

Uncertain inflation outlook and monetary policy normalisation in the heterogeneous euro area

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Abstract

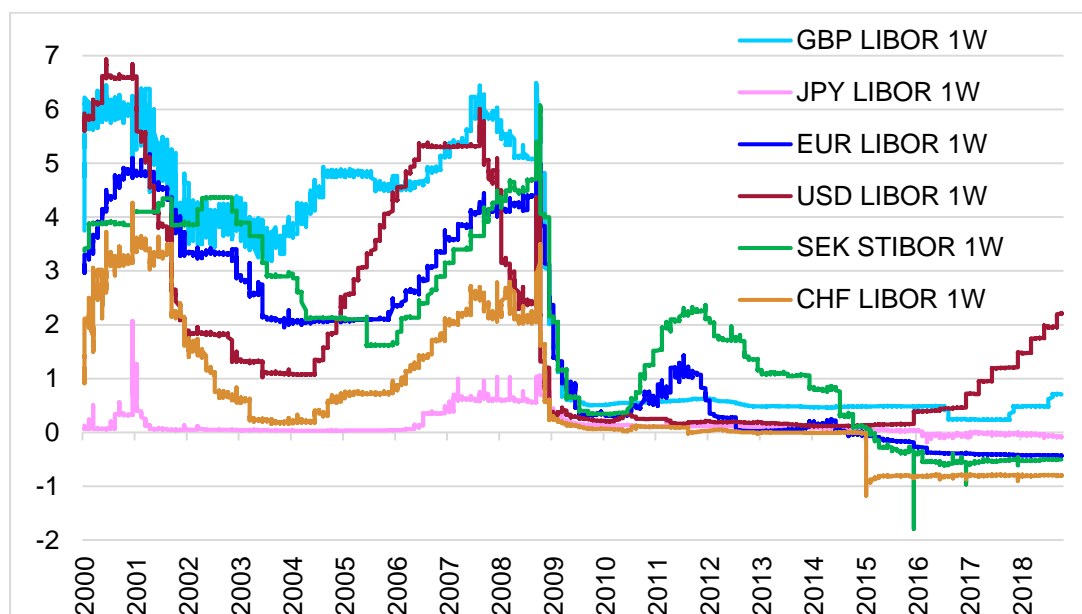
In the wake of the global and European financial and economic crisis, the European Central Bank (ECB) implemented expansive monetary policies measures, like large-scale liquidity provisions and asset purchases and lowering the interest rate on the deposit facility below zero. With the gradual economic recovery of the euro area, the question of monetary policy normalisation is becoming more prominent, especially after the ECB's announced intention to end net asset purchases at the end of December 2018. The key questions are whether the ECB should aim to shrink its balance sheet, and if so to what level, and when to raise the interest rate and to what 'new normal'? By drawing lessons from the recent monetary policy normalisation experiences of Sweden, United States and United Kingdom, we argue that premature monetary policy exit involves major risks, while inadequate forward guidance could cause market turbulence. In the new 'normal' central bank balance sheet policies will likely become part of the regular toolkit, especially if the natural rate of interest remains low, implying that nominal interest rates will likely remain below their pre-crisis values. We find that ending net asset purchases would not necessarily increase long-term rates and long-term rates could even remain broadly unchanged after a few central bank interest rate hikes. By analysing the ECB's forecasting track record, we show that it has systematically over-estimated future core inflation developments, which casts doubts about the reliability of ECB forecasts. Since the inflation outlook in the euro area is very uncertain, we suggest to wait with interest rate increase till core inflation overshoots the 2 percent threshold and there is a strong indication that it will not fall back to significantly lower levels. Likewise, we recommend to keep the size of the ECB's balance sheet unchanged in the foreseeable future, and to start a gradual process of its reduction only after the first few interest rate hikes. We recommend an explicit forward guidance to express these intentions. While financial stability risk is on the rise in some euro area countries, we argue that monetary policy is ill-suited to address financial stability concerns in general, and especially in the euro area, which is very heterogeneous. Instead, country-specific macroprudential policy should complement proper micro-prudential supervision.

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1. Motivation

The global financial and economic crisis, which intensified after the collapse of Lehman Brothers in September 2008, has led to the deepest economic contraction in many advanced countries since the second world war. Unusual economic circumstances have triggered unusual monetary policy measures. Central banks quickly cut their interest rates close to zero in 2008-2009 – thereby joining the Bank of Japan, that have long implemented a close to zero interest rate policy (Figure 1).

Figure 1: One-week interbank interest rates (%), 2 January 2000 – 17 October 2018



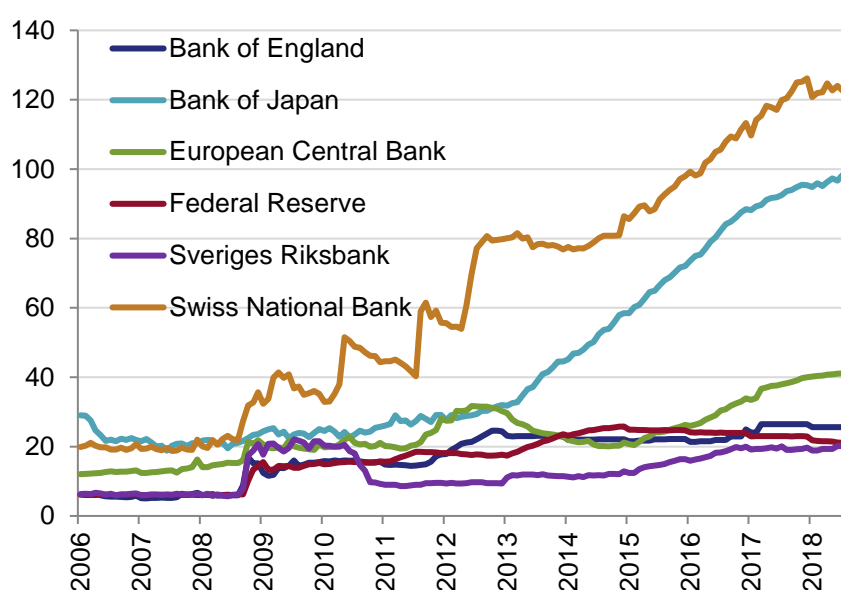
Source: Bloomberg and Sveriges Riksbank. Note: We show the 1-week interbank rates and not central banks' interest rates, because for some central banks the importance of certain rates changed (e.g. for the European Central Bank, the main refinancing operations (MRO) interest rate was the main determinant of short-term market rates before 2008, but since then the ECB's deposit rate is the main determinant). GBP=British pound sterling; JPY=Japanese yen; EUR=euro; USD= US dollar; SEK=Swedish krona; CHF=Swiss franc; LIBOR= London Interbank Offered Rate; STIBOR= Stockholm Interbank Offered Rate.

Zero has long been considered a lower bound for interest rates and thereby close to zero rates gave rise to the discussion on the 'zero lower bound' (ZLB). The rationale for the ZLB is that a negative interest rate might be ineffective if agents do not want to pay a 'fee' (i.e. the negative interest rate) for holding deposits and instead hoard cash¹. Since holding cash involves storage costs and risks of destruction and theft, the effective lower bound should be lower than zero, yet in 2008-2009 central banks have not (yet) opted for negative interest rates. Instead, several advanced country central banks adopted various other monetary policy measures, which aimed to ease monetary conditions further. These measures included large-scale asset purchases, such as government bonds and various private sector or agency securities (called 'quantitative easing') and large-scale liquidity provision measures, whereby banks were able to obtain loans from the central bank for longer

¹ An early contribution to the discussion on how to overcome the zero lower bound was Buiter (2009), who suggested three options: abolishing cash, taxing cash and introducing a new numéraire for measuring prices and introducing an exchange rate between this new numéraire and cash. See Cœuré (2015) for a more recent assessment of the zero lower bound problem and a discussion of the tools used by the ECB to overcome it.

durations and at more attractive terms than in the pre-crisis period. Again, the Bank of Japan was a forerunner in the adoption of quantitative easing measures even before the crisis, in 2001-2006. Some other central banks, most notably the Swiss National Bank and the Danish National Bank, purchased large amounts of foreign currencies to prevent the appreciation of the exchange rate of their currencies. These measures boosted the size central bank balance sheet to unforeseen levels (Figure 2). While there were sizeable differences in pre-crisis balance sheet size of central banks, the differences became even more striking after 2008.

Figure 2: Central bank balance sheet (% GDP), January 2006 – August 2018

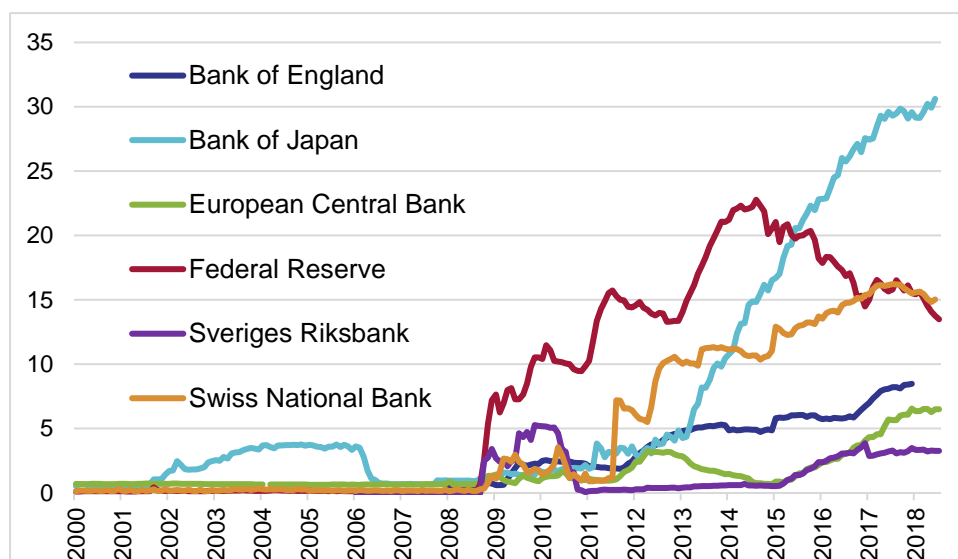


Source: Bruegel based on balance sheet data: Federal Reserve Bank of St. Louis (BoJ: JPNASSETS, ECB: ECBASSETS, FED: WALCL, BoE: UKASSETS), Bank of England (RPQB75A) and Swiss National Bank (EPB@SNB.snbipo{TO}); GDP: IMF (WEO), Eurostat [nama_10_gdp] and Swiss National Bank (EPB@SNB.gdpap{WMF,BBIP}).

