

The consequences of the new environment of financial conditions: entering uncharted territory

Monetary policy at a crossroads

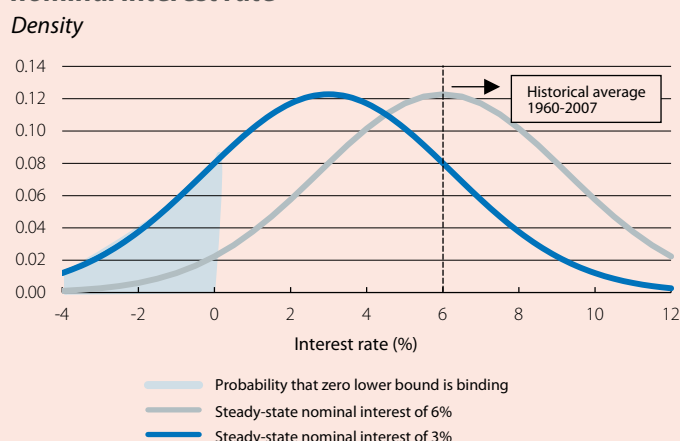
As we have seen in the first article of this Dossier, all the indicators suggest that interest rates will remain at relatively low levels over the next few years. In this context, central banks are expected to have less room for manoeuvre if they continue to operate with traditional tools. In fact, various studies (see the first chart) show how lower interest rates will lead to the monetary authorities hitting the zero lower bound much more frequently.¹ As an example, two macroeconomists from the Federal Reserve System, Michael Kiley and John Roberts, estimate that with a steady-state nominal interest rate of 3% (a very reasonable figure with an inflation target of 2% and a natural rate of around 1%), 40% of the time nominal rates in the US should stand at 0%.² How should monetary policy tackle this unparalleled challenge and what are the consequences for the macroeconomic scenario?

As the legendary baseball player Yogi Berra said: «It is dangerous to make forecasts... especially about the future». Nevertheless, we can start by making note of what must not or cannot be done. Several studies show that following simple monetary rules, such as the famous Taylor rule, is not feasible in an environment with low natural rates of interest and low inflation, given that this rule would often advise setting rates considerably below 0%. In particular, Kiley and Roberts estimate that with a steady-state nominal interest rate of 3%, if a Taylor rule that excluded the possibility of setting negative rates were followed, average GDP over the long term would lie well below its potential (with an output gap of between -1.1% and -2.3%), while inflation would be below the 2% target (between 0.1% and 1.2%). In other words, monetary policy must find ways to prevent this macrofinancial environment from causing vast deviations in inflation and GDP relative to their targets.

What role can central banks play? Two broad avenues of action have been proposed. One option is to continue to use the interest rate as the main tool and redefine the purpose of the central bank. The alternative is to maintain the same objective (typically, inflation of around 2% over the medium term) and incorporate new monetary policy tools. It is this alternative path that has been pursued following the financial crisis of 2008.

By keeping the reference rate as the main tool, a central bank can increase its room for manoeuvre if it increases its inflation targets. Raising inflation would make it possible to achieve negative real interest rates and would place the nominal interest rate above zero. In this regard, there are three main options: set a higher inflation target, set the target in terms of the level of prices, or set the target in terms of the level of nominal GDP. Each of these three options has different advantages,³ but none of them are entirely convincing in their ability to achieve the objective, which could potentially lead to a loss of credibility for the central bank. A good example of such a situation is Japan, where its central bank has been trying, for many years and unsuccessfully, to distance its economy from the risk of deflation. However, it has not achieved its goal due to the fact that inflation expectations are slow to adjust to the new targets and, ultimately, they do not adjust fully.

US: probability distribution of the steady-state nominal interest rate



Note: A rate of 3% is coherent with a medium-term inflation target of 2% and a natural rate of interest of around 1%. We use a normal distribution with a standard deviation of 3.25% for both distributions (historical average between 1960 and 2007).

Source: CaixaBank Research, based on data from M. Kiley and J. Roberts (2017), «Monetary Policy in a Low Interest Rate World», Brookings Papers.

