

## INTRODUCTION

### Unconventional Monetary and Exchange Rate Policies

PIERRE-OLIVIER GOURINCHAS\* and PAU RABANAL

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**T**he recession that followed the 2008–2009 Global Financial Crisis triggered unprecedented monetary policy easing around the world. Initially, central banks in most advanced economies responded aggressively by decreasing interest rates until reaching their effective lower bound. Afterwards, as the economic outlook kept worsening, central banks started deploying new policies to affect credit conditions and to provide liquidity at a large scale. These new policies, labelled as *unconventional monetary policies*, included large-scale asset purchase programmes of domestic assets (such as government bonds, mortgage-backed securities, and private sector debt), liquidity provision and refinancing operations with commercial banks and other financial institutions, and exchange rate floors that lead to large accumulation of foreign exchange reserves.

With its topic “Unconventional Monetary and Exchange Rate Policies”, the 16th Jacques Polak Annual Research Conference of the IMF aimed at understanding the effects of these policies, as well as discussing their future usefulness after economic conditions and interest rates normalize. The conference took place at the IMF headquarters in Washington DC on 5–6 November 2015. This special issue of the *IMF Economic Review* includes some of the key academic

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\*Pierre-Olivier Gourinchas was the Editor-in-chief of the *IMF Economic Review* at the time of the 2015 ARC and is a Professor of Economics at the University of California, Berkeley, CA 94720-3880. Pau Rabanal was Co-Editor of the Review at the time of the 2015 ARC and is a Senior Economist in the Research Department of the IMF. The authors would like to thank the members of the organizing committee: Gustavo Adler (Chair), Ruy Lama, Tommaso Mancini Griffoli, Jean-Marc Natal, and Carolina Osorio Buitron. Contact: pog@berkeley.edu.

articles behind the presentations at that conference. As usual, these papers went through a rigorous refereeing process and benefited from extensive feedback provided by the discussants, conference participants, members of the Editorial Board, and members of the conference organization committee.

The 2015 Mundell-Fleming lecture, by former Federal Reserve Chairman Ben Bernanke (currently at the Brookings Institution), addresses two main criticisms of the US central bank's actions during the crisis: first, the role that unconventional monetary policies had on the US dollar exchange rate (the "currency war" criticism) and second, the effect that these policies had on financial stability in other countries (the "financial spillovers" criticism, in particular during the "taper tantrum" episode of 2013). Bernanke addresses the first criticism by clarifying the two main global effects of US monetary policies. On the one hand, expansionary monetary policy leads to an "expenditure-augmenting effect" whereby higher demand in the USA affects the demand for its trading partners' exports, improving their growth prospects. On the other hand, a US dollar depreciation leads to an "expenditure-switching effect" where higher demand for US goods comes at the expense of others. Bernanke concludes that the "expenditure-augmenting effect" dominated the "expenditure-switching effect" after the crisis, and hence, US unconventional policies were on balance positive for the world economy. Bernanke responds to the second criticism by explaining that while there is a strong co-movement of asset prices, credit growth, and leverage across countries, little is known as to whether this co-movement is excessive or how presumed spillovers operate. Bernanke suggests that countries can use flexible exchange rates, as well as regulatory and macroprudential measures to enhance their financial resilience. In the last part of the lecture, Bernanke examines the "exorbitant privilege" of being the world's reserve currency and concludes that the benefits to the USA and its trading partners are more balanced than during the Bretton Woods era.

