Analysis

# Monetary policy to be normalised gradually and in a predictable manner

Monetary policy | 18 October 2018

The Governing Council of the ECB anticipates that net asset purchases under the asset purchase programme (APP) will be phased out by the end of 2018. The decision can be seen as a first step towards normalisation of monetary policy in the euro area, which signifies that the Governing Council will gradually withdraw non-standard monetary policy measures and communicate accordingly. There are more open questions associated with monetary policy normalisation than with conventional monetary tightening. Due to uncertainties relating to the effects of monetary policy normalisation on the financial markets and the real economy, it is likely that normalisation will be a long and gradual process.



## The Governing Council has taken first steps towards monetary policy normalisation

In June, the Governing Council of the ECB announced that it anticipated to phase out net purchases under the asset purchase programme (APP) by the end of 2018, conditional on the continual, sustained convergence of inflation towards the Governing Council's

objective. Governing Council's June monetary policy decisions can be seen as a first step towards normalisation of monetary policy in the euro area. Monetary policy normalisation means monetary tightening, which is a gradual progress and signifies that the Governing Council will begin to withdraw the unconventional – or non-standard – monetary policy measures and communicate accordingly.

Normalisation differs from the familiar practice of interest rate policy, where tightening is achieved by raising the key ECB interest rates, seen under normal monetary policy conditions. Because of the addition of non-standard measures to the monetary policy toolkit over the past decade, there are now several paths — and crossroads — available for policy tightening, and it is not entirely self-evident which path should best be pursued. However, before discussing the normalisation of monetary policy any further, it is important to understand how non-standard measures have impacted monetary policy itself.

## Effects of non-standard measures on monetary policy

In the past decade, the euro area has experienced a double-dip recession: the financial crisis of 2008 that originated in the United States but which drove the euro area into recession, followed by the euro crisis. To maintain price stability, the ECB strengthened its transmission of monetary policy by various means, its key policy rates were decreased to their effective lower bound, and the threat of deflation was countered by lowering long-term interest rates via the APP. These non-standard monetary policy measures can be examined by reviewing developments in short-term interest rates and the ECB's balance sheet.

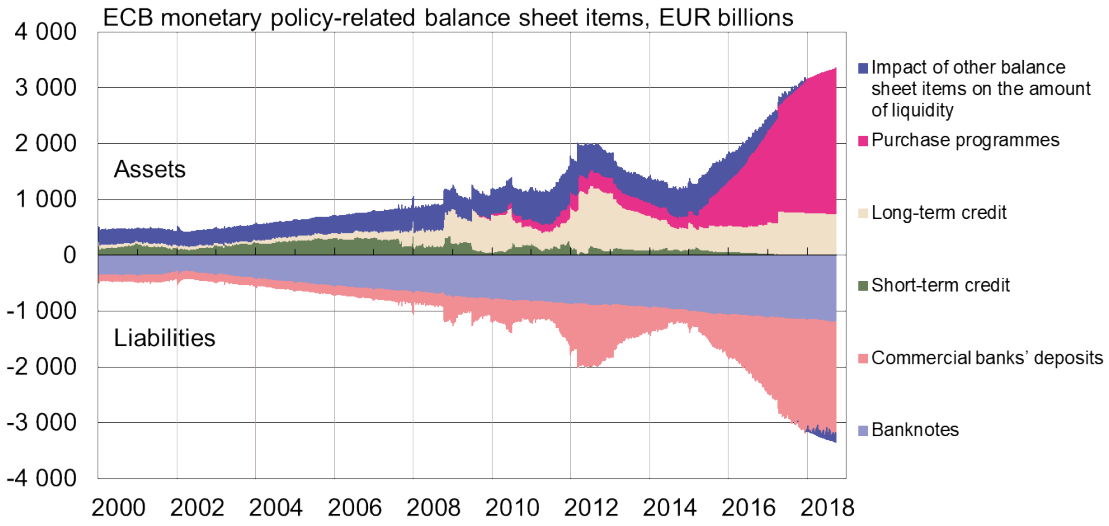
### Non-standard monetary policy has pushed short-term interest rates below zero

