



QE experiences and some lessons for monetary policy: defending the important role central banks have played

Article by Luiz Awazu Pereira da Silva and Phurichai Rungcharoenkitkul
Bank for International Settlements¹

The Eurofi Magazine

The Eurofi High Level Seminar 2017, 5–7 April 2017, Malta

A decade ago, the world's major central banks found themselves facing enormous new challenges. The stakes were much larger than just a setback in economic activity – also at risk was the cohesion of the international economic and political order. The world was grappling with its worst financial crisis in 80 years; the gravity of the situation called for an aggressive and balanced countercyclical (fiscal and monetary) stimulus. However, after that initial promising G20 coordinated policy response, local political economy factors in many advanced economies (AEs) began to constrain the capacity to implement the desired balance of policy mix, notably between aggregate demand management and structural reforms. Meanwhile, the economic and financial situation worsened, along with a serious crisis of confidence associated with concerns about European sovereign debt.

Against this backdrop, central banks ventured into the territory of unconventional monetary policies (UMP). Little was known at the time about how this approach would work in practice. One version had already been tried by the Bank of Japan in the 1990s, with mixed results. Many studies have found that UMP could help to stabilise financial institutions' funding costs and reduce uncertainties, even if their effectiveness in boosting aggregate demand and (observed and expected) inflation was less clear.²

Space is too limited here to summarise the recent extensive literature on QE effectiveness.³ And whether central banks in the 2010s should have done things differently will certainly continue to inspire much debate. But there are some general observations that should be remembered when assessing the monetary policy approach of the past decade.

First, the conditions that central banks faced when implementing UMP were both extreme and unprecedented. A full understanding of the challenges faced requires a full appreciation of the information constraints they laboured under. There was much less information then than now about the interconnectedness of very large financial institutions and/or the toxicity of assets in their balance sheets. Central banks did what they thought was best at the time to address the daunting challenges. It is important to refrain from easy unjustified criticisms after the fact.

Second, it is important to note a couple of key differences that distinguish the challenges of the past decade from those the Bank of Japan faced in the 1990s. In the absence of supportive fiscal policies that were present in the 1990s in Japan, monetary policy post-Global Financial Crisis (GFC) effectively became

¹ The views expressed here are our own and do not necessarily represent those of the BIS. We thank, without implication, comments received from Claudio Borio, Jaime Caruana, Andrew Filardo and Robert McCauley. We also thank Jouchi Nakajima for providing analytical inputs and Amy Wood for research assistance.

² See, for example, Ito (2014), Bowman et al (2011) and Ugai (2007).

³ For a recent survey, see Borio and Zabai (2016). There is of course a very large amount of new books and articles on the topic.



“the only game in town”. Hence, the responsibility of boosting aggregate demand fell almost exclusively on central banks.

Third, new threats are now emerging to long-term, well-established international economic order, often referred to as “globalisation”. The recent period has brought a “populist” backlash against experts in general, including central banks. Some blame trade and financial integration for the job losses in AEs’ manufacturing and worsening socio-economic side effects (eg rising inequality), although these policies had brought long-term benefits to many countries, AEs and EMEs alike, for decades. There is a new mindset that rejects international cooperation in favour of “protectionism”, by focusing narrowly only on the negative aspects of globalisation and ignoring its positives. Ironically, such a one-sided narrative may have made it more difficult to address the negative distributional consequences of globalisation through well-known corrective policies (eg adequate targeted fiscal transfers, retraining of the workforce, investment in human and physical capital etc).

These three observations illustrate the differences between assessing QE in the 1990s and now, as well as the gravity of the present situation. There is a simplistic criticism against a set of policies that have produced economic development and worked well for the last five decades, and an indiscriminate rejection of other policies, including those conducted by the central banks during the GFC to avoid another Great Depression. This should call for a clear defence of both policymakers’ actions, especially those of central banks, and trade and financial integration under globalisation.

Turning specifically to UMP, these tools proved critical to the role of monetary policy in the past decade. UMP provides central banks with an option to ease monetary conditions even after they exhaust their “conventional” ammunition of lowering short-term interest rates.⁴ By expanding the central bank balance sheet (or changing its composition) through the purchases of public and private assets, central banks can influence long-term interest rates and asset prices. In practice, the specific design of UMP varies depending on the policy objectives and the characteristics of the financial system. For example, most recently in Japan, UMP involves an explicit targeting of long-term yields. In Europe and the US (as well as Japan in earlier days), UMP entails a fixed amount of asset purchases, which indirectly influence bond yields and asset prices.