As a counterpart of bloated central bank balance sheets, banks' reserves (including various banks' deposits) held at the central banks also skyrocketed. While before September 2008 the share of such bank reserves were typically below 2 percent of total banking system assets (again, with the exception of Japan in 2001-2006 when it was around 4 percent), they increased to very high values, with the most recent values range between 3 percent in Sweden and 30 percent in Japan among the six countries we consider (Figure 3). Such large reserve holdings might expose the banks to losses if the central bank pays a negative interest rate after such reserves, which is the case in the euro area, Japan, Sweden and Switzerland². Moreover, such large bank reserve holdings require a different operational framework for monetary policy than pre-crisis situation with practically no excess reserves over the minimum reserve requirements.

² In Darvas and Pichler (2018) we concluded that excess liquidity held at central banks is not the best indicator to represent the incentives banks have to take on more risk in the euro area, even if it carries the cost of the negative ECB deposit facility interest rate.

Figure 3: Banks' reserves at the central bank relative to banking assets (%)



Source: Bruegel based on ECB's Statistical Data Warehouse (deposit facility: ILM.M.U2.C.L020200.U2.EUR, current account: ILM.M.U2.C.L020100.U2.EUR, Fixed-term deposits: ILM.M.U2.C.L020300.U2.EUR); Federal Reserve Bank of St. Louis (total reserves: RESBALNS); Bank of England (total reserves: LPMBL22, total assets via ECB: DD.A.GB.TA_DBG.PGDP.4F_N); Bank of Japan (total reserves: MD07'MAREM1, total assets: BS02'FAABK_FAAB2DBEAS); Swiss National Bank (reserves: EPB@SNB.snbipo{GB} and EPB@SNB.snbipo{GBI}, total assets: BSTA@SNB.MONA_U.BIL.AKT.TOT{U,T,T,A40}).

Note: There is no reserve requirement in the UK and Sweden, while in the other four countries banks must hold a certain share of the deposits of their clients at the central bank.

As the economic outlook improves and inflation gradually increases, the key question is when how these historically unprecedented monetary policy measures should be normalised, and to what levels. In fact, Figure 1 shows that euro and Swedish short-term interest rates started to increase from mid-2010, reflecting monetary tightening by the European Central Bank and the Sveriges Riksbank. In both currency areas the tightening proved to be short-lived and an even much more significant monetary policy easing has followed, suggesting that the mid-2010 normalisation attempts were premature. We will scrutinise these episodes.

More recently, the Federal Reserve started to increase interest rates in December 2015. Up to September 2018, the 0-0.25 percent target range for the federal funds rate has been increased in eight steps of 0.25 percentage point each to the target range of 2.00-2.25 percent. Moreover, the Federal Reserve has not just ended asset purchases, which was initially followed by a reinvestment strategy (whereby the Federal Reserve purchased the same amount of new assets as the amount of the maturing assets), but the reinvestment strategy has been gradually reduced since September 2017, whereby lower amounts are reinvested than what is matured. This reduced reinvestment strategy is reflected in the small decline in the size of the Federal Reserve balance sheet relative to GDP (Figure 2).

Faced with accelerating inflation partly because of the significant depreciation of the pound sterling in the aftermath of the United Kingdom's referendum to leave the European Union, the Bank of England has started a normalisation process by increasing the base rate by 25 basis points in November 2017 and then again in August 2018.

The central banks of the Euro area, Japan, Sweden and Switzerland has not yet started to lift interest rate, though asset purchases have ended in Sweden and is expected to end by end-2018 in the euro area. The Bank of Japan has not yet announced a reduction in the monthly amount of asset purchases, yet Shirai (2018) noticed that there was a reduction.

This paper assesses the monetary policy normalisation process from the perspective of the euro area. We cover four main issues. First, we analyse certain mistakes that were made in the normalisation process of Sweden, the United States and the United Kingdom, to learn lessons from these mistakes. Second, we scrutinise the possible 'new normal' for monetary policy in terms of interest rate and central bank balance sheets. Third, we analyse the track record of ECB inflation forecasts and assess the euro area inflation outlook. And fourth, we examine the heterogeneity of the euro area in terms of economic and financial developments and evaluate the implications of this heterogeneity for monetary and macroprudential policies.

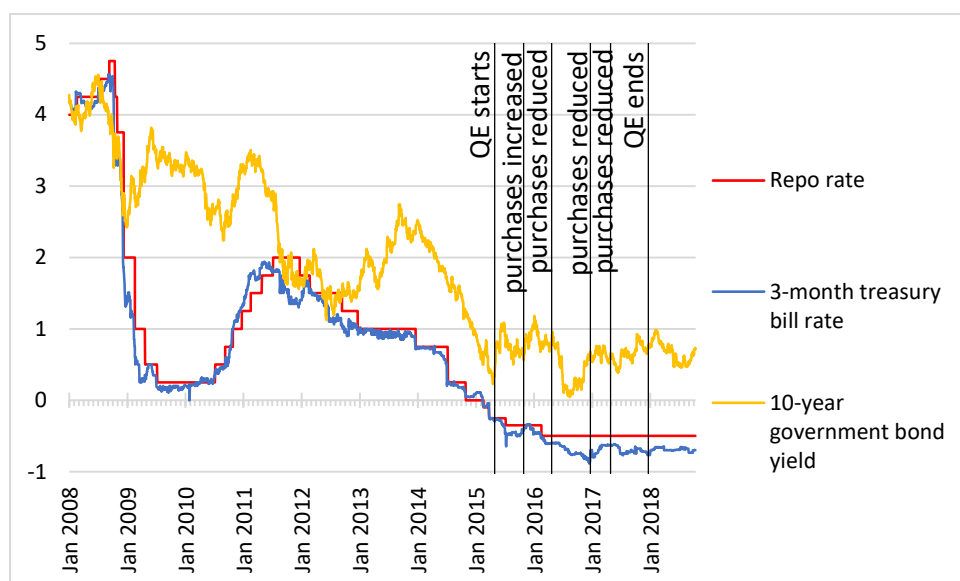
2. Lessons from monetary policy exit mistakes of Sweden, the US and the UK

The central banks of Sweden, the United States and the United Kingdom adopted certain monetary policy normalisation measures, which have led to adverse market reactions. These episodes offer valuable lessons to learn for the monetary policy normalisation of other central banks. In this section we discuss three such episodes. One example is Sweden, where a premature exit started in summer 2010 was followed by massive monetary policy easing. The other two examples are from United States (late 2012–summer 2013) and United Kingdom (summer 2013 – summer 2014), which share many similarities: inappropriate communication, including initially linking the future interest rate increase to a certain level of the unemployment and then de-linking when the unemployment rate has fallen, has led to a significant increase in long-maturity government bond yields, which was followed later by an even more significant decline in bond yields.

2.1 Sweden: premature exit followed by massive monetary policy easing

Sweden provides a bad example of too early exit from expansive monetary policies, which had to be reversed and followed by an even more significant monetary easing. When the global financial crisis intensified after the collapse of Lehman Brothers in September 2008, the Sveriges Riksbank, Sweden's central bank, cut its main monetary policy rate. The so-called repo rate (at which banks can borrow or deposit funds at the Riksbank for a period of seven days) was cut from 4.75% in October 2008 to 0.25% in July 2009 (Figure 4). However, between July 2010 and July 2011, the Riksbank increased its main policy rate from 0.25 percent to 2 percent in seven steps, largely motivated by addressing financial stability issues. The rapid 2010 recovery from the deep 2009 recession (Figure 5) probably gave confidence to the Riksbank to pursue with monetary policy tightening.

Figure 4: Swedish interest rates, 2 January 2008 – 12 October 2018



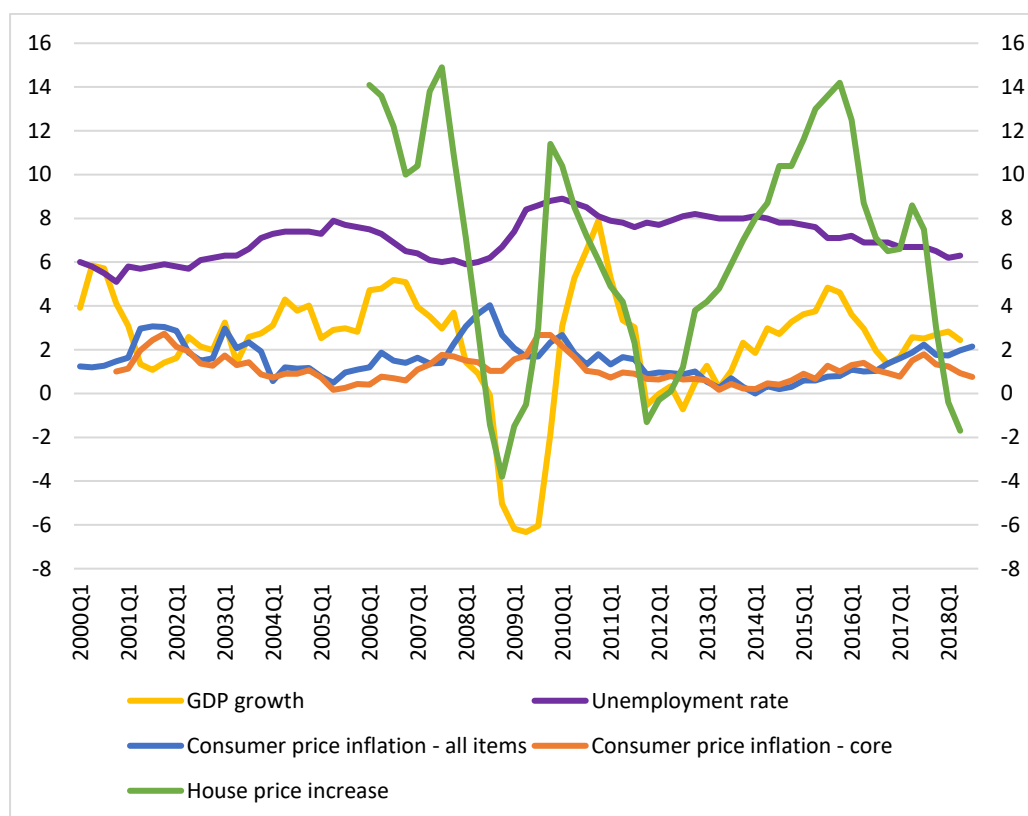
Source: Sveriges Riksbank, <https://www.riksbank.se/en-gb/statistics/search-interest--exchange-rates/>

Note: The repo rate has been the Riksbank's policy rate since 1994. The repo rate is the rate of interest at which banks can borrow or deposit funds at the Riksbank for a period of seven days. In addition, the Riksbank has an overnight deposit facility, which has an interest rate 0.75 percentage points lower than the repo rate, and an overnight borrowing facility, which has a rate 0.75 percentage points higher than the repo rate.

