



BANK OF FINLAND BULLETIN

BANK OF FINLAND ARTICLES ON THE ECONOMY

Bank of Finland Bulletin 1 • 2019

Publication dates 15 Mar 2019/ 3 April 2019

Vol. 93

The Bank of Finland Bulletin is published five times a year.

Editor-in-Chief

Olli Rehn

Editorial Board

Elisa Newby, Chairperson

Hanna Freystätter

Niko Herrala

Esa Jokivuolle

Paavo Miettinen

Meri Obstbaum

Petri Uusitalo, Secretary

Jarmo Kontulainen

Tomi Kortela

Mika Kortelainen

Helinä Laakkonen

Olli-Matti Laine

Sami Oinonen

Seija Parviainen

Michaela Schmöller

Lauri Vilmi

Charts and tables

Heli Honkaharju

Articles

were prepared in the Monetary Policy and Research Department under the supervision of Hanna Freystätter.

Translated and edited

by the Bank of Finland Language Services and Communications

Authors

Hanna Freystätter

Juhana Hukkinen

Pasi Ikonen

Eeva Kerola

Subscriptions of the newsletter

www.bofbulletin.fi

The contents of the Bulletin may be freely quoted, but due acknowledgement is requested.

ISSN 1456-5870 (online)

Table of Contents

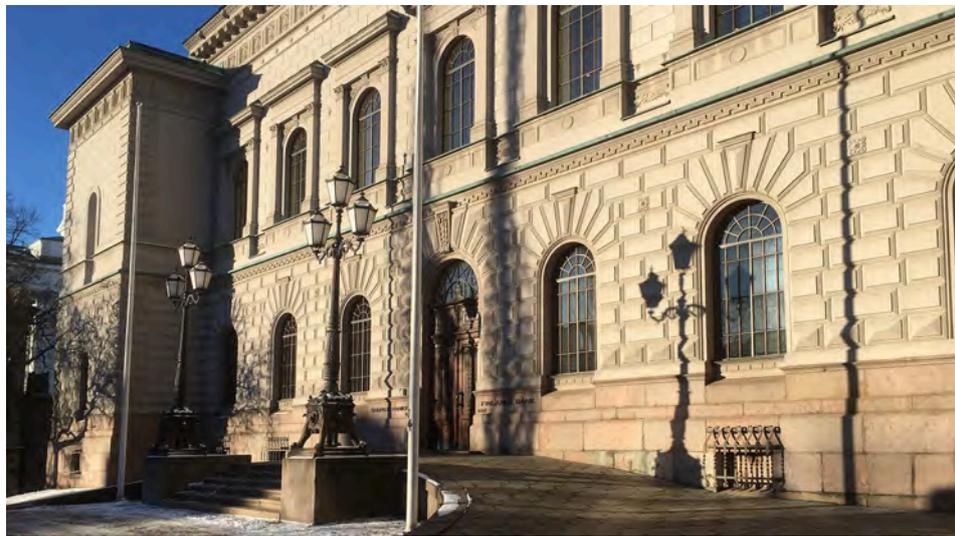
Editorial: European Central Bank strengthens monetary policy accommodation – ECB monetary policy strategy needs to be reviewed	3
Outlook deteriorated rapidly – can this be turned around?	7
The ECB's targeted longer-term refinancing operations have increased bank lending to the private sector	31
Dollar dominance means US risks also pose risks to others	37
Low inflation and interest rates challenge central banks to review their monetary policy strategies	41
Alternative scenarios linked to the global impact of US fiscal and trade policies	52

EDITORIAL

European Central Bank strengthens monetary policy accommodation – ECB monetary policy strategy needs to be reviewed

15 MAR 2019 11:00 AM • BANK OF FINLAND BULLETIN 1/2019 • EDITORIAL

The first months of 2019 have confirmed that global economic activity has undergone a change for the worse. Political uncertainty and trade tensions have eroded the outlook for the economy. However, at present, this change does not seem to imply entering into a recession but rather a transition to a phase of more sluggish growth. While at the end of last year many still hoped that the stagnation of growth would remain transient, it is now turning out to be more persistent and has led to substantial downward revisions to growth forecasts for the current year nearly everywhere.



Naturally, the turn in the global economy will also affect the outlook for the European and Finnish economies. The European Central Bank has already reacted to this at its meeting on 7 March 2019 by taking decisions that reinforce the monetary policy stimulus. For Finland, the turn for the worse in the global economy highlights the importance of maintaining fiscal sustainability and the competitiveness of Finnish work and output – even in an election period.

The situation is challenging for the ECB, as it must simultaneously operate in two

different time frames. On one hand, it has to take strong short-term measures in order to achieve its price stability objective in a situation where underlying inflation excluding energy and food prices hovers around 1%. It has turned out that, with such low levels of underlying inflation, the ECB's price stability objective of "below, but close to, 2%" cannot be achieved in a sustainable manner. On the other hand, the ECB must prepare itself for longer-term challenges which would necessitate a review of its monetary policy strategy – that is, a re-examination of the principles, key assumptions and instruments underlying its monetary policy. This idea has been discussed for some time already, and in November the US Federal Reserve announced it would launch a similar exercise. Undoubtedly the ECB will do the same when the time is ripe.

Global economic outlook dampened in 2018

The outlook for the global economy deteriorated in the second half of 2018 as protectionism (in trade policies) and uncertainty about growth in major economic areas weakened confidence and dampened growth in global trade. Export growth in advanced economies receded sharply. Slower growth in China is an additional concern.

In the next few years, GDP growth in the euro area is anticipated to fall clearly behind previous expectations. The ECB staff projections foresee GDP growth rates of only 1.1% for 2019 and 1.6% and 1.5%, respectively, for 2020 and 2021. The projection for 2019 has been revised strongly downwards, by 0.6 of a percentage point.

The outlook for prices has also become more subdued since December last year. Inflation expectations estimated on the basis of financial market prices (inflation-linked swaps) have decreased markedly. Long-term inflation expectations now stand at levels around 1.5%. The deviation of inflation expectations from the ECB's target is worrisome in terms of the effectiveness of, and strategy for, monetary policy.

Compared with earlier staff projections, ECB staff now forecast a clearly slower increase in the price level, with headline inflation foreseen to be 1.2% in 2019 and 1.5% and 1.6% respectively in 2020 and 2021. Over the short term, this downward revision is mainly explained by a lower oil price. Following a broadly similar path, underlying inflation is projected to be 1.2% in 2019 and 1.4% and 1.6%, respectively, in 2020 and 2021, reflecting only slowly increasing price pressures and lower (output) capacity utilisation than in previous forecasts.

The dampening of the economic outlook has had an impact on monetary policy worldwide. The Governing Council of the ECB decided at its meeting in March to keep the key ECB interest rates unchanged for a longer period than it had previously anticipated: it now expects them to remain at their present levels at least through the end of 2019. In order to support bank lending, the Governing Council also decided to launch a new series of targeted longer-term refinancing operations (TLTRO III). The operations will be conducted on a quarterly basis, starting in September 2019 and ending in March 2021.

The ECB's monetary policy decisions were taken to support a sustained convergence of inflation to levels that are below, but close to, 2% over the medium term in a situation in which underlying inflation remains muted and too weak economic growth slows down

the return of the inflation rate towards levels in line with the objective. Already at the turn of the year, the dampening economic outlook also caused the US Federal Reserve to stress patience in its future monetary policy and to delay the increase in its policy rates.

Why do we aim at inflation rates of around 2%?

Of course, one can ask why striving to achieve inflation rates of just below 2% is so important. Could one not claim that price stability has been achieved already when clearly lower inflation rates prevail? When the ECB's current objective was defined in 2003, it was justified by three arguments.^[1]

First, the goal was to reduce the probability of a situation in which the zero lower bound would restrict the room for monetary policy manoeuvre. If average inflation were to slow to rates markedly below 2%, this would also push down nominal interest rates and thus limit the room for interest rate policy. Later on, this factor has turned out to be more important than anyone apparently could have expected at that time.

The second aim was to reduce the probability that some countries would have to operate in an environment of negative inflation rates if restoring their competitiveness required inflation rates below the euro area average. This is because negative inflation is associated with several drawbacks owing to, for instance, the downward rigidity of prices and wages. This justification has also turned out to be very valid.

The third justification referred to back in 2003 was that a certain bias cannot be avoided when measuring inflation and that actual inflation is, for several reasons, slightly slower than what consumer price indices suggest.

Naturally, all these factors have been understood outside the euro area, too, and consequently 2% has become a common benchmark worldwide for defining monetary policy objectives.

ECB monetary policy needs to be reviewed

During the past 10 years or so, central banks have seen their economic environment change as a result of the impact of the financial and debt crises, an ageing population and generally lower interest rates, to mention just a few causes. The changes in the environment, the past years' experiences from non-standard monetary policy measures, as well as accumulated research evidence challenge central banks to review their monetary policy strategy.^[2]

The most recent update of the ECB's monetary policy strategy took place in 2003 – before the financial crisis and other, subsequent events and changes. Monetary policy

1. See 'The ECB's Monetary Policy Strategy After the Evaluation and Clarification of May 2003', speech by Jean-Claude Trichet, Frankfurt am Main, 20.11.2003. See 'The Monetary Policy of the ECB', Frankfurt am Main, European Central Bank 2004, pp. 51–54.

2. See 'The Federal Reserve's review of its monetary policy strategy, tools, and communication practices', a speech by Richard H. Clarida, Vice Chairman of the US Federal Reserve, on the grounds and objectives of the strategy review at the 2019 US Monetary Policy Forum, New York City, 22 February 2019.

strategies are currently being discussed across the world more vividly than for a long time. The Eurosystem, too, should consider performing a new systematic review of its monetary policy strategy.

Several factors call for a strategy review. One of them is that risk-free nominal short-term interest rates have decreased to very low levels. If this prevailing environment of very low rates turns out to be a long-lasting phenomenon, as several studies suggest, the room for manoeuvre for traditional interest rate policies, especially in an accommodative direction, remains narrower than was customary before the financial crisis. In recent years, it has been possible to complement the interest rate policy with non-standard measures, such as asset purchases by central banks, but the desired strengthening of inflation in the euro area has still not materialised.

