Summary of Audience Q&A
Session #6: "Monetary Policy Tools"

Date: June 5, 2019

Moderator: Kenneth Rogoff (Harvard University)

Presenters: Jing Cynthia Wu (University of Notre Dame) and Eric Sims (University of Notre Dame)

Discussant: Annette Vissing-Jørgensen (University of California, Berkeley)

Summary Prepared by: Marc Giannoni, Senior Vice President and Director of Research, Federal Reserve Bank of Dallas, and Jackson Crawford, Research Assistant, Federal Reserve Bank of Dallas

Following the presentation of "Evaluating Central Banks' Tool Kit: Past, Present, and Future" by Cynthia Wu and the discussion by Annette Vissing-Jørgensen, Professor Wu and her coauthor Eric Sims responded to several comments raised in Professor Vissing-Jørgensen's discussion. Professor Wu noted that the model parameter governing the spread between corporate and government bond yields could be allowed to vary over time, but that endogenising this term could prove challenging. She mentioned that a signaling channel for the effect of quantitative easing (QE) could be added to the model, and she argued that in the model, targeting long-term interest rates is functionally equivalent to using QE. Finally, Professor Wu took an opportunity to emphasize that in the model, consumption depends on the short-term interest rate while investment depends on the long-term rate. She argued that if mortgages were added to the model, they would behave largely like investment.

Professor Sims explained some additional modelling choices in the paper, pointing out that QE and certain financial frictions can cause a breakdown of Ricardian equivalence, so that details of debt distribution can play an important role in model outcomes. He closed with favorable comments on the idea of an event study analysing the effects of QE on bank profitability.

Kenneth Rogoff commented on the empirical evidence on QE, stating that there is little or no debate on the effects of QE1, but much more debate on the effects of QE2 and QE3. He argued that it is important to distinguish between a form of QE in which the government and the Fed's balance sheets are consolidated so that QE just acts as maturity transformation, versus a form of QE in which the central bank is an intermediary buying private securities. Rogoff also commented on negative interest rates, pointing out that proposed ideas exist which could eventually allow for pushing nominal interest rates to deep negative values. He further remarked that in the future, people may remember what was *not* discussed at this Fed Listens conference, such as some of the more out-of-the-box ideas relevant to monetary policy. Professor Rogoff then opened the floor up for questions.

Several conference participants commented on ways to make the model more realistic. Lewis Alexander (Nomura Securities International) suggested that the authors include an international dimension—in particular, the demand for safe assets from abroad—and that they apply their model to determine the minimum size of the Fed's balance sheet that would allow control of policy rates, as well as the desirable maturity structure of the assets that the Fed chooses to hold. Kristin Forbes (MIT Sloan School) asked whether Professors Sims and Wu's model could provide any insight on the spillover effects from U.S. conventional and unconventional monetary policy on the rest of the world. Krishna Guha (Evercore ISI) asked about the increasingly negative term premium on U.S. Treasury securities, and whether there is some constraint on this trajectory. He also asked whether Professors Sims and Wu had investigated the strategies of central banks that have attempted to immunize banks from the adverse effects of negative interest rates.

In her response, Professor Wu agreed that the effectiveness of QE2 is up for debate, but she argued that QE3 had been effective in relaxing financial conditions, particularly in terms of lowering the shadow interest rate as well as long-term Baa corporate bond spreads. She said that it might be worth exploring splitting the effects of QE into two separate dimensions to better capture the effects on Treasury and corporate bond yields. In response to questions about international issues and spillovers, Professor Wu agreed that these questions are interesting but noted that they could not be addressed by the closed-economy model in their paper. In response to Mr. Guha's mention of the maturity structure of debt, she explained that the current model only allows for one short-term bond and one long-term bond, but that the model could be expanded along this dimension. Regarding the attempts to immunize banks from the adverse consequences of negative interest rates, Professor Sims referred to a paper by Mauricio Ulate as well as a separate paper by Eggertsson, Summers, Juelsrud, and Wold arguing that interest rate passthrough breaks down when nominal rates are negative, as banks' lack of profitability hampers their ability to extend credit. He added that policies to immunize banks from negative interest rates make sense and could be analyzed through the lens of models like the one presented.

In response to the question about the international dimension of unconventional monetary policy, Professor Vissing-Jørgensen brought up a paper by Koijen, Koulischer, Nguyen, and Yogo. She characterized the paper as revealing that most of the people and entities who sold bonds to the European Central Bank during a QE episode were foreigners. She proposed that similar research be done in determining the characteristics of investors who sold bonds to the Fed during its QE programs.

Richard Clarida (Vice Chair, Board of Governors of the Federal Reserve System) gave a few brief comments, primarily relaying appreciation to the authors for their modeling approach. He noted the stark contrast between models like the one presented and the macroeconomic models of 12 years ago.

Next, David Andolfatto (Federal Reserve Bank of St. Louis) asked whether the experience of Japan suggests QE does not work as well in practice as previously thought. Mickey Levy

(Berenberg Capital Markets), who noted the central role played by financial intermediaries in the model presented, asked if there is anything the Fed could do now in anticipation of future QE to ensure a more successful implementation of the policy.

In her reponse, Professor Wu noted that Japan's yield curve is particularly flat and that unconventional monetary policy, which might be successful in a country like the United States, could have more limited effects in other countries. She emphasized the importance of the ability to drive down long-term rates for the success of unconventional monetary policy. Professor Sims connected this point to Mr. Levy's question, and emphasized the role of central bank balance sheet normalization in allowing for more successful unconventional monetary policy in the future.

In the last round of questions, Sam Schulhofer-Wohl (Federal Reserve Bank of Chicago) asked whether the presented model could analyze a maturity extension program by the Fed. Professor Sims responded by reiterating that the model contains a fairly simple term structure but that he and Professor Wu are thinking about how that might be modified. Peter Hooper (Deutsche Bank) asked how the effectiveness of QE is affected by the size of the Fed's balance sheet. Professor Wu responded by reemphasizing the role of balance sheet normalization to make sure that QE remains effective in the future.

Professor Rogoff noted that while the discussion had focused on the size of central bank balance sheets, the U.S. Treasury had been issuing long-term debt at the same time that these QE programs were occurring. Professor Vissing-Jørgensen commented that central banks could help create fiscal space in bad times, but that they may want to lean out of subsidizing government borrowing in good times in order to protect fiscal stability and be ready for the next crisis.

In her final comments, Professor Wu raised the question of whether it is the quantity of debt held by the Fed or whether it is the quantity of outstanding Treasury debt that matters. Professor Rogoff noted that what puts the Treasury and the Fed at odds in this situation is that the Treasury was trying to extend the maturity of the debt while the Fed was trying to shorten it.