Chart 1 shows the evolution of the key monetary policy interest rates in the euro area since the inception of the monetary union. The EONIA (Euro OverNight Index Average) is the interest rate at which banks lend funds to each other on an overnight basis. It is an important reference rate because it indicates the level of the risk-free interest rate in the euro area. Monetary policy can be used to steer short-term interest rates: prior to 2008, the EONIA followed movements in the interest rate on the ECB's main refinancing operations (MROs). However, since the beginning of non-standard monetary policy, it has mainly followed the ECB's deposit facility rate. This shift is explained by the fact that, after 2008, there was considerably more liquidity[1] in the euro area banking system than was needed by banks for the execution of normal payment transfers. The ECB took a variety of measures to boost liquidity in the banking system, as interbank lending was impaired during the financial crisis due to lack of confidence. Therefore, the first consequence of

non-standard monetary policy is that the deposit facility rate is currently the ECB's effective policy rate, whereas prior to 2008 the effective policy rate was the interest rate on the MROs.[2]

Chart 1.

ECB's unconventional monetary policy has changed the composition and size of its balance sheet




Source: ECB.
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4.10.2018

The second key aspect related to short-term interest rates is their low level following 2008. From 2009 onwards, the interest rates have practically been close to zero, i.e. they have reached the so-called zero-lower bound. In 2014, the euro area deposit rate was lowered into negative territory, which shows that zero did not create the floor for nominal interest rates. Negative interest rates may have different implications for the economy than positive rates due to, for example, the impact of interest rates on bank profitability. Therefore, there are more uncertainties associated with the economic impact of negative interest rates and withdrawal from such policy than with typical interest rate increases.

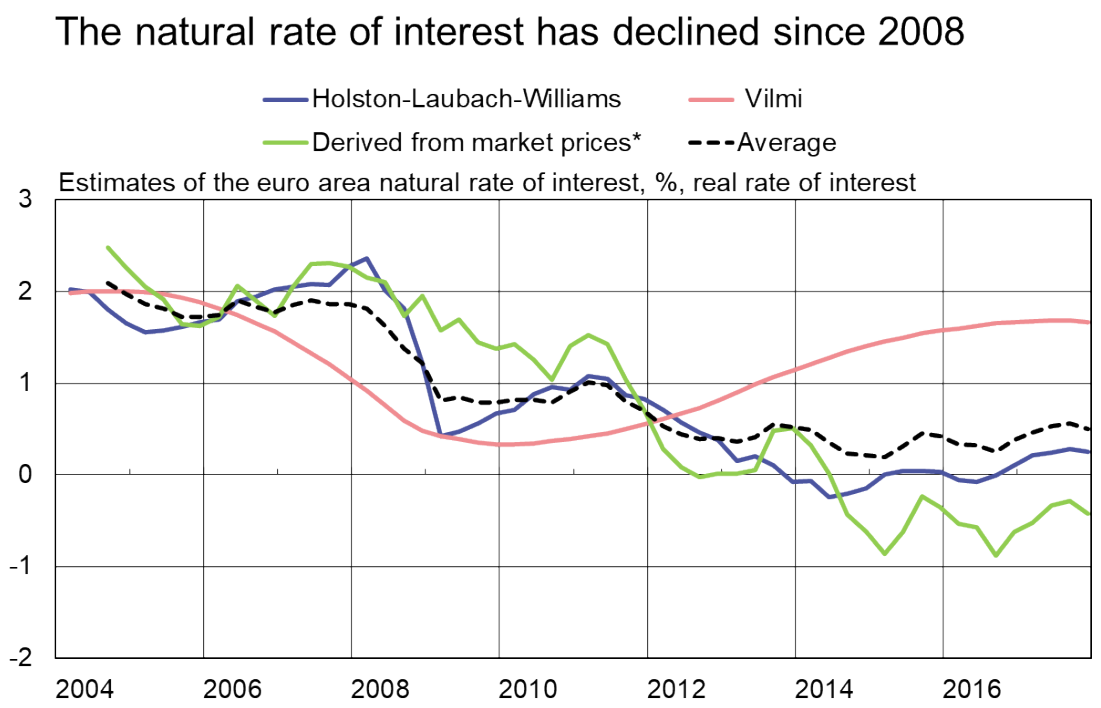
The third effect of non-standard monetary policy on interest rates is reflected in interest rate expectations. Short-term interest rates are low and are expected to remain so in future. At present, the pricing of interest rates indicates that markets do not expect short-term interest rates to return to positive values before 2020.[3] This partly reflects the ECB Governing Council's forward guidance, according to which the Governing Council expects interest rates to remain at their present levels at least through the summer of 2019. Therefore, in normalising monetary policy in the current situation, forward guidance on interest rates also plays a key role in addition

