Current monetary policies in advanced economies

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The reliance on unconventional monetary policy measures by advanced economies´ central banks since the outbreak of the crisis has been crucial to restore financial stability and support the economic recovery. In fact, more measures could be adopted in some areas. In those economies with a more solid improvement, there is a great degree of uncertainty regarding exit strategies and their associated challenges.

The crisis challenged conventional monetary policy, as central banks of the main advanced economies saw their traditional tools insufficient to reactivate the economic recovery and restore proper functioning of financial markets. Central banks were forced to implement a series of unconventional measures, mainly in the form of: i) financial asset purchases, ii) changes in communication policy; and, iii) providing credit facilities to the banking system. Despite the highly accommodative stance in major advanced economies, in many of them, the recovery is not yet settled, unemployment remains high, credit growth remains weak, and disinflationary pressures persist. For example, in Japan and in the euro area, no increases in official rates are being considered in the near future and more expansionary measures could be adopted. However, in some economies, where the recovery is more solid, the persistence of unconventional measures may pose risks, such as the possible emergence of new asset bubbles, delays in deleveraging and recapitalisations for banks, delays in fiscal consolidation and structural reforms, as well as cross-border spillover effects for emerging markets. Given the magnitude of the current stimulus, the effects on financial markets, and the lack of evidence regarding consequences of alternative strategies, the design of exit strategies is a significant challenge. Communication by central banks on how they will proceed with these strategies will be important to reduce uncertainty and prevent unintended consequences for the recovery.

Introduction

The global financial crisis of 2007-2008 represented a formidable challenge for the conduct of monetary policy in advanced economies as most of these economies entered the deepest recession since the Great Depression of the 1930s, while the monetary transmission mechanism was severely damaged. Once the central banks in the major advanced economies –the Federal Reserve (Fed), the Bank of England (BoE), the Bank of Japan (BoJ) and the European Central Bank (ECB)– exhausted the potential reductions in official interest rates shortly after the outbreak of the crisis, they had to resort to a wide arsenal of tools, as the economic recovery

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remained anaemic and some segments of financial markets were still dysfunctional. Central banks modulated their responses depending on their own objectives, the depth of the crisis in each area, and the different nature of their financial systems and institutional structures.

But beyond forcing central banks to introduce a broad array of unconventional measures, the global financial crisis contributed to the questioning of the paradigm built around monetary policy management in previous decades, during the period known as the Great Moderation. Arguably, while this questioning has not shattered the belief that price stability is the best contribution that monetary policy can make to social welfare, it seems clear that the crisis will have implications on how monetary policy will be carried out in the future. Nevertheless, there is still great uncertainty about the duration of the exit phase and the configuration of new strategies both in normal times and under extraordinary circumstances.

The set of unconventional policies introduced since 2007 has managed to dispel some extreme risks for financial instability, to counteract deflationary pressures, restore the operation of certain financial markets and ultimately support economic recovery. However, although the stance of monetary policy still remains highly accommodative in the central banks of the main advanced economies, looking forward, the expected path for monetary policy is increasingly diverging across them. On the one hand, in Japan and in the euro area, no increases in official rates are being considered in the near future. In fact, the ECB introduced in June a further block of expansionary measures and additional steps might be in the pipeline. On the contrary, the cost-benefit analysis of unconventional expansionary measures in the United States and the United Kingdom has been gradually tilting towards a lower marginal profit and a greater potential cost for the extension of these measures or, at least some of them. Thus, in 2014 the beginning of the process of monetary policy normalisation can already be felt in these two countries. In fact, in January 2014, the Federal Reserve initiated a gradual process of reducing the monthly volume of asset purchases. In addition, the progress of recovery in these two economies has led to bringing forward the expected date, according to market expectations, for the first hike in official rates.

The rest of the article is organised as follows. The following section summarises the main lines of action by central banks in the major advanced economies since the beginning of the crisis. The third section assesses the potential risks stemming from the continuation of existing unconventional measures. The fourth section discusses the exit strategies and the challenges associated with them.

