Trump's budget policy: Mortgaging the future?

By Christophe Blot

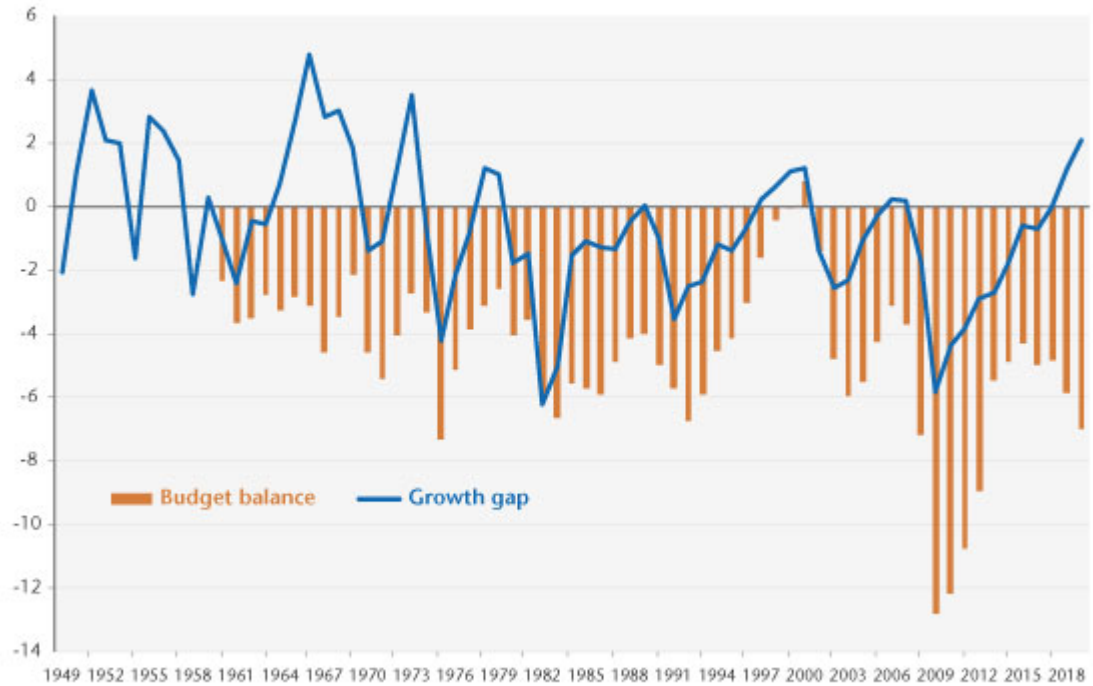
While the momentum for growth has lost steam in some countries – Germany, France and Japan in particular – GDP in the United States is continuing to rise at a steady pace. Growth could even pick up pace in the course of the year as a highly expansionary fiscal policy is implemented. In 2018 and 2019, the fiscal stimulus approved by the Trump administration – in December 2017 for the revenue component, and in February 2018 for the expenditure side – would amount to 2.9 GDP points. This level of fiscal impulse would come close to that implemented by Obama for 2008. However, Trump's choice has been made in a very different context, since the unemployment rate in the United States fell back below the 4% mark in April 2018, whereas it was accelerating 10 years ago, peaking at 9.9% in 2009. The US economy should benefit from the stimulus, but at the cost of accumulating additional debt.

Donald Trump had made fiscal shock one of the central elements of his presidential campaign. Work was begun in this direction at the beginning of his mandate, and came to fruition in December 2017 with the passing of a major tax reform, the Tax Cuts and Jobs Act [1], which provided for a reduction in household income tax – in particular by reducing the maximum marginal income tax rate – and corporation tax, whose effective rate would fall from 21% to 9% by 2018 [2]. In addition to this initial stimulus, expenditure will also rise in accordance with the agreement reached with the Democrats in February 2018, which should lead to raising federal spending by USD 320 billion (1.7 GDP points) over two years. These choices will push up domestic demand through boosting household disposable income and corporate profitability, which should stimulate consumption and investment. The multiplier

effect – which measures the impact on GDP of a one dollar increase in public spending or a one dollar cut in taxes – will nevertheless be relatively small (0.5) because of the US position in the cycle.

Moreover, the public deficit will expand sharply, to reach a historically high level outside a period of crisis or war (graph). It will come to 5.8% of GDP in 2018 and 7.0% in 2019, while the growth gap will become positive [3]. While the risk of overheating seems limited in the short term, the fact remains that the fiscal strategy being implemented could push the Federal Reserve to tighten monetary policy more quickly. However, an excessive rise in interest rates in a context of high public debt would provoke a snowball effect. Above all, by choosing to re-launch the economy in a favourable environment, the government risks being forced to make adjustments later when the economic situation deteriorates. This pro-cyclical stance in fiscal policy risks amplifying the cycle by accelerating growth today while taking the risk of accentuating a future slowdown. With a deficit of 7% in 2019, fiscal policy's manoeuvring room will actually shrink.

Figure. A pro-cyclical budget policy



Sources: CBO and NIPA, OFCE April 2018 forecasts.

[1] See the section on Budget policy: Crisis-free acceleration ["Politiques budgétaires : accélération sans crise"] in our April 2017 forecast for greater detail.

[2] See here for more on this.

[3] The growth gap expresses – as a % of potential GDP – the difference between observed GDP and potential GDP. Recall that potential GDP is not observed but estimated. The method of calculation used by the Congressional Budget Office (CBO) is explained here.

The ECB is still worried about the weakness of inflation

By Christophe Blot, Jérôme Creel and Paul Hubert

The President of the European Central Bank, Mario Draghi, recently announced that the increase in the ECB's key interest rate would come "well past" the end of the massive purchases of bonds (scheduled for September 2018), mainly issued by the euro zone countries, and at a "measured pace". The increase in the key rate could therefore occur in mid-2019, a few weeks before the transfer of power between Mario Draghi and his successor.

In his quarterly hearing with MEPs, Mario Draghi proved to be cautious about the intensity and sustainability of the

economic recovery [1]. Listening to him, the euro zone has not necessarily closed its output gap (actual GDP would have remained below its potential) despite the recovery in recent quarters. This is not the time to change the direction of monetary policy at the risk of weakening the recovery. It is also undeniable that the effects of the recovery are only materializing slowly and gradually in wage increases, which partly explains why the euro zone inflation rate remains below its mid-term target.

The ECB President has also been confident that companies are gradually anchoring their price (and wage) expectations on the ECB's inflation target of 2% per year. Mario Draghi also appeared very confident in the effectiveness of monetary policy. He announced that the measures undertaken since 2014 would contribute to a (cumulative) increase of 2 percentage points, respectively in real growth and inflation between 2016 and 2019.

