Introduction

The Eurosystem’s key interest rates are still historically low, resulting in negative short-term market rates. Yet there are signs that the era of record low interest rates is coming to an end.

In the United States, for example, the Federal Reserve has already been normalising its interest rates for some time, while the election of Donald Trump as the US president in the autumn of 2016 gave a further boost to American long-term interest rates.

In the euro area, too, long-term interest rates are no longer at the record low levels of 2016. Moreover, following the June 2018 monetary policy meeting, the ECB Governing Council announced that it was increasingly confident that the positive economic performance will also be reflected in higher inflation figures. The Governing Council therefore stated that, if that expectation is fulfilled, it will begin normalising monetary policy from the autumn of 2018.

The Italian interest rate rise in the spring of 2018 was an entirely different matter: the mounting uncertainty over the new Italian government’s commitment to the euro drove up Italian risk premiums, further widening the interest rate differential in relation to other European countries.

Against that backdrop, this article describes the possible consequences of higher interest rates for the economy of the euro area, and more specifically for the Belgian economy. It approaches that issue from a macroeconomic perspective, focusing on the non-financial sectors, although it does discuss the financial sector as the channel for transmitting interest rate conditions to the other sectors.

The first section recalls how the situation of record low and even negative interest rates came about, referring to the main conclusions of De Backer and Wauters (2017): in recent decades, structural factors have driven up the propensity to save and depressed the propensity to invest, triggering a marked fall in the equilibrium interest rate. Furthermore, after the great recession, central banks were obliged to cut interest rates even lower in order to safeguard macroeconomic stability. As the cyclical recovery is continuing, a number of central banks have begun to normalise their policy.

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Next, the article explains two aspects associated with the normalisation of monetary policy. First, its expected macroeconomic impact is analysed. In order to gain a better understanding of the macroeconomic implications of rising interest rates, we use a structural macroeconomic model for the euro area developed by the NBB. We show that an interest rate rise need not necessarily be negative for the macro economy: if it is driven by improved demand prospects, then an interest rate rise is actually desirable. However, that is not the case if the higher interest rate is due to restrictive monetary policy shocks or adverse supply shocks.

Second, the interaction between the normalisation of policy interest rates and the large portfolio of government securities held by the central banks is looked into. At present, the policy interest rate is only one of the monetary policy instruments: asset purchases are also an important tool for steering the monetary policy stance. We show how the short-term interest rate can be normalised more quickly thanks to the downward impact exerted on the long-term interest rate by government securities held on central bank balance sheets. That phenomenon also needs to be taken into account when interpreting the slope of the yield curve as an indicator of recession risk.

Following the macroeconomic discussion concerning higher interest rates, the third section describes the sector-specific implications. In contrast to the model-based analyses in the previous section, the analysis here is based on more descriptive statistics.

Governments have seen a sharp decline in their interest expenditure as a result of the very low interest rates on public debt. Furthermore, many governments have taken the opportunity to extend the maturity of their debt, providing a certain buffer against rising interest rates. Looking forward, it appears that the positive difference between nominal growth and nominal interest rates is unprecedentedly favourable for the reduction of government debt, except in Italy. For its part, owing to its asset purchase programmes, the central bank is seriously exposed to financial risks associated with rising interest rates. The interpretation and implications of these risks are also discussed.

Regarding the private sector, it is worth noting that the interest burden of Belgian households is almost unchanged: the lower interest rates have been accompanied by rising debts. A high proportion of fixed-rate loans should help to limit the impact of rising interest rates on Belgian households, just as it does for the Belgian government. The debt service ratio (DSR), which indicates the repayment burden, is a crucial variable in this analysis. Although the DSR of Belgian households is already relatively high, simulations indicate that the rising interest rate will cause the DSR to edge up only slightly. For businesses, the risks of a weak repayment capability tend to be low. Also, in the medium term, a tightening of monetary policy could be good for the DSR, via a decline in the debt level.

The section on the sector-specific impact ends with an open question which is relevant for Belgian households that keep substantial savings in the banks: what will happen to deposit remuneration once market interest rates begin to rise? In the United States, it is noticeable that deposit interest rates have hardly responded to the higher Fed policy rates. That could suggest that banks are thus trying to improve their profitability. However, other factors, such as the greater ease with which households can transfer deposits or convert them into other forms of investment, may put pressure on the banks to pass on the higher market interest rates in their remuneration.

The final section presents the conclusions.

1. The economic upturn is reflected in higher interest rates

1.1 Structural factors largely account for the current low interest rate level…

In recent years, interest rates have dropped to an historically low level as a result of both structural and cyclical factors.

Interest rates have been on a downward trend for several decades, driven by various global structural factors which have contributed to an increase in the supply of savings and a decline in demand for investment. As explained in De Backer and Wauters (2017), some demographic trends (rising life expectancy and an increase in the population of working age) and social trends (greater inequality) have supported the growth of savings. Moreover, in the emerging economies there has been a big increase in savings since the Asian crisis of 1997-1998. At the same time, demand for investment has
fallen in the past few decades, partly as a result of slower productivity and the decline in potential growth in advanced economies. The combined influence of these factors has resulted in a savings surplus that has gradually been driving down interest rates for many years.

1.2 ... but the better economic situation allows for a gradual normalisation of interest rate levels

Apart from structural factors, cyclical factors have also played a role in the low interest rate environment. Since 2008, the impact of the financial and economic crisis on the economy, and especially on inflation, has induced the central banks to cut their key policy interest rates in order to stimulate the economy. In the euro area, from 2009 the ECB’s policy rate dropped below its long-term equilibrium level(1), as estimated on the basis of the NBB’s dynamic stochastic general equilibrium (DSGE) model (see Box 1). Until 2013, the policy rate moved in line with the Taylor rule estimated by that model(2). From 2013 to 2017, the interest rate indicated by strict application of the Taylor rule was lower than the actual interest rate recorded during that period, suggesting that conventional monetary policy was constrained by a lower bound.

In contrast, since 2017, the interest rate corresponding to the Taylor rule has risen above the observed three-month interest rate. This means that the economic recovery could enable the central banks to withdraw some of their stimuli

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(1) The equilibrium interest rate, estimated at around 4% for the euro area, must be interpreted with caution. The model used for that estimate is intended mainly to model the cyclical fluctuations in the economic variables. It therefore takes little account of the structural factors described in the preceding point, which influence the equilibrium interest rate of the economy.