Central banks´ unconventional measures

Between the summer of 2007 and autumn of 2008, central banks adopted a series of measures to support liquidity, which reached unexpected limits after the bankruptcy of Lehman Brothers. They included, among others: i) expansion and changes of maturities of the standard lines of liquidity and collateral requirements; ii) extension of liquidity to a broader range of institutions; and, iii) the introduction of new temporary liquidity facilities, including bilateral currency swaps. Additionally, as lenders of last resort, central banks tried to avoid liquidity problems resulting in a solvency crisis in the banking industry.

The manner in which economic agents are financed in each country determines the nature of these measures. In that respect, the ECB started to offer liquidity limited by the quantity of adequate collateral (“fixed-rate full allotment”) and later on extended the maturity of longer-term refinancing operations (LTROs) at the height of the sovereign debt crisis. The rationale of those actions was to ensure the appropriate transmission of the interest rate signal in the context of malfunctioning financial markets.

The extraordinary liquidity provision was accompanied by a reduction in official interest rates by major central banks in order to support activity. Thus, in late 2008 and early 2009, policy rates in general reached the lower limit of 0%. Once the major central banks had reached the zero lower bound for official interest rates and economic recovery remained weak, it became necessary to resort to unconventional instruments.[2] There were three types of measures: i) purchases of financial assets and changes in the balance sheets of central banks; ii) changes in communication policy, including that known as *forward guidance;* and, iii) credit facilities to the banking system.

Purchases of financial assets

In the early stages of the crisis, beyond the extraordinary measures to provide liquidity, central banks began to purchase financial assets expanding the size of their balance sheets, the so-called quantitative easing programs ("QE"). The assets that have been acquired have depended on the different circumstances under which each of these institutions operates and the targets pursued by these programs. Their effects are manifested mainly through two channels. Firstly, according to the *portfolio-balance channel,* the increase in demand of the asset acquired by the central bank causes an increase in its price and therefore reduces its yield. Also, by reducing the risk price, the demand for other riskier assets, such as corporate bonds or shares increases, increasing their price. Thus, financing costs are reduced and a positive wealth effect occurs, encouraging spending and nominal demand. Second, the *signalling channel* impacts asset purchases due to the perception that the monetary

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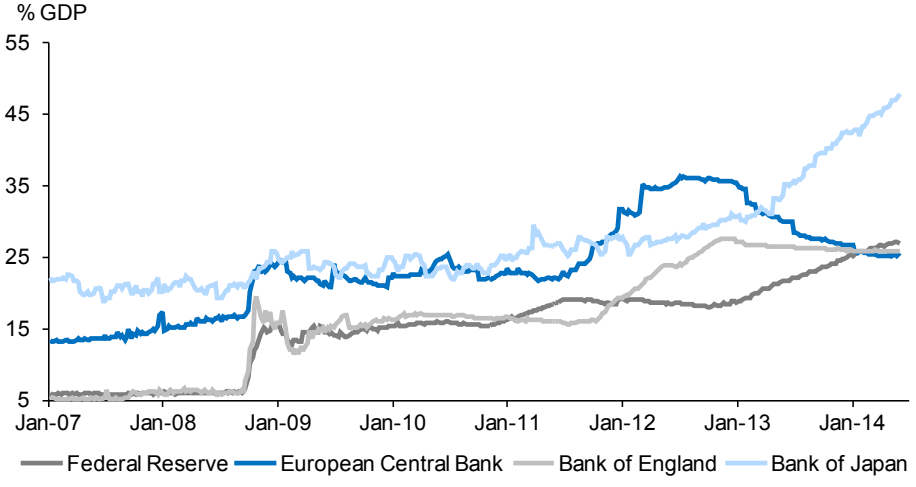
Exhibit 1

Balance sheet of central banks in major advanced economies



Sources: Federal Reserve System, ECB, Bank of England and Bank of Japan.

[2] For a more detailed description of the actions adopted by central banks, see Section III in Berganza, Hernando and Vallés (2014).

policy stance will remain loose for a prolonged period, which affects expectations on short-term interest rates and of long-term asset returns, also favouring aggregate demand.