to changes to the effective policy rate. To sum up, there are more aspects to be considered when adjusting the policy rate in times of monetary policy normalisation than in times of standard monetary policy.

## Non-standard monetary policy has increased the size of the Eurosystem balance sheet

The legacy of non-standard monetary policy is also clearly evident in the Eurosystem balance sheet which is shown in Chart 2 in respect of monetary policy-related balance sheet items.

Chart 2.




There is a change discernible in the Eurosystem's balance sheet after 2008: the balance sheet begins to expand and its composition changes from the one prior to the crisis. In normal times, the counter items of central bank money – banknotes and commercial banks' deposits with the central bank – are mainly short-term credit to banks and central bank financial assets.

In 2007, the ECB extended the maturities of central bank credit to banks as a response to higher risk premia on bank funding. As the crisis progressed, longer-term refinancing operations (LTROs and TLTROs) replaced short-term refinancing operations. The longer-term refinancing operations served to improve the transmission of low policy rates on the interest rates applied to household

and corporate loans and strengthen financial stability. Since interbank lending was still strained by lack of confidence, banks borrowed substantial volumes in the ECB's refinancing operations. This, in turn, increased the amount of liquidity further and led to an expansion of the central bank's balance sheet as a whole.

Asset purchases commenced in 2009 on a small scale. They began to feature prominently in the Eurosystem's sheet when the central bank decided on the expanded asset purchase programme in January 2015, i.e. when quantitative easing (QE) was commenced. The reason for QE was that the risk of deflation had increased in the euro area but it was no longer possible to further accommodate monetary policy substantially by depressing short-term interest rates. Asset purchases were financed by increasing commercial banks' deposits with the central bank, which is reflected as a marked growth of deposits in the Eurosystem's balance sheet. Therefore, asset purchases increased the balance sheet of the Eurosystem and the amount of money in the economy.