Another factor with monetary policy relevance is that the interdependence of economic activity and inflationary pressures seems to have weakened in recent years, causing a flattening of the Phillips curve. Should this phenomenon prove to be lasting, it would imply a weakening of the impact monetary policy exerts on inflation via aggregate demand.

Thirdly, inflation expectations have decreased in the euro area in recent years, thus deviating from the ECB's definition of price stability (an inflation rate below, but close to, 2% over the medium term). One explanation for this is that, for the reasons mentioned above, trust in central banks' ability to influence the inflation rate may have eroded.

Together, these three factors call for a reassessment of the ECB's monetary policy strategy. Naturally, this would not mean questioning the primary objective of price stability, but it would indeed entail a comprehensive review of the guiding principles, key assumptions and tools used for the implementation of monetary policy.

Among the most important tasks of the monetary policy strategy is to steer the expectations regarding monetary policy and inflation in such a way that supports the achievement of monetary policy objectives – above all price stability – in the current, much more demanding circumstances. In fulfilling this task, a good strategy also underpins the scope for monetary policy to stabilise real economic developments and thereby maintain sustainable growth and high employment. If the strategy reassessment were to lead to enhancements that would increase the effectiveness and credibility of monetary policy, it would have fulfilled its purpose.

Helsinki, 15 March 2019

Olli Rehn
Governor of the Bank of Finland

Tags

[monetary policy](#), [global economy](#), [inflation](#)

Outlook deteriorated rapidly – can this be turned around?

TODAY 1:00 PM • BANK OF FINLAND BULLETIN 1/2019 •

MONETARY POLICY, ECONOMIC OUTLOOK

Global economic growth is expected to remain somewhat slower in 2019 than the previous year. Growth is expected to abate gradually in the United States amid the fading effects of the fiscal stimulus. China's economic growth has continued to slow. The approach of the United Kingdom's withdrawal from the EU has weakened the UK economy. Euro area economic growth has also moderated rapidly and more persistently than previously expected. World trade and industrial output in the advanced economies contracted at an alarming pace at the end of 2018. The annual growth rate of world trade in goods turned negative in December. Industrial confidence has declined on a broad front – at the end of 2018 also in the United States.



The downside risks to global economic developments are still sizable. The US-Chinese trade dispute, which began a good year ago, remains unresolved despite continued negotiations. At present, the increased tariffs pertain to the majority of trade in goods between China and the United States. A further escalation of the trade tensions and a faster-than-anticipated moderation of Chinese growth could significantly undermine growth globally.

Brexit will be most negatively felt in the United Kingdom, but the implications for certain euro area countries and economic sectors may also be significant. Reaching an agreement on both Brexit itself and trade negotiations would reduce uncertainty in the short term, while in the longer term it is the results of the trade negotiations that will carry greater importance.

Euro area economic growth peaked in 2017. The abrupt decline in euro area growth

during 2018 came as a surprise, and so far there have been no signs of growth gathering pace again. Industrial confidence, in particular, has weakened rapidly and industrial output declined at the end of 2018. GDP growth is expected to remain slightly below the long-term equilibrium rate in 2019.

The more sluggish economic growth has also led to a slight decline in employment growth. Since economic growth has nevertheless been in positive territory for several years, the unemployment rate has dropped from the peak of about 12% in 2013 to just below 8% at the beginning of 2019. At present, wage growth roughly corresponds to the long term average.

The pick-up in wage growth has not been reflected as expected in core inflation, which has persisted at about 1%. The euro area's core inflation has also remained subdued in international comparison. However, it is expected to gradually gather pace in the immediate years ahead. Nevertheless, weaker growth prospects and slightly lower inflation expectations are impeding the sustained convergence of inflation towards its target.

Favourable financing conditions will continue to support growth in the euro area. Bank interest rates on loans to non-financial corporations and households are low and country-specific differences in lending rates are relatively modest. In Italy, the yields on sovereign bonds will remain slightly elevated due to political uncertainty in the country, and banks' credit standards have become somewhat tighter. However, the tightening of Italy's financing conditions has not spread to other euro area countries. Nevertheless, the overall weakening of the euro area economic outlook can make it more difficult to restrain growth in public debt and may hamper improvements to the state of the banking sector in several countries.

Looking further ahead, euro area growth continues to be obstructed by low productivity. The euro area falls behind the United States in research and development, which undermines future growth prospects. Country-specific differences are substantial, and of the largest euro area countries, only Germany is roughly on a par with the United States in terms of productivity and investment in R&D.

Global economy slows down, uncertainty depresses outlook

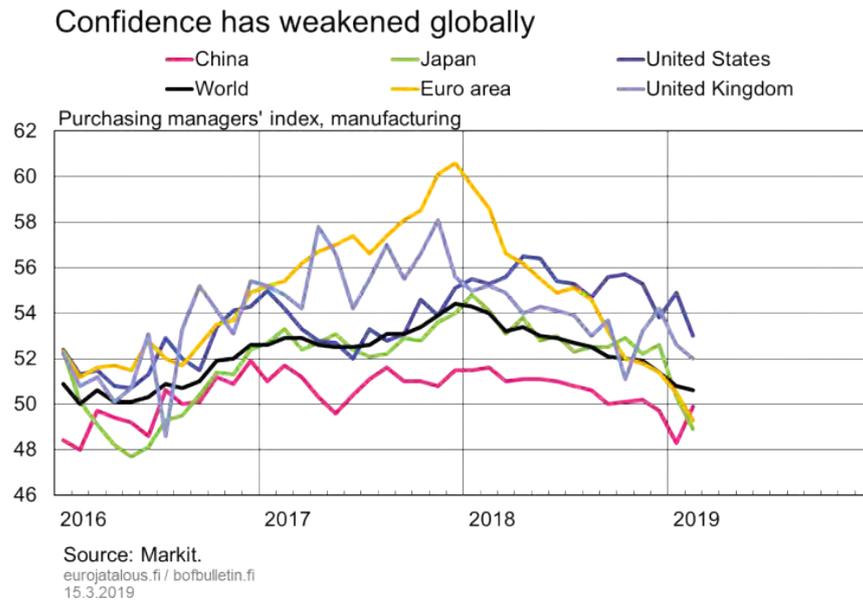
During the first half of 2018, the global economy grew at a pace slightly below 4%. In the final months of the year, prospects weakened and global growth is projected to be slower in 2019. Protectionist measures and uncertainty about growth in the major economic regions have eroded confidence and subdued world trade growth. According to the most recent forecasts, global economic growth will remain close to 3.5% in the immediate years ahead (Chart 2), but a weaker trend is also possible.^[1]

The external environment of the euro area has deteriorated over the past six months. Some of the downside risks to global growth have materialised. The trade dispute

1. IMF January forecast and March estimates by the OECD and ECB (excluding the euro area).

between China and the United States that began a little over a year ago remains unresolved despite continued negotiations. Raised import tariffs are currently imposed on the majority of goods traded between China and the United States.^[2] Protracted trade tensions have increased uncertainty about the future and, to some degree, already affected investment and export figures. Confidence indicators for predicting future economic growth have weakened (Chart 1).

Chart 1.



The slowing growth in China is a special cause for concern. China has become so important^[3] that the impacts of its weakening economic situation is inevitably felt elsewhere in the global economy. US growth is also expected to gradually slow when the effects of the fiscal stimulus fade. In addition to the trade policy dispute between the United States and China, the continuing uncertainty surrounding Brexit is reflected in the rapid weakening of the United Kingdom's economic growth and is dampening external demand in the euro area^[4]. Trade negotiations between the EU and the US are also still in progress – the possibility remains that the US could raise tariffs on cars and car parts, which would particularly hurt the German automobile industry.

Chart 2.

2. The raised tariffs affect half of China's exports to the US (valued at around USD 250 billion) and 80 % of US exports to China (valued at around USD 110 billion). General tariffs placed by the US on washing machines, solar panels, aluminium and steel are still in effect, apart for some individual countries that have been granted exemptions.

3. China's share accounts for just under one fifth of the total global GDP.

4. The UK Parliament rejected Theresa May's Brexit deal a second time on March 12, 2019.

After a strong 2017, global trade growth has slowed



Global goods trade has slowed in the past twelve months, even though it continued to grow in 2018 at a rate of just over 3% on the previous year (Chart 2). In the advanced economies, the rate growth in exports has almost halved in one year. Industrial output has slowed in all major economic regions, and especially new export orders have declined.

US economic growth slows as fiscal stimulus fades

The United States' economy grew rapidly in 2018, by almost 3% (Chart 3). Growth prospects have, however, weakened compared with the autumn figures. Both consumer and industrial confidence declined at the turn of the year. This reflects, in part, the raised import tariffs caused by trade disputes and the partial shutdown of the federal government.^[5] Private consumption – the traditional driving force behind US economic growth – may prove weaker than expected in early 2019.