The asset purchase programs by major central banks have differed in the type of assets acquired, maturity and duration. For example, at the end of 2013, the Fed had 18% of the outstanding U.S. government bonds whereas the Bank of England had 27% and the Bank of Japan 17% of their corresponding public bonds. As a result of these differences, the composition as well as the total amount of the balance sheet of the individual central banks has varied over time (Exhibit 1). In the case of the ECB, the Covered Bond Purchase Program set in 2009 served to revive this market that was an important funding source for banks. Similarly the Securities Markets Program established in 2010 facilitated some governments' access to finance and therefore the bank funding conditions in those countries. The announcement of potentially unlimited purchases of government bonds under strict conditionality under the Outright Monetary Transactions program in 2012 succeeded in putting an end to any doubts about euro area integrity. Finally, in June 2014, the ECB decided to intensify the preparatory work to outright purchases in the ABS market to enhance the functioning of monetary policy transmission.

Forward guidance

Central banks have chosen to offer guidance on future monetary policy to economic agents *(forward guidance)* in addition to the immediate actions that have been taken. Forward policy guidance can be transmitted to the economy through three main channels: i) interest rate curve, since the announcement of the expected official interest rate path affects long term interest rates, the most relevant ones for the financing conditions of agents; ii) reduction of the uncertainty on monetary policy decisions in the future, which may reduce the term premium, volatility and risk premiums; and, iii) reduction in real interest rates when official interest rates are at the zero bound through lower nominal interest rates and higher inflation expectations, provided this is not interpreted as an indication of a worsening economic outlook.

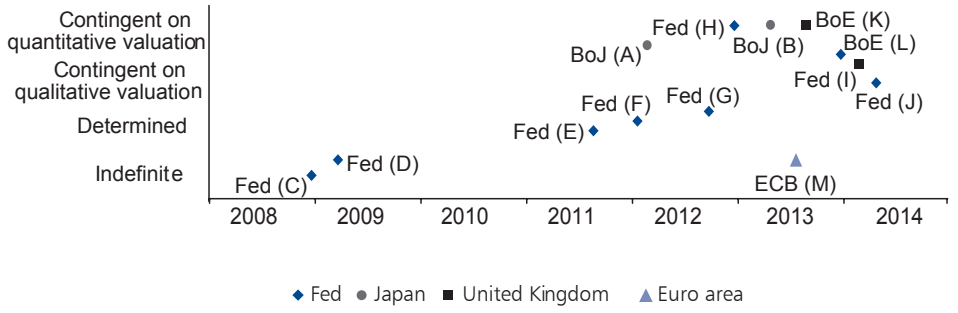
The nature of this commitment has evolved (see López and del Río, 2013) in the big four banks from the signalling of an open-ended period of time to specific dates and finally conditioning to certain economic variables (Exhibit 2). Contingent strategies, in which the monetary authority explicitly determines the future movements of official interest rates to changes in certain variables – for example, the inflation path or the unemployment rate – have the appeal, *a priori,* of preserving some flexibility to react to unexpected events, while reducing the risk of loss of credibility due to acting in a different manner to that announced. This type of contingent strategy was adopted by the Federal Reserve and the Bank of England ("contingent on quantitative valuation").

However, a short period of time has been sufficient to show the design and communication problems of this type of guidance. In particular, in 2014, unemployment rates in both countries reached the thresholds values much earlier than expected, in a context in which employment markets have shown peculiarities that create significant uncertainty about the future evolution of unemployment rates and the relationship of this variable with other macroeconomic variables. This rapid convergence to the thresholds values has prompted a reformulation of existing commitments and both central banks have reintroduced qualitative elements in their strategies to highlight that official rates will remain at their current levels beyond thresholds ("contingent on qualitative valuation" in Exhibit 2).