If the ECB's forecast of inflation back to its target in 2019 is contradicted by Hasenzagl et al. (2018), we find these same determinants of European inflation. In a recent study, we also show that the two main determinants of inflation in the euro area are inflation expectations and wage growth. Without anchoring the former on the medium-term target of the ECB and without a second-round effect of monetary policy on wages, inflation will not return to its target in the short term. Structural reforms may have increased potential GDP, as argued by Mario Draghi, but they have so far more certainly weighed on wage and price developments.

[1] Once a quarter, a monetary dialogue is organized between the President of the ECB and the members of the Monetary Affairs Committee of the European Parliament. This dialogue allows the President of the ECB to explain the direction of monetary policy in the euro area and to express his point of

view on topics defined upstream. Une fois par trimestre un dialogue monétaire est organisé entre le Président de la BCE et les membres de la Commission des Affaires monétaires du Parlement européen. Ce dialogue permet au Président de la BCE d'expliquer l'orientation de la politique monétaire dans la zone euro et d'exprimer son point de vue sur des sujets définis en amont.

The euro zone: A general recovery

By Christophe Blot

This text is based on the 2017-2019 outlook for the global economy and the euro zone, a full version of which is available here.

The euro zone has returned to growth since mid-2013, after having experienced two crises (the financial crisis and the sovereign debt crisis) that led to two recessions: in 2008-2009 and 2011-2013. According to Eurostat, growth accelerated during the third quarter of 2017 and reached 2.6% year-on-year (0.6% quarter-on-quarter), its highest level since the first quarter of 2011 (2.9%). Beyond the performance of the euro zone as a whole, the current situation is marked by the generalization of the recovery to all the euro zone countries, which was not the case in the previous phase of recovery in 2010-2011. Fears about the sustainability of the debt of the so-called peripheral countries were already being reflected in a sharp fall in GDP in Greece and the gradual slide into recession of Portugal, Spain and a little later

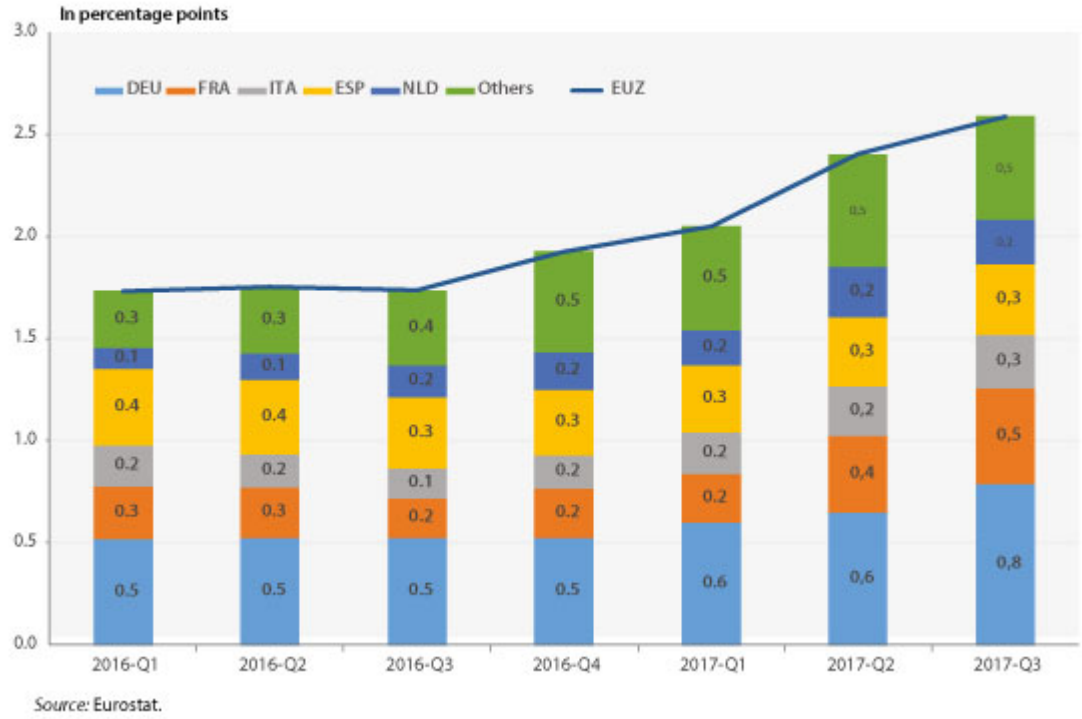
Italy.

Today, while Germany remains the main engine of European growth, all of the countries are contributing to the accelerating recovery. In the third quarter of 2017, Germany's contribution to euro zone growth was 0.8 point, a faster pace than in the previous two quarters, reflecting the vitality of the German economy (see the Figure). However, this contribution was even greater in the first quarter of 2011 (1.5 points for growth of 2.9% year-on-year). This catching-up trend is continuing in Spain, which in the third quarter of 2017 had quarterly growth of 3.1% year-on-year (0.8% quarter-on-quarter), making a 0.3 point contribution to the euro zone's overall growth. Above all, activity is accelerating in the countries that up to now had been left a little bit out of the recovery, particularly in France and Italy, which contributed respectively 0.5 and 0.3 points to the growth of the zone over the third quarter[1]. Finally, the recovery is taking root in Portugal and Greece.

This renewed dynamism of the European economy is due to several factors. Monetary policy is still very expansionary, and the securities purchases being carried out by the Eurosystem help to keep interest rates low. Credit conditions are favourable for investment, and the access to credit for SMEs is being loosened up, especially in the countries that were hit hardest by the crisis. Finally, fiscal policy is generally neutral or even slightly expansionary.

The current optimism must not nevertheless hide the scars left by the crisis. The euro zone unemployment rate is still higher than its pre-crisis level: 9% against 7.3% at the end of 2007. The level still exceeds 10% of the active population in Italy, 15% in Spain and 20% in Greece. The social consequences of the crisis are therefore still very visible. These conditions justify the need to continue to support growth, particularly in these countries.

Figure. The contributions to growth in the euro zone



Source: Eurostat.

What role for central bank balance sheets in the conduct of monetary policy?

By Christophe Blot, Jérôme Creel and Paul Hubert

By adjusting the size and composition of their balance sheets, the central banks have profoundly changed their monetary policy strategy. Although the implementation of these measures was initially envisaged for a period of crisis, questions are now arising about the use of the balance sheet as an instrument of monetary policy outside periods of crisis.

The central banks' securities purchase policy has resulted in significantly expanding the size of their balance sheets. In

September 2017, the balance sheets of the Federal Reserve and the European Central Bank amounted, respectively, to nearly 4,500 billion dollars (23.3% of US GDP) and 4,300 billion euros (38.5% of euro zone GDP), while in June 2007 they were 870 billion dollars (or 6.0% of GDP) and 1,190 billion euros (12.7% of GDP). The end of the financial crisis and the economic crisis calls for a gradual tightening of monetary policy, which is already underway in the United States and forthcoming in the euro zone. The Federal Reserve, for instance, has raised the key interest rate five times since December 2015, and in October 2017 it began to reduce the size of its balance sheet. However, no precise indication has been given as to the size of the bank's balance sheet once the process of normalization has been completed. Beyond simply size, there is also the question of the role that these balance sheet policies will play in the conduct of monetary policy in the future.