UMP has demonstrated its ability to arrest financial panics from spiralling out of control and, in that context, to stimulate aggregate demand. Why exactly this is the case is still a subject of intense debate. As Ben Bernanke famously quipped, “the problem with QE is that it works in practice, but it doesn’t work in theory”.⁵

Nevertheless, there is a broad consensus that UMP can work through various channels. Some emphasise the portfolio balance channel, where asset purchase programmes boost demand for risky assets by removing duration from fixed income markets. Others point to the signalling effect of UMP, ie the signal they send about the central bank’s intent and about the outlook for policy (which depends on the “credibility” of forward guidance). Regardless of the channels involved, UMP have proven to be able to keep financial conditions very accommodative. The substantial decline in long-term yields over the past eight years is unmistakable (Graph 1 – left-hand panel). Studies suggest that QE1 in the United States lowered the 10-year bond yield in the order of 100 basis points.

⁴ See Blinder (2013).

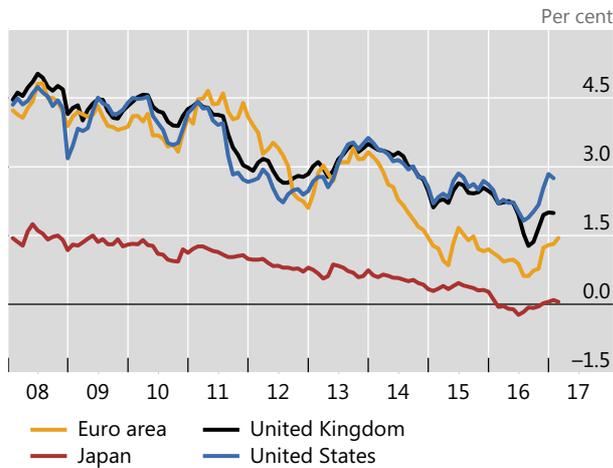
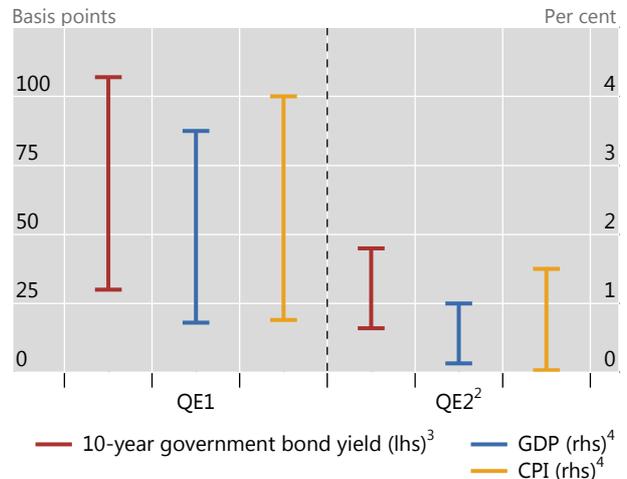
⁵ See FT: <https://www.ft.com/content/3b164d2e-4f03-11e4-9c88-00144feab7de>.



QE and its effectiveness

Graph 1

10-year government bond yield

Impact of quantitative easing in the United States¹

¹ The figures show the range of effectiveness, which refers to the maximum and minimum impacts across listed studies. ² Impact on 10-year government bond yield includes an effect of Maturity Extension Program (MEP). ³ Change in the yield following quantitative easing policy (QE) announcement. ⁴ Peak effect.

Sources: Krishnamurthy and Vissing-Jorgensen (2011); Gagnon et al (2011); Christensen and Rudebusch (2012); D'Amico and King (2013); D'Amico et al (2012); Bauer and Rudebusch (2014); Neely (2015); Chadha et al (2016); BIS Annual Report (2016); Swanson (2011); Hamilton and Wu (2012); Baumeister and Benati (2013); Weale and Wieladek (2016); Gertler and Karadi (2013); Chung et al (2012); Haldane et al (2016); Chen, Curdia and Ferrero (2012); Datastream.

