

Does central bank optimism move financial markets?

By [Paul Hubert](#) and Fabien Labondance

“Animal spirits”, also called “errors of optimism and pessimism” or “sentiments”, contribute to macroeconomic fluctuations, as has been pointed out by Pigou (1927) and Keynes (1936) and more recently by Angeletos and La’O (2013) [\[1\]](#). Quantifying these kinds of unobservable concepts is crucial for understanding how economic agents form their expectations and arrive at decisions that in turn influence the economy. In a recent [working paper](#), “Central Bank Sentiment and Policy Expectations”, we examine this issue by analysing central bank communications and assessing their impact on expectations about interest rate markets.

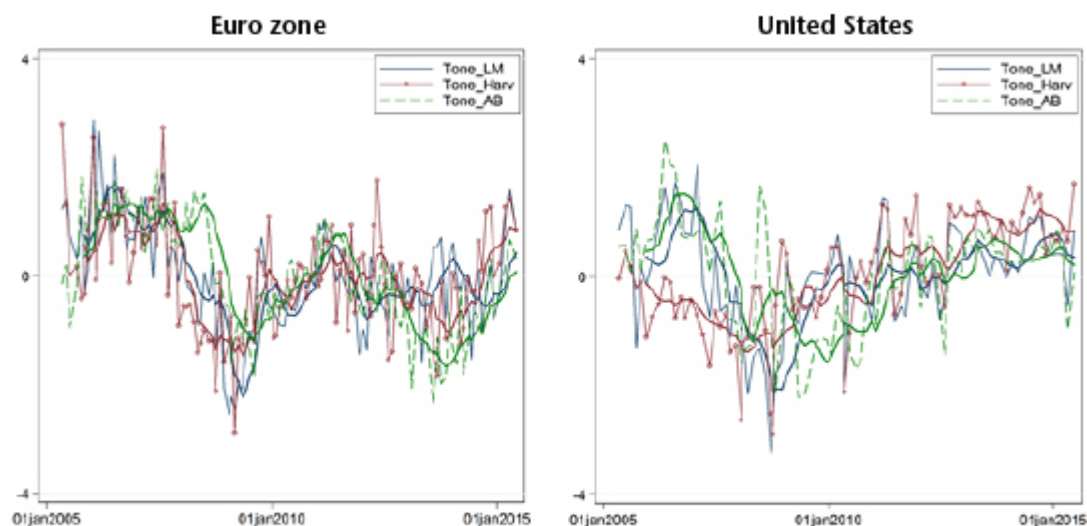
Our study aims to quantify the “sentiment” conveyed by central bank communications using the monetary policy statements of the European Central Bank (ECB) and the US Federal Reserve (Fed). We then test whether the optimism or pessimism transmitted in these statements affects the term structure of short-term interest rate expectations.

The main challenge is measuring a concept like the “sentiment” of a central bank, which is not very tangible. We first quantified the tone used by the ECB and the Fed in their monetary policy statements by using a computational linguistics approach based on three dictionaries of “positive” and “negative” words [\[2\]](#). Note that the goal here is not to measure the orientation of the discourse (whether, for example, expansionary or restrictive) but rather to quantify the use of words with a positive or negative tone in order to measure the overall tonality of the speech, regardless of its ultimate message. Sentiment is thus conceived as a component that is independent of economic fundamentals and the monetary

policy decisions actually taken [\[3\]](#). In other words, we look at whether the use of certain words rather than others, regardless of the message communicated, affects the financial markets.

Figure 1 shows changes in the tone of central bank statements, calculated on the basis of the three dictionaries, for the ECB and the Fed from 2005 to 2015. The tone is correlated with the economic cycle: the speech is more optimistic (positive tone) during periods of growth and more pessimistic (negative tone) during periods of recession. Using this measure of tonality, we can see the 2008-2009 recession in the euro zone and the US, as well as the sovereign debt crisis in the euro zone in 2012-2013. The tone adopted by central bankers seems therefore to be the product of a combination of the central banks' assessment of the current and future state of the economy and of the sentiment that they are conveying.

Figure 1. Tone of central banker statements



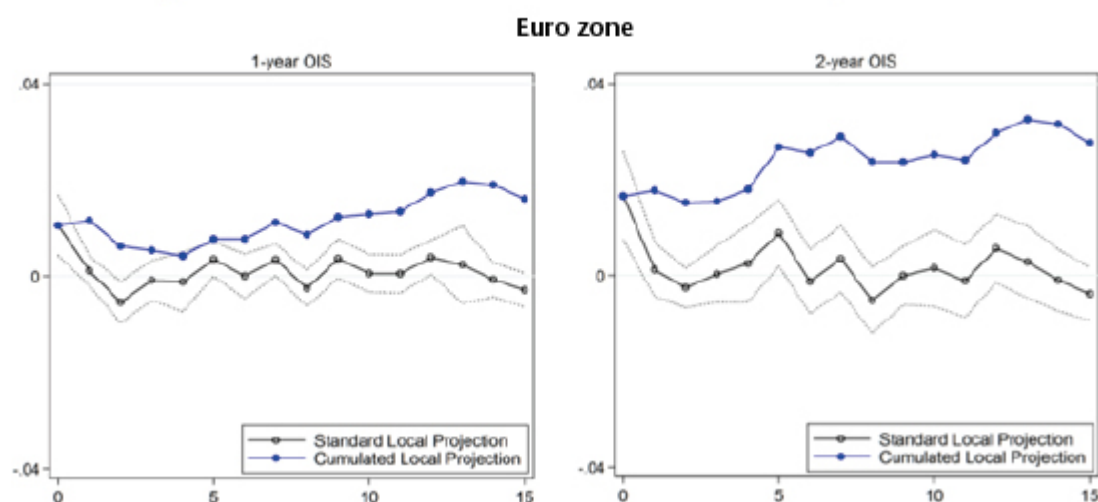
Source: The changes in tone were calculated using three dictionaries: Apel and Blix Grimaldi (2012 – AB); Loughran and McDonald (2011 – LM); and General Inquirer's Harvard IV-4 Psychosocial (Harv). The tone variables were normalized. The bold lines indicate the moving averages of the latest six statements on monetary policy.

After isolating the “sentiment” component of the variables quantifying the tone, we measured the impact of this sentiment on changes in short-term interest rate expectations, as measured by interest rate swaps (OIS – Overnight Indexed Swaps) for maturities ranging from 1 month to 10 years. Since

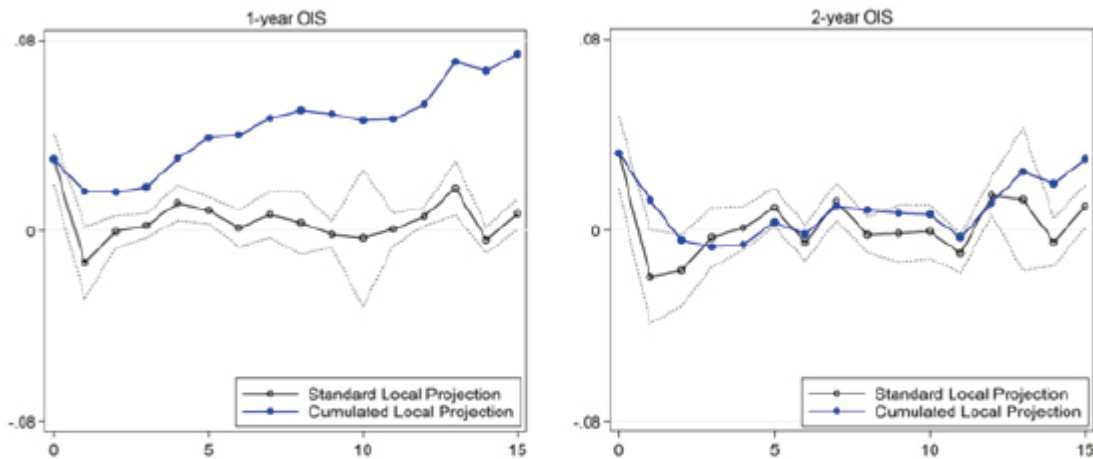
this sentiment is communicated on the day of the monetary policy decision, we also checked that we are not measuring the effect of the decision itself.

Our results show that a discourse with a positive (i.e. optimistic) sentiment has a positive effect on interest rate expectations for maturities ranging from 3 months to 10 years in the euro zone and on maturities from 1 to 3 months and from 1 to 3 years in the United States. The peak effect is for maturities of around 1 to 2 years both in the euro zone and the United States. We also show that this effect is persistent and tends to grow over time (see Figure 2). We also find that the impact of the sentiment depends on the precision of the signal, its size and its sign (the effect of pessimism is stronger than that of optimism, for example), as well as on the level of inflation and growth.

Figure 2. Effect of sentiment on interest rate expectations



United States



Note: Response function to a positive sentiment shock over 15 days using the methodology of Jorda (2005). The figure shows the estimated points, the 90% confidence interval and the cumulative effect.

Source: Jorda, Oscar (2005). "Estimation and Inference of Impulse Responses by Local Projections", *American Economic Review*, 95(1), 161-182.

These results show that market reactions are not due solely to the substance of the message but also to the way that it is expressed by the central bankers. Central bankers' sentiments influence the formation of interest rate expectations and seem to set the future prospects for rate policy. In a context where observers attentively scrutinize the slightest detail that might reveal the date when the Fed will once again raise rates, this study opens new avenues for research and suggests that it might be useful to test whether the sentiment conveyed in the last speech by Janet Yellen might be a good indicator.

[1] Angeletos, George-Marios, and Jennifer La'O (2013), "Sentiments", *Econometrica*, 81(2), 739-780 ; Keynes, John Maynard (1936), *General Theory of Employment, Interest and Money*, London, Palgrave Macmillan; and Pigou, Arthur Cecil (1927), *Industrial Fluctuations*, London, Palgrave MacMillan.

[2] We use three different dictionaries: one by Apel and Blix-Grimaldi (2012) that focuses on the communications of the central banks; one developed by Loughran and McDonald (2011) for a financial context; and the General Inquirer's Harvard dictionary, which lists positive and negative words used in everyday life. These dictionaries list words or phrases with

positive or negative connotations. The difference between the numbers of positive and negative words indicates the tone of the text: if there are more positive than negative expressions, the tone is optimistic, and vice versa. See Apel, Mikael and Marianna Blix-Grimaldi (2012), "The information content of central bank minutes", *Riksbank Research Paper Series*, no. 92; Loughran, Tim and Bill McDonald (2011), "When is a Liability not a Liability? Textual Analysis, Dictionaries, and 10-Ks", *Journal of Finance*, 66 (1), 35-65; and <http://www.wjh.harvard.edu/~inquirer/>.