These two experiences illustrate the complexity of the formulations of forward guidance based on quantitative references, especially if the margin of uncertainty surrounding the projection of the reference variables is very high, as in the current situation. The ECB has also used the management

Exhibit 2

Forward guidance in major central banks following the financial crisis



ANNOUNCEMENTS MADE BY THE CENTRAL BANKS			
Central bank	**Type of forward guidance**	**Date of decision**	**Announcement**
Bank of Japan	Contingent (A)	February 2012	"Until the 1% inflation goal is in sight"
	Contingent (B)	April 2013	"The Bank will continue with the quantitative and qualitative monetary easing, aiming to achieve the price stability target of 2 percent, as long as it is necessary for maintaining that target in a stable manner, with a time horizon of about two years"
Federal Reserve System	Indefinite (C)	December 2008	"For some time"
	Indefinite (D)	March 2009	"For an extended period"
	Determined (E)	August 2011	"At least through mid-2013"
	Determined (F)	January 2012	"At least through late 2014"
	Determined (G)	September 2012	"At least through mid-2015"
	Contingent on quantitative valuation (H)	December 2012	"As long as the unemployment rate remains above 6.5%, inflation between one and two years ahead is projected to be no more than 2.5% and longer-term inflation expectations continue to be well anchored"
	Contingent on qualitative valuation (I)	December 2013	"Labour market indicators will be considered more and official rates may be maintained well past the time that the unemployment rate declines below 6.5%, especially if projected inflation continues to run below the 2% target"
	Contingent on qualitative valuation (J)	March 2014	"In determining how long the current 0% - 0.25% official interest rate will be maintained, various measues of labour market conditions, indicators of inflation pressures and inflation expectations and financial developments will be considered"

Exhibit 2 (continued)

ANNOUNCEMENTS MADE BY THE CENTRAL BANKS			
Central bank	**Type of forward guidance**	**Date of decision**	**Announcement**
Bank of England	Contingent on quantitative valuation (K)	August 2013	"At least until the unemployment rate has fallen to a threshold of 7%, subject to three 'knockouts' related to inflation and financial stability"
	Contingent on a higher qualitative valuation (L)	February 2014	"There remains scope to absorb spare capacity further before raising Bank Rate. The path of Bank Rate over the next few years will depend on economic developments, although the rise in Bank Rate is expected to be gradual and the appropriate level is likely to be materially below 5%"
European Central Bank	Indefinite (M)	July 2013	"For an extended period of time. This expectation is based on the overall subdued outlook for inflation extending into the medium term, given the broad-based weakness in the real economy and subdued monetary dynamics"

Sources: Federal Reserve System, ECB, Bank of England and Bank of Japan.

of expectations, but for an indefinite period of time and with vague wording with respect to the case of the Federal Reserve or the Bank of England. In particular, the ECB, at its meeting in July 2013, announced that its Governing Council "expects interest rates to remain at current levels or lower for an extended period of time. This perspective is based on the anticipation of a stable overall inflation rate in the medium term, given the weakness of the real economy and weak monetary dynamics." The decision taken in June 2014 to lower the official rates (including the negative deposit rate) and continue with the fixed-rate full allotment procedure reinforces this forward guidance.

Credit facilities to the banking system

Along with asset purchase programs and strategies of managing expectations, some central banks have implemented specific interventions in order to stimulate activity by means of greater dynamism in bank lending. Thus, the Bank of England, together with the UK Treasury, launched a program called *Funding for Lending Scheme* (FLS) in July 2012 with the purpose of reducing the financing costs of banks and providing incentives to increase credit to the non-financial sector. With this scheme, the Bank of England provides banks with long-term funds that can be used to finance the expansion of their loan portfolios to households and businesses, with both the cost and the amount of funding available to banks being a function of the net credit that they offer. But given the recovery of the housing market and the risks to financial stability, it was decided that from February 2014 this programme would not be available for granting mortgage loans and would apply only to loans for SMEs. Similarly, the Bank of Japan since June 2010 has carried out a series of initiatives to encourage lending to the real economy and has approved their extension until June 2015. And more recently, in June 2014, the ECB decided to conduct a series of targeted long-term refinancing operations (TLTROs)

starting in September 2014 to support new lending, excluding loans for house purchases, to the private sector.

The risks associated with the continuation of unconventional monetary measures

In spite of the highly accommodative monetary policy stance in major advanced economies, in many of them the recovery is not yet settled, the levels of unemployment and idle capacity remain significant, credit growth remains exceptionally weak and, in the last year, some of them faced unexpected disinflationary pressures. Against this background, it is not surprising that public opinion, as well as international financial institutions, still demand further support from monetary policy measures in some cases, most notably in the euro area and Japan *(see, for instance, IMF, 2014)*. However, especially in those economies like the United States or the United Kingdom that are displaying a more solid recovery, the persistence of unconventional monetary policy involves a number of side effects and poses some risks, which may even cause central banks to deviate from their primary target of price stability *(see Rajan, 2013, or Caruana, 2014)*.