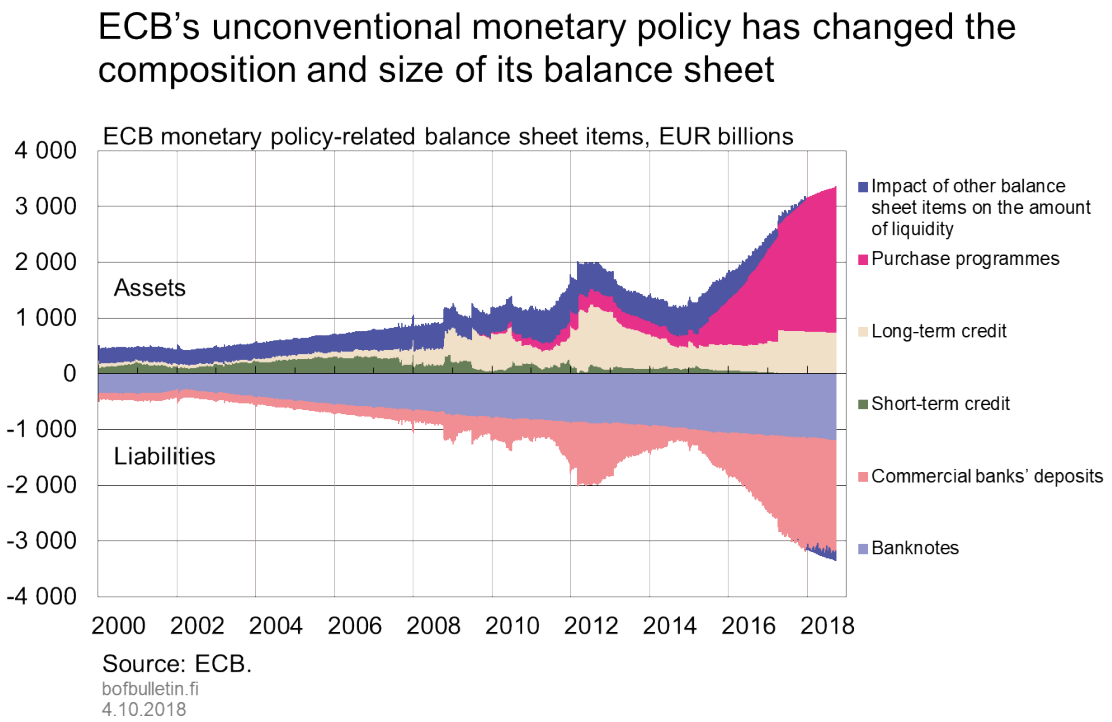
As a legacy of non-standard monetary policy measures, the Eurosystem's balance sheet is significantly larger than in times of typical monetary policy. Unwinding the non-standard policy measures also means reducing the size of the central bank's balance sheet and the volume of central bank money, or liquidity, in the markets. The balance sheet will not, however, remain at its current high level without further action. The longer-term refinancing operations will mature at some point, and the balance sheet will then contract automatically. The central bank's balance sheet will also contract gradually when the debt securities used in the asset purchase programme mature, unless the maturing funds are reinvested in the markets. However, this constitutes an over decade-long process. Due to the increased volume of banknotes, the central bank's balance sheet will not return to its pre-crisis level if the general public continues to hold banknotes at the current volume. In any case, the management of the central bank's balance sheet plays a pivotal role in monetary policy normalisation and represents a facet of monetary tightening that did not have to be considered before the financial crisis.

## Open questions relating to monetary policy normalisation

Partly as a legacy of non-standard monetary policy, the level of euro area interest rates is significantly lower than prior to the financial and euro crises (Chart 3). Naturally, other factors have also played into the low level of interest rates. In any case, short-term interest rates are about 3.5 percentage points lower and the 10-year rate is almost 4 percentage points lower than prior to the crises. As non-standard monetary policy measures are gradually withdrawn, monetary policy normalisation will lead to a rise in the general interest rate level. This raises three key questions: how should the normalisation process be sequenced; how much should the interest

rates be raised; and how and when should the ECB communicate on the new measures.

Chart 3.




## How should the normalisation process be sequenced?

The ECB Governing Council has deployed non-standard monetary policy measures to lower short-term and long-term interest rates alike: the negative deposit facility rate and forward guidance have lowered short-term rates, while the APP has lowered longer-term rates. Correspondingly, monetary policy can be normalised by influencing interest rate expectations via forward guidance and by raising the ECB's deposit facility rate. On the other hand, reducing the central bank's holdings of securities – or anticipating such a reduction – would raise long-term interest rates. Both alternatives serve to tighten – or normalise – monetary policy. However, open questions remain as to how these measures should be sequenced and how synchronous they should be.

