side for many years. Much sovereign debt traded in global markets today carries a negative nominal rate of return. Credibility of central banks, instead of improving over time based on the achievement of stated

---

[1] Any opinions expressed here are my own and do not necessarily reflect those of the Federal Open Market Committee.

goals, seems to be eroding instead. The problem of how inflation can end up "too low," in particular, does not seem to fit neatly into the proposed consensus framework. Accordingly, I have titled this talk "How the World Achieved Partial Consensus on Monetary Policy."

One of the first and most practical issues in attempting to implement the consensus as outlined by Goodfriend is how a central bank might go about achieving the necessary credibility. One important and influential idea has been that the central bank can commit to a linear policy feedback rule, such as the one suggested by Taylor (1993). Taylor followed Friedmanian ideas on policy rules by insisting on a credible commitment to future central bank behavior. But, unlike Friedman's *k* percent money growth rule, a monetary policy rule of the Taylor type provides a complete state contingent map of how the monetary policymaker intends to set the policy instrument in all future states.

The new classical synthesis model of Goodfriend and King (1997), as well as its close relative, the New Keynesian model of Woodford (2003), provided clearly worked out examples of DSGE economies in which policy rules in the class suggested by Taylor (1993) provided high quality business cycle stabilization. These models could be viewed very broadly as real business cycle economies with a sticky price friction. The goal of the monetary policymaker in this framework is to act to undo the effects of the sticky price friction in order to achieve the "Wicksellian natural real rate of interest," also known as R*, i.e., the real rate of interest that would occur in the underlying frictionless real business cycle economy. As many investigations of models in this class were carried out, it gradually became clear that many different Taylor-type rules could be used to implement the optimal monetary policy.

The "World Consensus" paper was published in 2007. Unfortunately, the years following its publication have not provided further consolidation of the consensus but have instead weakened the consensus to some extent. Goodfriend cited the inflation outcomes in Japan from the mid-1990s to 2007 as a puzzle that required explanation. The core issue might be stated as follows: The Volcker disinflation and its global aftermath showed that central banks can control inflation over the medium term and that central banks eventually came to understand the importance of a credible commitment to an inflation target. If this is the case, why is it that major central banks since 2007 have missed their inflation targets on the low side for many years in a row? Japan's puzzle, noted by Goodfriend, became more pervasive and less of an anomaly as time went on.

This puzzle is important enough that we may want to consider backing off of one or more of the key elements of the apparent consensus that Goodfriend identified. One idea is to swap out the sticky price friction and instead explore the implications of non-state contingent nominal contracting (NSCNC) in credit markets, as in Bullard and DiCecio (2019). This model could be viewed again as an underlying real business cycle economy but now with the NSCNC friction. The goal of monetary policy is again to undo the effects of the friction in order to achieve the Wicksellian natural rate of interest for the economy. Again, many different Taylor-type policy rules could be used to implement the optimal monetary policy. Actual inflation dynamics would depend on which rule was used. The model features heterogeneous households and Gini coefficients close to those observed in the U.S. economy.

The NSCNC friction is a compelling one to study and has probably not received sufficient attention in the macroeconomics literature. Intuition suggests that NSCNC in actual credit markets is rampant and that these markets can be very large. Nominal mortgage debt in the U.S. for instance was about $16 trillion as of the third quarter of 2019.[2] Doepke and Schneider (2006) argued that unexpected changes in inflation cause significant reallocation in the economy because of nominal asset holding. Sheedy (2014) constructed a model with both a sticky price friction and a nominal contracting friction and found that the NSCNC friction was about 9 times more important than sticky prices for household welfare.