At the beginning of 2018, significant new individual and business tax cuts came into force in the United States. Tax reductions along with increased government spending in 2018–2019 have resulted in a strong fiscal stimulus in an economic upswing. While the United States' economy is expected to slow in the years ahead as the fiscal stimulus fades, growth will remain at around 2.5% in 2019. From then on, growth will slow closer to the potential rate of growth, in the region of approximately 2%. The business tax cuts will increase the post-tax return on equity, consequently increasing the incentive to invest, while the cuts in personal taxation will increase labour supply. However, estimates of the impact of these effects vary.^[6]

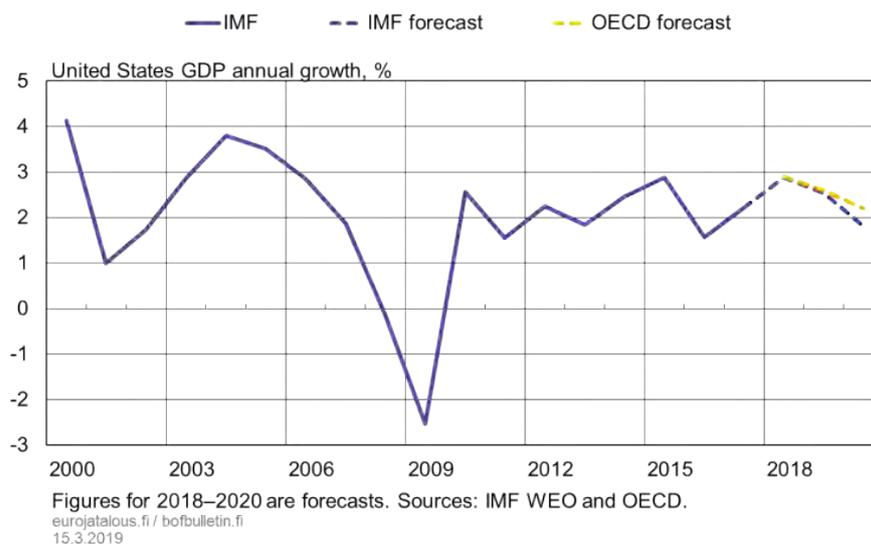
5. Read more about the raised tariffs' impacts on the US economy, Amity, M. et al. (2019) The Impact of the 2018 Trade War on U.S. Prices and Welfare, CEPR Discussion Paper no.13564 and Fajgelbaum, P.D., et al. (2019) The Return to Protectionism, Working Paper, March 2019.

6. See for example JCT (2017) Macroeconomic Analysis of the Conference Agreement for H.R. 1, The "Tax Cuts and Jobs Act", JCX-69-17, or Barro (2018) Tax Reform Will Pay Growth Dividends, WSJ 4.1.2018.

The overall general government deficit of the United States is projected to remain high and general government debt to increase (see article [Alternative scenarios linked to the global impact of US fiscal and trade policies](#)). The most recent IMF forecasts predict that the overall general government deficit will remain at around 5% of GDP in the years ahead and general government debt will rise to 112% of GDP in 2021. A large general government deficit in the United States increases import demand, which in turn adds to the trade and current account deficits.

Chart 3.

US growth expected to slow in years ahead



Inflation in the United States slowed to 2% at the end of 2018, mainly due to the falling price of crude oil. Core inflation has remained at slightly over 2%. According to estimates, the labour market is enjoying full employment, which helps to keep the inflation rate at around 2%. The unemployment rate is around 4%, and annual wage growth, based on average hourly earnings, rose to over 3% towards the end of 2018.

Broadly based weakening of growth in China

Economic growth slowed in China towards the end of 2018. Private consumption demand weakened and investment growth remained subdued. News outlets have reported that unemployment is increasing, especially in the export industries. The trade war has affected the general atmosphere and uncertainty has made companies reassess their investment decisions. China's response to the slowdown has been to increase stimulus efforts. The current economic policy, however, leaves limited room for manoeuvre. Economic policy is expansionary to begin with, as China has determinedly held on to its goal to double real GDP between 2010 and 2020. According to the IMF, the general government deficit has been 10% of GDP in recent years. Business and household indebtedness has also increased rapidly. For an emerging economy, the level of debt relative to the size of the economy is very high, over 250% of GDP (excluding the financial sector).

Chinese economic growth is projected to continue slowing in the years ahead (see BOFIT Forecast for China), which is a natural phase of evolution for China. The structural change towards a service economy constrains productivity growth. The population is ageing rapidly and the share of the working-age population decreasing. Growth is also held back by the sheer size of the economy and environmental problems.

Japan continues to pursue an expansionary economic policy

In 2018, economic growth in Japan slowed to a little under 1%. Despite rising labour force participation among women, growth potential is hampered by a labour shortage caused by the ageing population. Japan is trying to address this issue by facilitating employment-based immigration. The measures adopted so far have been insufficient to meet the demand for additional labour.

Japan continues its expansionary economic policy. The consumption tax increase that enters into force in October will increase tax revenue, but estimates say it will cover only two-thirds of the government's funding needs. Japan's debt-to-GDP ratio remains around 240% and the time frame for achieving a balanced budget has been delayed from 2020 to 2025.

Inflation has remained subdued. The Bank of Japan will continue its accommodative monetary policy and has confirmed that it will hold down interest rates for an extended period as well as continuing the bond-purchasing programme until inflation rises sustainably above the 2% target. The Bank of Japan now holds half of Japanese government debt, and the bank's balance sheet already exceeds the country's GDP.

Brexit is drawing closer

In the **United Kingdom**, total output grew last year by only slightly over 1% from the previous year. The uncertainty about how Brexit will proceed has contributed to a notable weakening of confidence indicators and observed economic activity alike. The UK economic outlook for the next few years depends on how the Brexit process develops.

Sweden's economic growth will slow down somewhat this year in line with the weakening of global growth. Over the medium term, however, Sweden's growth rate will return to levels close to 2%. Also, the inflation rate is expected to remain close to the 2% target set by the Swedish Riksbank. After its prior slowdown, the housing market picked up slightly last year.

The recovery in the **Russian** economy accelerated in the course of 2018. However, growth is expected to moderate to levels around the potential growth rate of approximately 1.5% (see BOFIT forecast for Russia). An increase in VAT will slow growth in private consumption, and political uncertainty weakens the investment outlook, in particular for private companies. If the oil price remains at its current level, both central government finances and the current account will remain in surplus.

Dampening of outlook reflected on global financial

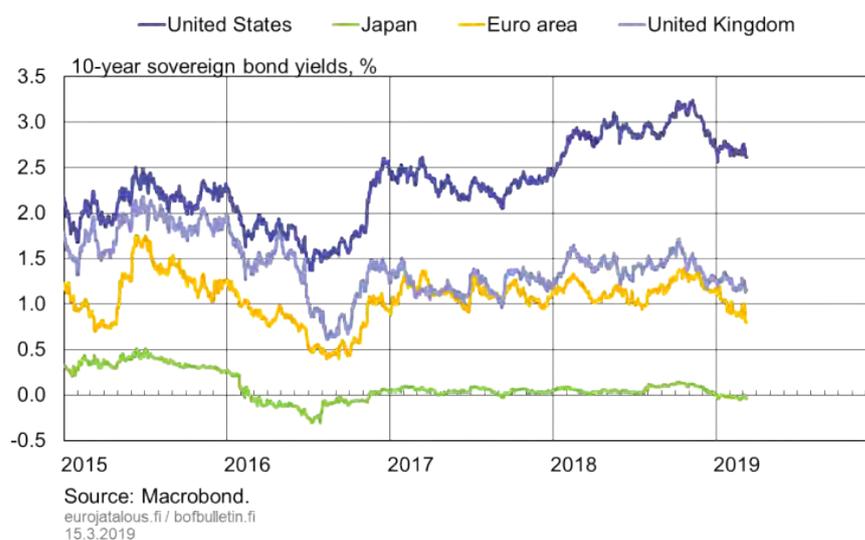
markets

The broadly based weakening of the outlook has, together with the prevailing uncertainty, dampened expectations of interest rate increases and caused volatility in stock prices. Stock prices fell sharply towards the end of 2018, but began to rise again after the turn of the year. Stock price indices have been pushed up by the US Federal Reserve's forward guidance on an easier monetary policy stance as well as by positive news on the progress of the US-China trade negotiations. Also, the oil price decreased sharply towards the end of last year, but has risen again, in particular amid production restrictions. The fall in the oil price pushed inflation rates down markedly in all major economic areas. At the turn of the year, OECD countries' inflation rate fell below 2.5% (core inflation around 2%).

The dampening economic outlook and the uncertainty have moderated the expectations of a gradual tightening of monetary policy in key countries. Last year saw four policy rate increases in the US. The weakening of the economic outlook towards the end of the year caused the US Federal Reserve to stress that the pace of policy rate increases was moderating. Indeed, policy rates are now expected to increase at a much slower pace. The impact of this postponement of rate increase expectations is visible in increasing stock prices but also in decreasing long-term interest rates (see Chart 4).

Chart 4.

Weakening economic outlook has pushed down long-term rates



The slower pace of monetary policy tightening in the US eases, for its part, the situation of those emerging economies that rely on US dollar funding. The dollar has depreciated moderately since late 2018 (see [Dollar dominance means US risks also pose risks to others](#)). The depreciation of the dollar and the decrease in interest rates support the exchange rates of emerging economies, lower their debt-servicing costs and thereby decrease capital outflow pressures.

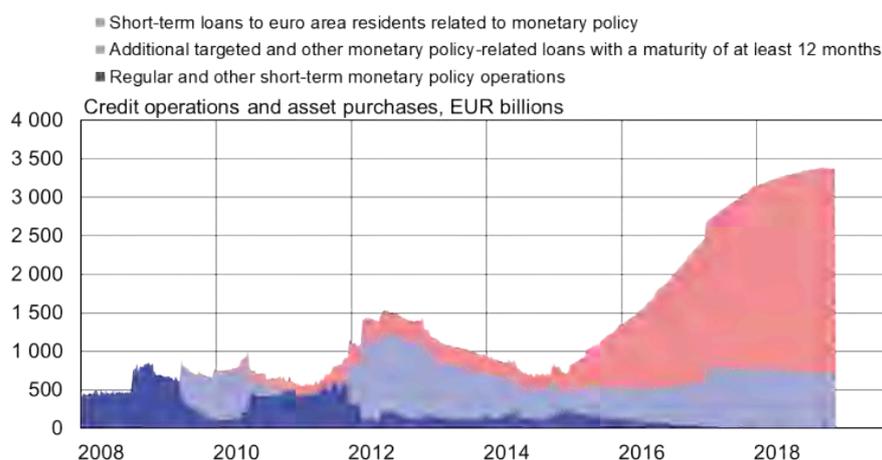
ECB monetary policy remains accommodative

Economic growth in the euro area slowed significantly in the second half of 2018. However, labour market conditions have further improved and wage growth has accelerated, which should support a sustainable strengthening of inflation to levels close to the target of below, but close to, 2%. At the same time, economic activity in the first part of the year looks subdued, and growth forecasts for the current year have been revised down markedly.