Initially, the measures taken during the crisis had to be exceptional and temporary. The aim was to satisfy a need for substantial liquidity and to act directly on the prices of certain assets or on the long end of the yield curve at a time when the standard monetary policy instrument – short-term interest rates – was constrained by the zero lower bound (ZLB). The use of these measures over a prolonged period – the last ten years – suggests, however, that the central banks could continue to use their balance sheets as a tool of monetary policy and financial stability, including in so-called "normal" periods, that is to say, even when there is enough maneuvering room to lower the key rate. Not only have these unconventional measures demonstrated some effectiveness, but their transmission mechanisms do not seem to be specific to periods of crisis. Their use could thus both enhance the effectiveness of monetary policy and improve the central banks' ability to achieve their macroeconomic and financial stability objectives. We develop these arguments in a recent publication that we summarize here.

In an article presented at the 2016 Jackson Hole conference, Greenwood, Hanson and Stein suggested that the central banks could use their balance sheets to provide liquidity to meet a growing need in the financial system for liquid, risk-free assets. The extra reserves thus issued would increase the stock of safe assets that could be drawn on by commercial banks, enhancing financial stability. The central banks could also intervene more regularly in the markets to influence the price of certain assets or risk premiums or term premiums. What is involved here is not necessarily a matter of increasing or reducing the size of the balance sheet, but of modulating its composition in order to correct any distortions or to strengthen the transmission of monetary policy by intervening in all segments of the rate curve. During the sovereign debt crisis, the ECB launched a Securities Market Programme (SMP) aimed at reducing the risk premiums on the yields of several countries (Greece, Portugal, Ireland, Spain and Italy) and at improving the transmission of the common monetary policy to these countries. In 2005, the Chairman of the Federal Reserve encountered an enigma on the bond markets when noting that long-term rates did not seem to be responding to the ongoing tightening of US monetary policy. The use of targeted purchases of securities with longer maturities would no doubt have improved the transmission of the monetary policy, as was being sought at that time by the Federal Reserve.

In practice, the implementation of a strategy like this in "normal" times raises several issues. First, if the balance sheet policy complements the interest rate policy, the central banks will have to accompany their decisions with the appropriate communications, specifying both the overall direction of monetary policy and the reasons justifying the use and the goal of such a policy. It seems that they managed to do this during the crisis, even as the number of programmes proliferated; there is therefore no reason to think that suddenly communications like this would become more difficult

to implement in a "normal" period. Furthermore, using the balance sheet as a monetary policy instrument more frequently would result in holding more, and potentially riskier, assets. In these circumstances, there would be a trade-off between the efficacy that could be expected from monetary policy and the risks being taken by the central bank. It should also be noted that using the balance sheet does not necessarily mean that its size would be constantly growing. Central banks could just as easily choose to sell certain assets whose price was deemed to be too high. However, in order to be able to effectively modulate the composition of the central bank's assets, its balance sheet must be large enough to facilitate its portfolio operations.

It should be recognized that economists have not yet fully analyzed the potential effects of balance sheet policies on macroeconomic and financial stability. But the remaining uncertainty should not prevent the central banks from making use of balance sheet policies, as only experience can lead to a comprehensive assessment of the power of balance sheet policies. The history of the central banks is a reminder that the objectives and instruments used by central banks have changed steadily [1]. A new paradigm shift thus seems possible. If balance sheet policies are able to enhance the effectiveness of monetary policy and improve financial stability, central banks should seriously consider their use.

For more, see: Christophe Blot, Jérôme Creel, Paul Hubert, "What should the ECB 'new normal' look like?", *OFCE policy brief* 29, 20 December.

[1] See Goodhart (2010).

The ECB on neutral ground?

By Christophe Blot and Jérôme Creel

The involvement of the European Central Bank (ECB) in the fiscal management of the euro area member states has been a subject of ongoing controversy. Since the implementation of the ECB programme to purchase sovereign debt, it has been accused of profiting off of troubled states and taking the risk of socializing losses. The rise of these controversies results from the difficulty in understanding the relationship between the ECB, the national central banks (NCBs), and the governments. The European monetary architecture comes down to a sequence of delegations of power. Decisions on the conduct of monetary policy in the euro area are delegated to an independent institution, the European Central Bank (ECB). But, under the European subsidiarity principle, the implementation of monetary policy is then delegated to the national central banks (NCBs) of the euro area member states: the ECB and NCBs taken together are called the Eurosystem. While up to now this dimension of the organization of the euro area's monetary policy has not attracted much attention, debate has recently arisen in the course of the implementation of the quantitative easing programme. According to commentators and journalists, some national central banks are profiting more than others from the policy of buying and supporting their national public debts, which are riskier than the debt in more "virtuous" countries[1]. The profiting banks are viewed as escaping the ECB's control and not strictly applying the policy decided in Frankfurt.

In a recent paper prepared as part of the European Parliament's Monetary Dialogue with the ECB, we show that these concerns are unfounded for the simple good reason that, on average, since the beginning of the implementation of this policy, the theoretical distribution key has been respected (graphic). This distribution key stipulates that purchases of