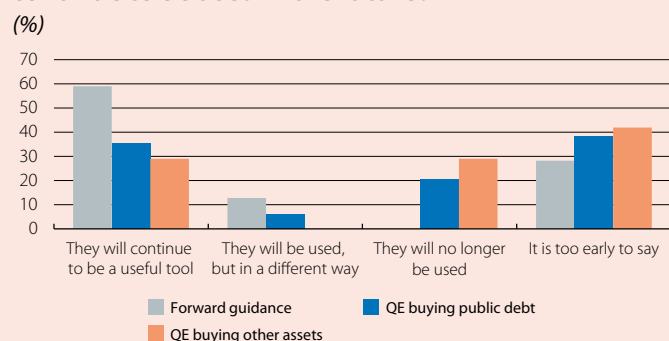
1. This lower bound is imposed by the existence of the alternative of withdrawing deposits and storing resources as cash, obtaining an interest rate equal to 0% (or slightly negative, if we take storage costs into account).

2. See M. Kiley and J. Roberts (2017), «Monetary Policy in a Low Interest Rate World», Brookings Papers.

3. For a more detailed discussion, see the Focus «Monetary policy frameworks for the future», in the MR10/2017.

An alternative framework would be to maintain the current targets and add non-conventional measures (especially communication and balance sheet policies, such as asset purchases) to the set of common tools available to the central banks, with a view to complementing traditional monetary policy. These measures may be justified in environments with very low rates in which the monetary policy transmission mechanism has been damaged. One advantage of this option is that the measures can be calibrated more precisely to the specific needs of the moment.

Survey of central banks: will non-conventional tools continue to be used in the future?



Note: Survey conducted in 2016 among the governors of the 95 main central banks worldwide, with a 58% response rate, including 16 governors of central banks in advanced economies.

Source: CaixaBank Research, based on data from A. Blinder, M. Ehrmann, J. de Haan and D. Jansen (2016), «Necessity as the mother of invention: Monetary policy after the crisis», Central Bank of the Netherlands.

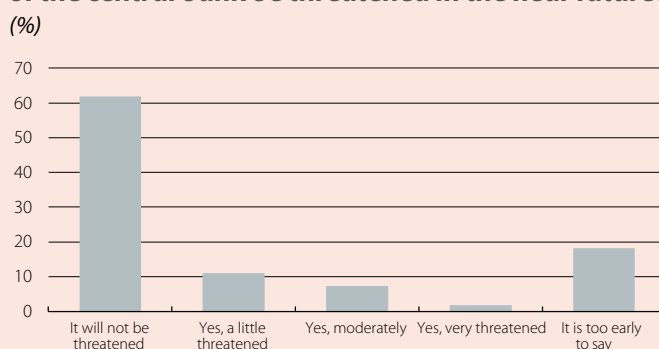
by acquiring large volumes of public and private bonds. This is a direct and credible mechanism for indicating that rates will remain low for a long period of time (it is credible because, if they were raised, the central bank would incur considerable capital losses on the assets acquired). This makes it possible to lower long-term interest rates, raise asset prices and improve the financial conditions of economic players. Ultimately, the aim is to offer support to aggregate demand. This policy also has its limits, however. On the one hand, it is essential that it is well synchronised with the traditional policy of setting rates and that there is thorough communication regarding its timing for it to be credible (otherwise, there may be episodes of financial turmoil, such as the taper tantrum of 2013). On the other hand, there are limits to the amount and type of debt that central banks can buy.

Interestingly, we already have some evidence that non-conventional tools are here to stay. Specifically, a team of economists conducted a survey in 2016⁴ among the chairmen of 95 central banks (with a 58% participation rate) in which they were asked whether they believed that non-conventional monetary policy tools would continue to be used in the future. Among the survey respondents, 72% considered that forward guidance will continue to be an important tool for the monetary policy of the future. As for quantitative easing (QE) asset purchase programmes, the enthusiasm was lower: 41.2% of those surveyed thought that the purchases of public debt by central banks will continue to be used in the monetary policy tool kit of the future, while 29% believed that purchase programmes involving other assets will continue to be valid in the future.