(2) The Taylor rule, proposed by Taylor (1993), measures the empirical relationship between the short-term interest rate and developments in inflation and economic growth.
and begin normalising interest rates. However, at the moment, the normalisation in the euro area is still expected to be very gradual because of the slow convergence of inflation towards the ECB’s objective. The interest rate expectations derived from the OIS long-term interest rate and the Reuters survey indicate that the markets expect short-term interest rates to creep upwards very slowly over the coming years. That contrasts with the interest rate path expected in the United States when the markets anticipated the exit from the accommodative monetary policy (the expectations recorded in April 2014 are shown by way of indication in chart 1), before the end of the net asset purchases. At that time, the markets foresaw a much faster interest rate rise than they do now in the euro area. The difference between those interest rate expectations on either side of the Atlantic is due to the higher growth and inflation outlook in the United States at that time, compared to the current forecasts for the euro area.

The historical breakdown, based on the aforementioned DSGE model, of the gradual normalisation of interest rates expected by the markets shows how that model interprets the cyclical factors that may explain those expectations. According to the model, the expected gradual rise in the short-term rate towards its equilibrium level is due to the gradual disappearance of the downward pressure on demand in the euro area and, to a lesser degree, in the United States. The hesitant rise in the expected short-term rate is therefore due to the endogenous response of monetary policy to these demand shocks. The contribution of the monetary policy shocks, which reflect the non-systematic response of monetary policy (see box 1), is relatively smaller and also diminishes over time. That interpretation is consistent with the historical importance of conventional monetary policy shocks: they explain only a small fraction (7%) of the variations in the short-term interest rate during the period from 1995 to 2012. In contrast, the endogenous response of monetary policy to the other shocks in the economy, via the estimated Taylor rule, makes a major contribution to interest rate fluctuations. For instance, the contribution of demand shocks to the fluctuations in the short-term rate over the same period is estimated at almost 60%.

Box 1 – The NBB’s DSGE model

In their Working Paper, de Walque et al. (2017) developed a tool that models the cyclical fluctuations in the aggregate economy of the euro area and of the United States. The model is constructed and estimated on the basis of the literature on the dynamic and stochastic general equilibrium (DSGE) models forming the foundation of modern macroeconomics.

The model’s equilibrium equations comprise a Taylor rule that indicates how conventional monetary policy is conducted. According to the Taylor rule applied in the model, monetary policy sets the short-term interest rate \( r_t \) in relation to the equilibrium rate \( r^* \) in response to the observed changes in inflation \( \pi_t \), and the level and growth of the output gap \( \tilde{y}_t \) in the monetary union.

\[
    r_t = r^* + \rho(r_t-1-r^*) + (1-\rho)\theta_\pi \pi_t + (1-\rho)\theta_\tilde{y} \tilde{y}_t + \theta_{\Delta \tilde{y}} \Delta \tilde{y}_t + \varepsilon_t
\]

The coefficient \( \rho \) takes account of the gradual adjustment of the short-term interest rate, while the term \( \varepsilon_t \) can be interpreted as a monetary policy shock. That shock reflects the non-systematic response of monetary policy. In the model, the economic agents assume that monetary policy follows the Taylor rule. Every deviation from that rule is a “surprise” in relation to the agents’ expectations, and is reflected by the monetary policy shock. In practice, that surprise may be added deliberately by the monetary policy-makers, e.g. because they have more information\(^1\) on economic developments and/or because their expectations differ from those of the markets, or because they want to change agents’ expectations (e.g. the disinflation policy in the early 1980s).

Besides the monetary policy shock, the model also comprises a whole range of other exogenous variables. Among the most important are the demand and supply shocks, and the shocks from outside the euro area.

\(^1\) Although the decisions are based on leading indicators and the outlook for inflation and economic activity, account must still be taken of the possibility that future economic shocks are sometimes poorly estimated at the time of determining the key interest rate. That could also be reflected in the monetary policy shock.
Demand shocks drive growth and inflation in the same direction. In the model, they are shocks that influence the preferences of consumers and investors, and will cause a direct change in consumption and investment. In practice, they may correspond, for example, to a change in agents’ confidence in the economy. In a period of uncertainty, a negative shock generally leads to a decline in consumption, a rise in saving, and the postponement of investment until economic conditions are more favourable. Such a shock may also include disruption of financial intermediation, which hampers access to credit and has a negative influence on consumption and investment. It may likewise result from debt reduction in the private sector, inhibiting consumption and investment.

Supply shocks typically steer output and inflation in opposite directions. One of the commonest examples is a total factor productivity shock. A technological innovation that increases the productivity of the production factors enables firms to produce the same or bigger quantities at lower cost. That shock therefore leads to increased output and lower prices.

Finally, external shocks cover a broad category of shocks originating from outside the euro area. They may be supply shocks, demand shocks or monetary policy shocks stemming from abroad. Those shocks influence the euro area’s economy indirectly via international trade. One example is a technological innovation that invigorates the productive sector outside the euro area, causes the prices of foreign goods to fall, and boosts European demand for those goods. In general, every foreign shock that changes demand for European goods, either directly or indirectly via relative prices, is an external shock. For instance, an unexpected adjustment to the Federal Reserve’s monetary policy does not only influence the US economy but also affects the bilateral exchange rate and is thus transmitted to the European economy.

In this article, the two-country DSGE model is used to simulate a baseline scenario of interest rate normalisation and a counterfactual scenario, and to compare them with one another (see section 2 for the results). These simulations are based on a conditional projection whereby the model is made to reproduce a specific future path for the short-term interest rate. In the baseline scenario, the model’s forecast is determined by market interest rate expectations. To satisfy that condition corresponding to an interest rate which is below the equilibrium rate, a statistical filter is used in the model, namely the Kalman filter, in order to examine the shocks required to achieve the intended interest rate path. The result of that allocation of the shocks is shown in the right-hand panel of chart 1. For the counterfactual scenario, the model assumes the shock breakdown used in the baseline scenario, to which demand shocks, monetary policy shocks and supply shocks in the euro area are added alternately in order to obtain a scenario in which the interest rate rises faster than in the baseline scenario.

2. Monetary policy normalisations are not always alike

2.1 The macroeconomic impact of the normalisation depends on the factors underlying the rise in interest rates

Should we be worried about the macroeconomic impact of an interest rate rise? Using detailed simulations with the DSGE model, we can investigate the macroeconomic impact of a bigger-than-expected rise in the short-term interest rate. The market expectations described above regarding future short-term interest rate movements in the euro area form the baseline scenario for these simulations. In the counterfactual scenario, we assume a faster rise in the short-term rate towards its equilibrium level (shown in red in the left-hand panel of chart 1). That counterfactual scenario is generated in three different ways, by alternately adjusting the factors responsible for that faster convergence.

In the first simulation, the downward pressure on demand in the euro area economy was reduced in order to obtain the counterfactual interest rate picture. The reduction in those shocks reflects greater confidence in the economy among the economic agents, so that they consume and invest more. These demand shocks, which are less negative than in the baseline scenario, require a less accommodative monetary policy, and thus allow for a sharper rise in interest
rates. Due to the less negative demand shocks, the euro area economy records higher growth and inflation than in the baseline scenario. This first counterfactual simulation shows that a faster normalisation of the interest rate need not be accompanied by negative macroeconomic effects, provided that it results from the more rapid disappearance of factors depressing demand.