[3] Cf. Angeletos and La'O (2013).

Do QE programmes create bubbles?

By [Christophe Blot](#), [Paul Hubert](#) and Fabien Labondance

Has the implementation of [unconventional monetary policies](#) since 2008 by the central banks created new bubbles that are now threatening financial stability and global growth? This is a question that comes up regularly (see [here](#), [here](#), [here](#) or [here](#)). As [Roger Farmer](#) shows, it is clear that there is a strong correlation between the purchase of securities by the Federal Reserve – the US central bank – and the stock market index (S&P 500) in the United States (Figure 1). While the argument may sound convincing at first glance, the facts still need to be discussed and clarified. First, it is useful to remember that correlation is not causation. Secondly, an increase in asset prices is precisely a transmission channel for conventional monetary policy and quantitative easing (QE). Finally, an increase in asset prices cannot be treated as a

bubble: developments related to fundamentals need to be distinguished from purely speculative changes.

Higher asset prices is a factor in the transmission of monetary policy

If the ultimate goal of central banks is macroeconomic stability [\[1\]](#), the transmission of their decisions to the target variables (inflation and growth) takes place through various channels, some of which are explicitly based on changes in asset prices. Thus, the effects expected from QE are supposed to be transmitted in particular by so-called portfolio effects. By buying securities on the markets, the central bank encourages investors to reallocate their securities portfolio to other assets. The objective is to ease broader financing conditions for all economic agents, not just those whose securities are targeted by the QE programme. In doing this, the central bank's actions push asset prices up. It is therefore not surprising to see a rise in equity prices in connection with QE in the US.

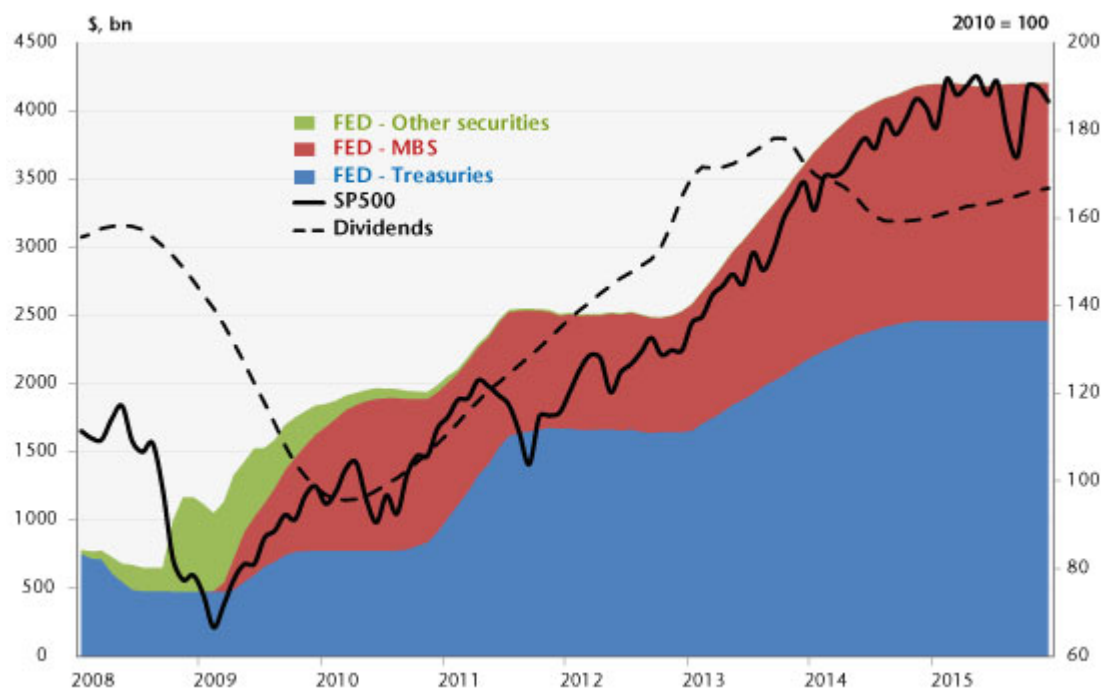
Every increase in asset prices is not a bubble

Furthermore, it is necessary to make sure that the correlation between asset purchases and their prices is not just a statistical artefact. The increase observed in prices may also reflect favourable fundamentals and be due to improved growth prospects in the United States. The standard model for determining the price of a financial asset identifies its price as equal to the present value of anticipated income flows (dividends). Although this model is based on numerous generally restrictive assumptions, it nevertheless identifies a first candidate, changes in dividends, to explain changes in stock prices in the United States since 2008.

Figure 1 shows a clear correlation between the series of dividends [\[2\]](#) paid and the S&P 500 index between April 2010 and October 2013. Part of the rise in equity prices can be

explained simply by the increase in dividends: the usual determinant of stock market prices. Looking at this indicator, only the period starting at the beginning of 2014 could then indicate a disconnect between dividends and share prices, and thus possibly point to an over-adjustment.

Figure 1. Quantitative easing and stock market prices in the US



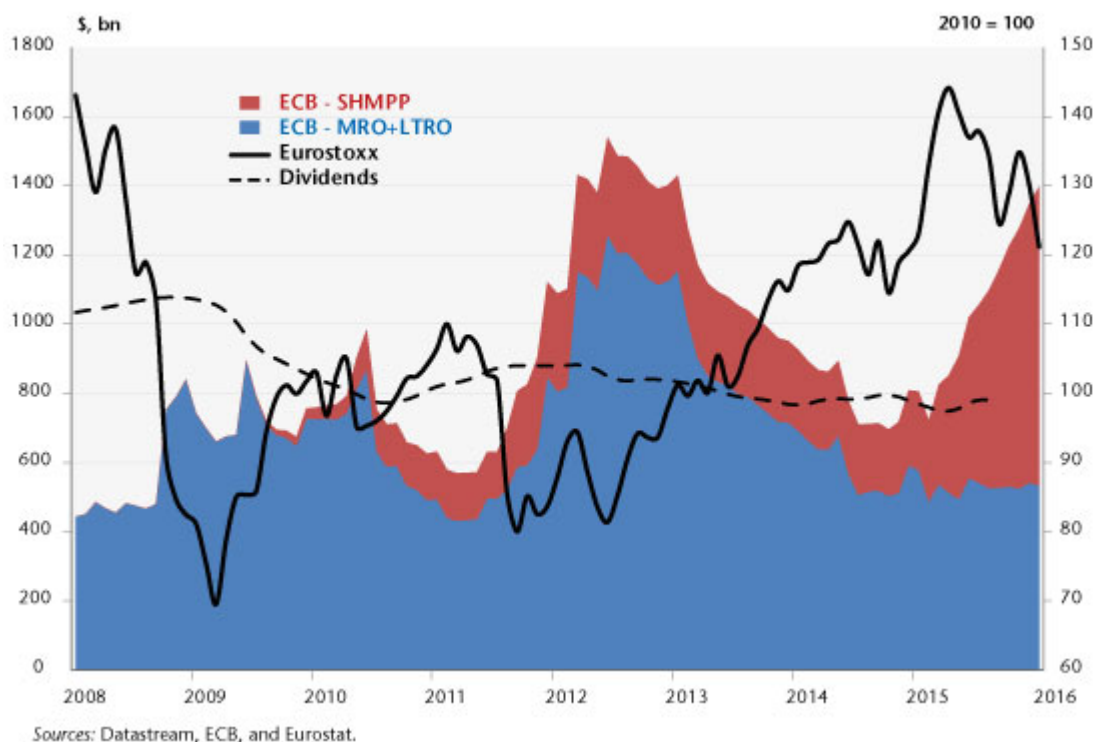
Sources: Datastream, Federal Reserve, and Bureau of Economic Analysis.

A correlation that isn't found in the euro zone

If the theory that unconventional monetary policies create bubbles is true, then it should also be observed in the euro zone. Yet performing the same graph as the one for the United States does not reveal a link between the liquidity provided by the European Central Bank (ECB) and the Eurostoxx index (Figure 2). The first phase in the increase in the size of the ECB's balance sheet, via its refinancing operations starting in September 2008, came at a time when stock markets were collapsing, following the bankruptcy of Lehman Brothers. Likewise, the very long-term refinancing operations carried out by the ECB at the end of 2011 do not seem to be correlated with the stock market index. The rise in share prices coincides in fact with Mario Draghi's statement in July 2012

that put a halt to concerns about a possible breakup of the euro zone. It is of course possible to argue that the central bank has played a role, but any link between liquidity and asset prices is simply not there. At the end of 2012, the banks paid back their loans to the ECB, which reduced the cash in circulation. Finally, the recent period is once again illustrating the fragility of the argument that QE creates bubbles. It is precisely at a time when the ECB is undertaking a programme of large-scale purchases of securities, along the lines of the Federal Reserve, that we are seeing a fall in world stock indices, in particular the Eurostoxx.

Figure 2. Quantitative easing and the stock market index in the euro zone



So does this mean that there is no QE-bubble link?

Not necessarily. But to answer this question, it is necessary first to identify precisely the portion of the increase that is due to fundamentals (dividends and companies' share prospects). A bubble is usually defined as the difference between the observed price and a so-called fundamental value. In a forthcoming working paper, we endeavour to identify periods of over- or undervaluation of a number of asset prices

for both the euro zone and the United States. Our approach involves estimating different models of asset prices and thereby to extract a component that is unexplained by fundamentals, which is then called a “bubble”. We then show that for the euro zone, the ECB’s monetary policy broadly speaking (conventional and unconventional) does not seem to have a significant effect on the “bubble” component (unexplained by fundamentals) of asset prices. The results are stronger for the United States, suggesting that QE might have a significant effect on the “bubble” component of some asset prices there.