In the United States, key interest rates were raised from their zero lower bound for the first time in December 2015. The reduction of the balance sheet was commenced in October 2017 when the interest rates had already been raised four times, to about 1%. Before the balance-sheet reduction began, the Federal Reserve communicated the related main principles and plans well in advance. The likely reason for this measured approach is that any unexpected changes in central bank purchases can lead to significant changes in bond prices. Monetary policy could thus become a source of shocks in the economy.[4] For this reason, the Federal Reserve decided on a well-

communicated and gradual reduction in the size of the balance sheet. Exerting influence on the short-term interest rate has been a key tool when the Federal Reserve has calibrated the stance of its monetary policy.

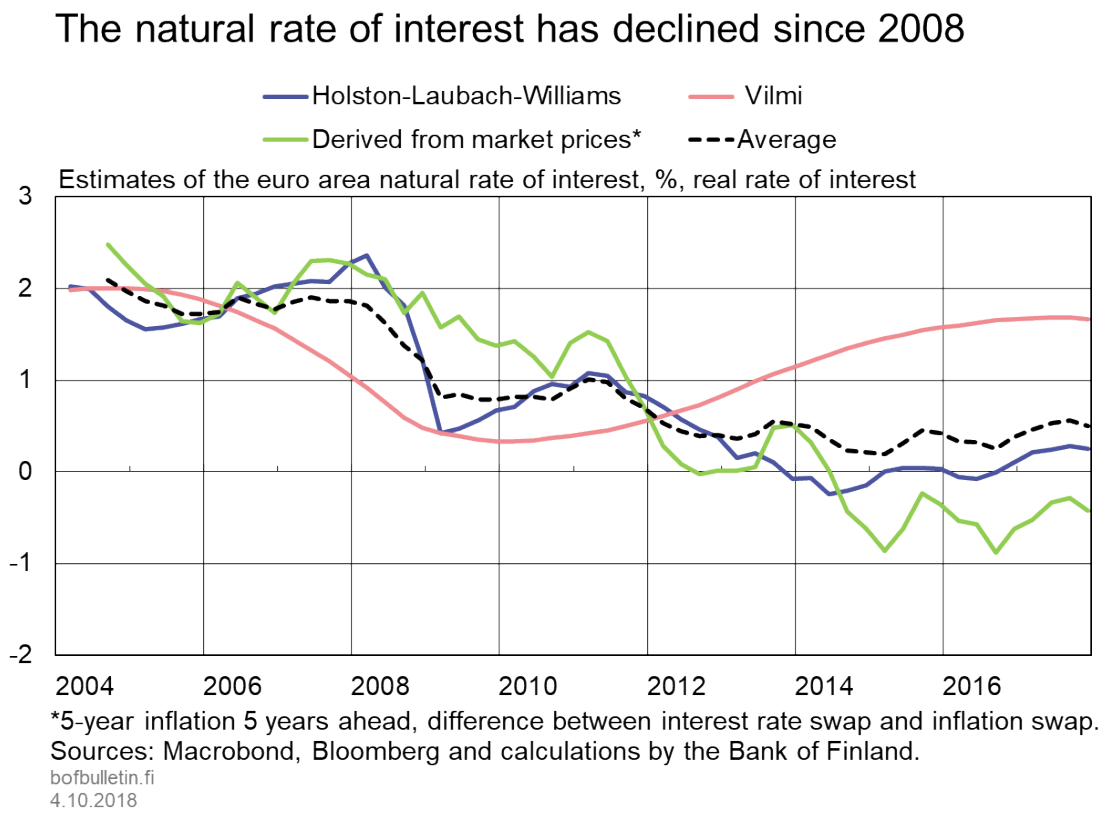
The ECB Governing Council has stated that it intends to reinvest the principal payments from maturing securities purchased under the APP for an extended period of time after the end of net asset purchases. Consequently, the financial markets expect that the balance-sheet reduction will not begin until in 2–3 years, after completion of net purchases. Therefore, should the ECB follow the Federal Reserve, the monetary policy normalisation process would begin with winding down the non-standard measures relating to short-term interest rates.