A second simulation assumes that the faster rise in the short-term interest rate is due to monetary policy shocks. In the model, this amounts to the monetary policy-makers surprising the market by increasing the key interest rate faster. This scenario therefore corresponds to a monetary policy that is more restrictive than the economic fundamentals require, and is accompanied by negative effects on growth and inflation.

Finally, the third counterfactual scenario covers the situation in which the faster rise in the short-term interest rate is due to shocks affecting the supply side of the economy. More specifically, this concerns shocks which suddenly lower the economy’s production capacity, for example, an unexpected fall in total factor productivity. Such negative productivity shocks lead to lower economic growth than in the baseline scenario. They also raise the general price level, triggering a monetary policy response. Faced with this type of shock, the central bank has to strike a compromise between stabilising economic activity around its potential level and safeguarding the monetary policy inflation objective. According to the estimated Taylor rule, such a compromise leads to a faster rise in the short-term interest rate in order to counteract the inflationary pressures.

To sum up, the counterfactual analysis shows that the macroeconomic consequences of an interest rate rise need not be negative. They depend to a large degree on the inherent cause of the rising interest rate. If that rise is due to the faster-than-expected elimination of the downward pressure on demand, then it is accompanied by stronger growth and higher inflation. If it is due to an unexpected tightening of monetary policy, then it will produce negative effects on both the real and nominal side of the economy. Finally, if it results from the monetary policy response to negative supply shocks, then it will be accompanied by lower-than-expected growth and higher-than-expected inflation.
2.2 The normalisation of interest rates interacts with the reinvestment of securities purchased under the asset purchase programme

In the model used, the short-term interest rate is the only monetary policy instrument. However, changes in key interest rates (and expectations in that regard) form only one aspect of the current monetary policy in the euro area: the central bank balance sheet has also become an essential monetary policy instrument. As announced by the ECB, euro area monetary policy will initially be normalised by ending the unconventional policy (namely the net asset purchases). In June 2018, in view of the progress made in adjustment towards the inflation objective, the ECB Governing Council announced that it probably would end the programme of net asset purchases in late 2018 provided inflation moves in line with expectations. The underlying strength of the euro area’s economy and the ample degree of monetary accommodation create confidence in the sustained convergence of inflation towards the objective, even after the gradual winding down of the net asset purchases.

To avoid any unjustified tightening of financial conditions once the net asset purchases have ended, other monetary policy measures will continue to provide the accommodation still required in order to ensure the sustained convergence of inflation to the ECB’s objective. On the one hand, the key interest rates will remain unchanged “at least through the summer of 2019 and in any case for as long as necessary to ensure that the evolution of inflation remains aligned with the current expectations of a sustained adjustment path” (1). On the other hand, the principal payments from maturing securities purchased under the APP will continue to be reinvested “for an extended period of time after the end of the net asset purchases, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation”. Reinvestment may continue even if the key interest rates rise, which could affect the shape of the yield curve. The first policy rate increases will drive up the short-term interest rate, whereas the reinvestment will continue to exert downward pressure on longer-term rates via their impact on the term premium.

The term premium is a means of measuring the uncertainty over future developments; thus, it is usually higher for longer maturities than for shorter ones. Its level depends on the equilibrium between the supply of and demand for a specific asset (2). Since net asset purchases by the central bank boost demand for some assets, they drive down the term premium (3), so that the long-term interest rate is lower for a given short-term interest rate path. Similarly, reinvestments—which keep the total amount of assets held on the central bank balance sheet steady—reduce the quantity of assets available on the market, with a comparable effect on the term premium.

That interaction thus also influences the speed with which policy rates can be raised while maintaining the desired monetary policy stance. For a given long-term interest rate, a lower term premium enables the central bank to start raising the short-term rate. Conversely, a decline in the central bank’s balance sheet total would cause the term premium to rise, and therefore the policy rates would need to increase more slowly to achieve the same long-term interest rate.

A breakdown of the risk-free interest rate (4) shows how monetary policy expectations influence, inter alia, the level and composition of interest rates, including long-term rates. As stated in the preceding section, in May 2018, the markets expected interest rates in the euro area to rise very gradually, remaining very low even over ten years. Meanwhile, expectations regarding reinvestment have also kept the term premiums at a very low level, and even negative for the shorter maturities. Both interest rate expectations and the term premium were much lower in 2018 than in 2004, a “normal” period for monetary policy, i.e. a period in which the economy was not confronted by a recession or a boom, and the central bank had not taken any non-standard measures such as asset purchases. Consequently, the yield curve in the euro area was considerably steeper in January 2004 (225 basis points) than in May 2018 (113 basis points).

Many observers regard the slope of the yield curve as a useful instrument for predicting recessions: negative slopes (where the ten-year yield is lower than the short-term interest rate) are said to point to gloomy expectations about the future level of interest rates, which may indicate concern about the economic outlook. A significant flattening of the curve is therefore interpreted as signalling a higher risk of recession (5).

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(2) Greenwood and Vayanos (2014).
(3) See for example Bonis et al. (2017).
(4) Decomposition of the OIS rate for the euro area on the basis of a term structure model which takes account of the presence of a lower bound on interest rates, see Dewachter et al. (2016).
(5) For a discussion of the literature on the subject, see Wheelock and Wohar (2009).
However, the downward pressure exerted on the term premium by the central bank’s asset holdings could nuance that conclusion: for a given risk of crisis, the curve would be flatter than if the central bank’s balance sheet were smaller. That is currently true to some extent for interest rates in the United States. Models comprising term premiums (and other financial variables) for estimating the likelihood of a recession predict far smaller risks than a model which only takes account of the slope of the curve(1).

Nonetheless, the signals derived from the slope of the curve must not be ignored: factors associated with less positive growth prospects may not only depress interest rate expectations(2), but also the term premiums (e.g. increased demand for “risk free assets”).

3. Impact of higher interest rates on governments, firms and households

In this section we no longer examine the question of rising interest rates from a general equilibrium perspective, but investigate in more detail the impact on the various economic sectors, focusing on the six largest euro area economies. To ascertain the effect that an interest rate rise will have, we also look at the experience of the steep fall in interest rates following the great recession. After reviewing the changes in the interest income of the various sectors since the crisis, we proceed to look at the government, the central bank, households and firms and consider how bank deposit interest rates will react to a rising interest rate.

3.1 Sector-specific interest rate sensitivity

The direct impact of an interest rate change on the various economies and sectors can be measured by the change in their net interest income (difference between interest received and interest paid). It should be noted that no account

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(2) Ibidem and Bauer and Mertens (2018).
is taken here of the indirect effects of an interest rate change, such as the impact on other incomes (e.g. dividends), or on asset price developments.

