## Global Aspects of Unconventional Monetary Policies

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Since the demise of Lehman Brothers and the subsequent exceptional contraction in demand in 2008-09, central banks have not only expanded the range of their liquidity operations to restore financial stability, but also adopted a range of unconventional monetary measures to raise aggregate demand once short-term policy rates had reached their effective lower bound. Those measures include: large-scale purchases of government bonds and private securities (quantitative easing); selective actions to support the flow of credit; and guidance about the future path of policy rates.

While these policies helped the advanced economies avoid some of the worst downside scenarios, they have proved to be controversial—particularly quantitative easing—provoking plenty of criticism at home and abroad. Before I turn to the particular focus of this conference, namely the global consequences, let me say a few words on the domestic costs and benefits.

Some have questioned whether quantitative easing works at all. In both the United Kingdom and the United States, central bank reserves pay the policy rate and are consequently close substitutes for Treasury bills. The one difference is that just banks can hold reserves and reserves can be turned straight into cash at the central

bank, whereas Treasury bills have to be sold or repo'd out first. Under Ricardian equivalence, the quantitative easing undertaken by the Bank of England and the Federal Reserve should then be irrelevant because private agents internalize the tax implications of the associated changes in the consolidated public sector balance sheet.

I think the empirical evidence from the growing number of event studies—including that presented yesterday by Arvind Krishnamurthy and Annette Vissing-Jorgensen—strongly suggests that this is not the case and that market imperfections give the policy traction by reducing term premia. This was particularly true during the worst of the post-crisis recession, though it may have become less so as markets have returned toward normality. That is reinforced by recent market movements in response to heightened anticipation that the Federal Reserve will shortly begin to taper its purchases.

A more serious objection is that the purchases are simply the wrong policy to deal with the problem at hand. Low policy rates and quantitative and credit easing all seek to encourage the intertemporal switching of spending from the future to the present. But, according to the critics, that just leads to further debt accumulation and is inimical to the adjustment necessary to unwind the excesses of the pre-crisis era (Rajan 2013).

The distinction here is between policies that are designed to bolster deficient aggregate demand and those that facilitate the necessary reduction in indebtedness and unwinding of the misdirected investments—most obviously in housing and construction—made before the crisis. The latter requires balance sheet repair of households and banks, including the writing down of debts that cannot be plausibly repaid and the closure of unviable businesses. That in turn allows resources to be reallocated to where they can be used more productively.

There is some validity to this critique. Bolstering aggregate demand through sustained low interest rates and quantitative and credit easing will indeed tend to work against the desired rebalancing of demand away from consumption toward saving and net exports—this is what the previous Governor of the Bank of England christened the "paradox of policy" (King 2009). And the present period of low

interest rates may indeed allow some businesses to survive that do not have a viable long-term future.

But against that, it is easier for households, businesses and banks to repair balance sheets when demand is strong than when it is weak. A sustained period of weak demand may also push many businesses that are perfectly viable in the long run into insolvency, especially if the supply of credit is impaired. And a long period with underutilized resources may cause durable damage to the supply capacity of the economy through a variety of hysteretic mechanisms, such as skill atrophy on the part of the unemployed and foregone opportunities for learning by doing.

In any case, to me this sets up a false dichotomy. There are both Keynesian and Hayekian dimensions to the post-crisis environment. A "two-handed" approach is called for, in which supportive aggregate demand policies on the one hand are complemented by policies that facilitate the necessary restructuring, particularly of the banking sector, on the other. So, rigorous evaluation of the assets on banks' balance sheets, followed by recapitalization, should be the order of the day (Tucker 2013). The United States has been a model in this regard. In Europe, we have lagged a little, but are now catching up. In the United Kingdom, the Prudential Regulation Authority, at the instigation of the Bank's Financial Policy Committee, has required several of our major banks to strengthen their capital buffers against potential losses. And, in the euro area, the European Central Bank is about to undertake an in-depth health check of banks' balance sheets.

Of course, there are some risks attached to pursuing such accommodative monetary policies. Quantitative easing can threaten future financial stability if it leads investors into excessively leveraged positions in the search for higher yields. Moreover, a long period of low interest rates can lead people to overestimate the debt they can safely manage if interest rates were to normalize. Central banks must be alive to these risks and deploy appropriate prudential tools in mitigation.

Furthermore, if central banks do seek to sustain demand, it can dull the incentives for private agents and governments to undertake the necessary adjustments and reforms. Such moral hazard has surfaced

occasionally in the euro area during the past couple of years. Accommodative monetary policy can buy time, but it is a policy best suited to filling in a temporary hiatus in demand, not a long-lived shortfall: it is a bridge, not a pier.

Let me turn now to the international consequences of these unconventional monetary policies. There are several interrelated channels of propagation. First and most contentiously, they may put downward pressure on the exchange rate, a purely "beggar-my-neighbor" channel. It was that which prompted Guido Mantega, the Brazilian Finance Minister, to charge advanced economy central banks with engaging in a "currency war."

Central banks in other countries may then respond by setting lower policy rates to lessen the appreciation of their currencies. One way to see whether this has happened is to look at the departures from what a standard Taylor rule would imply; the evidence surveyed by He and McCauley (2013) suggests that Asian central banks have indeed shaded down their policy rates in response to looser policies in the United States.

Further down the yield curve, large-scale asset purchases (LSAPs) will reduce yields not only in the markets where the purchases are made, but also in the markets for substitute assets through portfolio balance effects. There are several papers that find the lower bond yields resulting from the Fed's LSAPs have translated into lower yields in local currency bond markets that are integrated into global bond markets. For instance, Neely (2010) finds evidence of significant spillovers to other advanced economy sovereign bond markets, with yields falling on average by around half the associated fall in U.S. 10-year yields, while Moore, Nam, Suh and Tepper (2013) find that emerging economy government bond yields fell by around one-sixth.