This conclusion does not mean that the central banks and the regulators are impotent and ignorant in the face of this risk. Rather than trying to dissect every movement in asset prices, the central banks should focus their attention on financial vulnerabilities and on the ability of agents (financial and non-financial) to absorb sharp fluctuations in asset prices. The best prevention against financial crises thus consists of continuously monitoring the risks being taken by agents rather than trying to limit variations in asset prices.

[\[1\]](#) We prefer a broad definition of the end objective that takes into account the diversity of institutionalized formulations of the objectives of central banks. While the mandate of the ECB is primarily focused on price stability, the US Federal Reserve has a dual mandate.

[\[2\]](#) The series of dividends paid shows strong seasonality, so this has been smoothed by a moving average over 12 months.

Financialisation and financial crisis: vulnerability and traumatic shock

By Jérôme Creel, Paul Hubert, Fabien Labondance

Since the mini-crash that took place in the Shanghai stock market in August, financial instability has resurfaced in the markets and the media and, once again, the link with financialisation has been evoked. The Chinese crisis resulted from a combination of real estate and stock market bubbles that were fed by the abundant savings of a middle class in search of high-yield investments. It feels like we've gone back almost ten years when what is considered the excessive financialisation of the US economy – with abundant savings from the emerging countries enabling the build-up of widespread US consumer debt – is treated as the cause of the financial instability and crisis that was triggered in the summer of 2007.

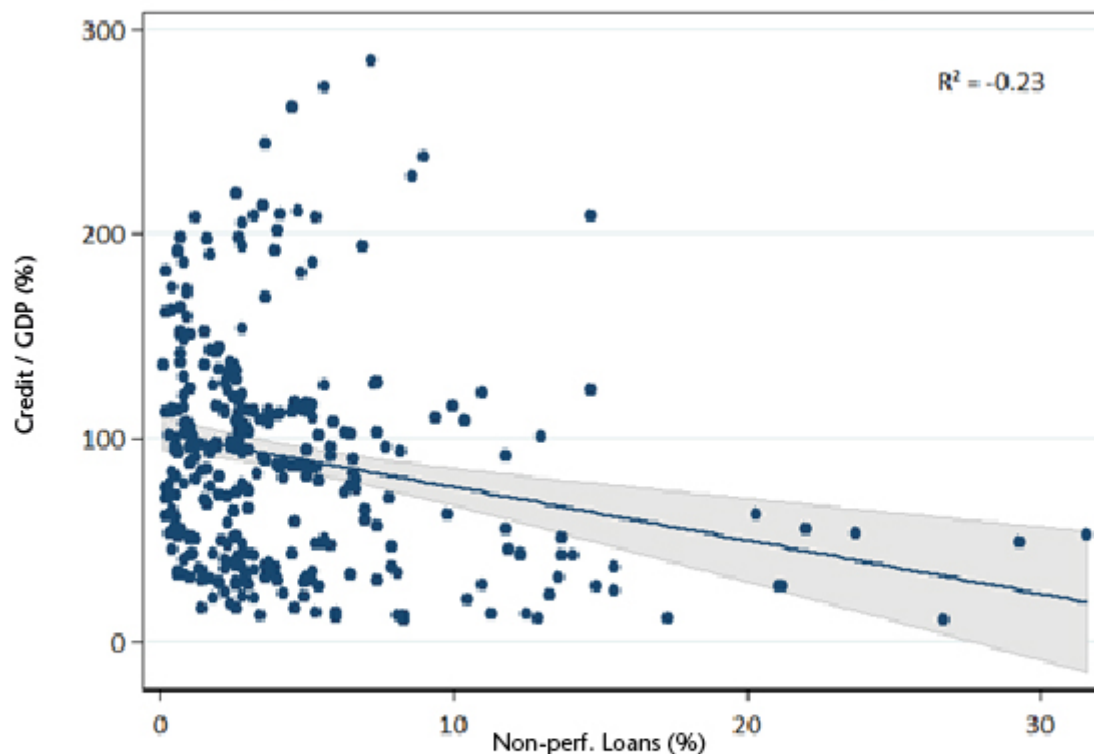
Is there really a link between, on the one side, increasing indebtedness and the great variety of financial investments, and on the other, volatile stock prices and a deterioration in the quality of bank loans? And if there is, what is the direction of the dynamics: from financialisation to financial instability, from financial instability to financialisation, or both at once? A rise in indebtedness could well lead to increasingly risky lending to agents who will not be able to repay them, which would then lead to a financial crisis: this is one possible case. The occurrence of a crisis would change the behaviour of households and firms, causing them to reduce debt: this is the second case, in which financial instability reduces the financialisation of the economy.

Depending on which is the case, the public policies needed differ. In the first, we need to monitor the degree of the economy's financialisation and target, for example, a maximum ratio of bank credit to GDP in order to prevent the rise and bursting of speculative bubbles. In the second case, there are two possibilities: to treat the causes, and thus to monitor the quality of loans to households and business so as to ensure the proper allocation of capital in the economy; or to treat the consequences by supporting productive investment to annihilate any rationing of credit.

In the course of the debate on the links between financialisation and financial instability, and on the consequences to be drawn in terms of public policy, the European situation is interesting for two reasons: the European Union has set up a system for monitoring external imbalances, including financial ones, from 2011, and a banking union since 2014. In a recent [working paper](#), we look at this debate for several groups of countries in the European Union over the period 1998-2012.

At first glance, the relationship between these two concepts is not easy to demonstrate, as can be seen in the graph below. It shows a scatter plot that for each year and for each European country gives the levels of financialisation (approximated here by the share of credits / GDP) and of financial instability (approximated here by non-performing loans). The correlation between these variables is -0.23.

Figure. Financialisation and financial instability



Note: Non-performing loans, or bad debt, expressed as a percentage of total loans granted by banks.
Credit/GDP: total amount of bank credit expressed as a percentage of GDP.

Source : Creel et al. (2015) based on GFDD databases.

We test the two typical cases discussed above. We call the first case the vulnerability effect. As financialisation develops, it engenders a sort of euphoria that leads to granting loans that are increasingly risky, which fosters financial instability. This hypothesis derives from the work of Minsky (1995) [\[11\]](#). We simultaneously test the potentially negative relationship between financial instability and financialisation, which we call the trauma effect. The very occurrence of financial instability as well as its impact encourages economic agents to take less risk and to shed debt. Our estimates show that the link between financial instability and financialisation is not uni-directional. Contrary to what is suggested by the simple correlation coefficient, the sign of the relationship is not the same when looking at the effect of one variable on the other, and vice versa. Both the vulnerability and the trauma effect have been at work in the European countries. A macro-prudential policy intended to

monitor the policy on granting bank loans, in terms of their volume and quality, therefore does indeed seem necessary in Europe.

We also tested the possibility that these effects are non-linear, that is to say, that they depend on reference values. The vulnerability hypothesis depends both on the level of financialisation (the higher it is, the stronger the relationship) and on time. This last point shows us that the positive relationship between financialisation and financial instability shows up at the moment of crisis for countries that are already heavily financialised. Finally, in the countries on the EU periphery [\[2\]](#), long-term interest rates and inflation rates greatly influence the financial instability variable. Consequently, it seems that for these countries there is a need for strong coordination between banking supervision and macroeconomic surveillance.

[\[1\]](#) Minsky H. P. (1995), "Sources of Financial Fragility: Financial Factors in the Economics of Capitalism", paper prepared for the conference, *Coping with Financial Fragility: A Global Perspective*, 7-9 September 1994, Maastricht, available at Hyman P. Minsky Archive. Paper 69.

[\[2\]](#) This group consists of Spain, Ireland, Italy, Greece, Portugal and the countries from the Eastern enlargements in 2004 and 2007. The establishment of this group is explained in the working paper.

The redistributive effects of the ECB's QE programme

By Christophe Blot, Jérôme Creel, Paul Hubert, Fabien Labondance and Xavier Ragot

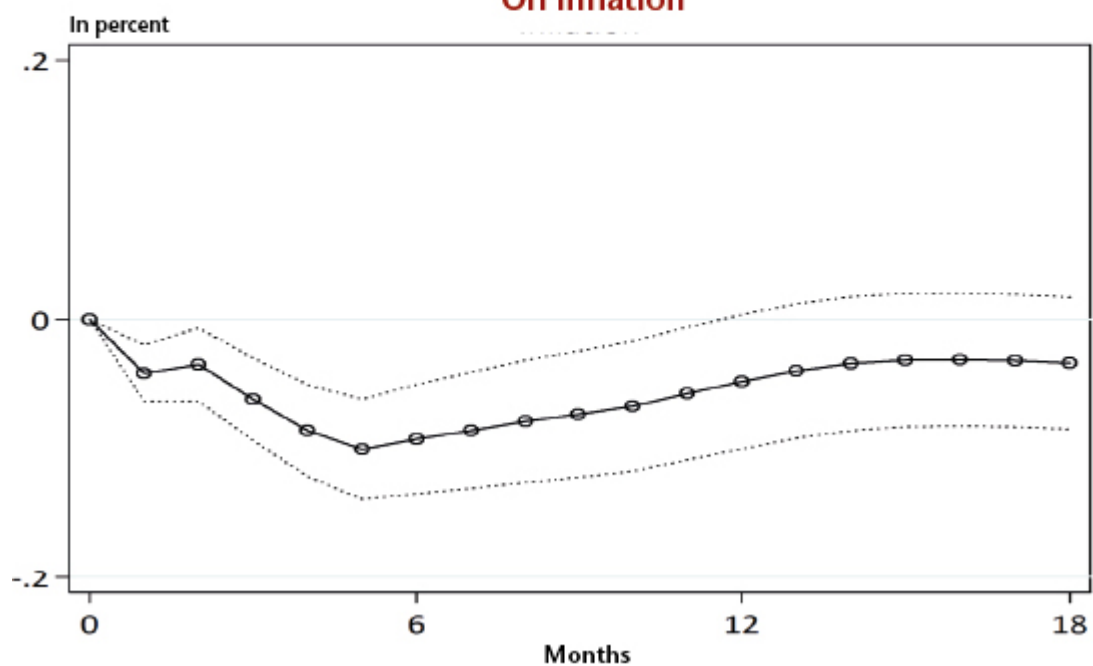
Rising inequality in income and wealth has become a key issue in discussions of economic policy, and the topic has inserted itself into evaluations of the impact of monetary policy in the US and Japan, the precursors of today's massive quantitative easing programmes (QE). The question is thus posed as to whether the ECB's QE policy has had or will have redistributive effects.