Analysis of the period since the great recession (2008Q3-2017Q4), during which monetary policy was accommodative and interest rates therefore declined sharply, reveals wide variations in the interest rate sensitivity of the various economies and sectors in the euro area. For the euro area as a whole, the impact was neutral, whereas net interest income increased in some countries (Spain, Italy) and declined in others (Belgium, France). Regarding the sectors, the non-financial private sector and the government saw their net interest income increase, while the financial sector recorded a decline.

The divergent impact on the various countries and sectors shows that the size and composition of their balance sheets are crucial to their interest rate sensitivity. If interest rates fall, net creditors (assets > liabilities) will generally suffer a loss of income, while net debtors (assets < liabilities) will see their income increase. A decline in interest rates therefore has a redistribution effect. In the euro area, there is a fairly close link between the impact on net interest income and the size of net financial assets (i.e. the difference between the outstanding financial assets and liabilities). However, that link is not perfect since net financial assets also comprise non-interest bearing assets, such as shares. Other factors, too, such as the interest rate variability of financial instruments and the movement in outstanding assets and debts, determine the ultimate effect.

Of the countries for which data are available, Belgium suffered the biggest loss of income as a result of the fall in interest rates. That is attributable to the substantial net wealth of the private sector, especially households. As in the euro area as a whole, the financial sector in Belgium experienced a fall in its net interest income, while the government saw its income rise. In so far as that impact is driven by the net wealth of the sectors, a (symmetrically) opposing effect is to be expected if interest rates increase.
Since the start of the crisis, government debt in the euro area has risen sharply. In most cases, it has also remained high. In 2017, as regards the six largest economies, public debt amounted to almost 100% of GDP in France and Spain, while it exceeded that level in Belgium and Italy. In Germany and the Netherlands debt was gradually reduced to 64% and 57% respectively.

Naturally, the low interest rate makes heavy debts more affordable. What is more, interest charges have fallen further to historically low levels: in 2017, for the six largest economies, they ranged between 1% of GDP in the Netherlands and 2.5% of GDP in Belgium to just under 4% of GDP in Italy. As soon as interest rates begin rising, the question is evidently whether the high government debts will be sustainable. We shall now examine that question more closely.

Higher market interest rates are only gradually reflected in higher implicit interest rates

To gain a general idea of the interest rate on the outstanding public debt, we look at the implicit interest rate. It is calculated as the ratio between interest charges and debt. In line with market interest rates, implicit interest rates also continued falling to their lowest levels since the start of the monetary union. In 2017, they amounted to 1.6% in Germany and the Netherlands, 2.4% in Belgium and 3% in Italy. However, the implicit interest rate responds with a lag to changes in market interest rates since it is an average of the market interest rates on debt incurred in the past.

For that reason, a rise in market interest rates will not be reflected in a directly proportional increase in the implicit interest rate on the public debt. Moreover, an increase in market interest rates will not necessarily drive up the implicit interest rate. So long as the market interest rate on new issues is lower than the rate on the government’s maturing securities and loans, the implicit interest rate will maintain a downward trend.

In addition, euro area governments have modified their debt structure since the crisis, making it less sensitive to a rise in interest rates. On the one hand, they issued longer-term debt instruments enabling them to take advantage of the low interest rates for longer and to delay the impact of a future rate rise. Thus, the average term of the outstanding public debt securities in the euro area increased from 6.4 years at the end of 2009 to 7.3 years at the beginning of 2018. In Belgium, it actually increased from 5.5 years to 9.5 years over the same period. On the other hand, the share of short-term debt diminished in most euro area countries (after having risen sharply during the financial crisis). In 2017, it was generally below 10% of GDP. Only in Italy and Portugal did the share of the debt with an original maturity of up to 1 year remain substantial (at 17% and 22% of GDP respectively): those countries are therefore more vulnerable to an interest rate rise or financing problems.

Nevertheless, in the longer term, public finances are still vulnerable to an interest rate rise: higher rates could significantly increase the interest rate burden, certainly in countries with a high debt ratio.

GDP growth and inflation are also key elements in debt dynamics

It is not only nominal interest rates that influence the sustainability of public debt; nominal economic growth also plays a part. That is clear from the simplified debt dynamics equation:

\[
\Delta d_t = -p_t + (i_t - g_t) d_{t-1}
\]

in which the change in the public debt ratio (\(\Delta d\)) depends on the primary balance (\(-p\)), i.e. the budget balance excluding interest charges, and the interest burden on the debt of the preceding period ((\(i - g\). In the case of a balanced primary budget (\(p = 0\)) the interest-growth differential determines the debt dynamics: if the nominal implicit interest rate (\(i\)) is higher (lower) than nominal GDP growth (\(g\)), then the debt ratio increases (declines).

This equation also shows that the impact of higher interest rates on the debt ratio depends on the underlying shocks. Where an interest rate rise is due to an exogenous tightening of monetary policy or an increase in the risk premium (e.g. on account of political and/or policy uncertainty in a country), the debt dynamics will deteriorate. Apart from the direct impact on the interest charges, the interest rate increase also depresses growth via a tightening of financial
conditions. That in turn has an adverse effect on the debt dynamics via two additional channels: the negative impact on the interest rate growth dynamics is exacerbated and, without a change of policy, the primary balance will deteriorate. Conversely, an interest rate rise which is due to an improving macroeconomic environment (positive demand shock) will not necessarily alter the debt dynamics: not only will the interest rate rise, nominal growth will also pick up.

It is intuitively assumed that the longer-term nominal interest rate exceeds nominal growth, because the long-term interest rate corresponds approximately to the sum of economic growth, inflation, a term premium and a credit risk premium (which are generally positive). Before the crisis, the long-term nominal interest rate was generally higher than nominal growth in the six largest euro area economies. The positive difference between the interest rate and the growth rate automatically pushed up public debt. It should be noted that Spain was an exception, thanks to its strong nominal growth; but the crisis showed that the high growth figures were not sustainable.

During the crisis, the difference between the interest rate and the growth rate worsened owing to negative economic growth, low inflation and – in countries regarded as riskier – higher credit risk premiums which drove up the nominal interest rates on public debt.

However, at present, the difference between the interest rate and the growth rate is generally negative, mainly due to the historically low interest rates and – to a lesser degree – the strengthening of nominal growth. Projections produced by private sector economists (like those collected by Consensus Economics, which are used in the chart) and by institutional

CHART 5  LONG-TERM NOMINAL INTEREST RATE AND NOMINAL GDP GROWTH

Sources: Consensus Economics, Datastream, EC.
Note: For the period 1999-2017, nominal GDP growth is calculated as the sum of real GDP growth and the growth of the GDP deflator. The nominal GDP growth projections were taken from the July 2018 survey conducted by Consensus Economics and are calculated as the sum of the private sector’s expectations concerning real GDP growth and inflation measured by the consumer price index (CPI).