Firstly, while extraordinary monetary policy measures have been instrumental to remove some extreme risks for financial stability, their extension over an excessively protracted period could pose significant risks on this front. In particular, asset purchase programs and *forward guidance* strategies might be favouring an excessive risk taking in certain markets (for instance, high-yield corporate debt), even encouraging the formation of new bubbles, without this reduction in funding costs translating into an improvement in real investment. More generally, the attempt of central banks to pre-commit in order to avoid abrupt changes in market interest rates might lead to a situation of financial dominance where the central bank is behind the curve, i.e. delays its reaction to prevent a sharp adjustment. In addition, the liquidity provided by the central bank in some countries has turned it into a major player in the interbank market, which could cause some banks to postpone their necessary deleveraging and recapitalisation. In that case, once systemic risks have been eliminated, liquidity measures in place to support the recovery of these financial institutions could be masking a problem of solvency.

Secondly, the continuation of unconventional monetary policies or the implementation of additional measures may delay the search for fiscal sustainability. The extraordinarily loose monetary stance reduces the cost of government debt and the increase in the balance sheet of central banks through buying government bonds facilitates the work of the national treasuries. There is therefore a risk of monetising debt affecting the price level path, which may therefore lead to a situation of fiscal dominance. More generally, current monetary policy may be "buying time" through a reduced financing cost without being exploited by other economic policymakers to address the structural problems, such as high unemployment rates or an unbalanced sectoral composition.

Thirdly, unconventional monetary policy measures might exacerbate the distributional effects generated by the decisions of central banks altering the price of financial assets, which are unevenly distributed among the agents. Forward guidance policies, in order to be able to maintain interest rates at low levels, contribute to mitigate the negative wealth effects arising from the crisis, but for savers that means a significant loss of income. Similarly, assets purchases by the central bank may favour the holders of such instruments bought by the central bank. This is the case, for example, with the purchase of mortgage-backed securities (MBS) or public debt.

Finally, the consequences of expansionary monetary policies have surpassed the borders of the countries that have carried them out and have generated substantial cross-border spillover effects that have been difficult to manage by

policymakers in emerging market economies. Although, in general, central banks do not internalise the consequences of their policies on other economies as they focus on domestic objectives, one cannot say that the actions taken in recent years by the central banks of advanced countries have pursued a competitive devaluation.

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Quite the contrary, the evidence shows that accommodative monetary policy in advanced economies has helped to sustain higher growth in emerging economies, particularly through trade and the maintenance of favourable financial conditions. However, as is the case in advanced countries, the economies of other countries cannot be sustained under the high global liquidity conditions indefinitely but must pursue policies that ensure a more sustainable growth.

Exit strategies: Questions and challenges

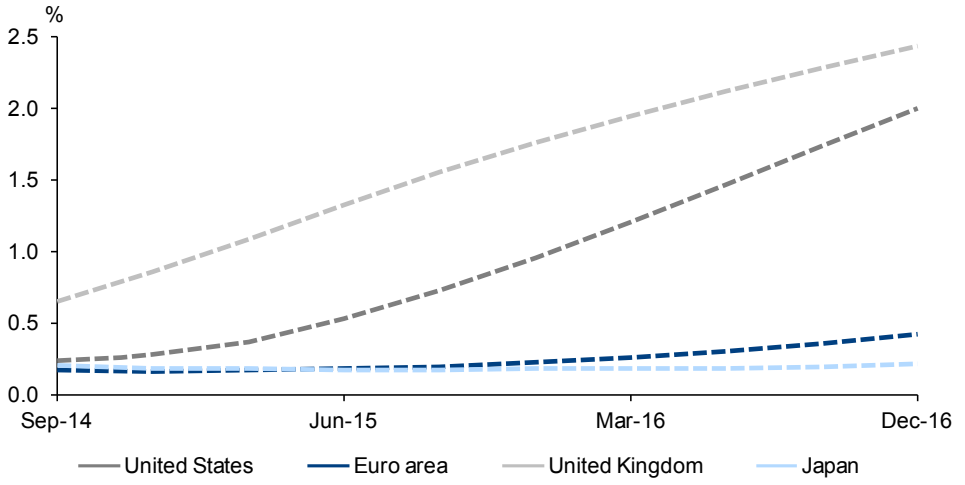
In the baseline scenario for the coming years, developed economies show a sustained recovery and financial stress disappears. In that case, some central banks should stop easing (in fact, the Bank of England stopped the government bond purchases in the second half of 2012) and after that they should gradually remove the extraordinary stimulus measures that have remained in place for an extended period. The design of exit mechanisms constitutes a significant challenge, given the magnitude of the current monetary stimuli, the induced effects on financial markets and other countries, and the scant theoretical foundations and empirical evidence which makes it difficult to anticipate the consequences of alternative strategies. In addition, central banks could return eventually to a different *status quo* than the pre-crisis one. Therefore, public communication about central banks' thinking and planning on when, how and where to exit is essential well in advance and during the process.