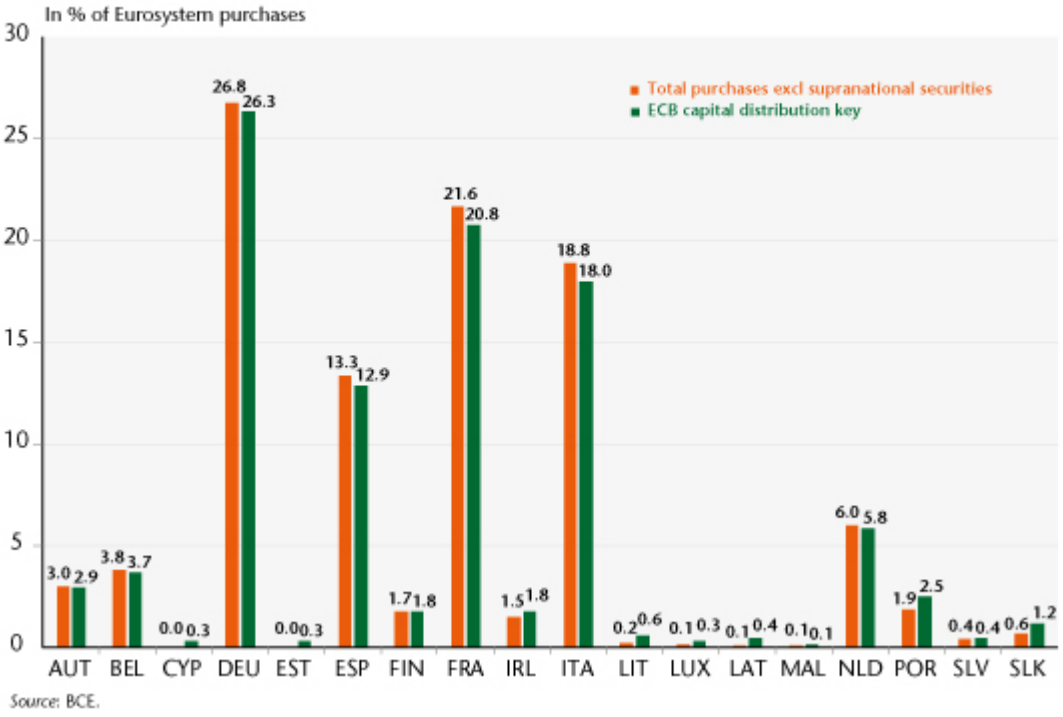
bonds by the Eurosystem are to be made pro rata to a state's participation in the ECB's capital. Remember that part of the purchases – 10 of the 60 billion in monthly purchases made under the programme – are made directly by the ECB[2]. The other purchases are made directly by the NCBs. As each central bank buys securities issued by its own government, the NCBs' purchases of public bonds do not entail risk-sharing between member states. Any profits or losses are kept on the NCBs' balance sheets or transferred to the national governments in accordance with the agreements in force in each country.

This distribution of public bond purchases, which is intended to be neutral in terms of risk management, isn't entirely so, but not for the reasons that seem to have worried the European Parliament's Committee on Economic and Monetary Affairs. This distribution favours the maintenance of very low rates of return on the debts of certain member states. In fact, by not basing itself on the financing needs of the member states or on the size of their public debts, it can produce distortions by reducing the supply of public bonds available on the secondary markets. Such may be the case in Germany, Spain and the Netherlands, whose shares of the European public debt are smaller than their respective shares in the ECB's capital (table). Conversely, the purchases of Italian bonds are smaller with the current distribution key than they would be with a distribution key that took into account the relative size of the public debt. The ECB's policy therefore has less impact on the Italian debt market than it does on the German market.

This orientation could also constrain the ECB's decision about continuing quantitative easing beyond December 2017. Let's agree that the ECB's best policy would be to continue the current policy beyond December 2017, but to stop it once and for all in July 2018. Given the current distribution rules, this policy would be subject to all countries having exchangeable government bonds until July 2018, including those

who issue public debt only rarely because they have low financing needs. It could be that it is impossible to continue this policy under the rules currently adopted by the ECB, because some countries do not have sufficient debt available. It would then be necessary to implement a different policy by drastically reducing the monthly purchases of short-term securities (say in January 2018), while possibly pursuing this policy for a longer time period (beyond the first half of 2018). The decision not to use risk-sharing in the management of European monetary policy is therefore far from being neutral in the way this policy is actually implemented.

Figure. Distribution by the cumulative securities purchases by the national central banks



Source: BCE.

Table. Weighting by country using different measures

In %

	ECB capital distribution key	Weighting based on relative size of...	
		...GDP	...the public debt
BEL	3.5	3.9	4.6
DEU	25.6	29.2	21.8
EST	0.3	0.2	0.0
IRL	1.6	2.6	2.0
GRC	2.9	1.6	3.2
ESP	12.6	10.3	11.3
FRA	20.1	20.7	21.9
ITA	17.5	15.5	22.6
CYP	0.2	0.2	0.2
LAT	0.4	0.2	0.1
LTH	0.6	0.4	0.2
LUX	0.3	0.5	0.1
MAL	0.1	0.1	0.1
NLD	5.7	6.5	4,4
AUT	2.8	3.2	3.0
PRT	2.5	1.7	2.5
SLV	0.5	0.4	0.3
SLK	1.1	0.8	0.4
FIN	1.8	2.0	1.4

Sources: ECB and Eurostat.

[1] Mario Draghi was questioned about the distribution of the public sector purchase programme (PSPP) at the press conference he held on 8 September 2017.

[2] There is risk-sharing on this sum: the gains or losses are shared by all the NCBs in proportion to their contribution to the ECB’s capital.

The European Central Bank is readying the future

By Christophe Blot and Paul Hubert

At the press conference following the meeting of the ECB's Governing Council on Thursday, 8 June, Mario Draghi announced that the Bank's key interest rates would remain unchanged (0% for the main refinancing operations rate, a negative 0.40% for the deposit facility rate and 0.25% for the lending facility rate). In particular, Draghi gave some valuable insights into the future direction of the euro zone's monetary policy by changing its message. Whereas he had systematically stated that rates could be cut ("at lower levels"), he now stated that they would be maintained at the "present level" for an "extended period of time" and "well past the horizon of our net asset purchases".

By announcing that there would be no further rate cuts, the ECB believes that the current monetary policy stance should enable it to achieve its objectives, and it is taking the first step towards a further tightening of monetary conditions. However, it should be noted that at the same time the ECB does not expect inflation to return to its 2% target by 2019. The Eurosystem's new macroeconomic projections published during the press conference foresee inflation at 1.5% in 2017, 1.3% in 2018 and 1.6% in 2019[1]. Although the recovery is continuing, inflation will remain below its target level for a period of at least three years, which justifies maintaining an expansionary monetary policy. By clarifying that the rates will not go up upon the termination of the net asset purchases[2], the ECB clearly intends to continue to support economic activity.

Then comes the matter of the date when the asset purchase programme will end. According to the current discourse, the

purchases will continue until December 2017, but they could be extended if the ECB deems it necessary. What strategy will the ECB adopt after that? It is possible that the asset purchases will diminish gradually along the lines of what the Federal Reserve did in 2014 [3]. In this case, the end of quantitative easing would take a few more months. This is currently the most likely option, which would push off the interest rate hike until the end of 2018. It is possible, however, that announcements of a reduction in purchases could be made by year end, which could lead to winding up QE by early 2018. Whichever option is chosen, the ECB will undoubtedly take care to communicate its strategy in order to gradually shape expectations about the first rate rise.

However, while this is one important element in the strategy for the normalization of the euro zone's monetary policy, the matter is not limited to the issue of rate rises. The ECB must also provide information about its intentions regarding its negative interest rate policy or about the moment it will decide to no longer satisfy all the requests for fixed-rate refinancing, as it has done since October 2008. Finally, it also needs to indicate the pace at which it plans to cut down the size of its balance sheet as the Federal Reserve has recently begun to do (see here). The ECB also needs to be transparent on these issues.

[1] These expectations have even been revised downwards since March 2017.