As anticipated, the Governing Council of the ECB stopped its net asset purchases under the expanded asset purchase programme at the end of 2018. However, the Eurosystem will continue to purchase securities as reinvestments of the principal payments from maturing securities (see Chart 5). It is estimated that such purchases will be made at an average monthly pace of EUR 17 billion in 2019. In December, the Governing Council enhanced its forward guidance on reinvestments by announcing that they will continue for an extended period of time past the date when the Governing Council starts raising the key ECB interest rates, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation.

Chart 5.

Eurosystem reinvests the principal payments from maturing securities in new securities



Source: ECB.
eurojatalous.fi / bofbulletin.fi
15.3.2019

In March, the ECB revised down its projections for euro area GDP growth and inflation. The Governing Council considered the risks surrounding the euro area growth outlook remain on the downside. Market expectations regarding policy rate increases had shifted significantly ahead since early autumn (see Chart 6).

As a result of the weakened economic outlook, the Governing Council changed its forward guidance on key interest rates at its meeting in March. The Governing Council now expects the key interest rates to remain at their present levels at least through the end of 2019, and in any case for as long as necessary to ensure the continued sustained convergence of inflation to levels that are below, but close to, 2% over the medium term.

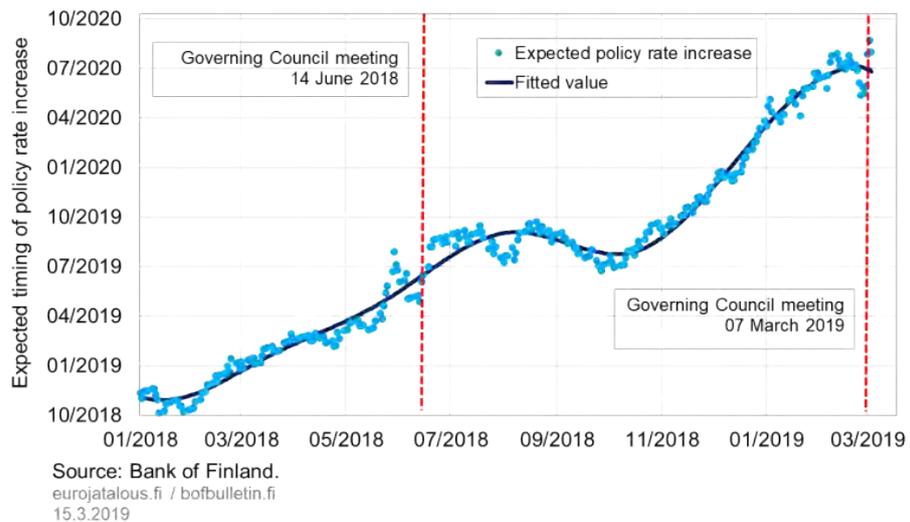
Previously, key interest rates were expected to remain at their current level through next summer. The change in the forward guidance on key interest rates also implies an extension of the period of reinvestment of maturing securities, as these reinvestments are linked to the start of key interest rate increases.

In March, the Governing Council also announced a new series of quarterly targeted longer-term refinancing operations (TLTRO-III) that will be available for banks. From September 2019 to March 2021, banks will have the possibility to obtain loans from the Eurosystem with a maturity of two years and an interest rate tied to the rate on the main refinancing operations. These loans are aimed at maintaining favourable developments in bank lending in the euro area.

The Governing Council also decided in March that the Eurosystem will continue conducting its lending operations as fixed rate tender procedures with full allotment for as long as necessary, and at least until the end of the reserve maintenance period starting in March 2021. The Governing Council stands ready to adjust all of its instruments, as appropriate, to ensure that inflation continues to move towards the Governing Council's inflation aim in a sustained manner.

Chart 6.

Markets now expect ECB to increase key interest rates later than estimated last autumn



The Governing Council decisions taken in March increase the accommodative impact of monetary policy. After the decisions, expectations regarding the start of key interest rate increases shifted ahead, long-term sovereign bond yields decreased and the euro depreciated against other currencies. Financing conditions in the euro area will remain accommodative for an extended period, supporting economic growth.

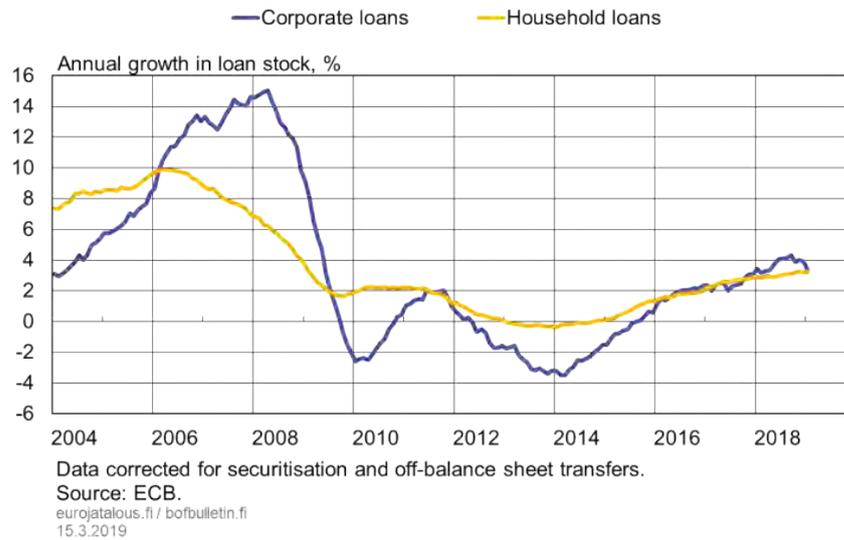
Moderate increase in bank lending

Towards the end of last year, the annual rate of loan growth was around 4% for corporate loans and slightly over 3% for household loans (see Chart 7). The acceleration of loan

growth has flattened out in recent months. Growth still remains moderate in comparison with the period preceding the financial crisis when annual growth in corporate loans peaked at 15%, and household loans at 10% approximately. Cross-country differences in loan growth figures are significant. In southern Europe, the stock of loans has grown relatively slowly, whereas in the north loan growth has, on average, been much faster.

Chart 7.

Moderate growth in loan stock continues



The ECB has supported lending by the banking sector, for instance by means of targeted longer-term refinancing operations, the third series of which will start in September 2019 (see **box on TLTROs**). These favourably priced long-maturity operations have contributed to a decrease in banks' funding costs, which has also been reflected in bank lending rates. Indeed, the interest rates applied by euro area banks in their lending to the private sector have remained historically low, at slightly below 2%.

The results of the latest ECB Bank Lending Survey contain signs of tightening credit conditions for the private sector in Italy. Loan margins have been increased and collateral requirements have been tightened. The yields on Italian sovereign bonds increased on the back of political uncertainty at the end of May 2018. Compounded by deteriorating economic conditions, the increase in sovereign bond yields weakens the balance sheets of Italian banks and pushes up their funding costs.

According to euro area companies, their access to finance has further improved. In the ECB Survey on the Access to Finance of Enterprises (SAFE), only 7% of respondents name access to finance as the most important problem for their business.^[7] This share has been continuously decreasing since 2012. Despite growing loan stocks, the ratio of overall corporate sector debt to GDP has, on average, further decreased in the euro area.

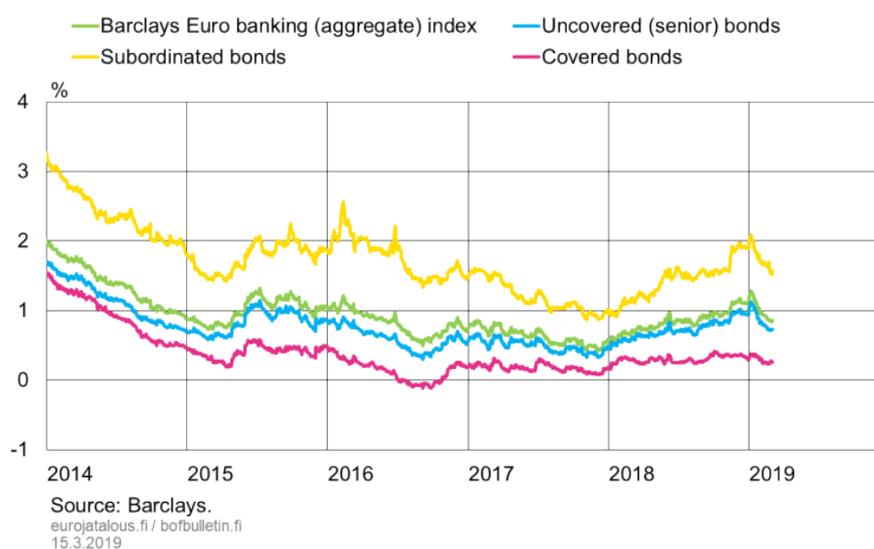
7. The most recent SAFE survey covers the period from April to September 2018.

Profitability remains a challenge for banking sector

In spite of a slight recovery, profitability remains stagnant in the euro area banking sector. Low interest rate levels, heightened political risk, and weakening economic conditions have all dampened banks' profit outlook. Over the past year, equity prices of euro area banks have fallen considerably more than broad market indices. At the same time, banks' market funding costs have increased (Chart 8). Markets and banks anticipate only slight growth in return on equity for the euro area's large banking groups by 2020, to about 8% (cf. 6.9% in Q3 2018).

Chart 8.

Banks' market funding costs increased in 2018



Subdued profit growth in core banking remains a sticking point for profitability overall. The challenging operating environment has proved especially caustic for banks' primary source of operating revenue, net interest income. Although bank lending has begun to recover in recent years, many banks have not been able to compensate for weak net interest income growth with other sources of revenue.

Banks are also beleaguered by longer-term structural issues. In many euro area countries, banks are weighed down by rigid cost structures and are too numerous relative to the size of the economy. Looking ahead, banks will have to contend with a host of challenges posed by major trends, such as digitalisation.