In a paper prepared for the European Parliament, [Blot et al. \(2015\)](#) point out that the empirical literature gives rise to two contradictory conclusions. In the US, the Fed's base rate cuts tend to reduce inequality. Conversely, in Japan an expansionary QE type policy tends to increase inequality. So what's the situation in Europe?

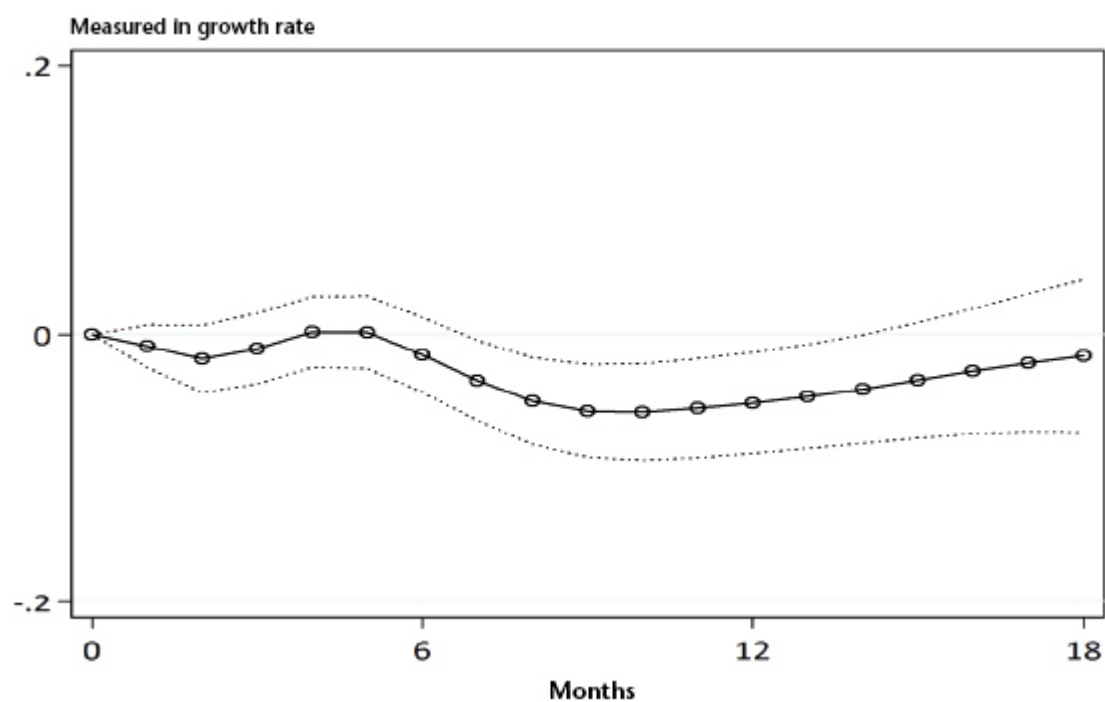
Based on macroeconomic data aggregated for the euro zone as a whole, Blot et al. (2015) show that while European monetary policy, conventional and unconventional, have indeed had an impact on the unemployment rate, the number of hours worked and the rate of inflation (see graphs), this was limited. This result suggests that the ECB's expansionary monetary policy has tended to reduce inequality, but not by much. So when the ECB finally decides to wind up its expansionary policy, we can expect a slight increase in inequalities to follow. Because of this effect, though small, Blot et al. (2015) suggest that the ECB should be held accountable not just for price stability or economic growth, but also for the impact of its policies in terms of inequality and the mechanisms needed to take this into account.

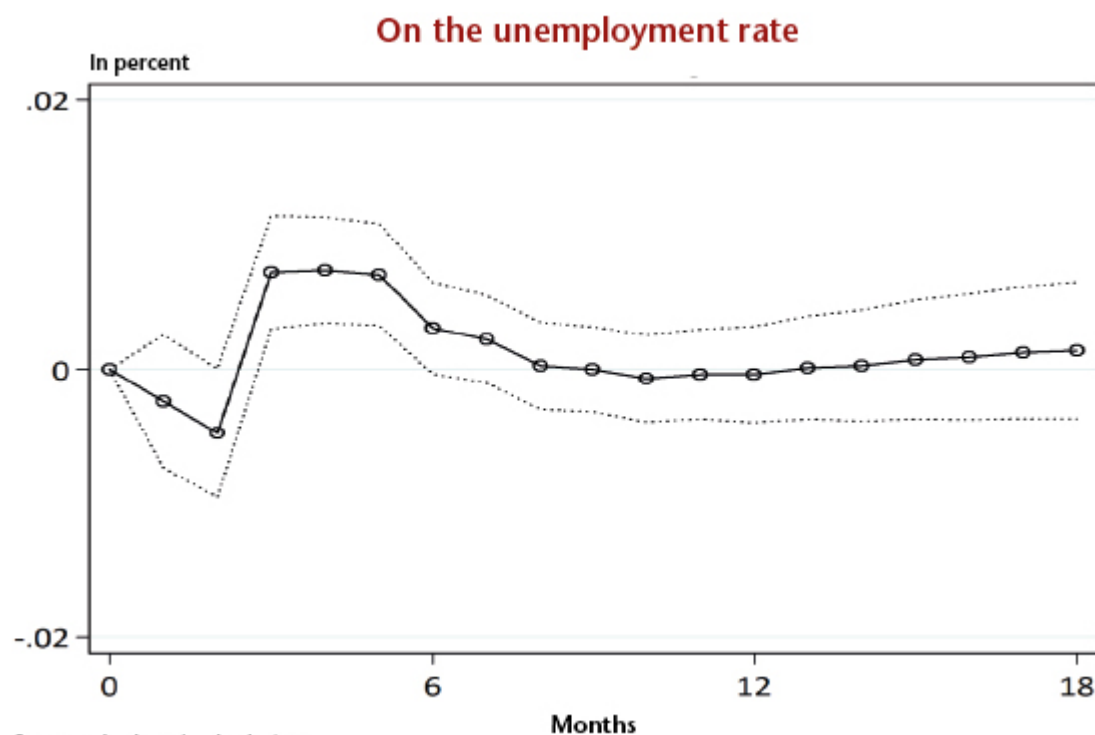
**Figures. The impact of a restrictive monetary policy shock
(0.2 percentage point hike in the implicit interest rate)
in the euro zone...**

On inflation



On hours worked





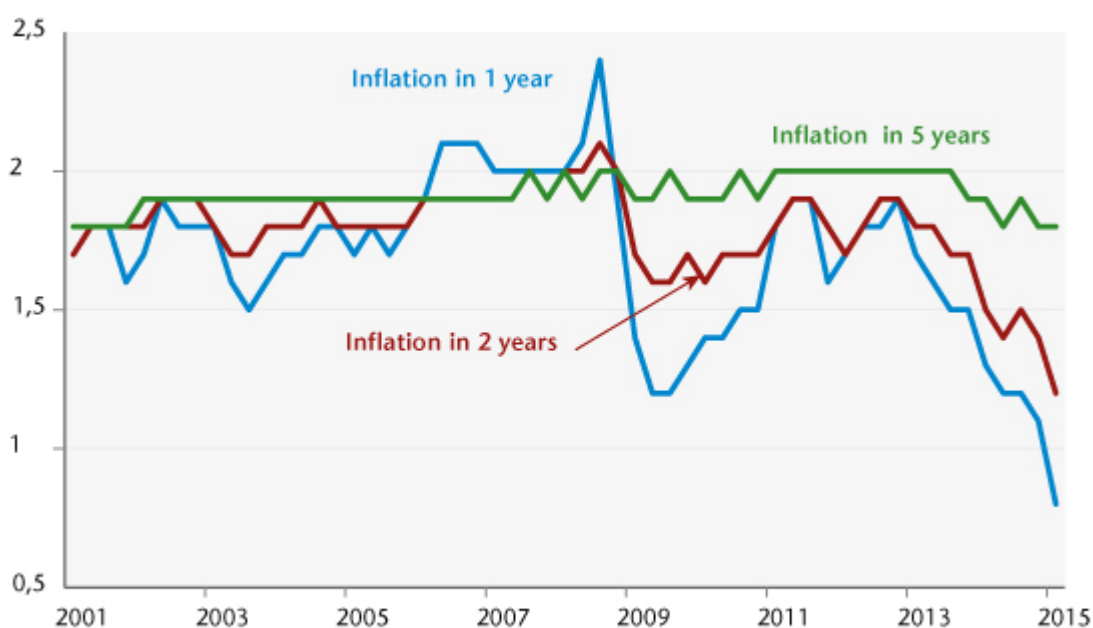
The ECB's quantitative easing exercise: you're never too young to start

By [Christophe Blot](#), [Jérôme Creel](#), [Paul Hubert](#) and Fabien Labondance

The ECB decision to launch a quantitative easing (QE) programme was widely anticipated. Indeed, on several occasions in the second half of 2014 Mario Draghi had reiterated that the Governing Council was unanimous in its commitment to take the steps needed, in accordance with its mandate, to fight against the risk of a prolonged slowdown in inflation. Both the scale and the characteristics of the ECB plan announced on 22 January 2014 sent a strong, though perhaps belated signal of the Bank's commitment to fight the risk of deflation, which

has been spreading in the euro zone, as can be seen in particular in inflation expectations over a two-year horizon (Figure 1). In a [special study entitled, “Que peut-on attendre du l’assouplissement quantitatif de la BCE?”](#) [“What can we expect from the ECB’s quantitative easing?”], we clarify the implications of this new strategy by explaining the mechanisms for the transmission of quantitative easing, drawing on the numerous empirical studies on previous such programmes in the US, the UK and Japan.

Figure. Inflation expectations in the euro



Source : ECB (Survey of Professional Forecasters).