[2] Since April 2017, net asset purchases have come to 60 billion euros per month, compared with 80 billion in the months before that.

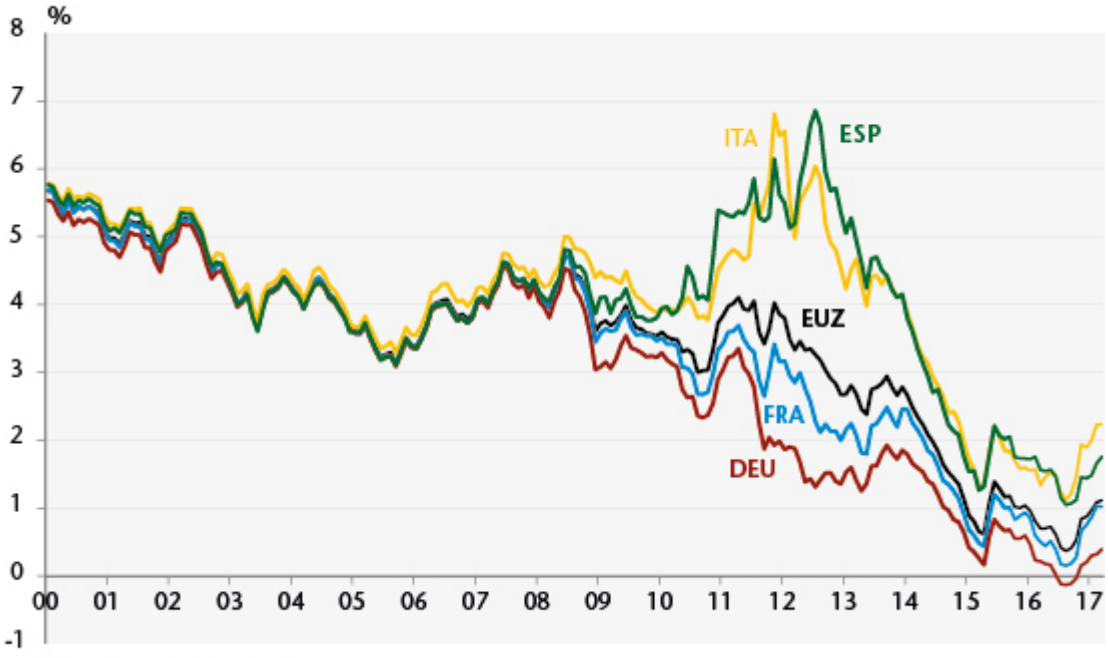
[3] The Federal Reserve spread out the reduction of its securities purchases from January to October.

What factors are behind the recent rise in long-term interest rates?

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

Since the onset of the financial crisis, long-term sovereign interest rates in the euro zone have undergone major fluctuations and periods of great divergence between the member states, in particular between 2010 and 2013 (Figure 1). Long-term rates began to fall sharply after July 2012 and Mario Draghi's famous "whatever it takes". Despite the implementation and expansion of the Public Sector Purchase Programme (PSPP) in 2015, and although long-term sovereign interest rates remain at historically low levels, they have recently risen.

Figure 1: Long-term sovereign interest rates in the euro zone



Source : European Central Bank.

There may be several ways of interpreting this recent rise in long-term sovereign interest rates in the euro zone. Given the current economic and financial situation, it may be that this rise in long-term rates reflects the growth and expectations of rising future growth in the euro zone. Another factor could be that the euro zone bond markets are following the US markets: European rates could be rising as a result of rising US rates despite the divergences between the policy directions of the ECB and of the Fed. The impact of the Fed's monetary policy on interest rates in the euro zone would thus be stronger than the impact of the ECB's policy. It might also be possible that the recent rise is not in line with the zone's fundamentals, which would then jeopardize the recovery from the crisis by making debt reduction more difficult, as public and private debt remains high.

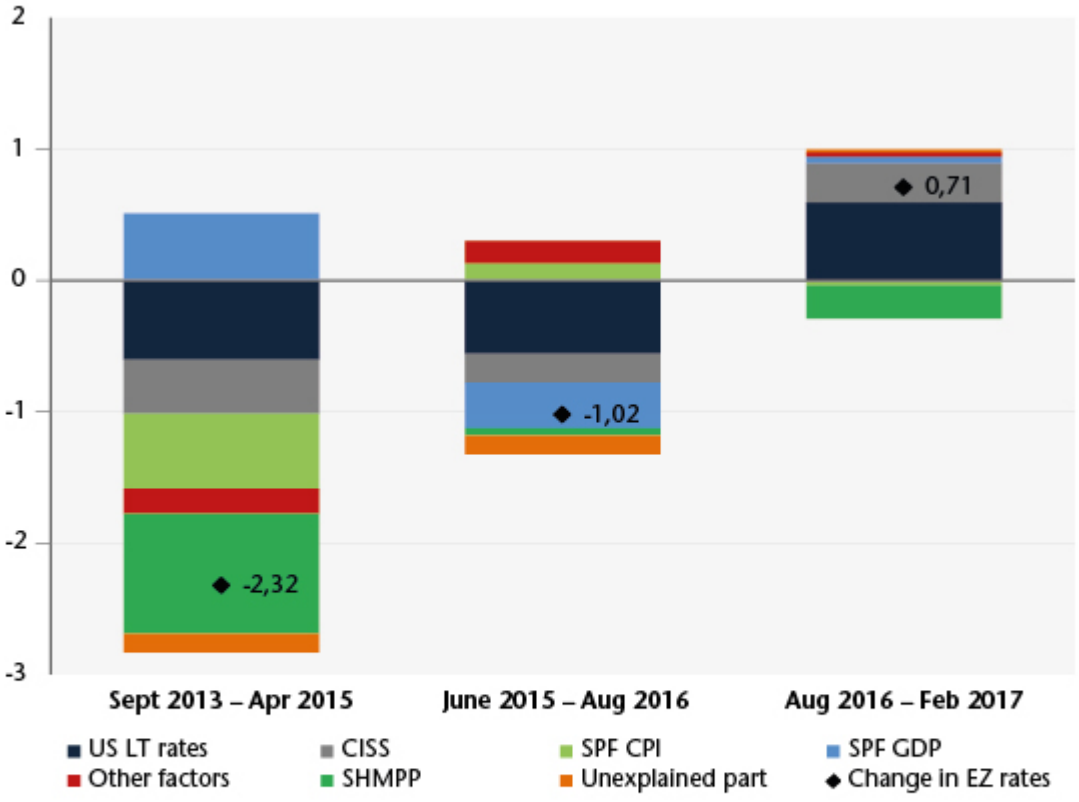
In a recent study, we calculate the contributions of the different determinants of long-term interest rates and highlight the most important ones. Long-term interest rates can respond to private expectations of growth and inflation, to economic fundamentals and to monetary and fiscal policy, both domestic (in the euro zone) and foreign (for example, in the United States). The rates may also react to perceptions of different financial, political and economic risks[1]. Figure 2 shows the main factors that are positively and negatively affecting long-term interest rates in the euro zone over three different periods.