Probably the biggest challenge will be the restructuring of central banks' balance sheets in terms of size, composition and average maturity. In most cases, it should be taken into consideration that the assets purchases have increased the maturity imbalance between assets and liabilities and, consequently, interest rate risk. In addition to the difficulty of the process itself, it is very important to adequately communicate the steps that are to be taken as a recent example has shown. In May 2013, the publication of the minutes of a US Federal Reserve's FOMC meeting and a speech by its then Chairman, Bernanke, led the markets to adopt a stance on the possible gradual reduction in the rate of monthly purchases of assets (a process known as *tapering*) starting in September and, in parallel, advance the calendar for raising the official discount rates, a move not desired by the Federal Reserve. In the end, and surprisingly, the FOMC decided in September not to start *tapering*. It was later, at its December meeting, in light of improved economic data and the resolution of certain fiscal uncertainties (and after a remarkable communication effort so that financial markets could distinguish the process of gradual reduction of asset purchases from the process of interest rate hikes) that the FOMC decided to reduce its monthly assets purchases.

The Bank of England has been the first within the major central banks to stop easing (it is the only one that is not expanding its balance sheet through net assets purchases) and the macroeconomic and financial situations suggest that it will be

Exhibit 3

Official interest rates discounted in the markets*



*Note: *Futures for three-month interbank interest rates as of June 26th, 2014.*
Source: Datastream.

the first to move towards the normalisation of monetary policy. As seen in Exhibit 3, according to markets, the first rate hike could be decided as soon as in the last quarter of 2014. Nonetheless, the US Federal Reserve was the first central bank to discuss its exit strategy principles in the minutes of the June 2011 FOMC meeting. In fact, although still expanding the balance sheet, many analysts consider that the reduction of the net purchases of government bonds and mortgage-backed securities of GSEs in the last FOMC meetings could be considered the first step in changing the monetary cycle.

In the baseline scenario, reductions of similar magnitudes would continue in each of the FOMC meetings during 2014 until purchases ceased completely in the last quarter of the year, which would mean that the Fed's balance sheet would reach a size five times the value at the beginning of the crisis. According to the June 2011 exit strategy, the committee felt it needed to reduce reserves through the removal of the reinvestment policy on the balance sheet in advance of any rate hike because it was a necessary measure to give the FOMC confidence that the federal funds market could function in a proper way. But since then, excess reserves have burgeoned, making any rapid draining ahead of a rate hike difficult. As a response, the Fed introduced (in September 2013) and tested a new fixed-rate full-allotment reverse repo facility (ON RRP),[3] which together with the payment of interest on excess reserves (IOER) and the term deposit facility (TDF), should give the Fed the capability to set the overnight risk-free rate for the US economy at a level of its choosing without the need to resort to asset sales and irrespective of the level of bank reserves (see Gagnon and Sack, 2014). In fact, should the federal funds market not recover its prior

[3] This instrument allows money market funds, the GSEs and other institutions besides the banks, to maintain bank reserves at the Federal Reserve in exchange for an interest rate and collateral in the form of assets that the Fed has in its portfolio following the purchases made after these years. This interest rate should equal the remuneration of reserves to which only the banks have access.