The terms of the quantitative easing decided by the ECB are indeed similar to those adopted by other central banks, especially by the US Federal Reserve and the Bank of England, which make comparisons legitimate. It appears from the American, British and Japanese experience that the measures implemented have led to a decline in sovereign interest rates and more generally to an improvement in the financial conditions of the overall economy[\[1\]](#). This has been the result of sending a signal about the present and future stance of monetary policy and a reallocation of investors’ portfolios. Some studies [\[2\]](#) also show that the US QE caused a

depreciation of the dollar. The transmission of QE from the ECB to this variable could be critical in the case of the euro zone. An analysis using VAR models shows that the monetary policy measures taken by the ECB will have a significant impact on the euro but also on inflation and inflationary expectations. It is likely that the effects of the depreciation of the euro on European economic activity will be positive (cf. [Bruno Ducoudré and Eric Heyer](#)), which would make it easier for Mario Draghi to bring inflation back on target. The measure would therefore have the positive effects expected; however, it might be regrettable that it was not implemented earlier, when the euro zone was mired in recession. Inflation in the euro zone has fallen constantly since late 2011, reflecting a gathering deflationary risk month after month. In fact, the implementation of QE from March 2015 will consolidate and strengthen a recovery that would undoubtedly have occurred anyway. Better late than never!

[1] The final impact on the real economy is, however, less certain, in particular because the demand for credit has remained stagnant.

[2] Gagnon, J., Raskin, M., Remache, J. and Sack, B. (2011). "The financial market effects of the Federal Reserve's large-scale asset purchases," *International Journal of Central Banking*, vol. 7(10), pp. 3-43.

Is the ECB impotent?

[Christophe Blot](#), [Jérôme Creel](#), [Paul Hubert](#) and [Fabien Labondance](#)

In June 2014, the ECB announced a set of new measures (a detailed description of which is provided in a special study entitled, "[How can the fragmentation of the euro zone banking system be fought?](#)", Revue de l'OFCE, No. 136, in French) in order to halt the lowering of inflation and sustain growth. Mario Draghi then clarified the objectives of the ECB's monetary policy by indicating that the Bank wanted to expand its balance sheet by a trillion euros to return to a level close to that seen in the summer of 2012. Among the measures taken, much was expected from the new targeted long-term refinancing operation (TLTRO), which gives banks in the euro zone access to ECB refinancing with a maturity of 4 years in return for providing credit to the private sector (excluding mortgages). However, after the first two allocations (24 September 2014 and 11 December 2014), the picture has become rather complicated, with the amounts allocated well below expectations. This reflects the difficulty the ECB is having in fighting effectively against the risk of deflation.

Indeed, having allotted 82.6 billion euros in September (versus anticipations of between 130 and 150 billion), the ECB granted "only" 130 billion on December 11, *i.e.* once again a lower amount than had been anticipated. So we are a long way from the maximum amount of 400 billion euros that had been evoked by Mario Draghi in June 2014 for these two operations. Moreover, these first two allotments were clearly insufficient to boost the ECB's balance sheet significantly (Figure 1), and all the more so as banks are continuing to reimburse the three-year loans that they received in late 2011 and early

2012 in the very long-term refinancing operation (VLTRO) [\[1\]](#). What explains the banks' reluctance to make use of this operation, even though it allows them to refinance the loans granted at a very low rate for a 4 year term?

The first is that the banks already have very broad and very advantageous access to ECB liquidity through the monetary policy operations already implemented by the ECB [\[2\]](#). These operations actually offer a lower interest rate than does the TLTRO (0.05% against 0.15%). Similarly, a TLTRO is not more attractive than some long-term market financing, especially since many banks do not have financing constraints. TLTRO is thus of marginal interest, due to the maturity of the operation, and more restrictive because it is conditioned on the distribution of credit. For the first two operations conducted in September and December 2014, the allotment could not exceed 7% of outstanding loans to the non-financial private sector in the euro zone, excluding loans for housing, as of 30 April 2014. A new series of TLTRO will be conducted between March 2015 and June 2016, on a quarterly basis. This time the maximum amount that can be allocated to the banks will depend on the growth in outstanding loans to the non-financial private sector in the euro zone, excluding loans for housing, between 30 April 2014 and the date of the operation in question.

The second explanation is that the weakness of credit in the euro zone is not simply the result of supply factors but also demand factors. Sluggish activity and private agents' efforts to shed debt are holding back lending.

Third, beyond banks' ability to find refinancing, it is also possible that they are trying to reduce their exposure to risk. The problem is thus related to their assets. However, non-performing loans are still at a very high level, especially in Spain and Italy (Figure 2). In addition, although the Asset Quality Review (AQR) conducted by the ECB has revealed that insolvency risks are limited in the euro

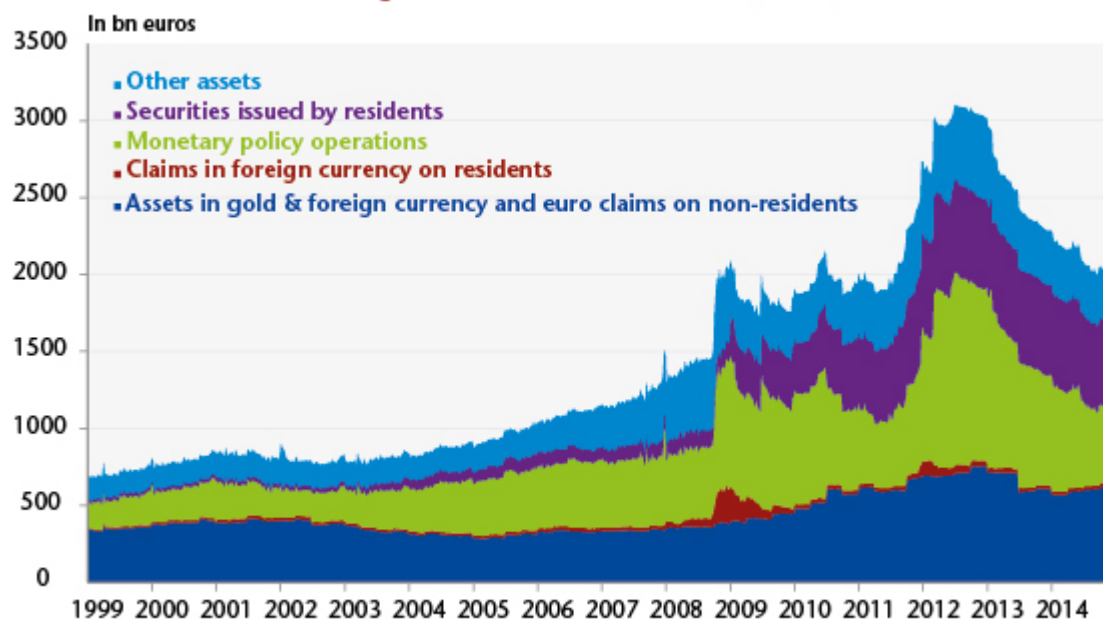
zone, the report also points out that some banks are highly leveraged and that they have mainly used the available liquidity to buy government bonds in order to meet their capital requirements. They are then reducing their balance sheet risk by limiting loans to the private sector.

Finally, two uncertainties are also reducing the banks' participation in the TLTRO. The first concerns the stigma attached to the conditionality of the TLTRO and to the fact that banks that do not meet their commitments on the distribution of credit will be required to repay the financing obtained from the ECB after two years. So banks facing uncertainty about their ability to increase their lending may very well wish to avoid the prospect of having to repay the funds sooner. The second factor concerns uncertainties about the programs for purchasing ABS and covered bonds[\[3\]](#). The banks could also turn to these programs to get cash in exchange for the sale of assets that they would like to get rid of.

Has monetary policy become totally ineffective? The answer is certainly no, since by giving banks a guarantee that they can refinance their activity through various programs (TLTRO, ABS, covered bonds, etc.), the ECB is reducing the risk that credit will be rationed due to the deteriorated state of some banks' liabilities. Monetary policy is thus helping to free up the credit channel. But its effects are nevertheless limited, as is suggested by [Bech, Gambacorta and Kharroubi \(2012\)](#) , who show that monetary policy is less effective in periods of recovery following a financial crisis. Can we get out of this impasse? This observation on the effectiveness of monetary policy shows that the ECB should not be viewed as the be-all and end-all. It is still essential to complement its support for activity through an expansionary fiscal policy across the euro zone. This point was also reiterated by the President of the ECB during this summer's [conference at Jackson Hole](#): "Demand side policies are not only justified by the

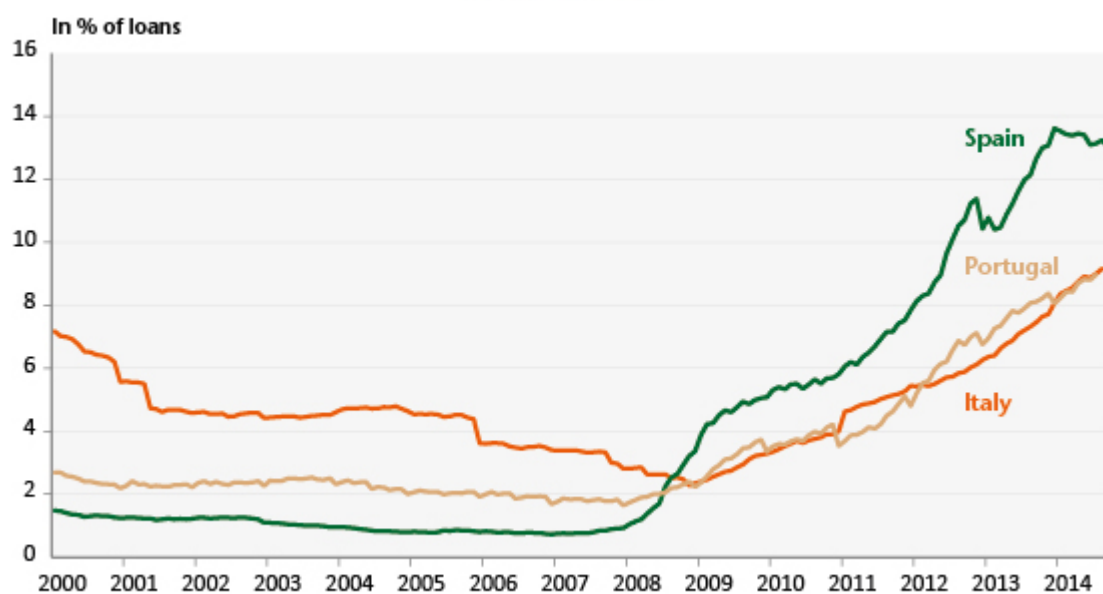
significant cyclical component in unemployment. They are also relevant because, given prevailing uncertainty, they help insure against the risk that a weak economy is contributing to hysteresis effects.”