What are some of the open questions raised about UMP in the post-GFC period? Studies based on the US experience, which may also inform the policy debate for the euro area, suggest that the effectiveness of QE on lowering long-term yields may have declined over time.⁶ QE2 and the Maturity Extension Program (Operation Twist), which involved \$1.2 trillion of US Treasuries purchases (four times the size of QE1), are estimated to have lowered yields by only 15–45 basis points (Graph 1 – right-hand panel). Why? In part, the benefits from mitigating the risks of spiralling market dislocations may have largely faded once the worst of the crisis was over. And monetary policy may have reached its limits, after the market priced in an extended period of low policy rates and compressed term premia.

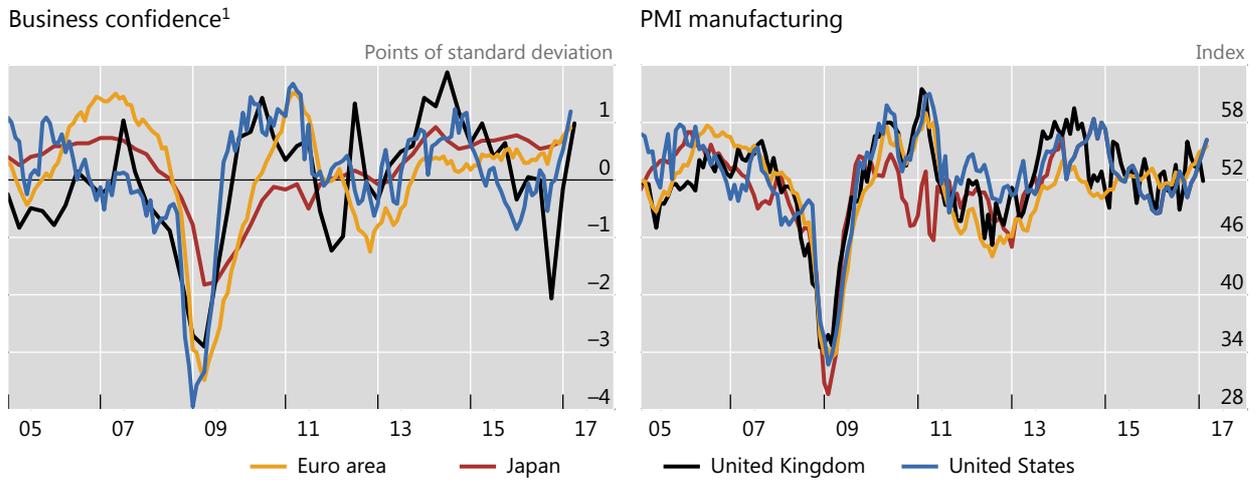
On another front, easing financial conditions is of course not an end in itself, but a means to boost private demand. On this account, the global economy indeed averted the prospect of a prolonged depression. By 2010, the business sentiments and manufacturing production recovered to near historical averages (Graph 2). The aggressive policy responses including UMP probably played a critical role in pre-empting a downward spiral in the confidence crisis and a freefall in economic activity. However, a more long-lasting legacy of the crisis has also been felt. Given the need for balance sheet repair in the banking sector, credit growth has taken a much longer time to recover, and even today is still significantly subdued compared to the pre-crisis period (Graph 3 – left panel). Consumer confidence has also recovered only gradually, reflecting high unemployment (Graph 3 – right-hand panel). The intensifying European sovereign debt crisis then introduced a renewed drag on the global economy during 2011–12. Again, aggressive intervention through UMP, at least *prima facie*, may have provided some cushion for the real economy.

⁶ Experience of UMP in the euro area is relatively short. The ECB introduced asset purchase programmes in 2014, focusing first on ABS and covered bonds. Purchases of government bonds, perhaps the purest form of quantitative easing, were initiated only in 2015.