Between September 2013 and April 2015, the euro zone's long-term interest rate decreased by 2.3 percentage points. During this period, only expectations of GDP growth had a positive impact on interest rates, while all the other factors pushed rates down. In particular, the US long-term interest rate, inflation expectations, the reduction of sovereign risk and the ECB's unconventional policies all contributed to the decline in euro zone interest rates. Between June 2015 and August 2016, the further decline of about 1 percentage point

was due mainly to two factors: the long-term interest rate and the expectations of GDP growth in the United States.

Between August 2016 and February 2017, long-term interest rates rose by 0.7 percentage point. While the ECB's asset purchase programme helped to reduce the interest rate, two factors combined to push it up. The first is the increase in long-term interest rates in the United States following the Fed's tightening of monetary policy. The second factor concerned political tensions in France, Italy and Spain, which led to a perception of political risk and higher sovereign risk. While the first factor may continue to push up interest rates in the euro zone, the second should drive them down given the results of the French presidential elections.

Figure 2: Contributions to changes in long-term sovereign rates in the euro zone



Note: SPF corresponds to the Survey of Professional Forecasters and measures private agent expectations of inflation (CPI – Consumer Price Index) and of GDP (Gross Domestic Product). The CISS (Composite Indictor of Systemic Stress) is an indicator of stress on the financial markets. The SHMPP (Securities Held for Monetary Policy Purposes), in the Weekly financial statements published by the ECB, measures the amount of purchases of bonds made by the ECB as part of its unconventional policy.

Source: calculation OFCE.

[1] The estimate of the equation for the determination of long-term rates was calculated over the period January 1999 – February 2017 and accounts for 96% of the change in long-term rates over the period. For details on the variables used and the parameters estimated, see the study.

Where are we at in the euro zone credit cycle?

By Christophe Blot and Paul Hubert

In December 2016, the European Central Bank announced the continuation of its Quantitative Easing (QE) policy until December 2017. The continuing economic recovery in the euro zone and the renewal of inflation are now raising questions about the risks associated with this programme. On the one hand, isn't the pursuit of a highly expansionary monetary policy a source of financial instability? Conversely, a premature end to unconventional measures could undermine growth as well as the ECB's capacity to achieve its objectives. Here, we study the dilemma facing the ECB [in French] based on an analysis of credit cycles and banking activity in the euro zone.

The ECB's announcement gives us two signals about the direction of monetary policy. On the one hand, by delaying the end date of QE, the ECB is implicitly announcing that the normalization of monetary policy, in particular a hike in its key rate, will not take place before early 2018. The ECB will thus continue its expansionary policy of increasing the size of its balance sheet. On the other hand, the reduction in

monthly purchases is also a sign that it is toning down its expansionary character. The announcement is similar to the "tapering" that began in January 2014 by the US Federal Reserve. Purchases of securities were cut back gradually, until they actually stopped at the end of October 2016.

The undeniably expansionary nature of monetary policy in the euro zone suggests that the ECB still considers it necessary to implement a stimulus in order to achieve its ultimate monetary policy objectives. The first of these is price stability, which is defined as inflation that is lower than but close to 2% per year. There are no signs of either runaway inflation or growth [1] [2]. The securities buyback programme should help to consolidate growth and push inflation towards the 2% target. At the same time, the liquidity issued by the central bank in its securities purchase programmes and the low level of interest rates (short and long term) are fuelling fears that monetary stability might have an adverse effect on financial stability[3].

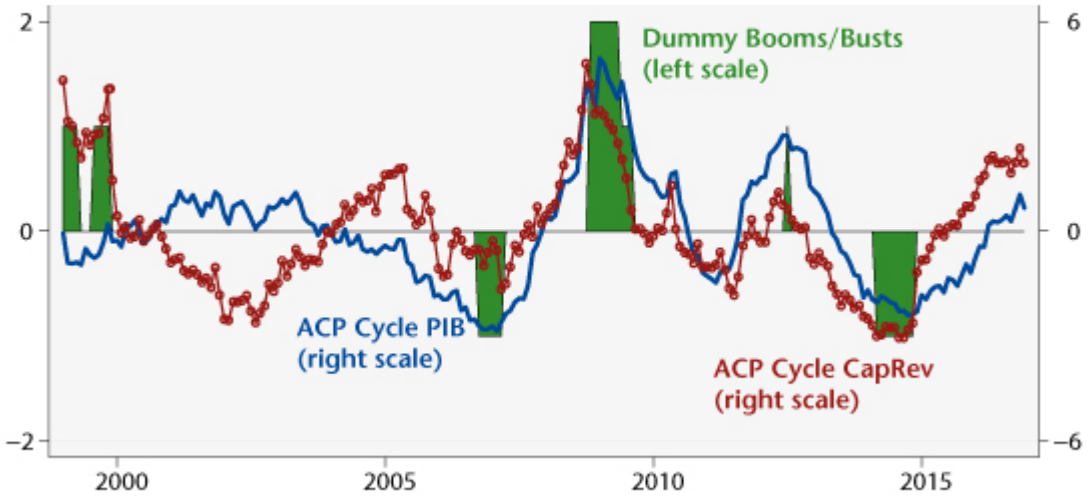
The result leaves the ECB facing a dilemma. Putting a premature end to quantitative easing could keep the euro zone in a state of low inflation and low growth. Unnecessarily prolonging QE, while the US Federal Reserve has begun normalizing its monetary policy, could create a risk of financial instability, resulting in an uncontrolled surge in asset prices, credit, and more broadly the risk taken on by the financial system.

We assess this dual risk using indicators on the activity of the banking system of the euro zone as a whole and of the countries that make it up. Credit, whether granted to households or to non-financial enterprises, is central to bank assets and often at the heart of risks to financial instability[4]. Here we propose extending the analysis to the size of the balance sheet and to total loans granted – including credit to other monetary and financial institutions – which makes it possible to measure the risk associated with

the banking system as a whole[5].

These different variables are related either to GDP, which makes it possible to capture the disconnection between banking activity and real activity, or to the capital and reserves of the banking system, which makes it possible to capture the leverage effect, i.e. the capacity of the system to absorb losses. Here we focus on quantities rather than prices, using indicators such as the ratio of credit granted on equity and the ratio of credit received on income. These are central to reflecting the transmission of monetary policy and to assessing the risk of financial instability.

Figure. Credit in the euro zone



Sources : Blot and Herbert (2017) and ECB data.