According to Svensson (2014), this policy tightening led to high costs in terms of excessively low inflation, overly high unemployment and a higher real debt burden for households. Inflation fell quickly after 2011 and was close to zero even in 2014, well below the 2 percent target (Figure 5). The unemployment rate also fell less rapidly than under a counter-factual scenario of continued low interest rates, which suggests that the premature monetary tightening pushed up the unemployment rate by about 2 percentage points for a several years (Svensson, 2014).

Ultimately, low inflation forced the Riksbank to cut rates to even lower levels: the repo rate was cut from 2 percent in July 2011 to -0.5 percent in February 2016. Moreover, the Riksbank also started to purchase Swedish government bonds for monetary policy purposes starting in April 2015 with Swedish Krona 40-45 billion a month, an amount which was increased to 65 billion per month in October of the same year. However, although the Riksbank initially aimed to ward off the threat to financial stability from household over-indebtedness, the household debt-to-income ratio was not affected by the 2010-11 policy of tightening and in fact the ratio continued to increase in real terms, partly because of the very low inflation rates.

Figure 5: Some key macroeconomic indicators of Sweden, 2000Q1 – 2018Q2

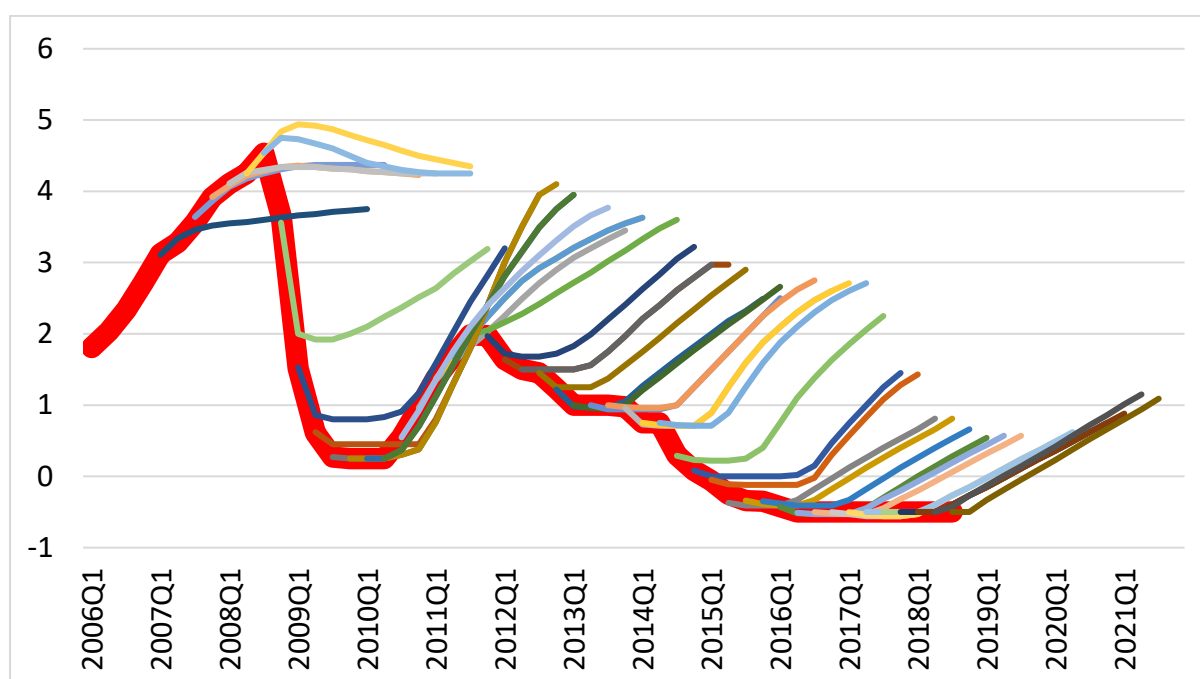


Sources: Eurostat datasets: 'GDP and main components (output, expenditure and income) [namq_10_gdp]', 'Unemployment by sex and age - quarterly average [une_rt_q]', 'HICP (2015 = 100) - monthly data (annual rate of change) [prc_hicp_manr]', and 'House price index (2015 = 100) - quarterly data [prc_hpi_q]'.

Note: percent change compared to the same quarter of the previous except for the unemployment, which is in percent of the labour force.

Furthermore, the Riksbank interest rate guidance turned out to be grossly inadequate since 2011. The Riksbank is among the few central banks that publish numerical forecasts for its main monetary policy rate (along with a confidence band). Only the 2010-11 tightening was in line with forecasts made earlier, but Riksbank interest rate forecasts made both before and especially after this period proved to be systematically wrong in predicting a future increase development of the Riksbank's own interest rate (Figure 6). These systematic forecast errors call into question the usefulness of the publication of interest rate forecasts.

Figure 6: The Riksbank's repo rate: actual and Riksbank forecasts, 2006Q1–2021Q3



Source: various monetary policy reports of the Sveriges Riksbank.

Note: the actual rate is the thick red line.

Tapering of government bond purchases started in April 2016 with actual purchases gradually stopped at the end of 2017. Yet the Riksbank still reinvests maturing bonds to keep the stock of its government bond holdings unchanged, because *“the Riksbank’s strategy for a gradual normalisation of monetary policy involves continuing to reinvest principal payments in the government bond portfolio for a while even after repo rate rises have begun”* (Riksbank, 2018).

Therefore, even though both the headline and the core inflation rate reached the two percent target in early 2017 (Figure 5), this time the Riksbank remained much more cautious and has not yet tightened monetary conditions. This cautious approach has been justified, given that core inflation fell back to 1.5% by mid-2018. These experiences offer important lessons for the European Central Bank.

It is also important to note that the 10-year government bond yield has not increased with the tapering and eventual stop of quantitative easing, but has largely remained in the range of 0.5-1 percent range, apart from a brief episode in the autumn of 2016 when it fell close to zero (Figure 4). The level of government bond yield is well below the pre-crisis values. The relative stability of the 10-year government bond yield is also in contrast to the Riksbank’s own prediction of a rate increase (Figure 6), suggesting the ineffectiveness of the Riksbank’s forward guidance. We cannot exclude the hypothesis that market participants disregard the Riksbank’s forward guidance due to the massive and systematic forecast errors made in the past.

Anyhow, the Swedish experience highlights that stopping net asset purchase would not necessarily lead to higher long-term interest rates.

2.2 Federal Reserve: ‘taper tantrum’ unnecessarily pushed-up the 10-year yield

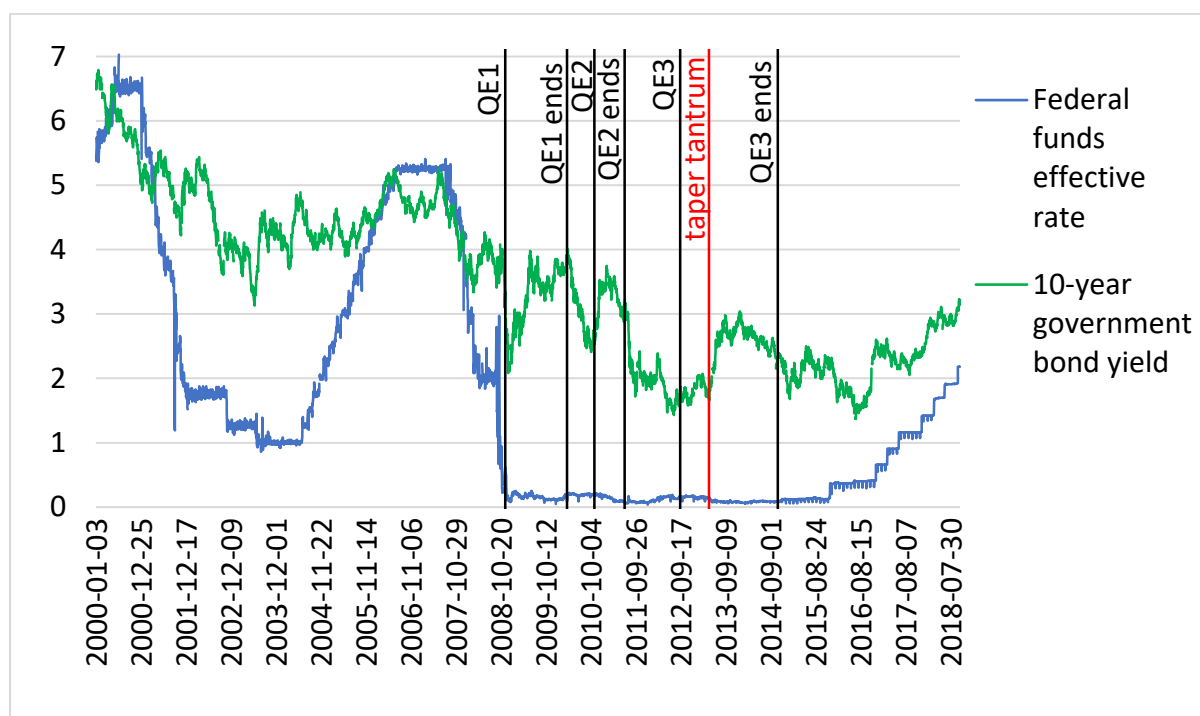
As the US economy gradually recovered from the deep recession of 2008-2009, in December 2012 the Federal reserve introduced a new way of forward guidance to communicate about its expected policy intentions by stating a particular value of the unemployment rate, which would trigger monetary policy changes: the FOMC *“anticipates that this exceptionally low range for the federal 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.”*³ As Whelan (2018) notes, the clear majority of FOMC members believed that time that the 6.5 percent unemployment rate would not be reached until 2015.