A prolonged depression averted

Graph 2

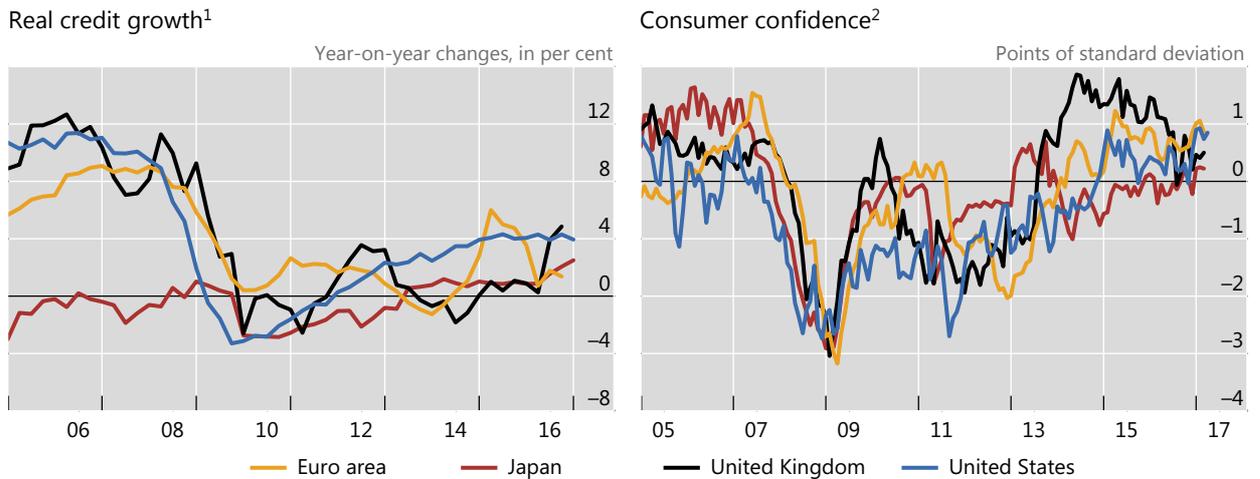


¹ Normalised data, measured as the difference between the indicator and its historical average.

Sources: Datastream; BIS.

But the crisis also left long-lasting imprints

Graph 3



¹ Total credit to private non-financial sector deflated by the GDP deflator. ² Normalised data, measured as the difference between the indicator and its historical average.

Sources: Datastream; BIS.

What are the *marginal* effects of UMP on the real economic activity? This issue has been hard to assess with a high degree of confidence, as was the case with the studies on the earlier experiences in Japan. Estimates of QE1 on real GDP vary by as much as 1–3%.⁷ There is also evidence that QE’s real effect is at least twice as uncertain as that of conventional monetary policy.⁸ Uncertainty aside, a number of studies

⁷ For example, see Chung et al (2012), Haldane et al (2016).

⁸ Williams (2013).



including our own work at the BIS have found that the real effects of these measures have also declined over time (Graph 1 – right-hand panel). As in the case of the impact on financial markets after the initial decline in the yield curve, the more limited room for additional stimulus has had consequences. In addition, the monetary transmission mechanism appears to become impaired at very low interest rates.⁹ Broader behavioural factors that run counter to our usual assumptions may also be at work: saving may rise rather than fall in response to lower rates, if the income effect dominates in cases where households have a target for saving. And firms' investment decisions may depend more on confidence in the economic outlook than on financing costs.

It is also important to remember that prolonged periods of very accommodative monetary policy are not without costs. Indeed, the unintended consequences of the policies must be considered. Distorted risk perceptions could lead to a build-up of financial imbalances, whose symptoms may only show up over time. These imbalances can lead to resource misallocations with a long-lasting impact on productivity.¹⁰ Very low or negative interest rates could also weigh on the profitability of financial institutions, impairing the monetary transmission mechanism and making these institutions more vulnerable to future shocks, and delay balance sheet repair. And if the objective of conventional and unconventional monetary policies is ultimately to foster confidence and reinvigorate "animal spirits", reliance on these measures may not send the right signal if they are continued too long after the crisis is over.

It must also be remembered that we live now in a much more interconnected financial world compared with the 1990s and that the international role of some of the jurisdictions adopting UMP now dwarfs that of Japan's then. What are the new lessons and challenges for other countries? Very accommodative monetary policies in advanced economies have spilled across borders in ways that are now well documented.¹¹ They call into question the idea that a floating exchange rate regime provides an effective shield against the vagaries of capital flows and their associated economic and financial stability risks. Instead, the adoption of UMP in major advanced economies has had a far-reaching fallout on term premia and exchange rates everywhere, accentuating the global financial cycle.¹²

Against this backdrop, it should not be too surprising that policymakers remain divided on how best to incorporate these experiences into monetary policy frameworks. Some recommend a more pragmatic post-Mundell-Fleming framework in EMEs, where macroprudential instruments help to smooth out excessive movements in the exchange rate and FX intervention supplements a flexible exchange rate regime.¹³ An illustration of the growing usage of macroprudential tools can be seen in Graph 4. Moreover, "capital flow management" measures (CFMs) are now seen in a more favourable light by many as a useful, if not important, part of the policy toolkit in this period of enhanced financial globalisation.¹⁴ In part, CFMs might allow domestic monetary policy to exert greater leverage on domestic economies and can complement other policies to lean against the wind (LAW).