Figure 1. ECB balance sheet (assets)



Source: ECB.

Figure 2. Bad debt



Source: National central banks.

[1] See the special study in the *Revue de l'OFCE* no. 136, "[Comment lutter contre la fragmentation du système bancaire de la zone euro?](#)" for an examination of the various monetary policy measures taken by the ECB since the onset of the financial crisis and an estimate of their impact on the real economy.

[2] This includes standard monetary policy operations as well as the VLTRO operation through which the ECB provided liquidity for an exceptional term of 3 years in December 2011 and February 2012.

[3] This involves programs for the purchase of securities in the market and not cash distributed directly to the banks. The covered bonds and ABS are securities pledged on assets whose remuneration depends on that of the underlying asset, which is by necessity a mortgage in the case of covered bonds and which in the case of ABS may include other types of loans (credit cards, cash loans to businesses, etc.).

Dealing with the ECB's triple mandate

By [Christophe Blot](#), [Jérôme Creel](#), [Paul Hubert](#) and [Fabien Labondance](#)

The financial crisis has sparked debate about the role of the central banks and monetary policy before, during and after the economic crisis. The prevailing consensus on the role of the

central banks is eroding. Having price stability as the sole objective is giving way to the conception of a triple mandate that includes inflation, growth and financial stability. This is *de facto* the orientation that is being set for the ECB. We delve into this situation in one of the [articles](#) of the OFCE issue entitled *Reforming Europe* [\[1\]](#), in which we discuss the implementation of these three objectives.

The exclusive pursuit of the goal of price stability is now insufficient to ensure macroeconomic and financial stability. [\[2\]](#) A new paradigm is emerging in which the central banks need to simultaneously ensure price stability, growth and financial stability. This has been the orientation of recent institutional changes in the ECB, including its new responsibility for micro-prudential supervision. [\[3\]](#) Furthermore, the conduct of the euro zone's monetary policy shows that the ECB has also remained attentive to trends in growth [\[4\]](#). But if the ECB is indeed pursuing a triple mandate, what then is the proper relationship between these missions?

The crucial need for coordination between the different actors in charge of monetary policy, financial regulation and fiscal policy is lacking in the current architecture. Furthermore, certain practices need to be clarified. The ECB has played the role of lender of last resort (with banks and to a lesser extent States) even though it has not specifically been assigned this role. Finally, in a new framework in which the ECB plays a greater role in determining the euro zone's macroeconomic and financial balance, we believe it is necessary to strengthen the democratic accountability of the Bank. The definition of its objectives in the Maastricht Treaty in fact gives it strong autonomy in interpretation (see in particular the discussion by Christophe Blot, [here](#)). Moreover, while the ECB regularly reports on its work to the European Parliament, the latter does not have any way to direct this [\[5\]](#).

Based on these observations, we discuss several proposals for

coordinating the ECB's three objectives more effectively henceforth:

1 – Even without modifying the treaties in force, it is important that the heads of the ECB be more explicit about the different objectives being pursued [6]. The declared priority of price stability no longer corresponds to the practice of monetary policy: growth seems to be an essential objective, as is financial stability. More transparency would make monetary policy more credible and certainly more effective in preventing another financial and banking crisis in particular. The use of exchange rate policy [7] should not be overlooked, as it can play a role in reducing macroeconomic imbalances within the euro zone.

2 – In the absence of such clarification, the ECB's extensive independence needs to be challenged so that it comes up to international standards in this area. Central banks rarely have independence in deciding their objectives: for example, the US Federal Reserve pursues an explicit dual mandate, while the Bank of England's actions target institutionalized inflation. An explicit triple mandate could be imposed on the ECB by the governments, with the heads of the ECB then needing to make effective tradeoffs between these objectives.

3 – The increase in the number of objectives pursued has made it more difficult to deal with tradeoffs between them. This is particularly so given that the ECB has *de facto* embarked on a policy of managing the public debt, which now exposes it to the problem of the sustainability of Europe's public finances. The ECB's mandate should therefore explicitly spell out its role as lender of last resort, a normal task of central banks, which would clarify the need for closer coordination between governments and the ECB.

4 – Rather than calling the ECB's independence completely into question, which would never win unanimity among the Member States, we call for the creation *ex nihilo* of a body to

supervise the ECB. This could emanate from the European Parliament, which is responsible for discussing and analyzing the relevance of the monetary policy established with respect to the ECB's expanded objectives: price stability, growth, financial stability and the sustainability of the public finances. The ECB would then not only be invited to report on its policy – as it is already doing to Parliament and through public debate – but it could also see its objectives occasionally redefined. This “supervisory body” could for example propose quantified inflation targets or unemployment targets.

[1] *Reforming Europe*, edited by Christophe Blot, Olivier Rozenberg, Francesco Saraceno and Imola Streho, *Revue de l'OFCE*, no. 134, May 2014. This issue is available in [French](#) and [English](#) and has been the subject of a post on the [OFCE blog](#).

[2] This link is examined in [“Assessing the Link between Price and Financial Stability”](#) (2014), Christophe Blot, Jérôme Creel, Paul Hubert, Fabien Labondance and Francesco Saraceno, *Document de travail de l'OFCE*, 2014-2.

[3] The implementation of the banking union gives the ECB a role in financial regulation (Decision of the Council of the European Union of 15 October 2013). It is henceforth in charge of banking supervision (particularly credit institutions considered “significant”) in the Single supervisory mechanism (SSM). As of autumn 2014, the ECB will be responsible for micro-prudential policy, in close cooperation with national organizations and institutions. See the article by Jean-Paul Pollin, “Beyond the banking union”, in *Revue de l'OFCE*, [Reforming Europe](#).

[4] Castro (2011), [“Can central banks' monetary policy be described by a linear \(augmented\) Taylor rule or by a](#)

[nonlinear rule?](#)", *Journal of Financial Stability* vol.7(4), p. 228-246. This paper uses an estimation of Taylor rules between 1991:1 and 2007:12 to show that the ECB reacted significantly to inflation and to the output gap.

[5] In the United States, the mandate of the Federal Reserve is set by Congress, which then has a right of supervision and can therefore amend the Fed's articles and mandate.

[6] Beyond clarifying objectives in terms of inflation and growth, the central bank's fundamental objective is to ensure confidence in the currency.

[7] This issue is considered in part in a recent OFCE [post](#).

Why a negative interest rate?

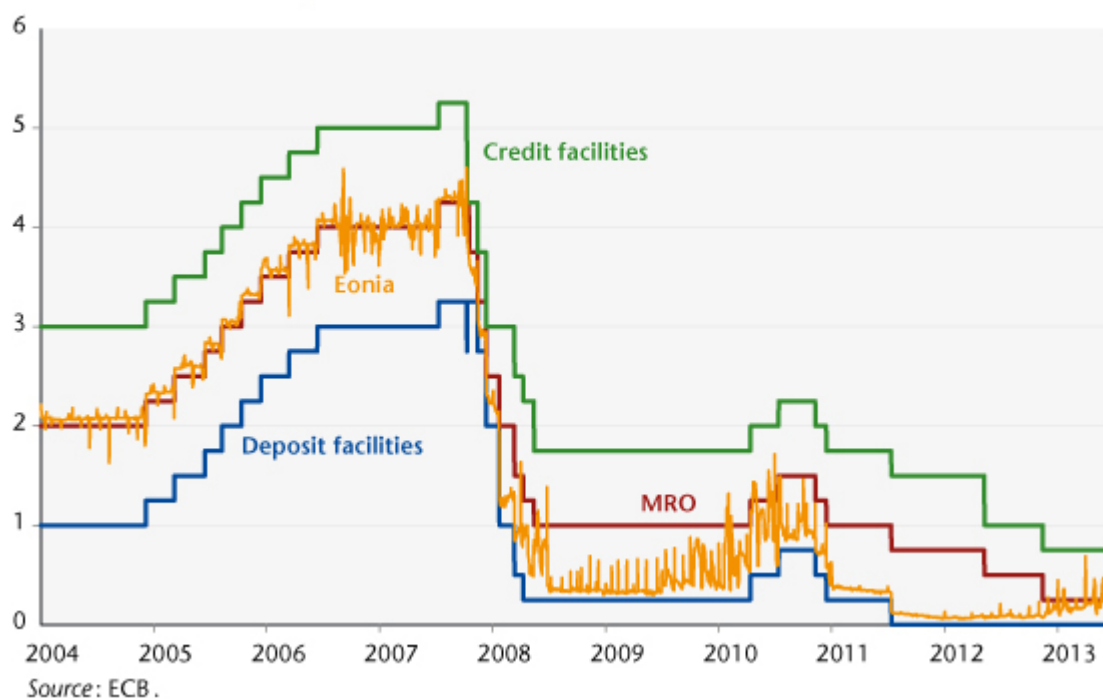
[Christophe Blot](#) and [Fabien Labondance](#)

As expected, on 5 June 2014 the European Central Bank (ECB) unleashed an arsenal of new unconventional measures. The aim is to curb deflationary tendencies in the euro zone. Among the measures announced, the ECB decided in particular to apply a negative interest rate to deposit facilities. This unprecedented step deserves an explanation.

Note that since July 2012, the rate on deposit facilities has been 0%. It now falls to -0.10%, meaning that a bank depositing cash at the ECB will have its deposit reduced by that rate. Before considering the repercussions of this measure, it is worth clarifying the role of deposit facilities. The ECB's activity is based on loans to credit institutions in the euro zone through the channel of main

refinancing operations (MRO) or long-term refinancing operations (LTRO). Prior to the crisis, these operations were conducted at variable rates based on an auction mechanism, but since October 2008 they have been conducted at fixed rates. The refinancing operation rates must allow the ECB to influence the rate charged by credit institutions for interbank loans (Euro OverNight Index Average rates, or Eonia) and, through this channel, the entire range of bank rates and market rates. To ensure the Eonia is not too volatile, the ECB provides the banks with two facilities: credit facilities, enabling them to borrow from the ECB for a period of 24 hours, and deposit facilities, enabling them to make cash deposits with the ECB for a period of 24 hours. In case of a liquidity crisis, the banks thus have a guarantee of being able to lend or borrow via the ECB, at a higher for credit facilities or a lower rate for deposit facilities. These rates can then be used to regulate fluctuations in the Eonia, as shown in Figure 1.