(1) The interest-growth differential is calculated here as the nominal ten-year market interest rate on government bonds minus nominal GDP growth. In contrast to the debt dynamics equation, it is therefore not the implicit interest rate on the public debt that is used (although it is included in the charts for information). The ten-year market rate does actually differ from the implicit rate, but it is common to use it as a substitute in similar analyses as it simplifies the interest rate projections (simulations of implicit interest rates are based on various assumptions, e.g. concerning the future path of market interest rates, the debt trajectory, the average maturity of debt, etc.).
organisations (such as the EC and the ECB) show that the interest-growth differential will remain negative far into the future and will thus help to reduce the public debt. That is exceptional in historical terms. The combination of low interest rates and the return to somewhat higher GDP growth (although generally still below its pre-crisis level) is therefore very favourable for the debt situation. However, that positive picture does not apply to Italy, the only one of the six largest euro area economies where the interest-growth differential is positive for the future, owing to the combination of higher interest rates and slower economic growth. In order to stabilise or reduce its debt ratio, the Italian government therefore needs to achieve primary surpluses.

However, there are downside risks associated with the scenarios described here. For instance, as already mentioned, a sudden rise in the risk premium can make the interest-growth differential less favourable and cause the debt dynamics to deteriorate. The same applies to a weakening preference for risk-free assets, such as government paper. It is also possible that accelerating economic growth and inflation (outpacing current expectations) will prompt the central banks to tighten their policy so that the (risk-free) nominal interest rate will again exceed nominal economic growth.

The favourable macroeconomic and financial context must therefore not cause governments – certainly in countries with a high debt ratio – to refrain from fiscal consolidation measures; on the contrary. By rebuilding fiscal buffers, governments will be able to address future risks and challenges, and ensure that the current favourable conditions make a lasting contribution to the sustainability of public debt.

As well as influencing public expenditure, rising interest rates also affect public revenues

A detailed analysis of the impact of an interest rate rise on public revenues is beyond the scope of this article. But it is worth noting that the monetary stimulus measures, and particularly the asset purchase programme, do not only influence government expenditure – via the interest rate on government bonds – but also affect government revenues – via the profits that central banks pay out to their shareholder governments.

On the one hand, the central bank makes a profit from its asset purchase programme\(^1\). Purchases of long-term fixed-rate securities are financed by issuing short-term debt (namely central bank reserves) which is remunerated at the deposit facility interest rate. At present, that rate is negative, and it is generally lower than the rates on the securities purchased. On the other hand, the asset purchase programme exposes the central bank balance sheet to an interest rate risk that arises if the interest rate on the deposit facility exceeds the yields on the securities held by the central bank. In such a situation, the central bank could see its profits diminish, or it might even incur losses. Many national central banks in the euro area have already adjusted their reserve policy accordingly. For example, since 2014, the NBB has allocated 50% of the profits to the reserves, instead of 25%, and will continue to do so for as long as the period of non-standard monetary measures persists\(^2\). This means that the government now receives lower dividends than if the reserve policy had not been changed.

3.3 Non-financial private sector

In the Belgian non-financial private sector, households have seen their net interest income decline most sharply during the period of accommodative monetary policy. Over the period 2008Q3-2017Q4, they turned from net interest recipients, to the tune of 0.8% of GDP, into net interest payers, for the sum of 1.2% of GDP.

As in the other euro area countries, Belgian households saw their interest income decline. At the end of 2017, that income totalled 0.7% of GDP, comparable to the euro area average. Interest payments stabilised at around 2% of GDP and – despite the falling interest rates – did not exhibit any downward trend as they did in most other countries.

The impact of an interest rate change on interest payments varies from one country to another and depends partly on the underlying trend in debt and on the variability of the interest rate on outstanding loans. Countries with strong "deleveraging" (i.e. debt reduction) and those where loans are predominantly subject to variable interest rates, such as Spain, saw the sharpest fall in the interest burden. In Belgium, the decline in interest rates exerted only limited

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\(^1\) For more information on the asset purchase programme and its impact on public finances, see also Cordemans et al. (2016).

\(^2\) For more information on the Bank's reserve policy, see for example NBB (2018).
downward pressure on interest charges, owing to the continuing rise in the household debt ratio and the relatively large proportion of fixed-rate loans.

The change in the interest burden can be broken down into a part attributable to the change in the (implicit) interest rate (i.e. the price effect) and a part due to the change in outstanding debts (i.e. the volume effect). The volume effect is the main factor behind the continuing high level of interest payments in Belgium.

**Large proportion of fixed-rate loans limits the variability of the implicit interest rate**

Although the relatively high interest payments of Belgian households are due mainly to the increased debt level, the implicit interest rate also declined less sharply than in the other countries. The variability of the implicit interest rate is determined by the strength and speed of the monetary transmission process, which in turn depends on structural factors such as the percentage of loans at variable as opposed to fixed interest rates.

The percentage of variable-rate loans\(^{(1)}\) (in relation to the total outstanding amount of bank loans) diverges widely in the euro area. With respect to households, Belgium features – with its neighbours Germany, France and the Netherlands – among the countries with a relatively small proportion of variable-rate loans (8.6 % at the end of 2017). In Finland, Portugal, Spain and Ireland, that rises to over 75 % of the total.

In the countries with a high percentage of variable-rate loans, the change in the implicit interest rate is larger and faster. While the implicit interest rate on household debt in Belgium and the Netherlands declined by 1.3 percentage points over the period 2008Q3-2017Q4, it fell by more than twice as much in the countries where the loan market consists mainly of variable-rate loans.

(1) Defined as loans with an interest rate revision within 12 months and an initial and residual maturity of more than one year (source: MIR survey).
If interest rates rise, a similar effect can be expected, with the implicit rate rising faster and more sharply in the countries where variable rate loans predominate.

**Low interest rate risk for the Belgian non-financial sector despite the high household debt level**

The non-financial private sector’s vulnerability to an interest rate rise can be assessed by means of a “heat map” comprising a number of indicators which measure the exposure (i.e. the debt level) and sensitivity to interest rate fluctuations (percentage of variable-rate loans).

Four indicators were selected for both households and non-financial corporations. The exposure is measured on the basis of three indicators, namely the debt level as a percentage of GDP and as a percentage of financial assets (as a percentage of capital in the case of companies) and the debt service ratio (DSR, see box 2 for the calculation). The latter measures the repayment burden, i.e. the percentage of disposable income (gross operating surplus) used to meet the capital repayments and interest charges associated with a particular debt position. The percentage of variable-rate loans indicates the rate-adjustment risk.