In early 2013 unemployment rate fell to 7.5 percent, nearing the 6.5 percent threshold mentioned above. The Federal Open Market Committee (FOMC) started to discuss tapering (i.e. reducing the amount of asset purchases) of third round of quantitative easing in early May 2013. Such a discussion, along with the fall in unemployment rate toward the 6.5 percent threshold, raised market expectations of a federal funds rate increase. The expected increase in short-term interest rates led to a rather significant increase in the 10-year yield, which increased from 1.7% in May 2013 to 3% in a few months (Figure 7), leading to a far larger tightening in financing conditions than the FED had intended.

Eventually, the unemployment rate fell below 6.5 percent, but inflation has not picked up and economic growth was somewhat weaker than expected, thereby, the Federal Reserve has not increased rates until December 2015 (when the unemployment rate was as low as 5 percent). Later, the 10-year government bond yield has fallen back even below 1.7%, despite the actual tapering and ending of asset purchases and the first increase in federal funds rate in December 2015. Thereby, the US experience is similar to the experience of Sweden, whereby the stopping net asset purchases does not necessarily lead to a higher long-term interest rate.

³ <https://www.federalreserve.gov/newsevents/pressreleases/monetary20121212a.htm>

Figure 7: US interest rates, 2 January 2000 – 15 October 2018



Source: Federal Reserve.

2.3 Bank of England: communication and forward guidance problems unnecessarily pushed-up the 10-year yield

The Bank of England followed the footsteps of the Federal Reserve by facing a very similar fiasco with linking interest rate increases to unemployment and later de-linking it from that. Communications misfortune also followed by a significant increase in long-term interest rate and then a later reversal.

On 4 July 2013, the Bank of England released a statement (an unusual move in the absence of a policy change) clarifying current policy and questioning whether the expected future rates were in line with economic developments⁴. Then in August 2013, the Bank of England introduced new forward guidance policies, linking increase in interest rate to unemployment falling below 7 percent with three so-called ‘knock-out criteria’, including a quantitative threshold for inflation projections 18–24 months ahead (<2.5 percent) as well as anchored medium-term inflation expectations and the absence of financial instability risks (Filandro and Hofmann, 2014; Whelan, 2018). The statement said: “the MPC intends not to raise Bank Rate from its current level of 0.5% at least until the Labour Force Survey headline measure of the unemployment rate has fallen to a threshold of 7%, subject to the conditions below.”⁵

However, unemployment fell faster than earlier foreseen by the Bank of England. Thus, in January and February 2014 the Bank of England has updated its forward guidance, unlinking it from the

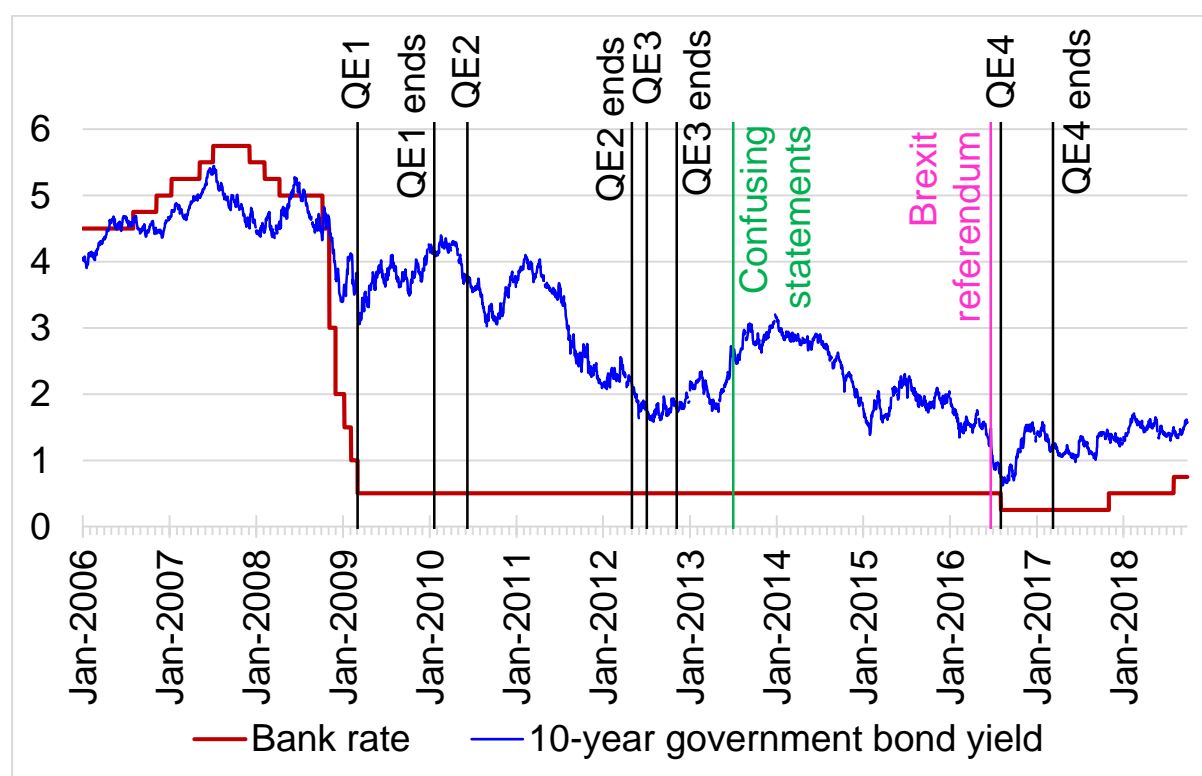
⁴ <https://www.bankofengland.co.uk/-/media/boe/files/news/2013/july/mpc-july-2013.pdf>

⁵ Filandro and Hofmann (2014) finds that futures rates did not drop following the formal introduction of forward guidance by the Bank of England in August 2013, suggesting that it was not effective in driving market expectations, though the two-year futures rates did drop by more than 10 basis points in July 2013 when the MPC raised concerns about the appropriateness of market expectations for future policy rates.

decrease of the unemployment rate below 7 percent. Furthermore, in late June 2014 Mark Carney, the Governor of the Bank of England suggested that 'new normal' for UK interest rates is 2.5 percent and the interest rates could reach this value in early 2017⁶.

These statements might have played a role in the strong increase of the 10-year UK government bond yield from a value of about 2.2 percent in July 2013 to over 3 percent by September the same year. After that it fluctuated around 3 percent till July 2014, when it started to fall significantly to as low as 1.4 percent by January 2015 (Figure 8). Thereby, we cannot exclude the hypothesis that an inappropriate forward guidance and its reversal contributed to a temporary upward shift of long-maturity interest rates, thereby causing an unintended tightening of monetary conditions. Inflation, however, remained well below 2 percent (considering both the headline and core inflation), and even slightly fell after this 2013-14 temporary monetary tightening episode (Figure 9).

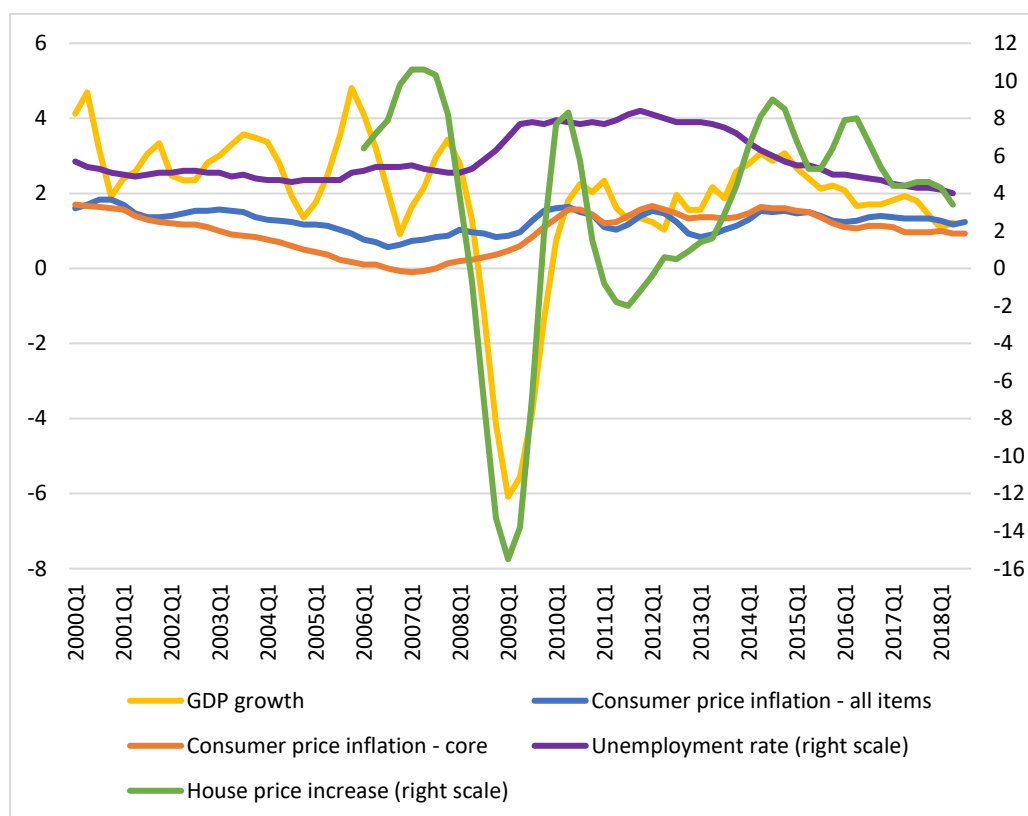
Figure 8: UK interest rates, 2 January 2006 – 28 September 2018



Source: Bank of England.