Nevertheless, euro area banks have still made progress in expunging credit risk from their balance sheets. At the same time, banks have strengthened their capital positions and bolstered their risk resilience. Reducing loan losses as well as credit risk has had a substantial effect in supporting the recovery of banks whose domiciles bore the brunt of the sovereign debt crisis. According to the European Single Supervisory Mechanism (SSM), euro area banks held EUR 628 billion worth of non-performing loans on their balance sheets in Q3 2018 – about 17% less than a year earlier. As a result, non-performing loans accounted for 4.2% of the total loan stock in Q3 2018. In spite of

relatively broad-based progress, non-performing loans still present a hurdle for some European countries.

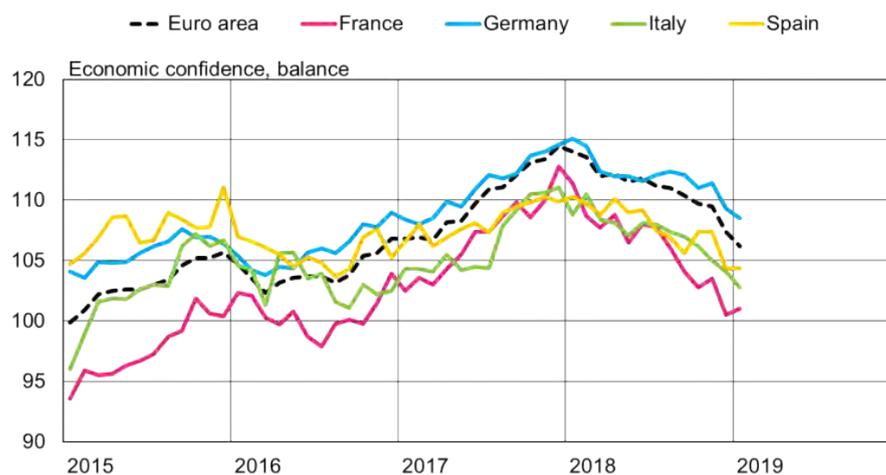
Euro area growth has slowed rapidly

Euro area real GDP grew strongly in 2017, by 2.5%. In 2018, GDP growth began to decline from the peak levels reached in the latter half of 2017, as did confidence indicators for the euro area economy (Chart 9). Growth still remained fairly strong through the second quarter of 2018, owing to positive developments in investment. The growth rate has since slowed, however, as declining global trade pushed euro area net exports into negative territory and industrial output contracted. Weakened economic sentiment weighed on private consumption growth.

Economic sentiment continued to decline through the end of 2018 and into early 2019, with export orders contracting. Private consumption indicators exhibited no signs of recovery. Growth was driven mainly by investment.

Chart 9.

Economic confidence in euro area has continued to decline

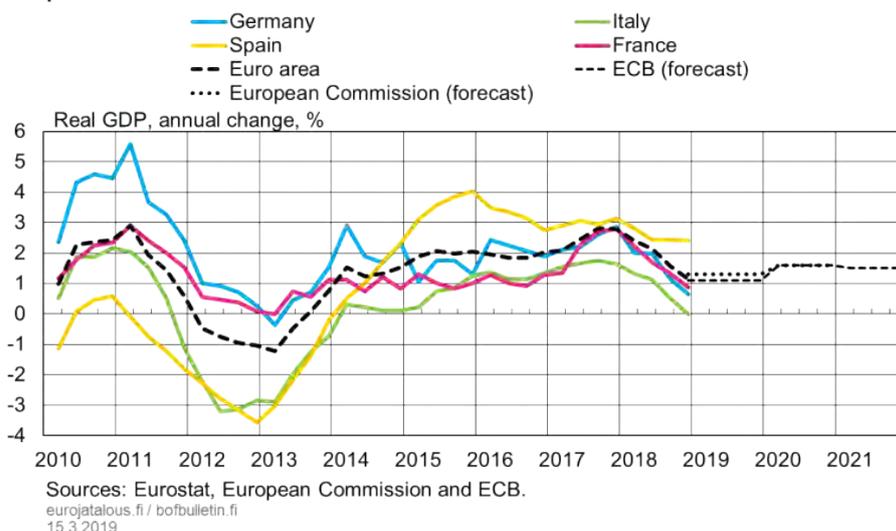


Source: European Commission.
eurojatalous.fi / bofbulletin.fi
15.3.2019

Real GDP growth in the euro area in 2019 is expected to come in substantially below previous forecasts (Chart 10). According to the ECB's latest macroeconomic projections for the euro area, real GDP growth will reach 1.1% in 2019 (cf. 1.7% in December forecast), 1.6% in 2020 (1.7%) and 1.5% in 2021 (1.5%). According to the European Commission's February forecast, real GDP growth in the euro area will reach 1.3% in 2019 and 1.6% in 2020.

Chart 10.

Euro area GDP forecasts anticipate growth to fall behind potential rate in 2019



Private consumption growth in early 2019 will be less than previously forecast. Private consumption will, however, remain one of the key drivers of euro area growth, as households' available incomes are lifted by the improved employment situation and rising earned income.

Euro area investment growth has been broadly based since 2014. Private fixed investment and housing investment have increased almost throughout the entire region. Investment growth is being bolstered by low interest rates, the need to renew the capital base, and deleveraging in the non-financial corporate sector. The need for, and growth of, investment is also reflected in the euro area's capacity utilisation rate. At the end of 2018, capacity utilisation had only slightly declined from the summer, when it approached its highest figures on record since measurement began in 1980.

Growth in euro area exports to the rest of the world slowed in 2018. Exports declined most notably to the United Kingdom and Turkey. In addition, moderating growth in China dampened the country's appetite for euro area exports. Growth figures in 2018 were buttressed by positive export growth to the United States. However, the outlook for net exports is bleak, and they will contribute negatively to growth in early 2019. Faltering consumer demand in China and uncertainty over trade and Brexit are all dimming the euro area's export outlook.

The euro area's current account surplus stood at about 3% of GDP at the end of 2018. While the current account surplus provides a buffer against potential economic shocks, it also signifies a higher degree of savings over investment, meaning that investment growth in the euro area is still subdued in that respect.

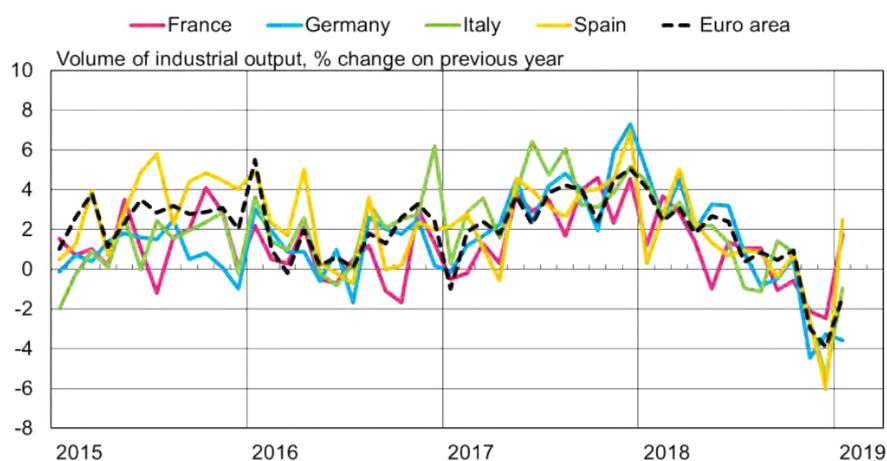
Overall, the pace of growth in the euro area is considered to have passed its cyclical peak. Since the latter half of 2018, growth has already decelerated below its long term potential, or equilibrium rate. Major estimates of the euro area's annual potential growth rate have recently settled at 1.4–1.5%. However, estimates of the potential rate are always subject to considerable uncertainty.

Scale of slowdown in German economy a surprise

Each of the four largest euro area economies has seen its outlook decline from autumn 2018. The European Commission lowered its 2019 growth forecasts for the entire euro area in February — most notably for Italy and Germany. Industrial output has suffered from weak export growth and uncertainty over the trade war (Chart 11). France, Italy and Germany have been especially vexed by various country- and sector-specific factors.

Chart 11.

Industrial output contracted across all large euro area countries at end of 2018



Source: Eurostat.
eurojatalous.fi / bofbulletin.fi
15.3.2019

The slowdown in the German economy has proved surprisingly rapid and far-reaching, particularly in manufacturing. Declining export demand and country-specific factors related to manufacturing have weakened Germany's growth outlook and weighed on economic sentiment. Import growth outpaced exports in 2018, with net exports contributing negatively to GDP growth. Industrial output contracted in several manufacturing industries at the end of 2018 — most notably in the automobile industry, which has suffered from temporary setbacks related to the emissions testing scandal. German real GDP grew by 1.5% in 2018, but the European Commission expects growth to slow to just over 1% in 2019. The European Commission has revised its forecast for German GDP growth significantly downwards in 2019, but left its 2020 estimate unchanged at 1.7%. GDP growth in Germany has mainly been kept afloat by domestic demand, which, in turn, has been buttressed by continued employment and wage growth and low interest rate levels.

French real GDP growth reached 1.5% in 2018 — the same pace as Germany's. French growth is similarly expected to moderate in 2019, although less so than in Germany. Political uncertainty and social unrest have reflected unfavourably on consumer confidence. Unpopular structural reforms are confirmed to continue but will be counterbalanced with public spending concessions. It is feared these concessions will weaken the public finances — given that general government is already in deficit.

Italy's economic growth has for several years now ranked among the weakest of the large euro area economies. Italian real GDP increased only by about 1% in 2018, and growth is likely to be near 0% in 2019. The Italian economy sunk into a technical recession in the latter half of 2018, following two consecutive quarters of falling output. As in Germany, Italy's industrial output contracted substantially at the end of 2018. Italy's public debt-to-GDP ratio is high (about 130% of GDP), and its sovereign bond yields have remained significantly elevated from May 2018, as a result of the heightened political uncertainty.