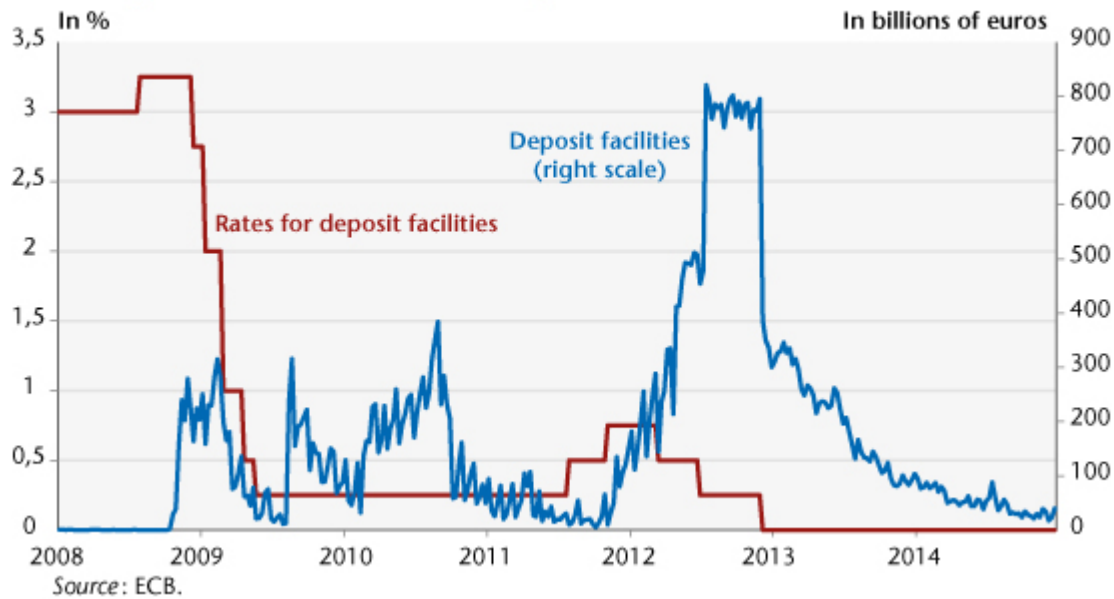
Figure 1. Main ECB rates and EONIA rate



In practice, until the collapse of Lehman Brothers in

September 2008, banks made little use of deposit facilities, indicating that the interbank market was functioning normally. The situation has radically changed since then, and the amount of deposits left with the ECB has fluctuated to a greater or lesser extent, depending on concerns over the sovereign bond crisis (Figure 2). The height of the crisis in spring 2012 coincided with a peak in the amounts deposited by the banks, which had excess liquidity. Over a period of three months, around 800 billion euros (equivalent to just under 10% of euro zone GDP), paid at 0.25%, were deposited by Europe's banks. In the context of fear of a euro zone collapse and uncertainty about the financial situation of financial and non-financial agents, the banks have been depositing poorly compensated sums with the ECB. They chose to do this rather than to exchange the excess liquidity in the money market or support activity by lending to companies or buying shares. It was not until Mario Draghi's statement in July 2012 that the ECB would do "whatever it takes" to support the euro zone that confidence returned and these sums fell. It was also then that the rate went down to 0%, further reducing the incentive to use the deposit facilities. The level of deposits fell by half, from 795.2 billion euros to 386.8 billion. Since then, they have declined gradually, but are still high, especially given that they receive no interest. In the last week of May 2014, there were still 40 billion euros in deposits (Figure 2).

Figure 2. Rates and levels of deposit facilities with the ECB



This situation prompted the ECB to set a negative rate in order to encourage commercial banks to reallocate this money. We can be sure that once the negative rate applies, the level of deposits will quickly drop to zero. Even so, this will mean an impulse of only 40 billion euros, and further action will be needed to support the real economy. On its own, this step by the ECB has certainly not convinced the markets that it has dealt with the situation.

The ECB has thus once again demonstrated its proactive approach to curbing the risks facing the euro area. Its reaction can be compared to the response of Europe's other institutions, which have struggled to fully take on board the depth of the crisis. Looking outside the euro zone, it is noteworthy that the US Federal Reserve and the Bank of England moved with greater speed, even though the risk of deflation was lower in the United States and the United Kingdom. This active approach is perhaps no stranger to the renewed growth seen in these countries. The ECB's action is therefore welcome. Now we need to hope that it will stave off the risk of deflation hanging over the euro zone, a risk that could have been avoided if the euro zone's governments had not

generally adopted austerity policies, and if the ECB had taken less of a wait-and-see attitude.

Does financial instability really undermine economic performance?

By [Jérôme Creel](#), [Paul Hubert](#) and Fabien Labondance

What relationship can be established between the degree to which an economy is financialized (understood as the ratio of credit to the private sector over GDP), financial instability and economic performance (usually GDP per capita) in the European Union (EU)? [A recent working paper \[1\]](#) attempts to provide a few answers to this question.

Two major competing approaches can be found in the economic literature. On the one hand, an approach inherited from Schumpeter emphasizes the need for entrepreneurs to access sources of credit to finance their innovations. The financial sector is thus seen as a prerequisite to innovative activity and a facilitator of economic performance. On the other hand, financial development can be viewed instead as the result or consequence of economic development. Development implies increased demand for financial services on the part of households and businesses. There is therefore a source of endogeneity in the relationship between financial development and economic growth, as one is likely to lead to the other, and vice versa.

Until recently, analytical studies that attempted to disentangle and quantify these causalities showed a positive

significant link between an economy's financial depth and its economic performance ([Ang, 2008](#)). However, the onset of the international financial crisis led to nuancing these conclusions. In particular, [Arcand et al. \(2012\)](#) showed that beyond a certain level the impact of increased financialization becomes negative [2]. The relationship between financialization and economic performance can be represented by a bell curve: positive at the beginning and then, from a level of 80%-100% for the private credit to GDP ratio, fading to zero or turning negative.

Unlike other works that include both developed and emerging or developing countries, our study focuses on the EU Member States from 1998 to 2011. The advantage of this sample is that we include only economies whose financial systems are developed or at least in advanced stages of development [3]. Moreover, it is a relatively homogeneous political space that permits the establishment of common financial regulations. We adopt the methodology of [Beck & Levine \(2004\)](#) who, using a panel and instrumental variables, are able to resolve the endogeneity issues discussed above. Economic performance is explained by the usual variables in endogenous growth theory, namely initial GDP per capita, the accumulation of human capital over the average years of education, government expenditure, trade openness and inflation. In addition, we include the aforementioned financialization variables. We show that, contrary to the usual results in the literature, an economy's financial depth does not have a positive impact on economic performance as measured by GDP per capita, household consumption, business investment or disposable income. In most cases, the effect of financialization is not different from zero, and when it is, the coefficient is negative. It is therefore difficult to argue that financial and economic development go hand in hand in these economies!

In addition, we included in these estimates different variables quantifying financial instability so as to check

whether the results set out above might be due simply to the effects of the crisis. These financial instability variables (Z-score [\[4\]](#), [CISS\[5\]](#), bad debt rate, the volatility of stock market indices and an index reflecting the microeconomic characteristics of Europe's banks) usually seem to have a significant *negative* impact on economic performance. At the same time, the variables measuring the *degree* of an economy's financialization show no obvious effects on performance.

These various findings suggest that it is certainly unrealistic to expect a positive impact of any further increase in the degree of financialization of Europe's economies. It is likely that the European banking and financial systems have reached a critical size beyond which no improvement in economic performance can be expected. Instead, there are likely to be negative effects due to the financial instability arising out of a financial sector that has grown overly large and whose innovations are insufficiently or poorly regulated.

The findings of this study suggest several policy recommendations. The argument of the banking lobbies that regulating bank size would have a negative impact on growth finds absolutely no support in our results—quite the contrary. Furthermore, we show that financial instability is costly. It is important to prevent it. This undoubtedly requires developing a better definition of micro- and macro-prudential standards, together with effective supervision of Europe's banks. Will the forthcoming banking union help in this regard? There are many sceptics, including the economists of [Bruegel](#), the [Financial Times](#) and the [OFCE](#).

[\[1\]](#) Creel, Jérôme, Paul Hubert and Fabien Labondance,

“Financial stability and economic performance”, *Document de travail de l’OFCE*, 2013-24. This study was supported by funding from the European Union Seventh Framework Program (FP7/2007-2013) under grant agreement no. 266800 (FESSUD).

[2] We consider this work in an earlier [post](#).

[3] In addition to the ratio of private sector credit to GDP, the depth of financialization is also indicated by the turnover ratio, which measures the degree of liquidity of financial markets, measured as the ratio of the total value of shares traded to total capitalization.

[4] Index measuring the stability of banks based on their profitability, their capital ratio and the volatility of their net income.

[5] Index of systemic risk calculated by the ECB and including five components of the financial system: the banking sector, non-bank financial institutions, money markets, securities markets (stocks and bonds) and foreign exchange markets.

The chiaroscuro of the ECB’s “forward guidance” *

By [Paul Hubert](#) and Fabien Labondance

“The Governing Council expects the key interest rates to remain at present or lower levels for an extended period of time.” With this pronouncement on 4 July 2013 at the press conference following the monthly meeting of the European Central Bank Board of Governors, Mario Draghi initiated the

adoption by the ECB of a new communication strategy called “forward guidance”. Since then these words have always been included in his speech following announcements of the ECB’s monetary policy, and he has repeated them again [today \[1\]](#). What should we expect? Forward guidance has recently been adopted by several central banks, but the methods chosen by the ECB differ and indicate that this measure will have only limited effectiveness in the euro zone.

Communication has become an integral part of the conduct of monetary policy since interest rates have been kept at a minimum level. More specifically, forward guidance consists of announcing and making a commitment to the future path of key interest rates. By doing this, the central banks want to increase the transparency of their activities and anchor expectations. The aim is to clarify both their strategy and their predictions about trends in the economy. In the present case, the central banks want to affirm their desire not to raise interest rates in the near future. They also hope to influence private expectations about short-term rates, and thus long-term rates, in order to strengthen the transmission of monetary policy, and thus support the economy.