prominence, this interest rate could provide an alternative target policy rate for communicating the stance of monetary policy. Other regional Fed Presidents (Dudley, New York; and Williams, San Francisco) have offered additional reasons to start the removal of the reinvestment policy on the balance sheet after the first rate increase: i) it could pull forward perceptions of tightening before the FOMC intends (as markets have healed, Fed balance sheet changes predominantly manifest the signalling effect over the portfolio balance effect); and, ii) getting the official interest rate off the zero lower-bound would create more policy flexibility. As seen in Exhibit 3, this first rate hike is discounted by the markets to take place around mid-2015.

The reordering of the exit strategy does not include MBS sales (active reduction of balance). In this sense, assuming a passive runoff of the balance sheet beginning at the start of 2016 rather than an active one, the balance sheet normalizes (the Fed's balance sheet over nominal GDP ratio is assumed to be 6% as in 2006 before the crisis) only by early next decade as under the Maturity Extension Program ("Operation Twist") the Fed extended notably the maturity of its portfolio.

Given the lack of experience of changing the monetary cycle in such a complex environment and the difficulty of correctly measuring the degree of recovery of both the financial sector and the real economy, communication by central banks on how they will tighten monetary policy will be important. The main risk is a sudden and unexpected increase in long-term interest rates, which can affect financial stability.

As commented above, given the lack of experience of changing the monetary cycle in a complex environment like the present one and, above all, the difficulty of correctly measuring the degree of recovery of both the financial sector and the real economy (for example, the uncertainty about the labour market slack in the US and about the long term productivity growth in the UK are very high), communication by central banks on how they will proceed to tighten monetary policy will be important. To reduce uncertainty and, above all, to prevent recovery from being aborted, it is expected that the introduction of the measures will be gradual (the equilibrium real interest rate could be lower after the financial crisis), anticipated by the economic agents and affected by how incoming data evolve (as persistently repeated by the Fed). The main risk is a sudden and unexpected increase in long-term interest rates, which can affect financial stability and more generally capital flows and global exchange rates. Precisely the announcement in May 2013 by the Fed that it was discussing the decline of the asset purchase process *(tapering talk)* had a great influence on economic agents' expectations, affecting both the valuation of diverse financial assets in the US (the interest rate on 10-year bonds rose more than 1 pp in just over three months) and in markets globally. But it was in emerging countries where the *tapering talk* had a significant and immediate effect (see Gallego and L'Hotellerie-Fallois, 2014). The reversal of capital flows by investors produced a clear worsening of their financial conditions. Between May and August 2013, debt spreads increased, currencies depreciated, and asset prices and the volume of reserves dropped. The first analysis of this period indicates that the effects were greater in countries that accumulated external vulnerabilities in terms of currency appreciation and deteriorating current account balances during the previous period under better financing conditions, although liquidity and market depth and size of investors' holdings also appear to be relevant explanatory variables.

For now, the gradual reduction in asset purchases by the Fed launched in January 2014, the qualitative forward guidance and the approaching earlier than previously projected of the first rate hike by the Bank of England are taking place

in an environment of very calm markets as the recoveries of the US and UK economies strengthen and there do not seem to be mounting wage pressures. Also, it must be taken into account that macroeconomic conditions in emerging countries are now generally more stable than those that caused previous currency crises. But there is a risk of alternative scenarios in which a rapid adjustment of interest rates and capital flows occurs. On the other hand, the Bank of Japan is engaged in an ambitious new phase of quantitative easing and the ECB has recently adopted new unconventional measures to face deflationary risks in the euro area. In this situation, in which there is no synchronisation between the major central banks, the withdrawal of unconventional measures in one country can have spillover effects through financial markets tensions. And concerns about the potential disorderly reaction of financial markets to a possible financial tightening could lead to a situation of financial dominance in which monetary policy could be constrained by the potential market strains. On the other hand, central banks may incur costs if they decide to carry out the sale of a portion of their assets associated with an increase in interest rates or due to the cost related to the payment of bank reserves. In any case, the risk that any of these central banks would temporarily incur losses should not weaken their independence as managers of monetary policy.

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