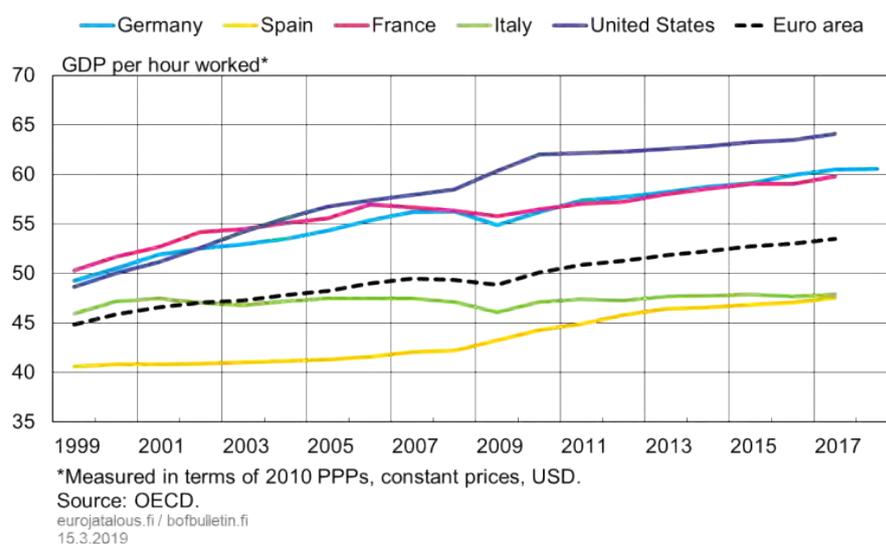
Spain was the fastest growing of the large euro area economies in 2018, with real GDP growth at 2.5%. Although the pace of growth has since moderated, with forecasts also having been revised downwards, real GDP growth is expected to remain at about 2% in 2019 and 2020. Industrial output and export growth have both weakened, but investment growth has performed well. Spain's public finances look to be on a fortuitous path, with the debt-to-GDP ratio forecast to shrink — albeit slowly.

Sluggish productivity development holds back euro area growth

The longer-term outlook for the euro area is dampened by weak productivity development. Productivity growth in the euro area began to slow already in the early 2000s. During the euro area crises, productivity growth decelerated further and has remained sluggish ever since. Importantly, the productivity slowdown is a euro area-wide phenomenon, homogenously observable across countries.^[8] However, a comparison of hourly labour productivity across the euro area, as measured by GDP per hour worked, reveals pronounced differences in the levels of productivity in different countries (Chart 12).

Chart 12.

Productivity differentials persist across the euro area



8. See also ECB Economic Bulletin, Issue 3/ 2017: 'The slowdown in euro area productivity in a global context'.

France and Germany display similar productivity levels and have followed a comparable productivity trend over the past two decades, while the productivity gap between France and Germany, on one side, and Italy and Spain, on the other, continues. The productivity levels in France and Germany, in turn, rank below the US counterpart, and the euro area aggregate displays a pronounced productivity gap relative to the United States.

Productivity differentials within the euro area remain significant. The ratio between productivity levels in Germany and Spain was 1.3 in 2017 and has thus remained largely unchanged vis-à-vis the corresponding ratio in 2000 (1.2). Productivity growth in Italy can be characterized as more-or-less stagnant over the past two decades. Spain experienced a similar stagnation in labour productivity growth in the early 2000s up until the Great Recession, while, since the crises, productivity has started to increase at a faster, albeit still rather slow, pace. Consequently, cross-country productivity differentials, prevalent already two decades ago, have persisted and signs of an early reduction of the underlying productivity gaps are not discernible in the data at present.^[9]

Productivity gaps also reflect heterogeneous R&D investment across countries

Generally, a host of factors determine labour productivity growth, ranging from the degree of capital deepening, management practices and business dynamism to the efficiency of the allocation of production factors across sectors and firms. Among those determinants, a key contributor is a country's capacity to innovate, driven by its activity in research and development.^[10] Thus, while various factors likely explain the productivity differentials across euro area countries as well as the euro area versus United States productivity gap, differentials in productivity are likely to also reflect, at least partly, the cross-country heterogeneity in R&D investment.^[11]

Chart 13 illustrates the evolution of research and development expenditures both across the euro area and in comparison with the United States. Overall euro area R&D investment equalled 2.2% of GDP in 2017 and has generally ranked below the corresponding US investment in innovation. The magnitude of R&D expenditures varies substantially across the euro area.

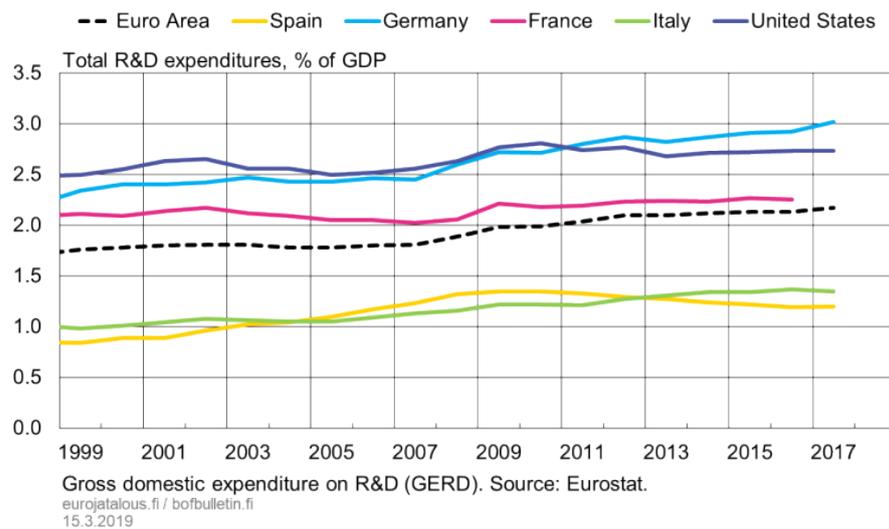
Chart 13.

9. The productivity gap within the euro area and the gap in euro area versus US labour productivity have also been stressed recently by other institutions, such as the IMF and the European Commission. See IMF (2017) IMF Country Report No. 17/236: Euro Area Policies; and European Commission (2018) Science, Research and Innovation Performance of the EU 2018: Strengthening the Foundations for Europe's Future.

10. On the link between R&D, innovation and productivity growth see Romer (1990) 'Endogenous Technological Change', *Journal of Political Economy*, Vol. 98 (5); and Grossman and Helpman (1991) 'Quality Ladders in the Theory of Growth', *Review of Economic Studies*, Vol. 58, pp. 43–61.

11. See European Commission (2018) for the importance of R&D in advancing euro area productivity growth and with regards to the euro area – US productivity gap.

Average euro area R&D expenditures clearly lower than in the US



German innovation expenditures corresponded to 3% of GDP in 2017, and R&D investment as a share of GDP has generally been on a similar scale to its US equivalent. R&D investment relative to GDP in France has ranged somewhat above the euro area average and equalled 2.3% in 2016. In Italy and Spain, by contrast, investment in innovation has remained at relatively low levels over the past two decades and corresponded to respectively 1.4% and 1.2% of GDP in 2017, highlighting the heterogeneity in terms of R&D expenditures within the euro area.

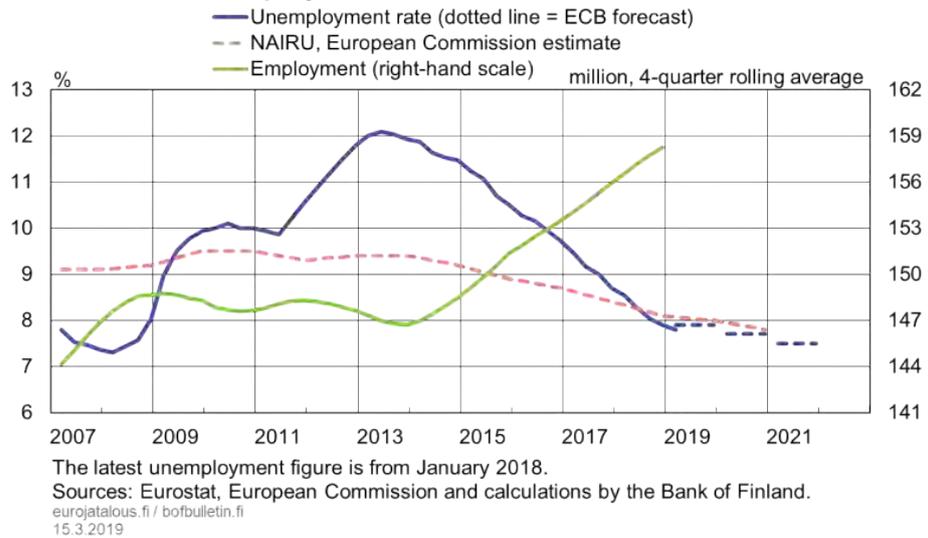
Euro area labour markets have tightened

Unemployment in the euro area has declined further in 2018. The unemployment rate has fallen steadily from the peak of about 12% in 2013 to around 8%, i.e. below the average euro area level prevailing prior to the crisis (see Chart 14). At the same time, the number of employed has increased considerably and the labour force participation rate has edged up.

In fact, there are already indications of labour shortages in many sectors in the euro area. Competition for workers is tightening, reflecting an increase in the number of jobs vacant. Survey data show that many companies are already suffering from a shortage of skilled labour. It is estimated that the euro area unemployment rate has already reached the non-accelerating inflation rate of unemployment (NAIRU), which refers to an unemployment rate that has a neutral effect on inflation. According to the ECB's assessments, unemployment will decline further in the immediate years ahead, despite a weakening of the cyclical momentum.

Chart 14.

Euro area unemployment rate already below the level of structural unemployment



However, there are still substantial differences in labour market conditions among euro area countries. In Germany, in particular, the labour market is already very tight, based on several indicators. Meanwhile, youth unemployment is still a significant problem in many euro area countries.