⁶ <https://www.bbc.com/news/business-28053045>

Figure 9: Some key macroeconomic indicators of the United Kingdom, 2000Q1 – 2018Q2



Source: Eurostat.

As regards the actual exit from expansive policies in recent years, the UK experience is quite similar to the experience of the US and Sweden: stopping net asset purchases hardly had an impact on long-term government yields, both after the third round of QE ended in November 2012 and the fourth (post-Brexit vote) round in March 2017. Moreover, even the actual 25 basis points interest rate increases in November 2017 and August 2018 was not followed by any significant increase in long-term yields. However, as regards more recent development, the uncertain outlook of Brexit negotiations could also play a role market reactions.

3. New normal in monetary policy?

Beyond the timing of monetary policy normalisation, the key questions are:

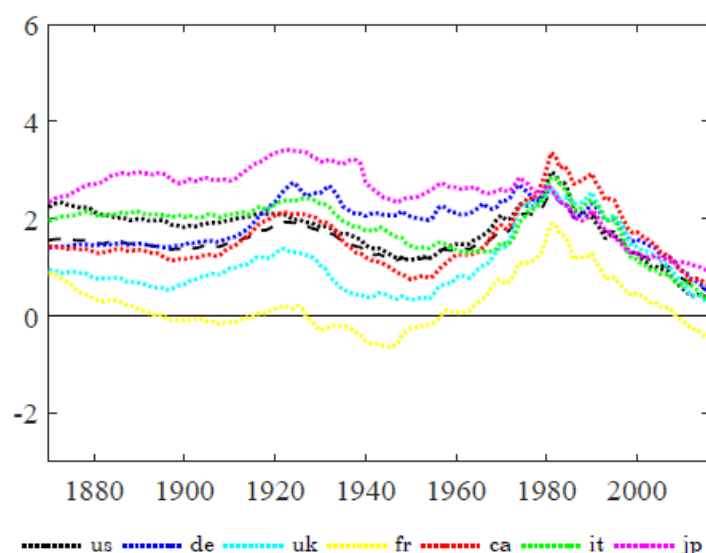
- To what level should the interest rate be increased?
- Should central bank balance sheets be reduced, and if so, to what level?

There are reasons to believe that interest rates will be lower and central bank balance sheet will be higher than they were in the pre-crisis period.

Several papers have documented the secular decline in interest rates. A recent contribution to this discussion is Del Negro *et al* (2018), who find that the trend in the world real interest rate for safe and liquid assets fluctuated close to 2 percent for more than a century but has dropped close to zero over the past three decades. They find the same declining pattern in many advanced economies

(Figure 10). They give two main explanation for this secular trend. First, the premium that international investors are willing to pay to hold safe and liquid assets has increased, partly due to the scarcity of safe assets in the context of a global saving glut. And second, lower economic growth also drives down the real interest rate.

Figure 10: Trends in short-term real interest rates, 1870-2016



Source: Del Negro et al (2018).

Whatever is the reason for the decline in real interest rate, if it remains at its currently estimated levels, it will have major implications for monetary policy. A lower equilibrium interest rate implies that in recessions the (effective) zero lower bound would likely be reached more frequently, thereby limiting the impact of traditional interest rate policy (Claeys and Demertzis, 2017; Foldén, 2018). Thereby, unconventional monetary policy measures would be used more regularly, which lead to higher central bank balance sheets than what were observed before 2008.

We note that this otherwise sensible argument applies to a kind of long-term average balance sheet size of central but is not very helpful for guiding current monetary exit strategies. The argument implies that in the future monetary easing periods balance sheet instruments will be used again, but it does not imply that in a monetary policy normalisation phase the balance sheet cannot return to its previous level. A key question is the speed of balance sheet reduction.

Foldén (2018) and Claeys and Demertzis (2017) discuss several other arguments in favour of and against a larger central bank balance sheet. Some arguments suggest that a larger central bank balance sheet can improve the monetary transmission mechanism, it can provide safe assets in the form of central bank liquidity (Figure 3), and it can also reduce banks' incentives for excessive maturity transformation, which would make banking less risky.

There are also arguments against larger balance sheet includes. It exposes the central bank to financial risk⁷ and undue political influence, since large holding of government and/or private sector assets could risk politicians wishing to rely on central bank asset purchases for certain political goals.

It should also be highlighted that the size of the central bank balance sheet depends on the way monetary policy is conducted, on the exchange rate regime, past monetary policy actions, central bank tasks, profit distribution. Thereby there is no universal benchmark for 'normal' central bank balance sheets. The advice one can make to the exit from the current balance sheet policies is that the strategy should start only after the macroeconomic goals of the central bank has been achieved. The balance sheet size reduction should be gradual to minimise disruptions to the functioning of financial markets and conditional on not jeopardising the macroeconomic goals.

4. Monetary policy exit in the euro area when the inflation outlook is uncertain

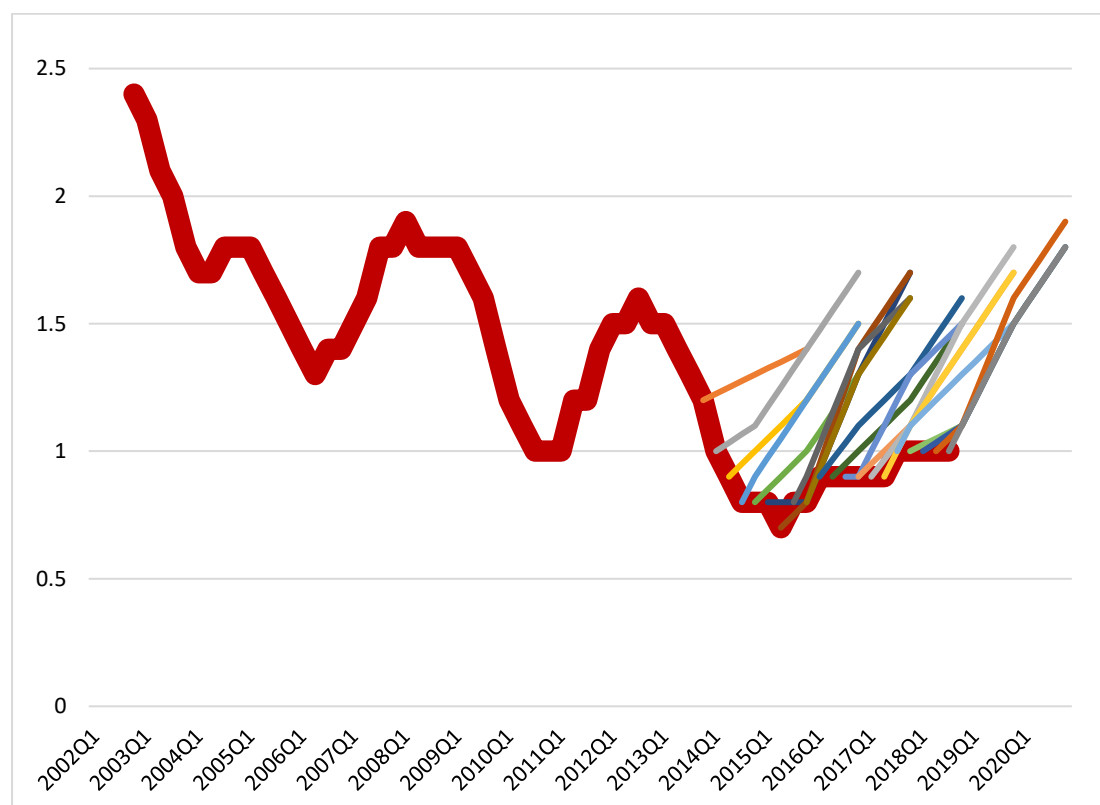
The main objective of the ECB is price stability, which is defined as inflation below 2 percent, while the ECB's Governing Council has clarified that it aims to achieve close to but below 2 percent inflation rate over the medium term. While euro-area headline inflation long undershot the 2 percent threshold, it reached 2.1 percent in July 2018 and then in September 2018 too⁸. However, this recent increase in headline inflation is partly due to oil price increase, while core inflation (which excludes items with volatile prices like food and energy) remains stable at 1 percent. The September 2018 forecast of the ECB itself expects the headline inflation to fall back to 1.5 percent by the third quarter of 2019, after which an acceleration is foreseen to 1.8 percent by the end of 2020. Core inflation acceleration is also predicted by the ECB.

We analyse track record of ECB inflation forecast. Figure 11 shows that the ECB has systematically overestimated the future developments of core inflation (at least since December 2013, the first time when core inflation forecasts were made public). This finding raises serious question marks about the ability of the ECB to do proper forecasts and consequently about the reliability of the current forecast suggesting the acceleration of core inflation in the coming years.

⁷ See Chiacchio *et al* (2018) for an assessment of the importance of central bank profits.

⁸ The 2.1 percent inflation rate refers to the percent increase compared to the same month of the previous year.