Starting with communication, in environments with limited margin to lower rates, the monetary authorities can provide indications on the future path of monetary policy to try to convince economic players that they will keep rates low in the future (a technique known as forward guidance). If such announcements are viewed as credible, it makes it possible to reduce longer-term interest rates and to increase asset prices today by stimulating the economy. However, this policy has its limits: it is not always easy to make such announcements credible. This is especially difficult in situations that are likely to generate temporary inconsistency dilemmas – that is, situations in which the best solution would be to deviate from the commitment when the time comes to execute it.

Asset purchase programmes, also known as quantitative easing (QE), involve expanding central banks' balance sheets

Survey of central banks: will the independence of the central bank be threatened in the near future?



Note: Survey conducted in 2016 among the governors of the 95 main central banks worldwide, with a 58% response rate, including 16 governors of central banks in advanced economies.

Source: CaixaBank Research, based on data from A. Blinder, M. Ehrmann, J. de Haan and D. Jansen (2016), «Necessity as the mother of invention: Monetary policy after the crisis», Central Bank of the Netherlands.

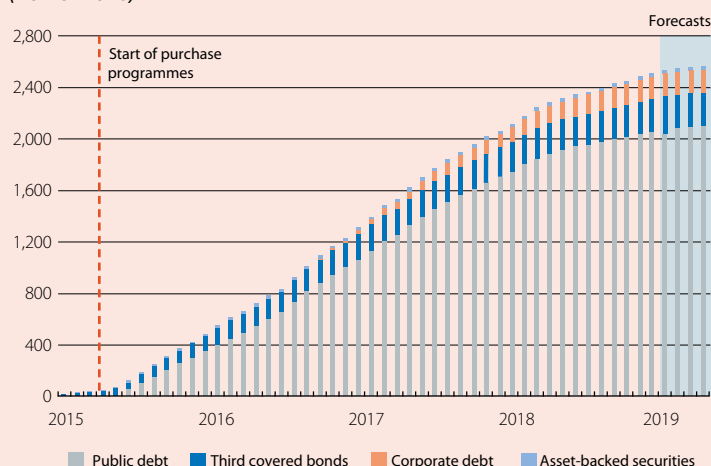
4. A. Blinder, M. Ehrmann, J. de Haan and D. Jansen (2016), «Necessity as the mother of invention: Monetary policy after the crisis», Central Bank of the Netherlands.

Finally, we must briefly highlight three major challenges that monetary policy will face in the future if non-conventional tools are chosen to be used. Firstly, central banks must shore up their independence in the face of growing political pressure to influence monetary policy that is generated when a central bank accumulates public debt on its balance sheet. We must remember that exercising monetary policy is an arduous task that requires technical judgement and it should not give in to the temptation to be governed by political intents.

Secondly, consideration should be given to rethinking the objectives of monetary policy and whether financial stability should be one of them. This debate will take on more importance in the future, since greater use of non-conventional monetary policies could increase the risk of financial instability. This is the case, on the one hand, because using these tools to achieve the central bank's long-term goals could lead to an increase in financial fluctuations in the short term, as has occurred with at least one of the announcements made by the Fed regarding asset purchases.⁵ Let us not forget that the monetary authorities are less accustomed to using these tools, making it more difficult for them to be optimally tailored. On the other hand, this is because, as the economist Lucrezia Reichlin explains, the flattening of the yield curve that is caused by the use of non-conventional tools, as a result of them reducing long-term rates, could put financial institutions that have little flexibility in their balance sheets in a predicament.⁶ An example of this are institutions that have liabilities with predetermined yields, such as life insurers and defined benefit pension plans.

Cumulative net asset purchases by the ECB

(EUR billions)



Source: CaixaBank Research, based on data from the ECB.