The essence of optimal monetary policy in an economy with an important NSCNC friction is fairly straightforward. Households have to sign ex ante contracts in order to borrow and lend, and in simple versions they will agree on a nominal interest rate that is equal to the expected rate of nominal GDP growth. Shocks to the real growth rate of the economy will then occur, arising from either demand or supply. The policymaker then acts to set inflation such that the contracted nominal interest rate is equal to the actual ex post rate of nominal GDP growth. As in other models, commitment to act in this manner must be credible, and the credibility can be aided by a Taylor-type monetary policy rule that provides a map of monetary policy actions to be taken in each future state. The monetary policy rule is a way of ensuring that the monetary policymaker and the private sector jointly understand how monetary policy will be adjusted in the future in response to shocks to economic growth. Critically, the central bank has to be able to actually deliver the required amount of inflation ex post.

---

[2] See https://www.federalreserve.gov/data/mortoutstand/current.htm.

Figure 1 provides an illustration of some of these ideas based on U.S. data over the last 15 years.

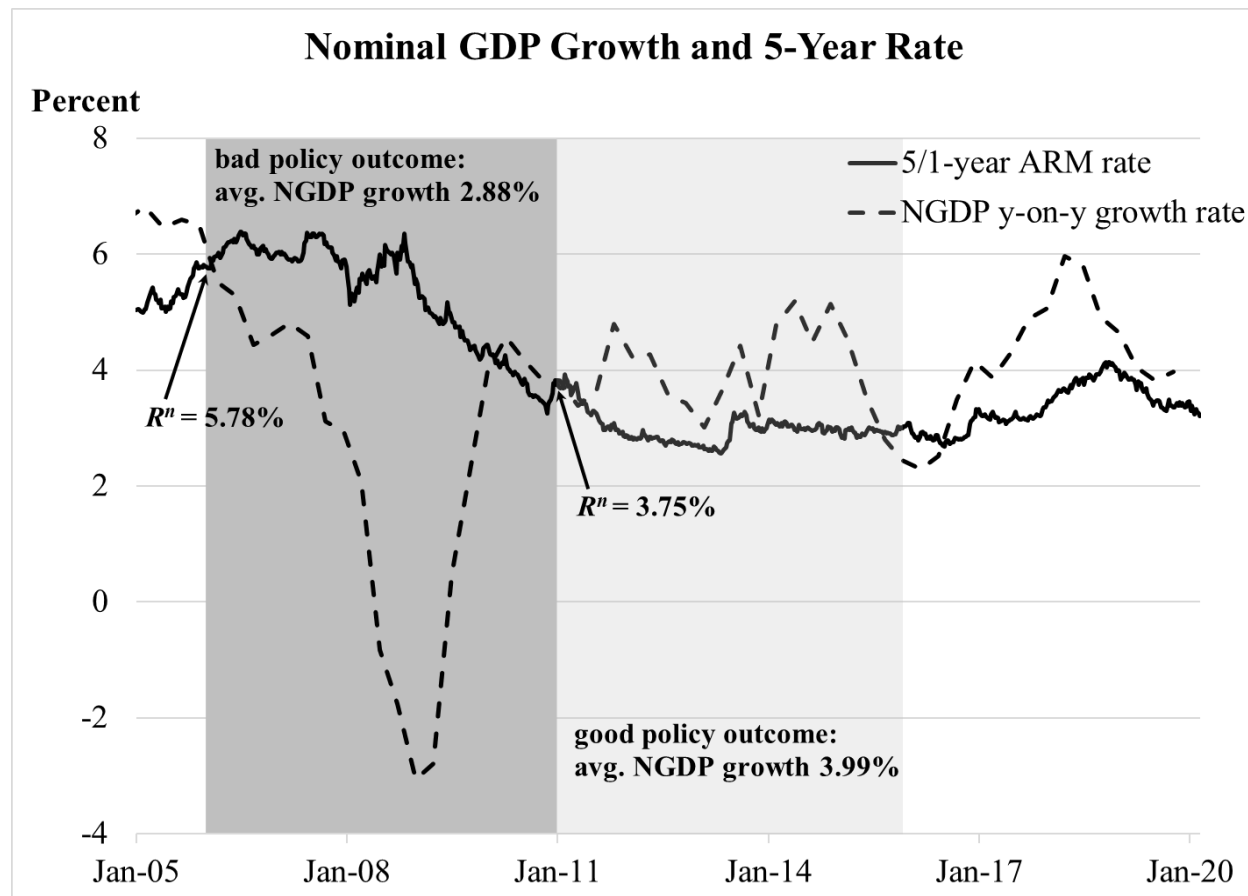### Nominal GDP Growth and 5-Year Rate

Percent

Figure 1: Nominal GDP growth and 5/1-year ARM rate. Sources: Bureau of Economic Analysis, Freddie Mac and author's calculations. Last observations: 2019-Q4 and week of Feb. 27, 2020.