In addition, capital flows out of the stimulating jurisdiction can encourage expansion in the supply of credit and also a switch into foreign currency denomination if the local currency is expected to appreciate. Unless well managed, that can lead to increased financial vulnerabilities in the future. Yet the results of Fratzscher, Lo Duca and Straub (2013) on the respective impacts of different tranches

of the Fed's quantitative easing suggest that these flow effects have not always operated in the same direction. In particular, they find that the first tranche triggered portfolio rebalancing *out* of emerging economies into U.S. equity and bond funds—perhaps reflecting its role in reducing tail risks in the United States—while the opposite occurred under the subsequent tranches.

Finally, to the extent that the unconventional policies are successful in their aim of boosting activity in the originating country, they will generate aggregate demand spillovers onto other countries through increased demand for imports.

It should be obvious from this discussion that the spillovers from unconventional monetary policies are diverse in nature and ambiguous in overall sign. But from the point of view of the world as a whole, there has to be a strong presumption that these unconventional monetary policies have been expansionary. And with the world economy still suffering from deficient global aggregate demand and underutilized resources, that surely has to be a good thing. That said, I would not wish to underplay the difficulties that some recipient countries have faced in absorbing large inflows of relatively short-term capital in a safe fashion.

The presence of these complex spillovers has led to suggestions that monetary policies need to internalize these spillovers and be better coordinated (e.g., Committee on International Economic Policy and Reform 2011). While I accept the logic of this, we do not know nearly enough about the magnitude—or even the sign—of these spillovers to make this viable. The best we can aspire to is directing monetary policies to the pursuit of domestic price stability in a sensible manner, while seeking to communicate our policy intentions as clearly as possible.

Let me finish with a few words on the exit from unconventional monetary policies. While still some way off, it will come eventually. And the recent market volatility prompted by heightened expectations of imminent tapering in the rate of asset purchases by the Federal Reserve has provided a salient reminder that it may not be smooth. Moreover, although the adoption of accommodative policies was

synchronized across the advanced economies, the heterogeneous nature of the recovery, with the United States leading the way and Europe bringing up the rear, means that exit is unlikely to be synchronized. This lack of synchronization will complicate matters.

The international spillovers mentioned earlier can obviously be expected to operate in reverse on exit. And indeed, we have just seen such synchronized increases in long-term sovereign bond yields internationally, together with capital outflows from emerging economies and associated downward pressure on their currencies. But for these countries, the greatest danger during exit will probably lie in the risk of future financial sector disruption if outflows expose currency mismatches on bank and corporate balance sheets.

For advanced economies, particularly those lagging behind on the road to exit, there is a risk that market participants see tightening moves in, say, the United States as indicating that tightening is imminent elsewhere. Although synchronized movements in bond rates is unsurprising given the high degree of substitutability between relatively safe sovereign bonds, synchronization at the short end of the yield curve is not warranted if cyclical positions differ.

Such concerns prompted both our Monetary Policy Committee (MPC) and the ECB's Governing Council to push back against the recent upward movements in the short end of the yield curve in our respective policy statements in July. The MPC took this further at our latest meeting by offering explicit forward guidance on the future path of policy rates and asset purchases. The guidance is similar to that already adopted by the Federal Open Market Committee, but differing in details that reflect the different position of the U.K. economy. In particular, we signaled our intention not to countenance tightening policy until unemployment has fallen to at least 7 percent. In addition, while our guidance is subject to two price stability overrides similar to those of the Fed relating to internal and external measures of inflation expectations, we have also added a financial stability override determined by our Financial Policy Committee.

This guidance is intended primarily to clarify our reaction function and thus make policy more effective, rather than to inject additional stimulus by pre-committing to a time-inconsistent "lower for longer" policy path in the manner of Woodford (2013). While such a time-inconsistent policy may be desirable in theory, in an individualistic committee like ours, with a regular turnover of members, it is not possible to implement a mechanism that would credibly bind future members in the manner required.

Nevertheless, by reducing uncertainty about our behavior, we are aiming to encourage households and businesses to spend and invest. The knowledge that monetary policy will not be tightened until the U.K.'s fledgling recovery is secured should boost confidence. Moreover, it should reduce the likelihood that the present expansionary monetary stance is withdrawn prematurely through an upward movement in market interest rates. Short-term yields have moved up since our announcement on a string of good news about the economy, but the unemployment threshold, by serving as a reminder of just how much growth is needed to regain lost ground, should temper the extent of any tightening. Indeed, for that reason, guidance is potentially more valuable during exit than during entry. Finally, given the uncertainty about the causes and durability of the recent exceptional weakness in U.K. productivity growth, it also provides a robust framework within which to test the scope for economic expansion without jeopardizing price or financial stability.

While guidance—and good central bank communication more generally—will be important during exit, I doubt very much that good central bank communications alone can ensure that it will be completely smooth. When a central bank's reaction function is not well understood, market interest rates tend to respond to policy-makers' actions in response to economic data. But when the reaction function is well understood, market interest rates will instead respond earlier as the economic data unfolds. Although there are benefits to the market more accurately anticipating a given policy decision, because the data are likely to evolve in an imperfectly predictable fashion, so will market interest rates and asset prices.

In sum, then, exit will be challenging for central banks, both in countries withdrawing stimulus and in countries affected by the associated international spillovers. But we do have the luxury of knowing

that it must come eventually and can plan for it appropriately. And when it does come, it should be against the background of a markedly better economic outlook in the advanced economies. That itself would mark a pretty welcome change!

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