Thirdly, central banks and major financial institutions subject to national and supranational supervision should work shoulder to shoulder to improve their mechanisms for international coordination in a more globalised world, as well as to determine the degree to which they overlap with macroprudential tools. This should not come as a surprise: asset purchase programmes amplify the spillovers of monetary policy, as we have already seen in the current environment. In effect, these programmes have generated abundant liquidity in the advanced economies which, in an environment of low interest rates, has been directed at neighbouring economies. This puts the central banks of the recipient countries under pressure, since the resulting capital inflows apply upward pressure on the value of their currencies and generate deflationary pressures. This is especially pronounced in small, open economies: Denmark, Sweden and Switzerland are clear examples of countries affected by the QE of the

ECB. If they want to avoid sudden appreciations of their currencies and manage the capital inflows, the recipient economies are forced to adopt more accommodative monetary policies than their domestic economic conditions require, which can also feed financial instability.⁷

In the end, monetary policy must decide what form it wants to take in the future, and this will require an in-depth rethink of the objectives and the tools that are used.

The impact of low rates on the banking sector

The environment of low rates, like the one we expect for the next few years to come, will have major consequences for the banking sector. It is important to keep in mind that this environment applies downward pressure on the sector's profitability.⁸ This is because low interest rates erode the interest margin, that is, the difference between what the bank earns on credit

5. See J.C. Berganza, I. Hernando and J. Vallés (2014), «Los desafíos para la política monetaria en las economías avanzadas tras la Gran Recesión», Occasional Papers n° 1404, Bank of Spain.

6. See H. Pill and L. Reichlin (2016), «Non-Standard Monetary Policy and Financial Stability», London Business School Working Paper.

7. See the article «Monetary policy: from independence to interdependence» in the Dossier of the MR09/16.

8. See P. Hernández de Cos (2018), «¿Reinventar la banca o mejorar su gestión?», Opening of the 14th IESE Banking Sector Conference, Bank of Spain.

facilities, loans and mortgages and what it pays on deposits, since in the latter case banks can scarcely reduce interest rates below 0%. Therefore, when rates are very low, a further decrease has a greater impact on what the bank receives from its assets than on what it has to pay on its liabilities (which include deposits). This intuition has been widely endorsed by the economic literature, which has empirically documented that, in environments with low interest rates, banks earn a lower interest margin on average than they do in high-rate environments.⁹

Following on from this, an article published by the ECB¹⁰ helps us to quantify the effect that a prolonged period of low interest rates has on the profitability of banking in Europe: the impact is negative and statistically significant. Specifically, if interest rates remain near their current levels for three more years – a scenario that is perfectly feasible –, it would apply downward pressure on profitability, as measured using return on assets (ROA),¹¹ of approximately 0.06 pps (the average ROA for the EU as a whole in 2018 was 0.5%). In addition, if the environment of low rates were to persist until 2022, the impact on profitability between 2012 and 2022 would amount to –0.1 pp in net terms (i.e. taking into account the positive effect of low interest rates on economic activity).

In this environment, the sector can be expected to continue to focus on more profitable business activities. These include lending to companies or consumers on the asset side of the business, and asset management activities such as investment funds, pension plans and savings insurance, which generate income through fees. It can also be expected that this environment of low interest rates will continue to act as a catalyst for greater concentration in the sector. This process could have a wider-reaching impact beyond the strictly national scope, with more flexible and integrated European regulation facilitating the creation of truly pan-European banks. In this regard, completing the banking union would represent a giant leap.

Public debt and low rates: careful with short-sightedness!

Finally, it is time to analyse how low interest rates that persist over a long period of time affect the sustainability of public debt. This is a key issue in the current environment, given the high levels of public debt that exist in most developed countries.

The path followed by public debt depends on three key variables: the interest rate at which each country's Treasuries are financed, the primary public deficit and, of course, the speed at which the economy grows in nominal terms.

The way in which each of these variables has an impact on public debt is intuitive: the lower the interest rate at which the Treasuries are financed and the lower the primary deficit, the more public debt is reduced (or the less it increases). On the other hand, the higher the growth of the economy, the more the debt to GDP ratio decreases. Intuitively, if the primary deficit is equal to zero, public debt (as a percentage of GDP) will increase when the cost of debt is greater than the nominal growth of the economy, and vice versa.¹²

Currently, the cost of debt has reduced significantly, largely due to the expansionary monetary policy carried out by the major central banks. This has enabled many developed countries to stabilise their public debt, despite continuing to register primary budget deficits.