The second paper in this issue, "Monetary Policy, Incomplete Information and the Zero Lower Bound" by Christopher Gust, Benjamin Johannsen, and David López-Salido (Board of Governors of the Federal Reserve System), studies the conduct of monetary policy when the equilibrium real rate of the economy is unknown and the zero lower bound of nominal interest rates is binding. The equilibrium rate of interest is an important benchmark of the stance of monetary policy, and a number of recent estimates indicate that it has fallen sharply during the Great Recession and remains low. In addition, uncertainty about the equilibrium real rate highlights the potential information processing problem facing policymakers. This paper uses a New Keynesian model to study optimal monetary policy in this set-up. When interest rates are low and near the zero lower bound, the private sector internalizes that the monetary authority can only respond in one direction, which increases the mean of the private sector's expected future paths for short-term nominal (and real) interest rates. As a result, optimal monetary policy needs to take this tightening bias into account and respond less to signals that the real interest has increased. In other words, the optimal policy is to make a mistake on the side of keeping the real policy rate

below the perceived efficient rate. The paper also studies the optimality of commonly used Taylor rules for monetary policy.

The next paper in this issue “QE in the future: the central bank’s balance sheet in a fiscal crisis” by Ricardo Reis (London School of Economics) considers the future use of Quantitative Easing (QE) policies. Instead of focusing on the role of QE in a financial crisis, as most of the literature does, this paper looks at how the central bank could address a fiscal crisis, understood as a situation where the fiscal outlook becomes suddenly inconsistent with both stable inflation and debt sustainability. Given nominal and financial frictions, as well as the possibility of a sovereign debt default by the government, the fiscal crisis can lower welfare through aggregate demand and nominal rigidities, as well as contractions in credit and disruption in financial markets. While QE is neutral in normal times, this is not so during a fiscal crisis for two reasons. First, as in the fiscal theory of the price level, a shortfall in real government surpluses requires a jump in the price level to lower the real value of outstanding debt, i.e. debt held by the private sector. By affecting the size of that outstanding debt, QE directly affects the size of the required inflationary shock. Second, QE can reduce the risk of default on public sector debt, which reduces the risk of a financial market freeze. In both cases, the power of QE comes from the fact that interest-paying reserves issued by the central bank to purchase government debt are default-free: these reserves are a special public liability, neither substitutable by currency nor by government debt. Importantly, the paper articulates the reasons why QE is not equivalent to either standard fiscal policy, or stealth monetary financing, precisely because interest-paying reserves are not substitutable for short-term bonds or currency.

The fourth paper, “The hunt for duration: not waving but drowning?” by Vladyslav Sushko, Dietrich Domanski, and Hyun Shin (Bank of International Settlements), explores channels through which the demand for long-term safe assets by long-term investors may be upward sloping, i.e. increasing in the price of these assets rather than decreasing. An upward-sloping demand curve would amplify the general scarcity of safe assets. The authors start by observing that declining long-term interest rates increase the negative duration gap of long-term investors. Typically, long-term investors such as life insurance companies have longer duration liabilities (the fixed term obligations to policy holders) than the duration of their assets. When long-term interest rate declines, this duration gap tends to increase, i.e. the duration of assets increases less than that of liabilities. Long-term investors are likely to respond to this increasing mismatch by increasing the duration of their assets, i.e. by purchasing more long-term assets. In turn, this drives up the price of these assets, or equivalently decreases long-term interest rates. The paper provides some evidence that the demand for long-dated bonds by German insurers in 2014 was indeed upward sloping. The paper offers a provocative and novel channel through which adverse feedback loops may develop, amplifying the scarcity of safe assets.

In the final paper, “Financial Frictions and Unconventional Monetary Policy in Emerging Economies”, Roberto Chang (Rutgers University) and Andrés Velasco (Columbia University) consider the use of conventional and

unconventional monetary policy by small emerging economies. These authors develop a dynamic small open economy model with financial frictions. They use their model to investigate which exchange rate regime (fixed, flexible) is more appropriate, as well as the role of unconventional monetary policy. A central message is that unconventional policies – e.g. central bank direct credit, discount lending, or equity injections – matter if the financial frictions are binding. It follows that these policies can be effective in emerging economies even away from the zero lower bound, to the extent that financial frictions are important. The paper provides a simple and transparent model where the effect of conventional as well as unconventional monetary policies can be evaluated rigorously.