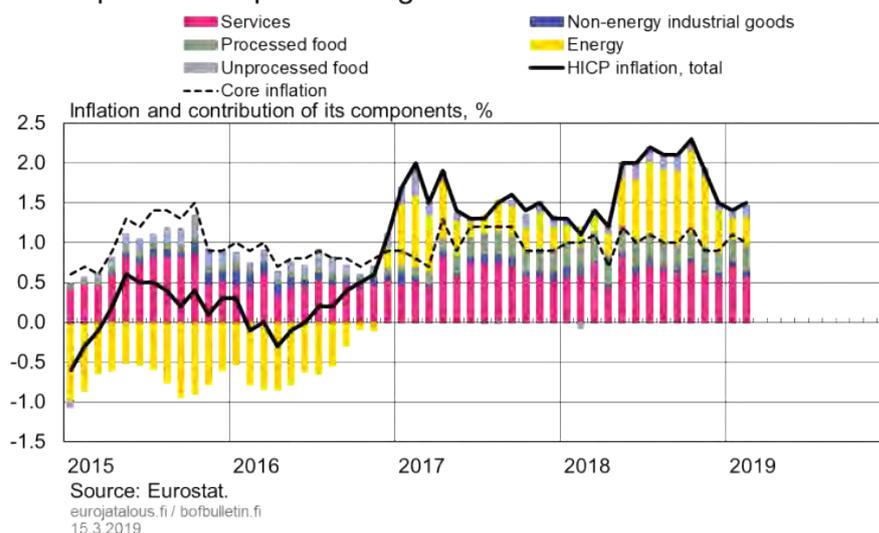
Wage growth has not yet boosted core inflation

Euro area inflation averaged 1.7% in 2018. It picked up in May to around 2% and was unchanged until November (see Chart 15). Since December, the pace of inflation has been slower.

Inflation was mainly fuelled by an increase in oil prices, the inflation effects of which are reflected through both higher costs and mechanically, via base effects. Inflation is measured as a year-on-year change in prices. Hence, if oil prices are higher than in the corresponding period a year earlier, this will have an upward impact on the inflation figures. The contribution of energy to inflation in 2018 was about one-third. Based on oil futures prices at the beginning of March 2019, oil prices in the next few years will stabilise to upwards of USD 60 per barrel, which would reduce inflation during 2019.

Chart 15.

Inflation has moderated in early 2019 due to waning of the impacts of oil price changes

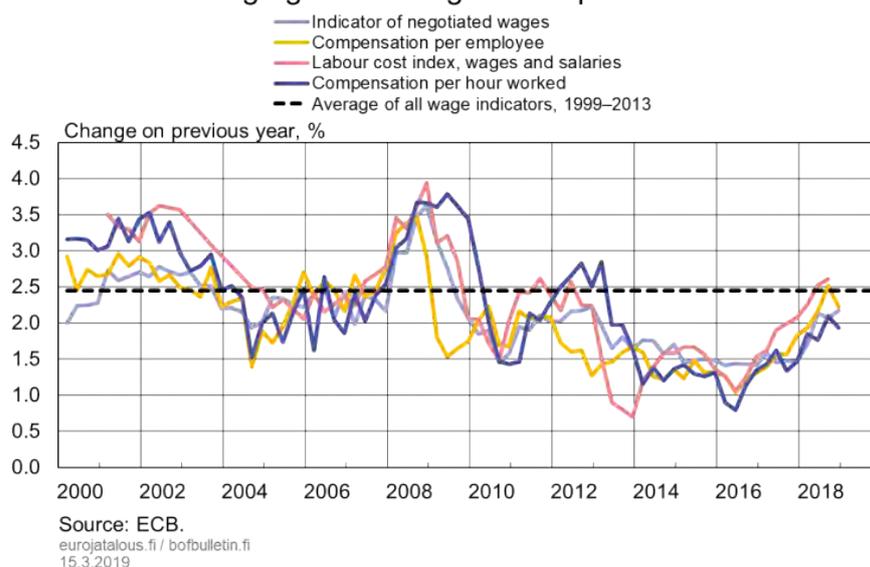


In the euro area, however, oil is an external factor that causes temporary fluctuations in inflation but does not reflect the more permanent underlying factors affecting prices. From the viewpoint of the price stability objective, it is also advisable to analyse core inflation which excludes the prices of energy and food and reflects internal price pressures within the euro area. Core inflation has persisted at around 1% since 2014.

Core inflation in the euro area has been dampened by a protracted sluggish growth in wages. Since 2017, however, wages have risen at a steady pace (see Chart 16). This will create inflationary pressures via rising costs and consumers' enhanced purchasing power.

Chart 16.

Euro area wage growth has gathered pace



At the same time, productivity growth has recently remained relatively muted, leading to a rise in unit labour costs (see Chart 17). If corporate profit margins remain unchanged, this will increase firms' pressures to raise their prices. The pick-up in wage growth is underpinned by the continued economic growth in the euro area and tight labour markets. The euro area output gap, which measures the difference between actual and potential output in the economy, has closed. Unemployment has already fallen below its natural (NAIRU) level. Therefore, the economy is largely running at full capacity, leading to a situation in which competition for limited resources will create pressures to raise wages. So far, the pick-up in wage growth has not been reflected in higher core inflation, however. One reason suggested is that firms absorb part of the higher costs by reducing their profit margins. The specific reasons behind wage growth can also have an effect on the extent to which wage growth is reflected in inflation.^[12] In addition, in an environment of low inflation, higher labour costs may pass through to prices more slowly than during periods of rapid inflation.^[13]

Chart 17.

Unit labour cost growth up due to rise in wages and low productivity



Source: ECB.
eurojatalous.fi / bofbulletin.fi
15.3.2019

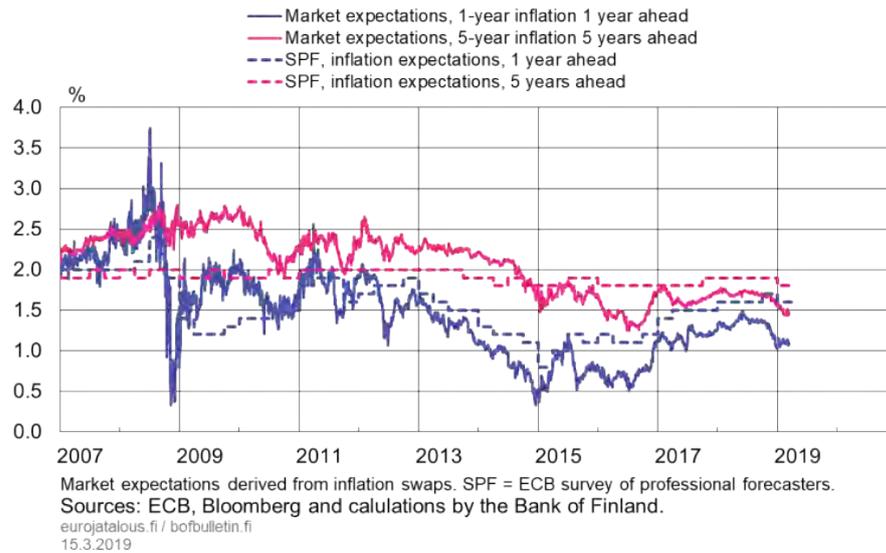
Inflation expectations have weakened, based on both market information and survey data (see Chart 18). Market-based inflation expectations have been declining ever since the summer of 2018. It is particularly noteworthy that long-term expectations extending over the business cycle have fallen, which may trigger a self-fuelling process and lead to an actual moderation in the rate of inflation.

Chart 18.

12. See the article 'The role of wages in the pick-up of inflation', ECB Economic Bulletin 5/2018.

13. See Bobeica – Ciccarelli – Vansteenkiste (2019) The link between labor cost and price inflation in the euro area. ECB Working Paper No 2235/2019.

Inflation expectations have declined



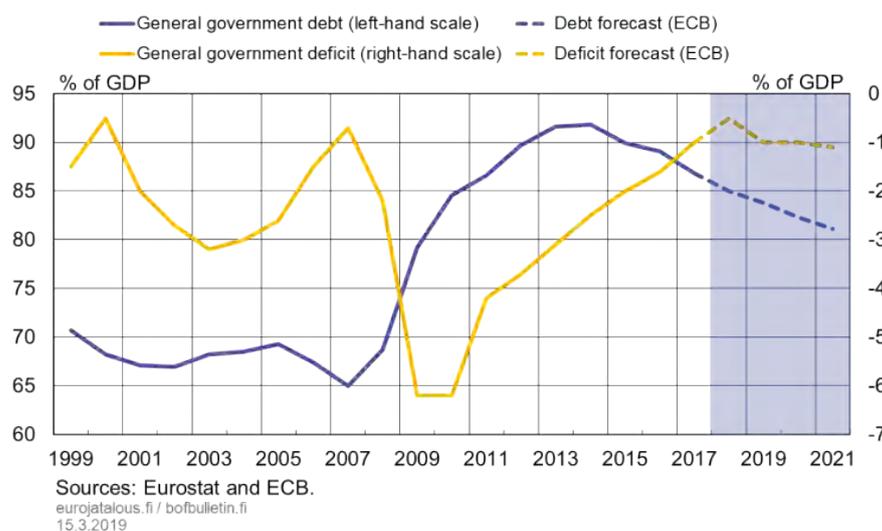
The outlook for inflation has weakened somewhat compared with the end of 2018. Both the ECB and the European Commission have revised downwards the inflation estimates in their most recent forecasts. Inflation will moderate notably during 2019, mainly due to base effects related to oil prices. Once the base effects fade out, inflation will gradually pick up. According to the Commission forecast, inflation will be around 1.5% in 2019 and 2020. This is largely consistent with the ECB's March 2019 projection that foresees inflation of 1.2% in 2019, 1.5% in 2020 and 1.6% in 2021.