All in all, there are several factors that could once again raise the cost of debt in the medium-term. On the one hand, the advanced economies are already in a more mature phase of the business cycle, so a moderation in the pace of growth can be expected over the next few years. On the other hand, although we expect the natural rate of interest to remain low, the interest rate at which the Public Treasury is financed could rise, not due to fundamental reasons but rather because of risk premiums. In this regard, investors have already shown a high degree of sensitivity to increases in public debt, so risk premiums could increase again if the perception of risk among investors were to deteriorate. This is more likely to occur in contexts such as the current one, characterised by high financing needs.

9. See S. Claessens *et al.* (2017), «Low-For-Long Interest Rates and Banks», CEPR Discussion Paper 11842.

10. See C. Altavilla, M. Bouchinha and J.L. Peydró (2017), «Monetary policy and bank profitability in a low interest rate environment», ECB Working Paper 2105.

11. ROA is an indicator that measures the profitability of a company's total assets, calculated as the ratio between profit and total assets. It expresses the company's financial profitability, regardless of how the assets are financed (whether with internal capital or third-party resources).

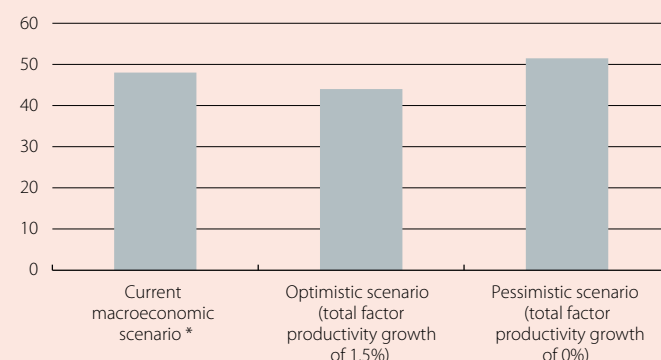
12. Formally, $\Delta B = (r - g) * B + d$, where B is public debt as a percentage of GDP, d is the primary deficit (i.e. excluding interest payments as a percentage of GDP), r is the interest rate of the Treasuries and g is the growth of the economy (both in real terms or in nominal terms).

Ultimately, the space generated by the low rates has not been used to achieve primary surpluses (on the contrary, relatively high primary deficits have remained in place), thus postponing the necessary adjustment to public debt. Therefore, one thing is clear: when the next recession comes, the scope available for carrying out countercyclical fiscal policies will be much smaller.

In fact, a detailed quantitative study by the Federal Reserve Bank of Minneapolis¹³ estimated the probability of the interest rate at which the US Treasuries are financed exceeding the economy's growth rate within five years. The study quantified it at almost 50%, much higher than many could imagine (and for 17 advanced economies that include the major countries of the euro area, it placed the probability at 30% within 5 years and at 38% within 10 years). It is important to emphasise that if this situation were to materialise, it would not necessarily mean that public debt would show explosive behaviour. To avoid this, however, primary surpluses would need to be maintained in a sustained manner over time.

These considerations become even more important if we consider the cost of inaction. For example, it is estimated that in the event of a return to a scenario with interest rates that exceed growth, the interest payments that the US Government would have to pay as a percentage of GDP would increase by between 1.8 and 3.5 pps, based on current debt levels. Clearly, complacency poses a risk, and this is something we must keep very much in mind when analysing the outlook for public debt in the medium term.

Probability of $r > g$ in the US within 5 years (%)



Note: * The current scenario envisages a GDP growth for the next 5 years of 1.4%, which is derived from a population growth of 0.7% and a total factor productivity growth of 0.7%. The probabilities are calculated using a probit model that predicts the value of $r > g$ in the US (r is the long-run real interest rate and g , the real growth of the economy) in $t+1$, on the basis of the value at t of $r-g$, public debt, real GDP per capita growth, and population growth with a sample beginning in 1870.

Source: CaixaBank Research, based on data from N. Mehrotra (2018), «Debt sustainability in a low interest rate world», Working Paper n° 32, Hutchins Center.

Javier Garcia-Arenas
CaixaBank Research

13. See N.R. Mehrotra (2017), «Debt Sustainability in a Low Interest Rate World», Working Paper n° 32, Hutchins Center.