**TABLE 1  IMPACT OF INTEREST RATES ON THE SUSTAINABILITY OF NON-FINANCIAL PRIVATE SECTOR DEBT: HEAT MAP**

<table>
<thead>
<tr>
<th>Country</th>
<th>HOUSEHOLDS</th>
<th>NON-FINANCIAL CORPORATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Debt/GDP ratio</td>
<td>Debt/financial assets ratio</td>
</tr>
<tr>
<td>Belgium</td>
<td>60.4</td>
<td>19.6</td>
</tr>
<tr>
<td>Germany</td>
<td>52.9</td>
<td>28.6</td>
</tr>
<tr>
<td>Spain</td>
<td>61.3</td>
<td>33.2</td>
</tr>
<tr>
<td>Finland</td>
<td>67.1</td>
<td>45.4</td>
</tr>
<tr>
<td>France</td>
<td>58.7</td>
<td>24.9</td>
</tr>
<tr>
<td>Greece</td>
<td>57.0</td>
<td>37.1</td>
</tr>
<tr>
<td>Euro area</td>
<td>58.1</td>
<td>27.2</td>
</tr>
<tr>
<td>Ireland</td>
<td>47.4</td>
<td>37.2</td>
</tr>
<tr>
<td>Italy</td>
<td>41.3</td>
<td>16.5</td>
</tr>
<tr>
<td>Netherlands</td>
<td>105.1</td>
<td>33.0</td>
</tr>
<tr>
<td>Portugal</td>
<td>69.4</td>
<td>33.7</td>
</tr>
</tbody>
</table>

Sources: ECB, NBB (own calculations).

Note: All data relate to 2017Q4 (in %). A white cell indicates “no” risk (= 0), an orange cell indicates a “low” risk (= 1), a red cell indicates a “moderate” risk (= 2), and a dark red cell indicates a “high” risk (= 3). These categories were defined on the basis of threshold values that respectively correspond to the 65th, 80th and 90th percentile of the statistical distribution of each indicator across all the euro area countries and over time (period 1999Q1-2017Q4). The composite indicator was calculated as the average of the four discrete risk scores.

(1) The consolidated debt excludes loans between resident non-financial corporations from their total debt. In this article, where Belgium is concerned, loans granted by finance companies/holding companies and foreign non-financial corporations are also deducted since most of those loans – just like loans between resident companies – consist of intra-group borrowing.

For each indicator we determine a threshold value, indicating no risk (= 0), a low (= 1), moderate (= 2) or high (= 3) risk on the basis of the 65th, 80th and 90th percentiles respectively of the combined historical distribution of those indicators across all euro area countries. Next, we calculate a composite indicator as the average of the risk scores.

(1) Furthermore, as a result of refinancing, interest rate reductions may spread relatively quickly also in a market dominated by fixed-interest loans, but this is not the case in the event of an interest rate rise, which may accentuate the differences between countries with variable- and fixed-rate loans. However, the rise in the variable interest rate may be curbed by rules protecting borrowers, such as the interest rate cap system and the legal rule in Belgium, whereby the initial variable interest rate cannot be more than doubled.
In general, on the basis of the “heat map”, it seems that, in the euro area, households are currently more vulnerable than non-financial corporations. That is due mainly to their exposure (i.e. their relatively high debt ratio). The risk of a revision of rates (i.e. a relatively high percentage of variable-rate loans) varies little between households and non-financial corporations, and is therefore more country-specific.

In Belgium, households have relatively high debt ratios and DSRs, making them more vulnerable to an additional increase in the repayment burden as a result of an interest rate rise. On the other hand, the low percentage of variable-rate loans moderates the impact of an interest rate rise.

Box 2 – Debt service ratios in the non-financial private sector

Debt service ratios (DSRs) provide important information on the interaction between debt and the real economy, since they tell us what percentage of disposable income goes to debt repayment (ratio of capital repayments and interest charges to income). A higher DSR means that there is a smaller proportion of income available for expenditure and saving, which may have real consequences.

In contrast to the debt ratio (outstanding debt in relation to GDP), the debt service ratio compares two flow variables, making it easier to interpret its value. In addition, that ratio explicitly takes account of changes in interest rates, thus providing a better view of the sustainability of a debt position. The level of the DSR depends on the disposable income, the outstanding debt, the implicit interest rate and the average maturity of outstanding debt\(^{(1)}\).

In this box, DSRs are calculated for households and non-financial corporations. DSRs are not directly available at the macroeconomic level, and various assumptions have to be made in order to calculate them\(^{(2)}\). Among the various components of the DSR, only outstanding debt\(^{(3)}\), income and interest payments are available in the national accounts. To calculate the DSR, it is therefore necessary to make assumptions about the average residual maturity and the form of repayment for outstanding loans.

For simplicity, we assume that debts are repaid according to a system of fixed monthly payments (capital redemption and interest payments), and that the average residual maturity of outstanding debt is stable.

The monthly repayment (M) can be calculated as follows:

\[
M = S \times \frac{i}{1 - (1 + i)^{-n}}
\]

where:

- \(S\) = the total outstanding debt;
- \(i\) = the average interest rate on outstanding debt, expressed on a monthly basis;
- \(n\) = the average residual maturity of outstanding debt, in months.

The average interest rate on outstanding debt is based on the national accounts. More specifically, the interest payments include payments for the financial intermediation services indirectly measured (FISIM), i.e. the actual interest paid, which in the national accounts is divided into a reference interest rate and an interest margin (FISIM).

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(1) It should be noted that the macroeconomic DSR may underestimate the average DSR at household level, since the denominator also includes the income of households without debt and no account is taken of distribution aspects.

(2) Among the international institutions, only the BIS publishes DSRs (Drehmann et al., 2015). Our calculations differ from those of the BIS as regards the debt (NBB: debt adjusted for intra-group lending, BIS: total debt), and as regards the residual maturity (NBB: 10 years, BIS: 18 years for households and 13 years for non-financial corporations).

(3) Excluding intra-group loans in the case of non-financial corporations: at group level the repayment of those loans is neutral.
The implicit interest rate is obtained by dividing those interest payments by the outstanding debt\(^{(1)}\). In the case of both households and non-financial corporations, the average maturity is assumed to be ten years\(^{(2)}\).

The quarterly DSR is equal to the ratio between the repayment burden in a given quarter \((M \times 3)\) and the disposable income during that quarter. In view of the seasonal pattern of disposable income, the income in a given quarter is equalised to the average income over the past four quarters.

The DSR can be divided into an interest component and capital repayments\(^{(3)}\). It therefore lends itself to examining the direct impact of interest rate changes on the repayment burden. The DSR for Belgian households and firms is shown below, and compared with the BIS calculations (Drehmann et al., 2015).