## How much should interest rates be raised?

Another question concerning monetary policy normalisation is how much monetary policy should be tightened. As shown in Chart 3, interest rates in the euro area – and in other advanced economies – are significantly lower than prior to the global financial crisis. The low level of interest rates is partly due to monetary accommodation, but it is also highly likely that the so-called long-term equilibrium real interest rate has declined. This suggests an increase in the economy's appetite for savings or a decline in its demand for investment – that is, the economy has undergone structural change.

The natural rate of interest in important point of reference for monetary policy. If the short-term real interest rate is higher than the natural rate, monetary policy is contractionary. On the other hand, when the short-term real interest rate is lower than the natural rate, monetary policy is expansionary. Because of the decline in the natural rate, monetary policy becomes tighter at an earlier stage than what might be expected from an overview of historical nominal interest rates. In other words, a decline in the natural rate of interest means that policy rates that are still low by historical comparison may already be contractionary in the current environment.

Chart 4.




The natural rate of interest is not an observable variable – instead, it has to be estimated using a variety of alternative methods. Of the estimates of the natural rate of interest illustrated in Chart 4, two have been calculated using similar models (Holston–Laubach–Williams and Vilmi), but the results on the current level of the natural rate differ.[5] This disparity reflects the uncertainty inherent in estimating the natural rate of interest. In addition to the previous method, securities market prices can be used to calculate an estimate of the level of the natural rate of interest.[6] The average of these estimates suggests that the long-term level of the short-term nominal interest rate in the euro area is about 3%, whereas prior to the financial crises, the natural nominal rate was 4%.[7] A decline in the natural rate of this size would mean that low policy rates would not be as accommodative as prior to 2008. In the context of monetary policy normalisation, this means that a rise in policy rates would result in a higher degree of monetary tightening than what an overview of historical nominal interest rates might suggest.

Non-standard policy measures contribute additional uncertainty to monetary tightening compared with traditional interest rate policy under normal conditions. Firstly, this is due to the number of tools available for monetary normalisation, which creates complexity in orchestrating the measures in a manner that allows for the desired monetary policy stance at various points in

time, as compared with monetary tightening through interest rate policy alone. Secondly, the economy seems to have undergone structural change, resulting in a decline in the natural rate of interest. This ultimately determines how accommodative or contractionary any given policy rate actually is. Consequently, moderate rises in interest rates may well tighten financing conditions in the economy more than before. Overall, these factors suggest that monetary policy normalisation should be gradual.

In light of the structural changes in the economy, the ECB must maintain comprehensive oversight of potential risks and points of failure in the conduct of monetary policy. For example, as inflation is expected to pick up, the central bank must consider whether there is greater risk in tightening monetary policy too little or too late, or whether it would prove more detrimental to tighten monetary policy too much or too soon. In times of normal monetary policy, the general assumption has been that tightening should be front-loaded and begun clearly before inflation reaches levels higher than the target, due to lags in monetary policy transmission.

When the zero lower bound is effective and actual inflation has persistently remained below target, there is a significantly higher risk of the central bank tightening its monetary policy too much or too soon. Therefore it might be justified to postpone monetary policy tightening until actual inflation has surpassed its target. In such a scenario, the central bank would have to allow for a temporary surge in inflation above the target, owing to the protracted period of below-target inflation.[8]

## Monetary policy normalisation is a long process

In June 2018, the Governing Council of the ECB announced that it anticipated to phase out net purchases under the asset purchase programme (APP) by the end of 2018. This is the first step towards monetary policy normalisation in the euro area, which means that the ECB will tighten its monetary policy by gradually withdrawing non-standard policy measures and communicating accordingly. The Governing Council has already announced that it intends to reinvest the principal payments from maturing securities purchased under the APP for an extended period of time after the end of net asset purchases; thus, the ECB's main instrument in monetary policy normalisation would at least initially involve changes in forward guidance and raising the deposit facility rate. According to the current forward guidance by the Governing Council of the ECB, key interest rates are expected to remain at their present level at least through the summer of 2019 or longer if necessary.