Figure 11: Core inflation – actual data and ECB forecasts, 2002 – 2018 (moving 12 months average rate of change)

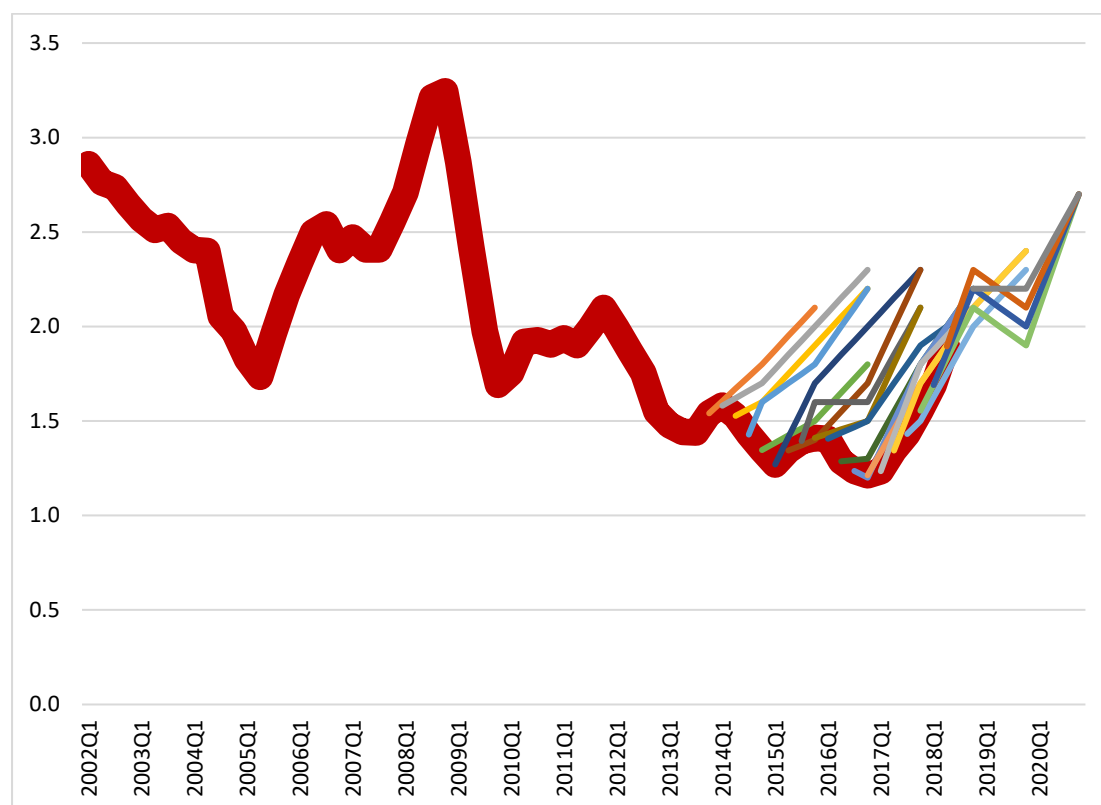


Source: Eurostat for actual and author's calculations using various vintages of ECB forecasts.

Note: Actual inflation is the thick red line (moving 12 months average rate of change), while the thin lines show the inflation forecast made in each quarter. ECB forecasts are available for the annual average inflation. That's why we use the 12-month average rate of change for the actual data, which, in each December, equals annual average inflation. In the chart the end observation (in Q4 of various years) of each forecast curve corresponds to the annual average inflation forecast numbers published by the ECB. we have linearly interpolated this Q4 annual average forecast data and the actual inflation rate in the quarter of the date of the forecast.

A little hope is offered by recent wage developments (Figure 12). While the ECB's earlier forecast also proved to be overly optimistic, more recently wage growth has picked up, which, sooner or later, might be reflected in inflation.

Figure 12: Compensation of employees – actual data and ECB forecasts, 2002 – 2018 (moving 12 months average rate of change)



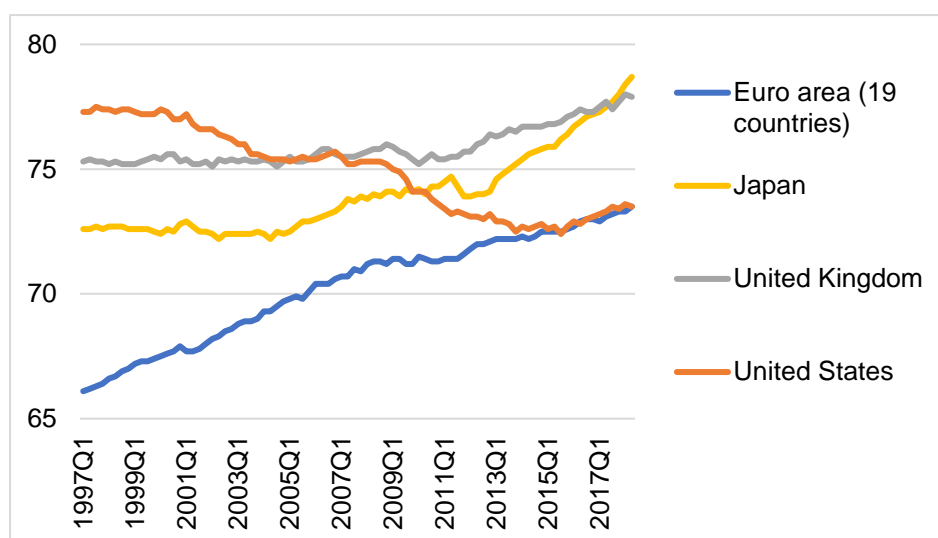
Source: Eurostat for actual and author's calculations using various vintages of ECB forecasts.

Note: Actual wage growth is the thick red line (moving 12 months average rate of change), while the thin lines show the forecast made in each quarter. ECB forecasts are available for the annual average wage growth. That's why I use the 12-month average rate of change for the actual data, which, in each December, equals annual average wage growth. In the chart the end observation (in Q4 of various years) of each forecast curve corresponds to the annual average wage growth forecast numbers published by the ECB. I have linearly interpolated this Q4 annual average forecast data and the actual wage growth rate in the quarter of the date of the forecast.

There are however other labour market developments which call for caution about the prospect of further wage increases. First, the labour force participation rate has been steadily increasing in the euro area (Figure 13). An expanding labour force will keep a downward pressure on wages⁹.

⁹ It is also notable that while Americans were fleeing the labour market in 2000-2015, there has been a steady increase in euro area labour force participation.

Figure 13: Labour force participation rate (age 15-64, % of population)



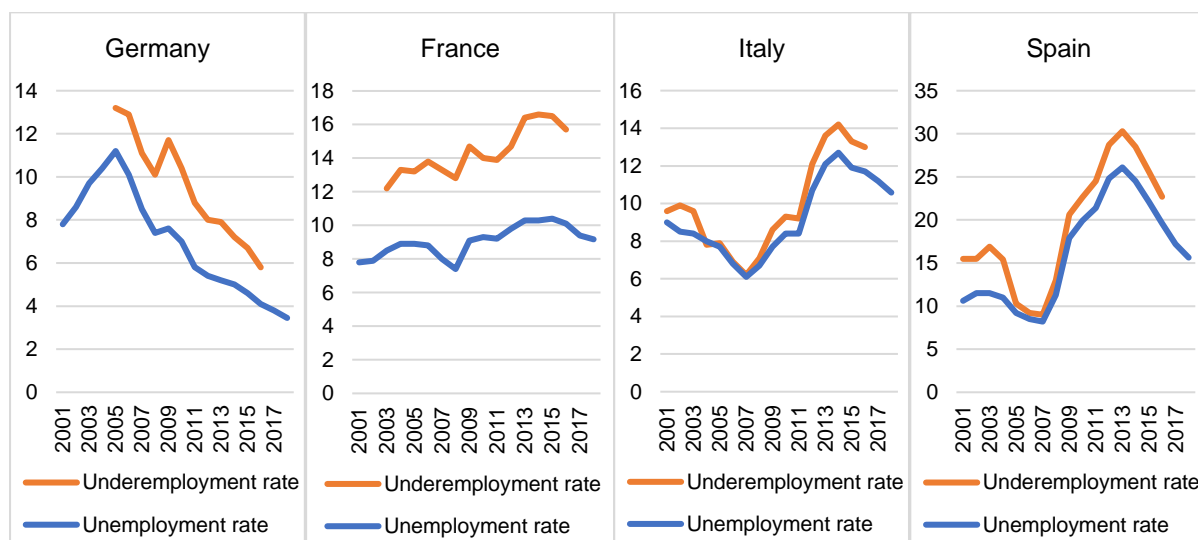
Source: Eurostat's 'Employment and activity by sex and age - quarterly data [lfsi_emp_q]' dataset.

The second labour market factor calling for caution is that the so-called underemployment rate (which also considers involuntary part-time employment) is well above the unemployment rate (

Figure 14). Those part time workers who wish to work full time could exert a downward pressure on wage growth.

And third, the Phillips-curve, which in its most basic setup measures the relationship between unemployment and wage growth, is found to become flatter (Kuttner and Robinson, 2010). This implies that the relationship between demand conditions (including unemployment) and wage and price inflation is weaker and thereby a fall in unemployment (or under-employment) is less likely to be followed by increased inflation.

Figure 14: Underemployment vs unemployment, 2001-2018



Sources: Underemployment: Bell and Blanchflower (2018); Unemployment: Eurostat's 'Unemployment by sex and age - annual average [une_rt_a]' and 'Unemployment by sex and age - monthly average [une_rt_m]' dataset.

Note: 2018 data refer to the average of January – August 2018.

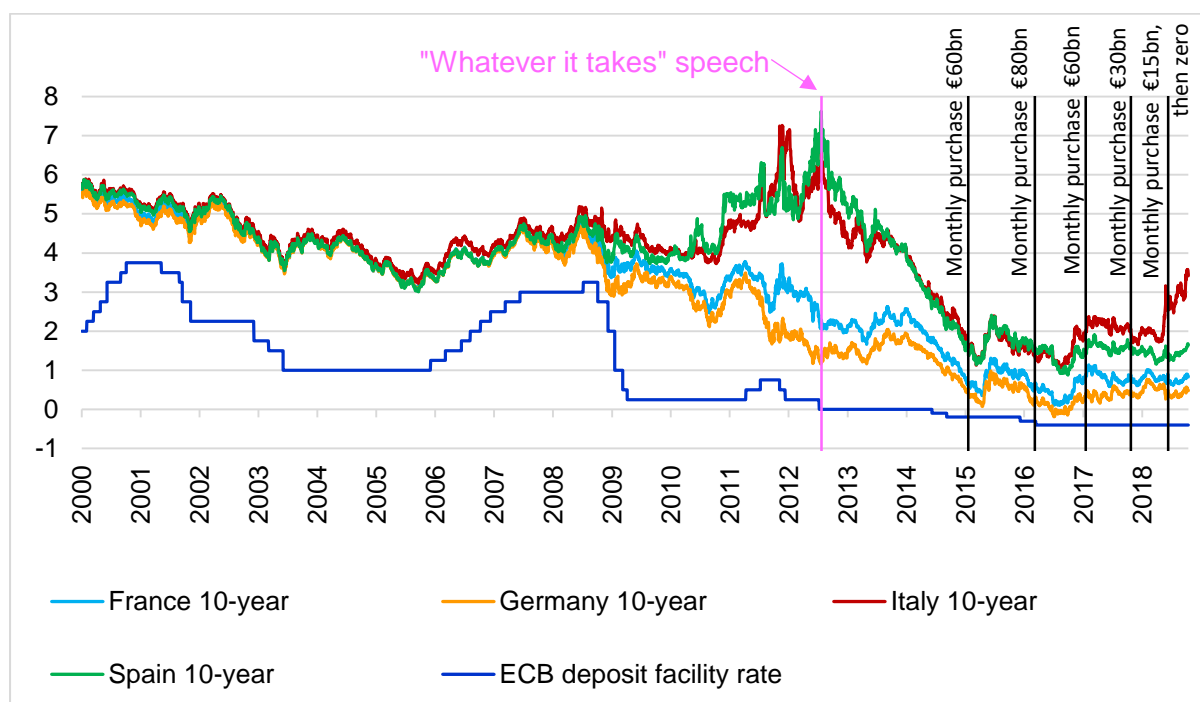
All these factors suggest a high level of caution when considering the date and the path of the prospective interest rate increase of the European Central Bank. A key conclusion from other central banks was that ending asset purchases might not increase interest rates (especially if maturing asset holdings are reinvested). The same conclusion seems to hold for the ECB too so far: except for Italy, where domestic political shocks drove the interest rate up recent months, in other large euro area countries government bond yields have hardly changed after the ECB has reduced and announced the end of asset purchases.