⁹ Borio and Hofmann (2017).

¹⁰ Borio et al (2016).

¹¹ IMF (2013a), Chen et al (2016), and Bruno and Shin (2015).

¹² Rey (2015), Rajan (2015).

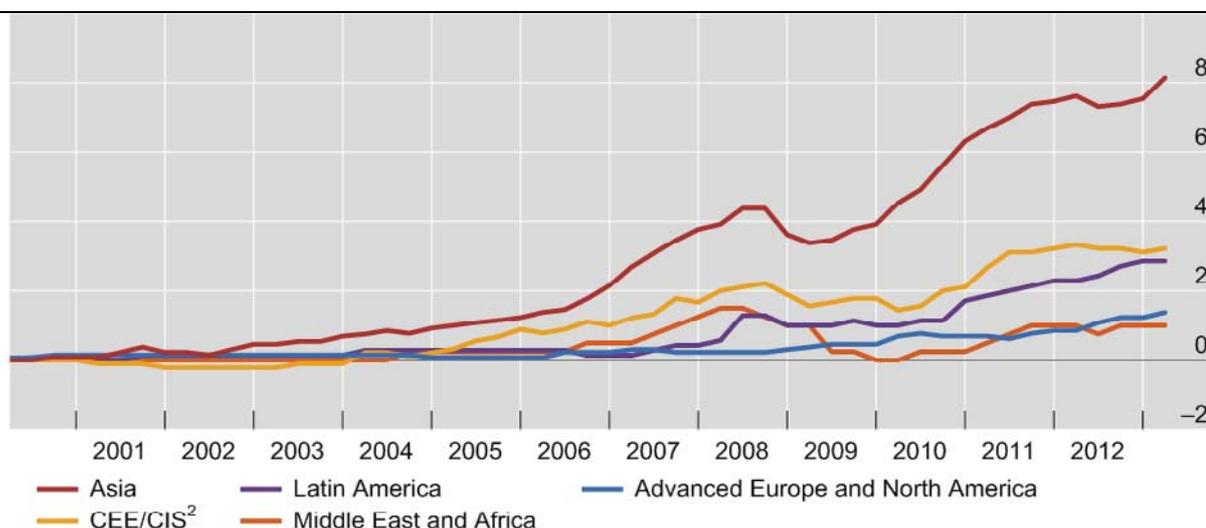
¹³ Pereira da Silva (2016).

¹⁴ IMF (2012).

Macroprudential policies: cumulative actions by region

Average per country in each region, Q1 2000-Q1 2013¹

Graph 4



¹ Index summing up housing related measures, credit measures, reserve requirements, dynamic provisioning and core funding ratio. Simple average across countries within country groups. ² Central and Eastern Europe and Commonwealth of Independent States.

Source: Zhang, L and E Zoli (2014): "Leaning against the wind: macroprudential policy in Asia", IMF Working Papers, no 14/22.

Recent research also illustrates that both emerging market economies and advanced economies can mutually benefit from a more prominent role for international monetary policy cooperation relative to narrowly focused domestic-oriented regimes.¹⁵ International monetary policy cooperation, via enlightened self-interest as in the case of a purely pragmatic recognition of the negative effect of spillbacks, could help to reduce the risk that beggar-thy-neighbour policies are adopted. It is sometimes perceived as impractical to call for increased cooperation given central banks' national mandates. But the shortcomings of the international monetary system mean that exchange rate flexibility is far from being an effective shock absorber envisaged in theory.