Withdrawal from non-standard l monetary policy is likely to be a long process, as both the economic outlook and the appropriate monetary policy stance are characterised by uncertainty.

Firstly, when viewed from the perspective of monetary policy normalisation, the outlook for the economy appears somewhat unclear, as inflationary pressures in the euro area still remain moderate. Monetary accommodation is still necessary to build up inflationary pressures in the euro area and support the continued sustained convergence of inflation towards the policy objective – i.e. to levels below, but close to, 2%. Secondly, electing the stance of monetary policy is nontrivial due to the expanded monetary policy toolkit and the relatively limited experience thereof. Thirdly, the natural rate of interest may have declined, in which case monetary policy need not be tightened as much as during previous upswings. In light of changes in the economic environment, monetary policy should adhere to the principle of prudence so as not to become a source of shocks to the economy. Hence, it is justified to proceed in monetary policy normalisation in a gradual and predictable manner.

If the natural rate remains low, it is likely that monetary policy will, going forward, become ever more frequently constrained by the effective lower bound on nominal interest rates. The non-standard policy tools currently applied might in future, become part of standard monetary policy. At the same time, what is now referred to as monetary policy normalisation will simply become known as monetary tightening.

## Notes

1. In this context, liquidity means aggregate liquidity held in commercial banks' deposits with central banks. ↑
2. In other words, in steering the short-term interest rate, the Eurosystem has effectively moved from a corridor-type system to a floor-type system in which the ECB's deposit rate creates the floor, or the lower bound, for interest rates in the economy. However, it should be noted that the yields on some government bonds are currently below the ECB's deposit rate. This is likely a result of these bonds being widely used as collateral in short-term repurchase agreements, and due to the scarcity of these securities their yields are below the ECB's deposit rate. ↑
3. The interest rate path derived from pricing can be interpreted as market expectations only when risk neutrality prevails. Calculation of objective expectations is subject to uncertainty, and therefore risk-neutral expectations can be used in the short term as a relatively fair estimate of genuine objective expectations. Market expectations about the interest rate path are somewhat higher than expectations calculated under the assumption of risk neutrality. ↑
4. Such an episode was experienced In the United States when the Federal Reserve surprised markets in 2013 by communicating that it could gradually taper off its net purchases, which lead to a drastic increase in bond yields. This market reaction is known as "Taper Tantrum". ↑
5. The calculation of the natural rate of interest is described in detail in the following articles: Kathryn Holston, Thomas Laubach and John C. Williams (2017) Measuring the natural rate ↑

of interest: International trends and determinants, Journal of International Economics, 108, p. 59–79, and Lauri Vilmi (2017) Two tales of the natural rate of interest, BoF Economics Review, 1/2017.

6. This measure can be considered as reflecting market expectations of the short-term interest rate in the long-term when market participants are assumed to be risk-neutral. Actual market expectations may differ significantly from long-term expectations. Considering that risk pricing in the bond market is significantly affected by uncertainty related to expected future inflation, the estimate of the market-based natural rate of interest does not necessarily differ notably from actual expectations. ↑
7. The long-term nominal rate of interest can be derived from long-term real interest rates when actual inflation is added to the real interest rate. In the euro area, long-term inflation can be considered as corresponding to the ECB's target, which is roughly 2%. ↑
8. Ideas along these lines have been put forward by e.g. Ben Bernanke (2017) Monetary Policy in a New Area, Brookings Institution, Peterson Institute. ↑

## Keywords

monetary policy normalisation, unconventional monetary policy