Therefore, the key issues are the start date and the expected path of interest rate increases. Lessons from other central banks also highlight that premature monetary policy exit could be risky and might necessitate later monetary policy easing, which can undermine the credibility of the central bank.

Consequently, our advice is to wait with interest rate increase until core inflation has reached a sufficiently high level. Since inflation has undershoot for long, prolonging rate increase to after a period of inflation overshooting would be desirable. In my view, the ECB's current forward guidance is therefore insufficient: *"The Governing Council expects the key ECB interest rates to remain at their present levels at least through the summer of 2019, and in any case for as long as necessary to ensure the continued sustained convergence of inflation to levels that are below, but close to, 2% over the medium term."* (13 September 2018 ECB press release¹⁰)

¹⁰ <https://www.ecb.europa.eu/press/pr/date/2018/html/ecb.mp180913.en.html>

Figure 15: ECB deposit facility interest rate, main asset purchase announcement dates and 10-year government bond yields of four countries, 2 January 2000 – 17 October 2018



Source: ECB and Bloomberg

Note: for asset purchases the announcement dates are indicated; the actual changes to purchased volumes took effect typically about 2 months later.

5. The euro area is heterogeneous, financial stability risks vary across countries

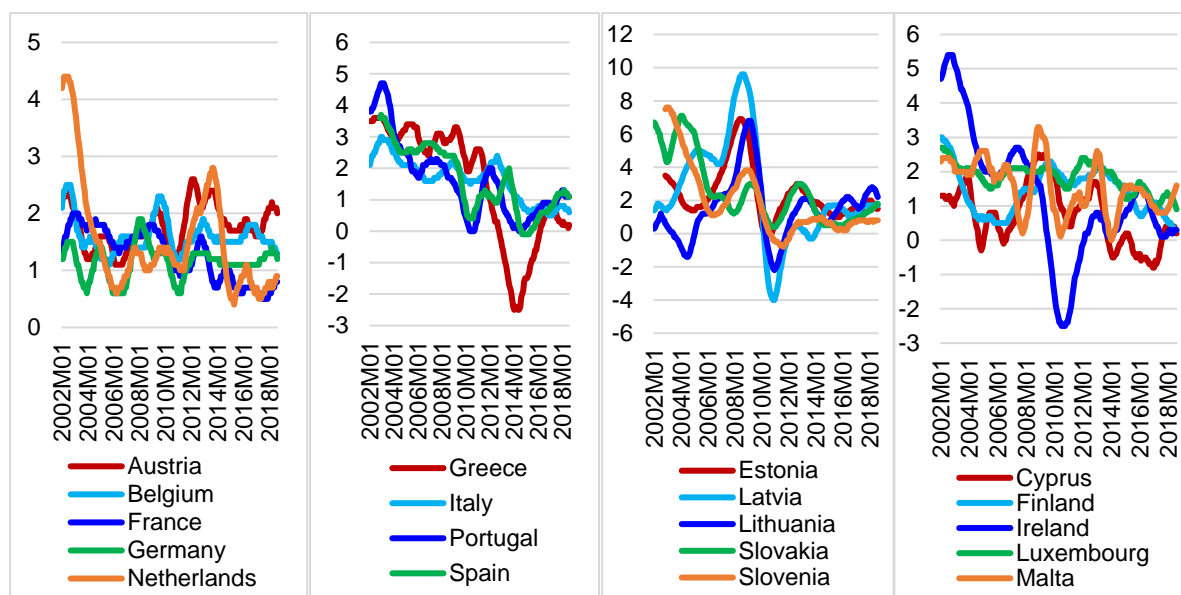
Beyond the overall macroeconomic issues, financial stability could be another factor that central banks might weigh when considering the normalisation of monetary policy. In Darvas and Pichler (2018) we argue that monetary policy should not be used to aim financial stability objective, partly because the main monetary policy instrument, the interest rate, is too broad as an instrument, and ultimately quite ineffective in dealing with the build-up of financial imbalances, as the literature demonstrates¹¹. Instead, other measures, like micro-prudential supervision, macro-prudential oversight, fiscal policy and regulation of sectors that pose risks to financial stability, such as construction, should be deployed to address financial stability risks.

The euro-area situation is further complicated by the large degree of heterogeneity of euro-area members. We present three charts to demonstrate this heterogeneity: core inflation (Figure 16), household credit developments (Figure 17) and house price index developments (Figure 18).

While financial stability concerns would suggest an interest rate increase in some countries (e.g. Slovakia, where both household loans and house prices increase very rapidly), but not in others (e.g. Italy, where household loans stagnate and house prices continue to fall).

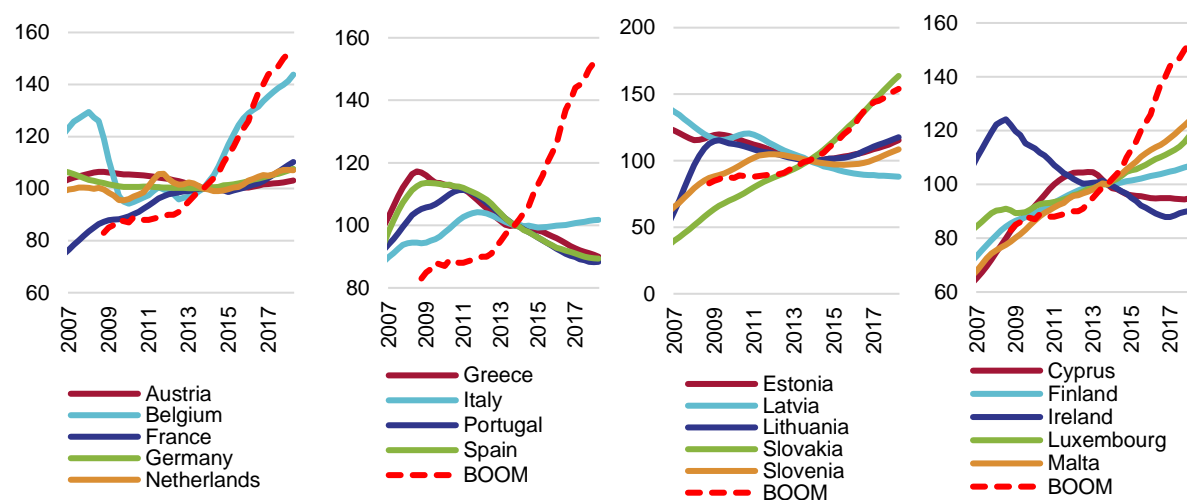
¹¹ See for example Bean *et al* (2010), Nelson *et al* (2015), Posen (2009) and Svensson (2014).

Figure 16: Core inflation (moving 12 months average rate of change)



Source: Eurostat's 'HICP (2015 = 100) - monthly data (12-month average rate of change) [prc_hicp_mv12r]' dataset.

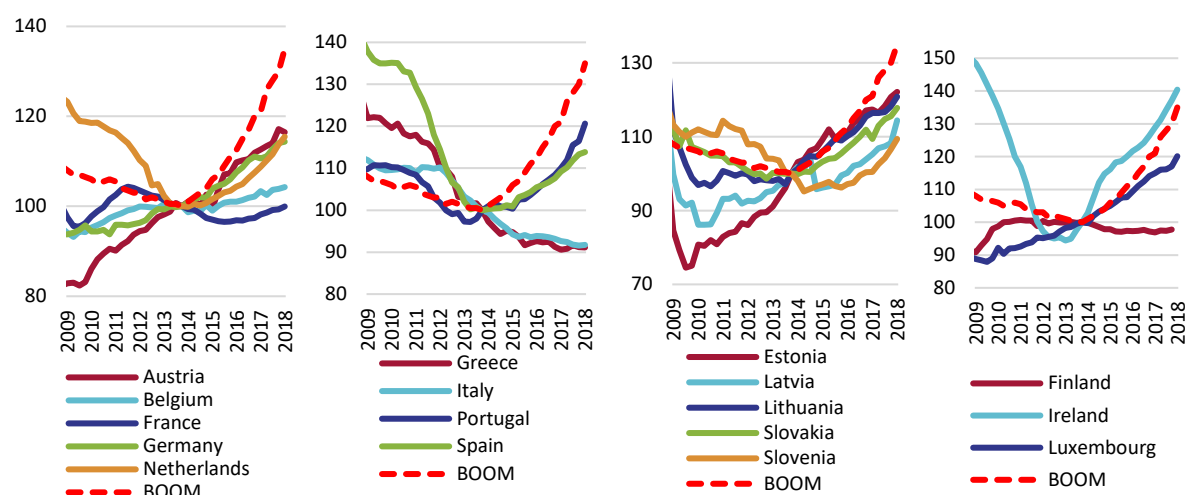
Figure 17: Bank lending to households at constant prices (2013Q4=100), 2009Q1-2018Q2



Source: ECB's Statistical Data Warehouse (lending: BSI.M.*.N.A.A20.A.1.U2.2250.Z01.E and BSI.M.*.N.A.A20.A.4.U2.2250.Z01.E, HICP: ICP.M.AT.N.XEF000.4.INX); Boom growth rates based on Rostagno et al (2016) estimates.