There is a growing recognition that stronger macroprudential policies and better policy cooperation may be warranted under these circumstances. However, a number of challenges remain with respect to macroprudential policy. Regulatory changes in one jurisdiction could "leak", creating an externality abroad.¹⁶ For example, foreign borrowing by banks and/or corporates may be immune to domestic macroprudential policy. This strengthens the case for a common set of macroprudential rules across major financial centres. Some have also observed that, given the sheer size and global reach of global systemically internationally active banks, macroprudential policies would be toothless without some form of international coordination.¹⁷ Indeed, to meet the challenge of international financial cycles, more progress on developing a more comprehensive set of global macroprudential policies may be needed.

In conclusion, while UMP were not invented in the aftermath of the GFC, their use has evolved considerably. These policies helped mitigate the full fallout of the crisis, even if their subsequent impact on aggregate demand, inflation and interest rate spreads has been more difficult to assess. Complicating

¹⁵ Agénor et al (2017) and IMF-FSB-BIS (2016).

¹⁶ Jeanne (2014).

¹⁷ Cecchetti and Tucker (2016).



the situation for central banks was the limited willingness and ability of other policymakers to use more actively other aggregate demand management policies and to implement much needed structural reforms. Moreover recent developments in advanced economies raise a new concern arising from an apparent rejection of many beneficial aspects of trade and financial integration. In a world where even best-practice macroeconomic policies are sometimes heavily and unfairly criticised, it is necessary more than ever to defend sound and responsible policymaking – including the special role played by central bankers during the Global Financial Crisis.



References

- Agénor, P, E Kharroubi, L Gambacorta, G Lombardo and L Pereira da Silva (2017): "The international dimensions of macroprudential policies", BIS mimeo.
- Bauer, M and G Rudebusch (2014): "The signalling channel for Federal Reserve bond purchases", *International Journal of Central Banking*, vol 10, no 3.
- Baumeister, C and L Benati (2013): "Unconventional monetary policy and the great recession: estimating the macroeconomic effects of spread compression at the zero lower bound", *International Journal of Central Banking*, vol 9, no 2.
- Bank for International Settlements (2016): *86th Annual Report*, Basel.
- Blinder, A (2013): "After the music stopped: the financial crisis, the response, and the work ahead", Penguin.
- Borio, C and L Gambacorta (2017): "Monetary policy and bank lending in a low interest rate environment: diminishing effectiveness?", *BIS Working Papers*, forthcoming.
- Borio, C and B Hofmann (2017): "Is monetary policy less effective when interest rates are persistently low?", *BIS Working Papers*, forthcoming.
- Borio, C, E Kharroubi, C Upper and F Zampolli (2016): "Labour reallocation and productivity dynamics: financial causes, real consequences", *BIS Working Papers*, no 534, January.
- Borio, C and A Zabai (2016): "Unconventional monetary policies: a re-appraisal", *BIS Working Papers*, no 570.
- Bowman, D, F Cai, S Davies, and S Kamin (2011): "Quantitative easing and bank lending: evidence from Japan" Board of Governors of the Federal Reserve System, *International Finance Discussion Papers*, no 1018, June.
- Bruno, V and H S Shin (2015): "Cross-border banking and global liquidity," *Review of Economic Studies*, 82, June, pp 535–64.
- Butler, C (2012): "The G20 framework for strong, sustainable, and balanced growth: glass half empty or half full?", *Oxford Review of Economic Policy*, vol 28, no 3.
- Caruana, J (2016): "Credit, commodities and currencies", Lecture at the London School of Economics and Political Science, 5 February.
- Cecchetti, S and P Tucker (2016): "Is there macroprudential policy without international cooperation?" *CEPR Discussion Paper*, no 11042, January.
- Chadha, J, P Turner, and F Zampolli (2013): "The ties that bind: monetary policy and government debt management", *Oxford Review of Economic Policy*, vol 29, no 3, pp 548–81.
- Chen, H, V Curdia and A Ferrero (2012): "The macroeconomic effects of large-scale asset purchase programs", *Economic Journal*, vol 122, no 564.
- Chen, Q, A Filardo, D He, and F Zhu (2016): "Financial crisis, US unconventional monetary policy and international spillovers", *Journal of International Money and Finance*, vol 67, October, pp 62–81.
- Christensen, J and G Rudebusch (2012): "The response of interest rates to US and UK quantitative easing", *Federal Reserve Bank of San Francisco Working Paper*, no 6.
- Chung, H, J-P Laforte, D Reifschneider and J Williams (2012): "Have we underestimated the likelihood and severity of zero lower bound events?", *Journal of Money, Credit and Banking*, vol 44, pp 47–82.
- D'Amico, S, W English, D Lopez-Salido, and E Nelson (2012): "The Federal Reserve's large-scale asset purchase programmes: rationale and effects", *Economic Journal*, vol 122, issue 564, pp F415–F446.