The DSRs for households and non-financial corporations as calculated by the NBB are respectively higher and lower than those estimated by the BIS. The higher DSR for households is due to the shorter maturity assumed for the outstanding debt (10 years instead of 18 years). In the case of corporations, the lower DSR is due mainly to the adjustment of the debt for intra-group loans.

Nonetheless, the trend in the household DSR is the same in both the NBB and the BIS figures. As already explained, the assumption about the maturity only affects the level of the DSR, and not its movement. For corporations, the profile differs. According to the BIS, the DSR maintains an upward trend over the period 2003-2017, whereas the NBB figures show it as stable. The difference is due mainly to intra-group loans, which rose sharply during the period considered.

\(^{(1)}\) Another possible source for the average interest rate is the MIR survey. However, that survey only concerns bank loans and is therefore less relevant if the debt consists largely of non-bank credit (as in the case of businesses).

\(^{(2)}\) The average maturity only influences the level of the DSR, not its movement.

\(^{(3)}\) This breakdown is not published by the BIS.
To illustrate the sensitivity of the non-financial private sector's repayment burden to an interest rate rise in the current macroeconomic context, the impact of a 100-basis-point interest rate increase on the DSR over the period 2018Q1-2020Q2 is simulated mechanically, using the Bank’s macroeconomic projections for disposable income and debt produced for the ESCB in the context of the BMPE(1). It should be noted that these scenarios disregard endogenous effects of the interest rate shock on income or on the debt level.

We simulate four scenarios (see chart in box 2):

- Scenario 1 (blue): Baseline: BMPE projections for disposable income and debt, constant implicit interest rate;
- Scenario 2 (orange): Baseline +100-basis-point rise in the implicit interest rate over the projection horizon (10 basis points per quarter), applied to all loans;
- Scenario 3 (green): Baseline +100-basis-point rise in the implicit interest rate over the projection horizon (10 basis points per quarter), applied only to variable-rate loans;
- Scenario 4 (blue dotted line): baseline with constant debt level.

Scenario 1 reveals that the DSR of both households and firms is likely to rise further, owing to the projected credit expansion which exceeds the growth of disposable income and the gross operating surplus respectively.

The impact of the interest rate rise on the DSR is evident from the difference between scenarios 2 and 3 and the baseline. Scenario 4 shows how the DSR will change if only incomes rise; in other words, it indicates the denominator effect (fall in the DSR resulting from a rise in income), which becomes more likely the more the interest rate rise is due to a positive demand shock, as explained in section 2.1 of this article.

The simulations show that a 100-basis-point interest rate rise pushes up the DSR of households in Belgium by a maximum of 0.6 percentage point, and that of firms by 1.6 percentage points (scenario 2). Assuming that only variable-rate loans are repriced (scenario 3), the impact of the rate increase on the DSR in Belgium is reduced to 0.1 percentage point for households and 0.4 percentage point for firms.

Finally, scenario 4 shows that, with stabilisation of the debt level, the current macroeconomic projections for income may imply significant passive deleveraging.

All in all, these simulations indicate that the impact of an interest rate rise on the DSR of households and firms is small. While a higher interest rate does lead to a higher repayment burden, and for households the DSR is already relatively high, the practice of granting fixed-rate loans has some moderating effect. In the case of firms, the “heat map” showed that their initial position is less problematic, so that – even if the DSR were to rise by the maximum amount – their repayment capability would be under less stress than that of households.

As already mentioned, the above simulations and projections take no account of endogenous responses by the debt level and income (i.e. the debt ratio) to the interest rate shock. In so far as the debt ratio declines as a result of the interest rate rise, the upward effect of the rate rise on the DSR will be smaller than in the above simulations.

Hofmann and Peersman (2017a) point out that the DSR’s response to an interest rate shock is in fact an empirical issue. Conceptually, the impact is unclear because it depends on both the response by the implicit interest rate and the response by the debt ratio.

The effect via the implicit interest rate is beyond dispute: a higher policy rate leads to a higher implicit interest rate. The size of the effect depends on the speed and intensity of the monetary transmission process, which in turn depends on the proportion of variable-rate loans.

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(1) During a joint macroeconomic projection exercise (Broad Macroeconomic Projection Exercise or BMPE), central banks that are part of the Eurosystem produce projections for the most important macroeconomic aggregates on the basis of joint assumptions.
However, the effect via the debt ratio is unclear. According to the empirical literature (Bauer and Granziera, 2017; Hofmann and Peersman, 2017b), the credit volume generally falls more sharply than income, so that the debt ratio declines, more particularly in the medium term.

Hofmann and Peersman (2017a) conclude that an interest rate rise – in the event of a monetary policy shock – has a temporary significant and upward effect on the DSR. The higher policy rate leads to a higher implicit interest rate, and that effect exceeds the fall in the debt ratio. For a 100-basis-point shock, they find empirically that the maximum increase in the DSR is 0.4 percentage point (1). In the medium term (from 12 quarters after the shock), there is, however, a downward effect on the DSR as a result of the further fall in the debt ratio.

Thus, in macroeconomic terms, an interest rate rise will tend to improve rather than impair the debt repayment capability in the medium term. That is an important finding, as according to some people, monetary policy is in a “debt trap” (Borio and Disyatat, 2014; Juselius et al., 2017): the high debt deters central bankers from increasing interest rates owing to the detrimental effect on the DSR, which may lead to still higher debts. However, the empirical evidence shows that the impact on the DSR is modest, and that a tightening of monetary policy in the medium term actually fosters a lower DSR, so that from the point of view of debt sustainability, an interest rate rise may be beneficial.

3.4 How might banks’ deposit rates respond?

The key policy rate rises ought also to be reflected in an increase in the interest rates on assets held by the non-financial private sector. That would partly offset the higher interest charges for non-financial corporations, and especially for households, which hold substantial financial assets (2). That transmission can be immediate and complete in the case of market instruments such as bonds. Conversely, the response of the interest rate on retail bank deposits is more uncertain. In the context of very low, or even negative, policy rates, the banks maintained their interest rate on retail deposits (particularly for households) above 0%. Sometimes, national regulations stipulate minimum rates for the interest on deposits (3), further limiting the scope for banks to adjust their funding costs. Combined with the protracted period in which interest rates have remained at the lower bound, this may have depressed banks’ profitability (4).

Recent experience has shown that the latest increases in the federal funds rate had hardly any impact on the remuneration of bank deposits in the United States. In April 2018, the 12-month deposit rate was roughly 16 basis points higher than in October 2015, whereas the federal funds rate increased by over 150 basis points in the same period, and the 12-month bond yield rose by 190 basis points. Other deposit interest rates displayed a similar picture. All in all, since the first interest rate hike following the crisis, namely in 2015, the transmission of the increase in the policy and market interest rates has amounted to between 10% and 30%. That contrasts with the picture for interest rates on mortgage loans, which closely track market rates (interest rates on 30-year loans increased by 64 basis points, compared to 75 basis points for the ten-year yields on government paper).