The graph shows the changes in the credit cycle, relative to GDP (blue line) and relative to the capital and reserves of the banking system (red line) [6]. The green areas indicate periods when credit deviates significantly above or below its long-term trend. In general, the analysis of credit and of the size of the banking system's balance sheet points to a recovery in activity but it does not suggest either a credit boom or an excessive contraction in the euro zone in the recent period. While credit is evolving in a relatively more favorable direction relative to its trend in France and Germany, the cycle does not indicate an excessive increase.

The Netherlands and Spain are distinguished by a low level of credit relative to GDP. For the Netherlands, this trend is confirmed by the indicators relative to the banking system's capital and reserves, while in Spain, outstanding loans relative to capital and reserves are at a historically high level, suggesting an excessive level of risk-taking given the economic situation.

[1] Translation errorDespite the recent rebound in inflation, which is largely linked to the rise in oil prices and inflation expectations, inflationary pressures are still moderate, and getting inflation back to the 2% target is not sufficiently sure to warrant a change in the direction of monetary policy.

[2] Unemployment is still high, fuelling deflation.

[3] A recent analysis by Borio and Zabai (2016) of the effectiveness of unconventional monetary policy suggests that its effectiveness could decrease even as the risks involved increase. The role of asset prices has been studied by Andrade et al. (2016), showing that asset prices had reacted, as expected, following the measures taken by the ECB, and by Blot et al. (2017) on an assessment of the risk of bubbles.

[4] See Jorda *et al.*, 2013 and 2015.

[5] Translation errorThe Basel III legislation is based on risk indicators calculated at the level of banking establishments, while our approach is based on macroeconomic indicators.

[6] Translation errorThese cycles are obtained using a principal component analysis (PCA) of several types of trend / cycle breakdowns: the Hodrick-Prescott filter, the Christiano-Fitzgerald filter, and the moving average.

How negative can interest rates get?

By Christophe Blot and Paul Hubert

On 11 June 2014, the European Central Bank decided to set a negative rate on deposit facilities and on the excess reserves held by credit institutions in the euro zone. This rate was then lowered several times, and has been -0.40% as of March 2016. This raises questions about the reasons why agents, in this case the commercial banks, agree to pay interest on deposits left with the ECB. In an article on the causes and consequences of negative rates, we explain how the central bank has come to impose negative rates and how far they can go, and then we discuss the costs of this policy for the banks.

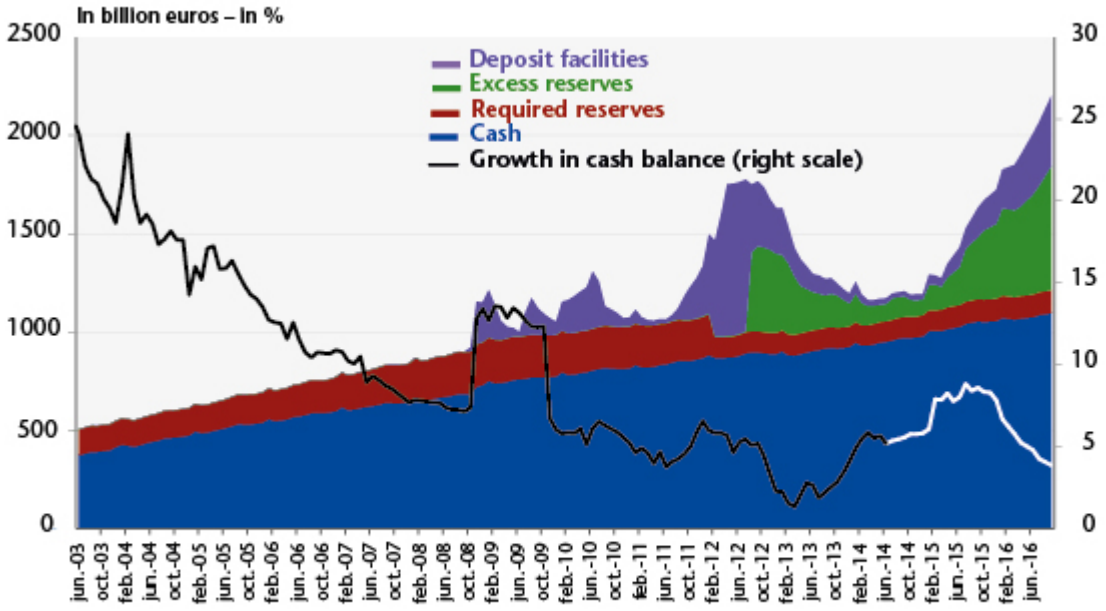
To conduct its monetary policy, the ECB requires commercial banks in the euro zone to have an account with the Bank, which is used to meet the minimum reserve requirements[1] and to participate in operations to provide liquidity. This account can also be used to perform clearing transactions between commercial banks. The required reserves are remunerated at a rate set by the ECB. Beyond this amount, in normal circumstances the banks do not receive any other compensation. Moreover, the ECB also provides a deposit facility allowing the banks to deposit cash with the ECB for a period of 24 hours, with remuneration paid at a deposit facility rate.

Prior to 2008, the commercial banks held only the reserves that they needed to meet the minimum reserve requirements (see the graph). Any stock of excess reserves[2] was very small: less than 1 billion euros on average until 2008. The same was

true for the balance of deposit facilities, which was 321 million euros on average. Since the crisis, the ECB has replaced the interbank market and has intervened to provide a large amount of liquidity. Through the banks' participation in various ECB programmes to purchase securities (quantitative easing, QE), they also receive liquidities that are placed in their reserve account, to such an extent that by September 2016 the accumulated stock of excess reserves and deposit facilities reached 987 billion euros. The negative rates do not apply to all monetary policy operations but only to the portion of the cash left on deposit by the banks (total assets of the euro zone banks are 31 trillion euros). At the current rate, the direct annual cost to the banks is thus 3.9 billion euros.

Given that the banks are not required to hold these excess reserves, it is reasonable to ask why they accept to bear this cost. To answer this question, it is necessary to examine the possibilities for trade-offs with other assets that could be used as a substitute for the excess reserves. The reserves are in fact money[3] issued by the central banks solely for the commercial banks and are therefore a very liquid asset. But the rates on the money market are also negative, to such an extent that it is a matter of indifference to the banks whether they have excess reserves and place their liquidities on the interbank market for a week or buy Treasury securities issued by the French or German government, for example, with yields that are also negative.

Graphique. Reserves and cash



Note: The rate of growth of the cash balance (year on year) is shown by a white line during the period of negative rates.

Source : ECB.

Actually, the best substitute for the reserves would be to hold the cash directly. The substitution could therefore take place within the monetary base if the banks called for the conversion of their excess reserves and deposit facilities into cash, which has the same properties in terms of liquidity and zero nominal interest. Currently this would mean converting 987 billion euros of reserves into banknotes, nearly doubling the amount outstanding, as the volume of notes in circulation in September 2016 was 1,096 billion euros.