From the theory...

The promoters of the forward guidance strategy, foremost among them Eggertsson and Woodford (2003), suggest that monetary policy can be made more effective by adopting a policy of stable interest rates that is well known in advance. This proposal is justified by the fact that demand for credit is highly dependent on expectations of long-term interest rates, which depend on expectations of short-term rates. Hence, by announcing the future levels of interest rates in advance, the central bank declares its intentions and dispels any uncertainty about its future decisions. This strategy is especially relevant in a situation of a liquidity trap, when nominal interest rates are close to zero, as is the case today. The traditional tool of central banks is then

constraint, as nominal interest rates cannot be negative. Central banks can thus no longer influence the cost of the loans granted, but they can on the other hand influence volumes through unconventional measures [\[2\]](#). The channel of expectations and the transmission of signals to private agents then become paramount and complement quantitative easing.

It is important to note that the effect of forward guidance on long-term rates and thus on the economy passes through the term structure of the interest rates. Several theories attempt to explain how rates vary in accordance with the term. The term structure of interest rates can be considered from the viewpoint of the theory of expectations, which assumes that long-term rates reflect a combination of expected future short-term rates, and thus that the different maturities are perfect substitutes. For its part, the theory of a liquidity premium implies that long-term interest rates include a premium linked to the existence of one or more long-term risks. Finally, another theory is based on the assumption of market segmentation and stipulates that financial instruments with different maturities cannot easily be substituted and that their prices move independently. If investors wish to hold liquid assets, they will prefer short-term instruments over long-term ones, and their prices will vary in opposite directions. Only in the case of the first two theories will forward guidance have the desired effect on long-term rates.

...to the practice

This kind of strategy had already been implemented by some central banks even before the 2008 financial crisis, in particular in New Zealand since 1997, in Norway since 2005, and in Sweden since 2007. The United States also implemented this communication strategy several times when rates were very low. The Federal Open Market Committee (FOMC) implicitly introduced forward guidance in its communications in August 2003. At a time when its target rate was at a historic low, the FOMC stated that “...policy accommodation can be maintained

for a considerable period". This terminology, specific to forward guidance, remained in FOMC communiqués until the end of 2005. It reappeared in December 2008, and in greater detail in August 2011, when Ben Bernanke, chairman of the US Federal Reserve (or the "Fed"), announced that economic conditions warranted maintaining the federal funds rate at a low level until at least mid-2013. Since then, the announcement on 13 September 2012 that the Fed will not raise its rates before mid-2015 continues this same strategy.

To understand what impact the ECB's forward guidance might have, it is important to distinguish two types of forward guidance: one for which the action of the central bank is subject to a time period, and another which depends on economic variables, including thresholds that trigger an action on the bank's part. In the case of the Fed, the first statements mentioned above refer to a period of time, but since December 2012 it has conditioned its commitment to future rate changes on cyclical thresholds that act as triggers. The Fed has also announced that "this exceptionally low range for the [Fed Funds](#) rate will be appropriate at least as long as the unemployment rate remains above 6-1/2 percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored". The arrival of new FOMC members in January 2014 could, however, change the timing of the next monetary tightening. Likewise, in August 2013 Mark Carney, Governor of the Bank of England (BoE), set out a forward guidance strategy indicating his intention not to raise rates so long as the unemployment rate had not fallen below 7%. This commitment is nevertheless conditional on containing inflation, on stable inflation expectations and on the neutral impact of this commitment on financial stability.

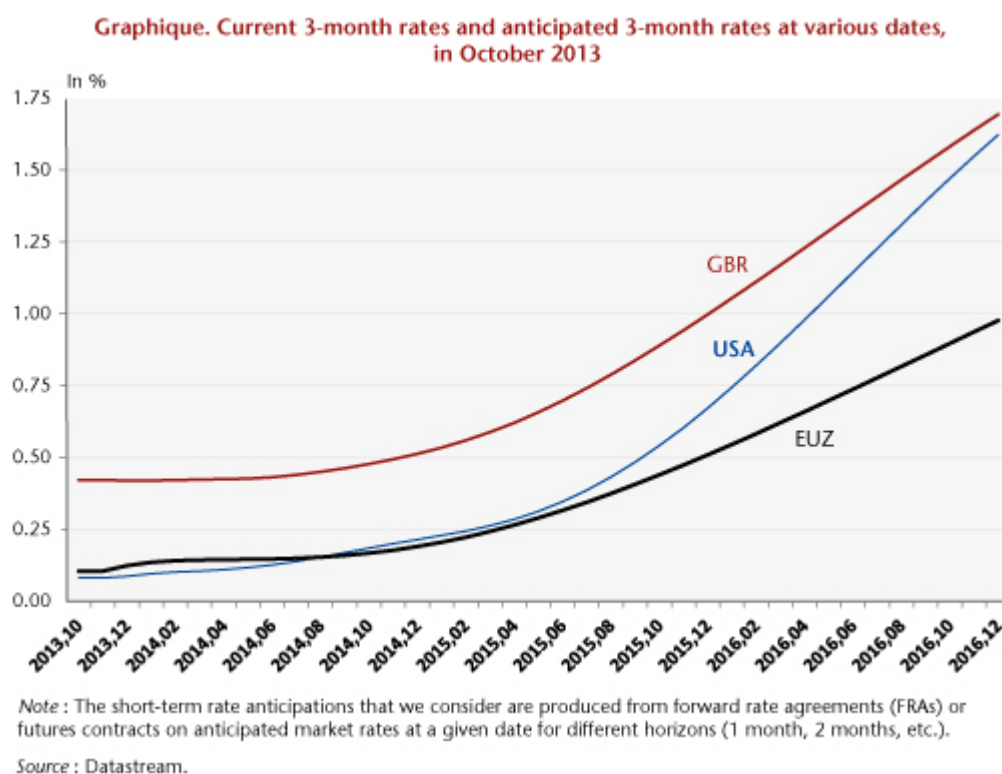
There is a major disadvantage to conditioning forward guidance on a time period, as has been adopted by the ECB (and as will

be described later): changes in economic conditions over the time period in question could render the commitment obsolete. The announcement thus has very little credibility. Conditioning forward guidance on thresholds for economic variables does not have this drawback. One criterion for the credibility of commitments conditioned on thresholds is, however, that the underlying variables chosen are observable (GDP rather than output gap) and that they do not suffer from measurement errors (inflation rather than inflation expectations), so that private agents can assess whether the central bank is acting in accordance with its commitments. Then and only then will the agents have confidence in the declarations and will the central bank be in a position to influence expectations of long-term rates. The relative advantages and disadvantages of the two types of forward guidance explain why the Fed switched from one to the other and why the BoE has also made ☐a commitment linked to thresholds.

The establishment of forward guidance conditioned on a threshold for a macroeconomic variable may, however, contribute to muddying the waters on the ranking of the central bank's objectives. If several variables are targeted simultaneously and they begin to diverge, what will the bank decide? The Fed does not prioritize its objectives. As the economy emerges from crisis it is quite possible that the Fed may decide to ensure the strength of GDP, or to lower unemployment rather than inflation. For its part, the BoE follows a strategy of inflation targeting. It has therefore defined conditions ("knockouts") on inflation, inflation expectations and financial stability, which, when they are not met, will lead to an end to forward guidance and therefore to any commitment to keep rates unchanged. The hierarchy of objectives would thus be well respected and the BoE's credibility maintained.

How effective can forward guidance be? Kool and Thornton

(2012) express serious doubts as to the results obtained through forward guidance. They assess the predictability of short-term and long-term rates in countries where this strategy has been adopted and show that forward guidance improves the ability of private agents to forecast future short-term rates only for periods of under one year, without improving the predictability of rates in the longer term. The chart below shows the expectations of 3-month rates by the financial markets in October 2013 for the coming months. Since benchmark rates change by a minimum of 0.25%, this figure indicates that no change in rates is expected for the time being, apart perhaps from the United States for the one-year horizon.



The timid adoption by the ECB

With regard to the ECB, which for its part sets a hierarchy of goals by giving priority to inflation, the introduction of forward guidance constitutes a conditional commitment to a period of time (“... for an extended period of time”) without

any reference to thresholds. From this point of view, it goes against the current of the Fed and the BoE, which adopted conditional commitments to numerical thresholds. For the record, prior to July 4th the ECB gave clues to its decision in the following month in the form of expressions that were easily recognizable to observers. Thus, the insertion of the word “vigilance” in the ECB President’s speech at his press conference announced a probable tightening of monetary policy [\[3\]](#). By adding forward guidance to its basket of tools, the ECB wants to be less enigmatic. In particular, it seems that it wanted to respond to concerns over a possible rise in interest rates.

However, Benoit Coeuré, a member of the ECB Executive Board, said that this strategy does not call into question the rule, repeated many times at press conferences, that the ECB will never commit to future policies (“no pre-commitment rule”) and that forward guidance is to be re-evaluated at each meeting of the Board of Governors. Jens Weidmann, a member of the ECB’s monetary policy committee as president of the Bundesbank, confirmed that the ECB’s forward guidance “is not an absolute advanced commitment of the interest rate path”, while Vitor Constancio, ECB Vice-President, added an extra dose of confusion by saying that the ECB’s forward guidance “is in line with our policy framework as it does not refer to any date or period of time but is instead totally conditional on developments in inflation prospects, in the economy and in money and credit aggregates – the pillars of our monetary strategy”.

So how effective can a policy be that is poorly defined, that does not seem to have a consensus within the ECB Governing Council, and whose key to success – the credibility of the commitment – is openly questioned? Not very effective.

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* This text draws on a study, "Politique monétaire: est-ce le début de la fin?" ["Monetary policy: Is it the beginning of the end?"], forthcoming in [The OFCE outlook for the global economy in 2013-2014 \[in French\]](#).

[\[1\]](#) Today's 25-basis point cut in the benchmark rate is consistent with the ECB's strategy of forward guidance.

[\[2\]](#) Unconventional measures refer to monetary policy practices that are not classified as traditional policy (*i.e.* changes in interest rates). These are measures that result in a change in the content or magnitude of the central bank balance sheet through purchases of government or private securities, which is generally referred to as "quantitative easing".

[\[3\]](#) Rosa and Verga (2007) offer a description of these expressions.