That is reminiscent of what happened in the United States after the Second World War. In an attempt to boost their profitability, the banks passed on less than 10% of the interest rate increases in their deposit rates, but 100% in their borrowing rates (5).

In the early 2000s, Japan also experienced a long period of interest rates close to zero. The policy rate was raised in July 2006 and in February 2007 (by 30 and 35 basis points respectively). The interest rate on deposits held with Japanese banks reflected the first rise fairly closely, but incorporated hardly any of the second: overall, the deposit rate increased by 38 basis points (while the policy rate rose by 65 basis points). The transmission to the borrowing rate was also incomplete during that period, and shortly afterwards the policy rate was lowered.

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(1) Note that this impact is somewhat smaller than in our simulations based on the BEMPE projections, which disregard the endogenous impact of the interest rate rise on the debt ratio.

(2) At the end of 2017, bank deposits represented almost a third of households’ financial assets in the euro area, or 65% of GDP. In Belgium, the figure was 83% of GDP.

(3) In France, the rate applicable to a “livret A” – a special savings account with a ceiling – is revised by the government twice a year. In Belgium, the minimum rate on regulated savings deposits stood at 0.11%, namely a minimum basic rate of 0.01% and a minimum loyalty bonus of 0.10%, in June 2018.

(4) For more information on that mechanism, see de Sola Perea and Kasongo Kashama (2017).

Various factors influence the expected impact of future rate increases on banks’ profitability and may affect the transmission to the deposit rates (where a more rapid rise would reduce banks’ net interest margin\(^{(1)}\)).

Liquidity surpluses can have a two-fold effect. On the one hand, they reduce the incentive for banks to put up the interest rate in order to attract more deposits. On the other hand, the rise in the interest rate on the deposit facility to 0% and above may imply an increase in the net interest margin for banks that hold deposits with the Eurosystem. Those banks would therefore have more leeway for paying higher remuneration on retail deposits without detriment to their profitability. In recent years, banks in countries where the liquidity surpluses are concentrated have usually offered lower deposit interest rates (especially to firms).

More generally, maturity mismatches between assets and liabilities (which are also influenced by the proportion of liquidity surpluses that have a maturity of one day) may also affect the transmission to deposit interest rates. For banks, long-term assets, on which the interest rate cannot be revised immediately, and short-term liabilities (predominantly retail deposits) imply that an interest rate hike will reduce their net interest margin. Belgian banks, which have a high proportion of fixed-rate loans (granted at the time of low interest rates) and short-term deposits, could get into that situation. By postponing the rise in the deposit rate, the banks can avoid a deterioration in their net interest margins resulting from a complete and speedy transmission. Conversely, banks which hold mainly short-term assets (or assets at variable interest rates) could see an automatic increase in their net interest margins as a result of the rise in market interest rates. In their case, there could be less pressure to keep the deposit interest rates largely unchanged.

The funding structure also affects the impact of interest rate rises on profitability. Banks which are heavily dependent on retail deposits could be strongly inclined to keep the interest rate low and boost their net interest margin, since even small increases in the remuneration on deposits can imply significantly higher funding costs. At the same time, their dependence on deposits may imply that they are under greater pressure to raise the interest rate in order to avoid losing their principal source of funding.

\(^{(1)}\) The need to increase the interest margin could also have an impact on the interest rate on new loans.
Banks which have used the targeted longer-term refinancing operations (TLTROs) as a source of funds could face an increase in their funding costs when those operations mature (between June 2020 and March 2021). That would put additional pressure on their net interest margins, which could prompt the banks to keep the deposit rate low for longer.

Retail deposits are generally regarded as a very stable and relatively cheap source of funding. They are the result of the relationship between the customer and the bank, a link which may extend beyond the deposit; they have a short maturity; and they are predominantly covered by deposit guarantee systems. Moreover, retail deposits receive favourable treatment in the regulations on bank liquidity(1), so that the banks generally regard them as a very attractive method of financing(2). The competition for retail deposits between banks may therefore have a major influence on the rates offered. Furthermore, that competition may have increased since the entry into force of two European Directives facilitating competition between banks(3). New financial institutions based on new technologies (challenger banks, FinTech, etc.) may also become new rivals for the banks. All those factors could step up the pressure on banks to increase the remuneration on retail deposits as soon as market interest rates begin to rise.

Conclusion

After remaining very low for a long period, interest rates are now expected to rise gradually in the euro area. The macroeconomic impact of that “normalisation” depends on the factors behind the interest rate rise. For example, if the rise is due to diminishing downward pressure on demand, then it will be accompanied by robust growth and inflation. Conversely, interest rate rises due to an unexpected tightening of monetary policy may have an adverse impact on the economy.

There are various factors suggesting that the next interest rate rise will differ from those in the past. The interaction with the non-standard monetary policy measures is one reason: reinvestment of the principal payments from maturing securities purchased by the central bank may continue to compress the term premium, even if interest rates are rising. For a given long-term target interest rate, that will enable the central bank to raise the short-term interest rate faster than it would without reinvestment. However, since that combination of measures tends to flatten the yield curve, it also risks blurring the signals given by the yield curve concerning the likelihood of an economic recession. At the same time, the central banks could incur losses on their portfolio of bonds acquired during the implementation of the asset purchase programmes.

Furthermore, the interest rate rise will take place in a context of high debt levels, which may have implications for financial stability. However, the effects could vary greatly, both across countries and between sectors. They depend in particular on balance sheet structures and the transmission of interest rate increases. Regarding the public sector, the differential between economic growth and interest rates is expected to remain exceptionally favourable. As for the non-financial private sector, the DSR could increase at first, but that effect will be weaker in the case of fixed-rate loans.

It remains an open question how the remuneration of bank savings deposits will develop following a rise in interest rates. While banks could try to maintain their deposit rates at low levels to improve their profitability, other factors, such as the greater ease with which households can transfer their deposits to other institutions or convert them into other forms of investment, may put pressure on banks to pass on the higher market interest rates in their deposit remuneration.

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(1) A proportion of retail deposits is regarded as “stable” and has an estimated run-off risk of 5% in the calculation of the liquidity coverage ratio (LCR). For the “less stable” retail deposits, the risk is estimated at 10%. The LCR applies much higher run-off rates to other forms of financing (deposits by large firms or the government, interbank loans, etc.), namely between 25% and 100%.

(2) In contrast, in a period of negative market interest rates, retail deposits may be more expensive than other funding sources.

(3) Directive 2014/92/EU on payment accounts (applicable since September 2016) greatly simplified the procedures for switching to a different bank. Directive (EU) 2015/2366 on payment services (PSD2), in force since January 2018, could also boost the competition between payment service providers, and between those providers and the banks.
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