The figure plots U.S. data on five-year mortgage rates, which I will refer to as the contract rate, R^n, along with actual nominal GDP growth. The dark gray region on the left indicates a period when monetary policy was not executed well according to the principles of this model, and the light gray region on the right is a period when monetary came close to meeting the optimality condition. On the left side, the contract rate is 5.78%, indicating in this model an expected rate of nominal GDP growth of 5.78%. Subsequent nominal GDP growth (because of the crisis) was only 2.88%, so borrowers did not have sufficient resources to pay off their nominal debts. The model predicts significant reallocation in this case. On the right side, the contract rate is 3.75%, while subsequent nominal GDP growth has not been too far off at 3.99%. The monetary policy

in this case has largely succeeded in converting the non-state contingent nominal contracts originally agreed to into the theoretically ideal state contingent real contracts.

The issue of low inflation around the world may come into clearer view in a model of this type. A critical feature of the optimal nominal GDP targeting policy is that the central bank can actually produce the required level of inflation in response to real growth shocks. The figure, as well as our intuition, suggests that this was very difficult during the financial crisis years. If the private sector and monetary policymakers themselves begin to doubt policymaker ability to deliver promised inflation, the private sector agents will begin to contract on lower and lower nominal interest rates. Once these contracts are in place, the optimal policy is to deliver the associated lower level of nominal GDP growth and the associated lower rate of inflation. This dynamic could lead inflation to slide to low levels over time. The end result would be low nominal interest rate contracts, low nominal GDP growth and low inflation. Accordingly, theories leaning in this direction may provide a promising avenue for thinking about policymaker incentives for maintaining credibility in a low inflation world.

Marvin Goodfriend was a brilliant economist who helped the profession make great strides on a critical social problem—inflation control—over the last four decades. His "World Consensus" paper lays out the deep ideas, many of which he contributed to personally, that formed the foundation of an apparent consensus on monetary policy that seemed to have developed by the eve of the global financial crisis. Subsequent global macroeconomic events have challenged that consensus. Our responsibility is to follow the example of Marvin Goodfriend's career and ethos to aggressively explore new ideas in order to forge a new consensus on monetary policy.

References

Bullard J. and R. DiCecio (2019): "Optimal Monetary Policy for the Masses," Federal Reserve Bank of St. Louis Working Paper No. 2019-009C.

Doepke, M., and M. Schneider (2006): "Inflation and the Redistribution of Nominal Wealth," *Journal of Political Economy*, 114(6), pp. 1069-97.

Goodfriend, M. (2007): "How the World Achieved Consensus on Monetary Policy," *Journal of Economic Perspectives*, 21(4), pp. 47-68.

Goodfriend, M. and R.G. King (1997): "The New Neoclassical Synthesis and the Role of Monetary Policy," *NBER Macroeconomics Annual*, 12, pp. 231-83.

Lucas, R.E. Jr. (1972): "Expectations and the Neutrality of Money," *Journal of Economic Theory*, 4(2), pp. 103-24.

Sheedy, K.D. (2014): "Debt and Incomplete Financial Markets: A Case for Nominal GDP Targeting," *Brookings Papers on Economic Activity*, Spring, pp. 301-61.

Taylor, J.B. (1993): "Discretion versus Policy Rules in Practice," *Carnegie-Rochester Conference Series on Public Policy*, 39, pp. 195-214.

Woodford, M. (2003): *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press.