The fact that these agents can have an asset that is not interest-bearing is the argument for why nominal rates cannot be negative. In practice, because there are costs to holding currency in the form of notes, this trade-off does not take place when the threshold for negative rates is exceeded. The nominal rate can therefore be negative. It is clear however that there is a threshold at which holding cash would be preferable. The cost of holding large amounts of cash is not known precisely, but it seems that it is not insignificant, and in any case is higher than the 0.4% currently charged by the ECB.

It seems that in practice there has not yet been any such substitution, since the volume of outstanding notes in circulation has not risen particularly since negative rates were first set (graph). Jackson (2015) has made an assessment indicating that the various costs of holding money in the form of notes and coins could be up to 2%, which would act as an effective lower bound (ELB) for a reduction in rates.

Beyond the costs that negative rates represent for banks, the expected benefits of such a policy need to be considered, as well as the overall context in which they have been set. Together with negative rates, the ECB is using its targeted long-term refinancing operations (TLTRO II) to enable the banks to finance themselves at negative rates, and is thus urging them doubly (via the cost of their excess reserves and via the rate at which they are financed) to grant credit to the real economy.

[1] Credit institutions are in practice required to leave reserves in this account in the amount of a certain fraction of deposits collected from the non-financial sector. See here for more details.

[2] Amount of reserves beyond the required reserves.

[3] Together with the banknotes issued, these form what is called the monetary or money base, M_0.

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

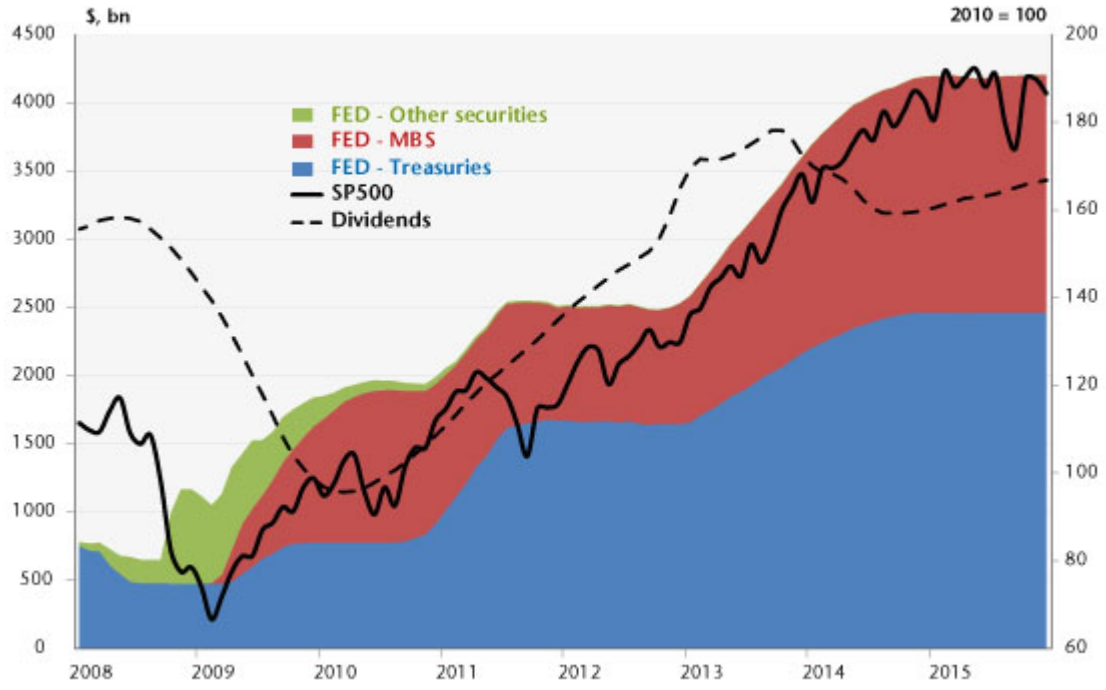
in connection with QE in the US.

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



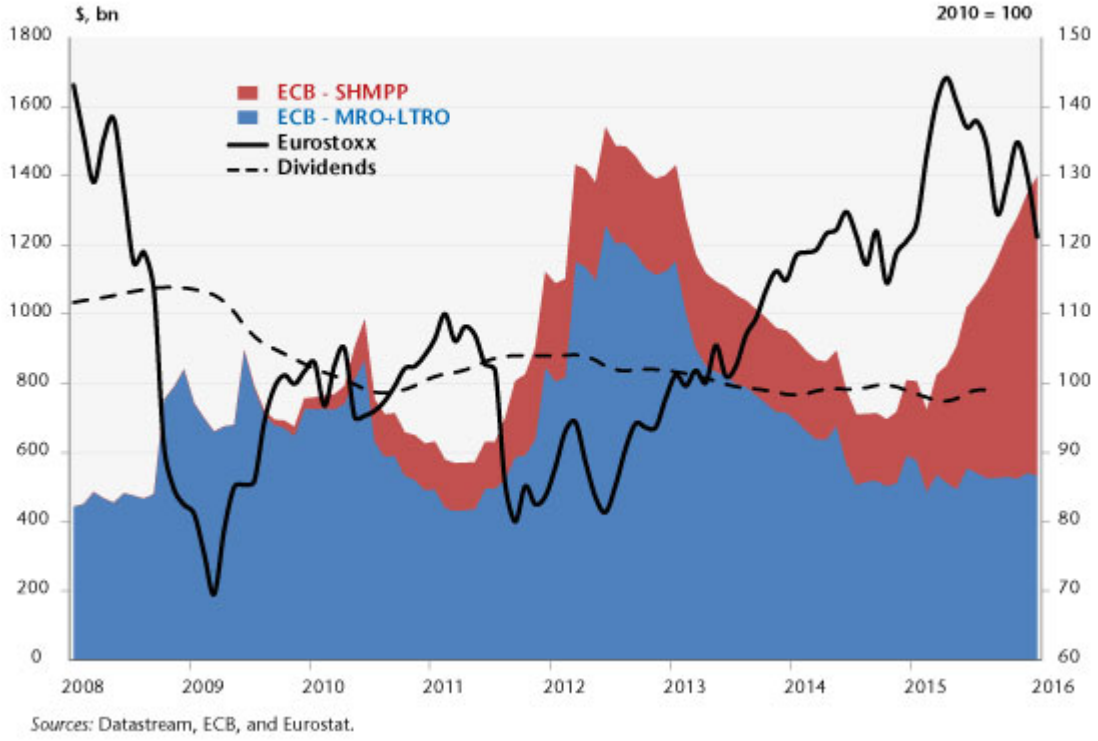
Sources: Datastream, Federal Reserve, and Bureau of Economic Analysis.

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



Sources: Datastream, ECB, and Eurostat.

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.