D'Amico, S and T King (2013): "Flow and stock effects of large-scale asset purchases: evidence on the importance of local supply", *Journal of Financial Economics*, vol 108, no 2.

Engel, C (2015): "Macroprudential policy in a world of high capital mobility: policy implications from an academic perspective," NBER Working Paper, no 20951.

Filardo, A, H Genberg, and B Hofmann (2016): "Monetary analysis and the global financial cycle: an Asian central bank perspective", *Journal of Asian Economics*, vol 46, pp 1–16.

Frankel, J (2015): "International coordination", paper for the Asia Economic Policy Conference *Policy Challenges in a Diverging Global Economy*, Federal Reserve Bank of San Francisco, November 19–20.

Gagnon, J, M Raskin, J Remache, and B Slack (2011): "The financial market effects of the Federal Reserve's large-scale asset purchases", *International Journal of central banking*, vol 7, no 1.

Gertler, M and P Karadi (2013): "QE 1 vs 2 vs 3...: A framework for analysing large-scale asset purchases as a monetary policy tool", *International Journal of Central Banking*, vol 9, no S1.

Haldane, A, M Roberts-Sklar, T Wieladek and C Young (2016): "QE: the story so far", *Bank of England Staff Working Papers*, no 624.

Hamilton, J and J-C Wu (2012): "The effectiveness of alternative monetary policy tools in a zero lower bound environment", *Journal of Money, Credit and Banking*, vol 44, no S1, pp 3–46.

International Monetary Fund (2012): "The liberalisation and management of capital flows – an institutional view", prepared by IMF staff and completed on November 14.

International Monetary Fund (2013a): "2013 Spillover Report", 1 August.

IMF-FSB-BIS (2016): "Elements of effective macroprudential policies: lessons from international experience", 31 August.

Ito, T (2014): "We Are All QE-sians Now", Institute for Monetary and Economic Studies, Bank of Japan, Discussion Paper, no 2014-E-5.

Jeanne, O (2014): "Macroprudential policies in a global perspective," *NBER Working Paper*, no 19967.

Krishnamurthy, A and A Vissing-Jorgensen (2011): "The effects of quantitative easing on interest rates: channels and implications for policy", *NBER Working Paper*, no 17555.

Neely, C (2015): "Unconventional monetary policy had large international effects", *Journal of Banking and Finance*, vol 52, issue C.

Pereira da Silva, L (2016): "Some lessons of the Global Financial Crisis from an EME and a Brazilian perspective", in O Blanchard, R Rajan, K Rogoff and L Summers (eds) *Progress and Confusion: The State of Macroeconomic Policy*, MIT Press, pp 219–32.

Rajan, R (2015): "Competitive monetary easing: is it yesterday once more?", *Macroeconomics and Finance in Emerging Market Economies*, vol 8, no 1-2, pp 5–16.

Rey, H (2015): "Dilemma not trilemma: the Global Financial Cycle and monetary policy independence," *NBER Working Paper*, no 21162.

Swanson, E (2011): "Lets twist again: a high-frequency event-study analysis of operation twist and its implications for QE2", *Federal Reserve Bank of San Francisco Working Paper*, no 8.

Taylor, J (2013): "International monetary policy coordination: past, present and future," *BIS Working Papers*, no 437.

Ugai, H (2007): "Effects of the quantitative easing policy: a survey of empirical analyses", Institute for Monetary and Economic Studies, Bank of Japan, *Monetary and Economic Studies*, vol 25, no 1, pp 1–47.



Weale, M and T Wieladek (2016): "What are the macroeconomic effects of asset purchases", *Journal of Monetary Economics*, vol 79, issue C.

Williams, J (2013): "A defense of moderation in monetary policy," *Journal of Macroeconomics*, no 38, December, pp 137–50.

Zhang, L and E Zoli (2014): "Leaning against the wind: macroprudential policy in Asia", *IMF Working Paper*, WP/14/22.