Note: Outstanding stocks of loans have been deflated using HICP. We calculate the nominal outstanding stock of loans stocks from financial transaction (to exclude the impact of reclassifications) by cumulating transactions compared to the actual stock level in 2013Q4. Since HICP has seasonal components, we use a 4-quarter moving average of the HICP index to deflate the nominal loan stock.

Figure 18: Real house price index (2013Q4=100), 2009Q1-2018Q2



Source: Bruegel based on OECD (Real house price indices, seasonally adjusted); Boom growth rates based on Rostagno et al (2016) estimates.

Note: Real house price index unavailable for Cyprus and Malta.

These heterogeneous developments within the euro area underline that monetary policy, which cannot be discriminated between euro area countries, is not a useful instrument for containing financial stability risks. Moreover, the literature demonstrates that the main monetary policy instrument, the interest rate, is ultimately quite ineffective in dealing with the build-up of financial imbalances¹².

The most suitable tool for tackling financial stability risks in the heterogeneous is country-specific macroprudential policy (Darvas and Merler, 2013). The EU's new macroprudential framework indeed allows competent national authorities (mostly national central banks) to implement country-specific macroprudential measures. In some euro area countries certain vulnerabilities have already led to measures, like capital buffer for systemically important institutions, countercyclical capital buffers (CCyBs), and debt-to-income (DTI) ratio limits and loan-to-value (LTV) ratio limits (table 1).

¹² See for example Bean et al (2010), Nelson et al (2015), Posen (2009) and Svensson (2014).

Table 1: Macroprudential policy measures in European countries, mid-2018

	Systemic risk buffers (SyRB)	Countercyclical capital buffers (CCyB)	Other measures aimed at real estate market	Global systemically important institutions (G-SIIs)	Other measures not fundamentally related to real estate	What other measures not targeting the real estate market
Austria	Y		Y			
Belgium			Y		Y	Capital add-on for banks with excessive trading activities as measured according to two indicators (volume-based, risk-based).
Bulgaria	Y	Y			Y	stress-tests, capital rules for bank dividend distribution, reporting rules, exposure to Greek equity, liquidity coverage ratio
Cyprus			Y		Y	stress-tests, caps on deposit interest rates, liquidity coverage requirement add-on
Czech Republic	Y	Y	Y			
Denmark	Y	Y	Y		Y	limits to lending growth, short funding and large exposures
Estonia	Y		Y			
Finland	Y		Y	Y		
France		Y		Y	Y	French Systemically Important Institutions shall not incur an exposure that exceeds 5 % of their eligible capital for NFCs or group of connected NFCs assessed to be highly indebted.
Croatia	Y		Y			
Hungary	Y		Y		Y	liquidity coverage ratios, foreign exchange assets rules

Ireland		Y	Y		Y	Introduction of a set of requirements for loan originating alternative investment funds.
Iceland	Y	Y	Y			
Liechtenstein	Y		Y			
Lithuania		Y	Y			
Luxembourg			Y		Y	stress-tests
Latvia			Y			
Malta			Y		Y	NPL limits
Netherlands	Y		Y	Y		
Norway	Y	Y	Y		Y	liquidity coverage ratios
Poland	Y		Y		Y	liquidity coverage ratios
Portugal			Y			
Romania	Y		Y		Y	consumer loan rules, foreign exchange assets rules
Sweden	Y	Y	Y	Y	Y	Pillar II capital add-on, increased transparency in capital requirements, increased risk weights for corporate exposures, risk weights
Slovenia			Y		Y	cap on deposit interest rates, loan-to-deposit ratios
Slovakia	Y	Y	Y		Y	maturity limits for consumer loans
United Kingdom		Y	Y	Y	Y	leverage ratios
Germany				Y		
Spain				Y		
Italy				Y		
Greece						

6. Five main take-aways

Our analysis has led to five major lessons for the monetary policy normalisation process of the European Central Bank.

1. Premature monetary policy exit involves major risks, while inadequate forward guidance could cause market turbulence
2. In the new 'normal' central bank balance sheet policies will likely become part of the regular toolkit, especially if the natural rate of interest remains low
3. Stopping net asset purchases would not increase long-term rates
4. The inflation outlook in the euro area is very uncertain: better to wait with interest rate increase till core inflation overshoots
5. The euro area is very heterogeneous: monetary policy cannot address financial stability concerns; instead, country-specific macroprudential policy should have a major role

References

- Bean, Charles, Matthias Paustian, Adrian Penalver and Tim Taylor (2010) 'Monetary policy after the fall', Proceedings - Economic Policy Symposium - Jackson Hole, Federal Reserve Bank of Kansas City, pages 267-328, https://www.kansascityfed.org/publicat/sympos/2010/Bean_final.pdf
- Bell, David N.F. and David G. Blanchflower (2018) 'Underemployment in the US and Europe', NBER Working Paper No. 24927, <https://www.nber.org/papers/w24927>
- Buiter, Willem H. (2009) 'Negative nominal interest rates: Three ways to overcome the zero lower bound', The North American Journal of Economics and Finance 20(3), 213-238, <https://www.sciencedirect.com/science/article/abs/pii/S1062940809000369>
- Chiacchio, Francesco, Grégory Claeys and Francesco Papadia (2018) 'Should we care about central bank profits?', 30 August, Bruegel Policy Contribution 2018/13, <http://bruegel.org/2018/08/should-we-care-about-central-bank-profits/>
- Claeys, Grégory and Maria Demertzis (2017) 'How should the European Central Bank 'normalise' its monetary policy?', 23 November, Bruegel Policy Contribution 2017/31, <http://bruegel.org/2017/11/how-should-the-european-central-bank-normalise-its-monetary-policy/>
- Claeys, Grégory and Zsolt Darvas (2015) 'The financial stability risks of ultra-loose monetary policy', 26 March, Bruegel Policy Contribution 2015/03, <http://bruegel.org/2015/03/the-financial-stability-risks-of-ultra-loose-monetary-policy/>
- Claeys, Grégory, Zsolt Darvas, Silvia Merler and Guntram B. Wolff (2014) 'Addressing weak inflation: The European Central Bank's shopping list', 6 May, Bruegel Policy Contribution 2014/05, <http://bruegel.org/2014/05/addressing-weak-inflation-the-european-central-banks-shopping-list/>
- Cœuré, Benoît (2015) 'How binding is the zero lower bound?', Speech, London, 18 May 2015, <https://www.ecb.europa.eu/press/key/date/2015/html/sp150519.en.html>

Darvas, Zsolt and David Pichler (2018) 'Excess liquidity and bank lending risks in the euro area', 26 September, Bruegel Policy Contribution 2018/16, <http://bruegel.org/2018/09/excess-liquidity-and-bank-lending-risks-in-the-euro-area/>

Darvas, Zsolt and Guntram B. Wolff (2014) 'So far apart and yet so close: Should the ECB care about inflation differentials?', 22 September, Bruegel Policy Contribution 2014/10, <http://bruegel.org/2014/09/so-far-apart-and-yet-so-close-should-the-ecb-care-about-inflation-differentials/>

Darvas, Zsolt and Silvia Merler (2013) 'The European Central Bank in the age of banking union', 3 October, Bruegel Policy Contribution 2013/13, <http://bruegel.org/2013/10/the-european-central-bank-in-the-age-of-banking-union/>

Del Negro, Marco, Domenico Giannone, Marc P. Giannoni and Andrea Tambalotti (2018) 'Global Trends in Interest Rates', NBER Working Paper No. 25039, <https://www.nber.org/papers/w25039>

Dierick, Frank (2018) 'The ESRB and macroprudential policy in the EU', presentation at the 83. East Jour Fixe of the Oesterreichischen Nationalbank, 18 September, Vienna, <https://www.oenb.at/Termine/2018/2018-09-18-east-jour-fixe-83.html>

Filardo, Andrew and Boris Hofmann (2014) 'Forward guidance at the zero lower bound', BIS Quarterly Review, March 2014, 37-53, https://www.bis.org/publ/qtrpdf/r_qt1403f.pdf

Foldén, Martin (2018) 'The Riksbank's balance sheet: How large should it be in the future?', 13 April speech at the Swedish House of Finance, <https://www.riksbank.se/globalassets/media/tal/engelska/floden/2018/floden-reasonable-for-the-riksbanks-balance-sheet-to-shrink-in-the-long-run>

Kuttner, Ken and Tim Robinson (2010) 'Understanding the flattening Phillips curve', The North American Journal of Economics and Finance 21(2), 110-125, <https://www.sciencedirect.com/science/article/pii/S1062940808000806>

Nelson, Benjamin, Gábor Pintér, and Konstantinos Theodoridis (2015) 'Do contractionary monetary policy shocks expand shadow banking?' Working Paper No. 521, Bank of England, <https://www.bankofengland.co.uk/working-paper/2015/do-contractionary-monetary-policy-shocks-expand-shadow-banking>

Posen, Adam (2009) 'Finding the right tool for dealing with asset price booms', speech to MPR Monetary Policy and Markets Conference, London, <https://www.bankofengland.co.uk/-/media/boe/files/speech/2009/finding-the-right-tool-for-dealing-with-asset-price-booms>

Riksbank (2018) 'Monetary policy report – September 2018', Riksbank, <https://www.riksbank.se/globalassets/media/rapporter/ppr/engelska/2018/180906/monetary-policy-report-september-2018.pdf>

Rostagno, Massimo, Ulrich Bindseil, Annette Kamps, Wolfgang Lemke, Tomohiro Sugo and Thomas Vlassopoulos (2016) 'Breaking through the zero line. The ECB's Negative Interest Rate Policy', 6 June, presentation at Brookings Institution, Washington DC, https://www.brookings.edu/wp-content/uploads/2016/05/20160606_Brookings_final_background-Compatibility-Mode.pdf

Shirai, Sayuri (2018) 'Japanese monetary policy', presentation gave at the Asia-Europe Economic Forum 2018, 17 September, Brussels