Euro area fiscal stance slightly looser

The euro area general government debt-to-GDP ratio shrank to approximately 85% in 2018. The debt ratio is expected to shrink further, while remaining above the pre-crisis level (below 70% of GDP) in the immediate years ahead (Chart 19). In Germany, the general government debt-to-GDP ratio in 2018 was approximately 60%, in France and Spain nearly 100%, and in Italy 130%. Differences between the country ratios are expected to remain large. The euro area's overall fiscal deficit shrank to around 0.5% of GDP in 2018. It is expected to grow slightly.

Chart 19.

Euro area general government debt-to-GDP ratio expected to shrink further



The euro area general government debt-to-GDP ratio is expected to shrink, mainly because nominal GDP growth is expected to remain higher than the interest rates on public debt, while the primary balance remains positive. The fiscal stance is expected to be slightly expansionary in the immediate years ahead. The expansionary stance is due to the planned withdrawal of pension reforms and the introduction of basic income in Italy, and reductions in social security contributions in e.g. Germany and the Netherlands.

Blanchard (2019) proposes that public debt does not necessarily create fiscal costs if interest rates are expected to remain below nominal GDP growth rates for a long time.^[14] These conditions do not apply in all euro area countries, as clearly evidenced by the rise in Italian sovereign bond yields in 2018 (see Chart 20).^[15] In heavily-indebted countries, gradual consolidation of public finances would bolster market confidence and provide governments with more fiscal room for manoeuvre.

Downside risks to global economy remain large

The global economy is expected to grow by some 3.5% in the immediate years ahead, but the outlook is dampened by downside risks. The likelihood of exceptional developments outside the euro area, in particular, has increased. This has been partly reflected in financial market volatility. The euro area's three most important partners for goods trade are the United States, the United Kingdom and China. All these economies are subject to considerable downside risks.

The final outcome of the United Kingdom's withdrawal from the EU, i.e. Brexit, was still unclear in early March, even though, based on the original timetable, Brexit is set to take

14. See Blanchard (2019) Public Debt and Low Interest Rates, AEA Presidential Lecture, January 2019.

15. For a discussion on the contractionary effects of the rise in interest rates on Italian government borrowing, see Blanchard and Zettelmeyer (2018) The Italian Budget: A Case of Contractionary Fiscal Expansion?, PIIE Realtime Economic Issues Watch, October 2018.

place on 29 March 2019. In early March, the UK Parliament had not yet approved the withdrawal agreement that was reached between the United Kingdom and the European Union and that seeks to ensure an orderly and soft withdrawal from the EU. A no-deal Brexit would have a significant negative impact on trade between the United Kingdom and the countries of the European Union, and also on the long-term outlook for the UK economy. Brexit will weaken particularly the UK economy. As the United Kingdom is an important trading partner of the euro area, a no-deal Brexit would also be reflected in a slowing of euro area exports and the economy in general. The impact would be significant particularly for Ireland, but the United Kingdom is also an important trading partner for e.g. the Netherlands and Belgium.^[16] Machinery, equipment and vehicles are the main products exported by the euro area to the United Kingdom. A significantly prolonged negotiation period would be reflected as protracted uncertainty and a slowing of investment and exports.

The trade and fiscal policies of the United States are also linked with considerable negative growth risks (see article [Alternative scenarios linked to the global impact of US fiscal and trade policies](#)). With regard to protectionist measures, the United States have agreed with the EU and China on a negotiation period during which the parties will refrain from new tariff increases. This has calmed the situation, but if the parties fail to reach agreement during the negotiation period, there is a risk of new barriers to global trade.^[17] On the other hand, if the parties were to achieve a long-term agreement, this would reduce uncertainty, and in the best case it would make global trade fairer and could make a positive contribution to growth.

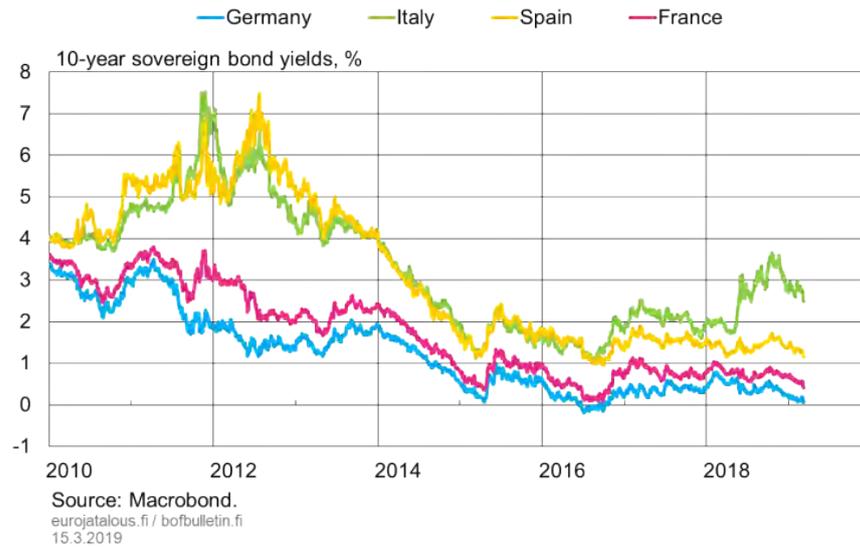
China's debt has ballooned, and in nearly all historical cases where countries have rapidly accumulated debt in the manner of China this led to a rapid deceleration on the pace of GDP growth. In the second half of 2018, the Chinese economy witnessed a broad-based slowdown. Contradictory goals in domestic economic policy have led to a stop-go scenario, which, combined with slower growth and the deteriorating debt problem, could increase market disturbances. Market agents ought to prepare for a considerably sharper decline in growth. A slump in the Chinese economy could have significant consequences for global confidence, commodity prices, world trade and global growth. Moderation of Chinese growth may also exacerbate the problems in other emerging economies.

Chart 20.

16. A survey by the National Bank of Belgium on the impact of Brexit on the EU27: Bisciari (2019): A survey of the long-term impact of Brexit on the UK and the EU27 economies, National Bank of Belgium Working Paper no. 366; and Calculations by the Bank of England on the effects of Brexit on the UK: BoE (2018) EU withdrawal scenarios and monetary and financial stability: A response to the House of Commons Treasury Committee.

17. The economic effects of protectionist measures are analysed in e.g. the following articles: Bank of Finland Bulletin (4/2018) 'Trade policy tensions casting shadow on economic horizon', published 4 October 2018; and ECB (2018) 'Implications of rising trade tensions for the global economy', ECB Economic Bulletin 3/2018.

Italian sovereign bond yields still higher than in early 2018



Of internal downside risks in the euro area, the key risks are developments related to fiscal policy and financial market uncertainties in some euro area countries. The risk yields on Italian sovereign bonds, in particular, are still high. According to an assessment by the European Commission, Member States' budget proposals for 2019 are in compliance with the Stability and Growth Pact. In some Member States, debt levels are, however, still high, and according to the Commission, economic developments in these countries are subject to substantial risks in the medium term. To reduce risks, Member States should ensure that there is sufficient room for fiscal manoeuvre. Structural improvements in the economy would reduce structural unemployment in the euro area and possibly boost productivity growth, which has been weak since the financial crisis. There is a threat that a general weakening in the outlook for the euro area may slow the reduction in general government debt and improvements in the banking sector in several countries.

Tags

[monetary policy](#), [global economy](#), [inflation](#), [euro area](#)

The ECB's targeted longer-term refinancing operations have increased bank lending to the private sector

TODAY 1:00 PM • BANK OF FINLAND BULLETIN 1/2019 • MONETARY POLICY

In recent years, the ECB has supported bank lending in the euro area by offering long-term financing to banks. The aim of the longer-term refinancing operations (LTROs), the most recent one in particular, was to encourage banks to increase lending to the private sector. LTROs have played a major part in the ECB's unconventional monetary policy of recent years, and the latest series of operations appears to have increased bank lending to firms.



In March 2016, the Governing Council of the ECB decided to launch a new series of targeted longer-term refinancing operations (TLTRO II), providing banks with low interest rate funding from the ECB. The first TLTRO II loans will mature in summer 2020.

The objective of the TLTROs has been to enhance the transmission of monetary policy to the real economy by incentivising banks to increase lending to firms and households. Increased credit supply boosts investment and spending, which again increases aggregate output and reduces unemployment, consequently supporting the ECB's price stability objective. With these operations, the Eurosystem aimed to accelerate inflation in 2014–2016 and to deflect the threat of deflation. The TLTROs have been a part of the ECB's non-standard monetary policy that has also included securities purchase programmes, among other measures.^[1]

1. More information about other unconventional measures and their implementation can be found in the article

Under the TLTRO II programme, the ECB offered banks collateral-backed long-term central bank funding at a low interest rate. The series of quarterly targeted longer-term refinancing operations was launched in summer 2016. In these operations, with a maturity of four years, banks were entitled to borrow up to 30% of their stock of eligible loans as at 31 January 2016.^[2] The interest rate applied in these operations was fixed at the rate on the main refinancing operations. However, banks were offered a strong incentive to increase lending: if a bank under the TLTRO II programme increased lending to firms and households (excluding loans for house purchase) above a certain threshold, the interest rate could actually be cut below zero (down to $-0,40\%$).^[3]

Before announcing the TLTRO II programme, the ECB had already conducted several-year-long funding operations, the first of which began at the end of 2011.^[4] The new operations launched in 2016 differed from previous operations in that they incorporated much stronger incentives to increase lending to firms and households.

The TLTRO II programme was well received by the banks, which borrowed a total of EUR 739 billion under the scheme.^[5] Chart 1 illustrates the historical development of total loans under the ECB's refinancing operations. As the chart shows, central bank credit obtained by banks consists almost exclusively of TLTRO II loans. Banks may also apply for short-term central bank credit; however, TLTRO II loans currently make up around 98% of the ECB's credit operations. The remaining 2% consists of one-week MROs and three-month LTROs. The current total outstanding amount under the ECB's refinancing programmes is around EUR 730 billion. This means that the refinancing operations also constitute a considerable part (16%) of the balance sheet of the Eurosystem, which currently stands close to EUR 4 700 billion.

Chart 1.

[The financial crisis changed the instruments but not the objectives of monetary policy.](#)

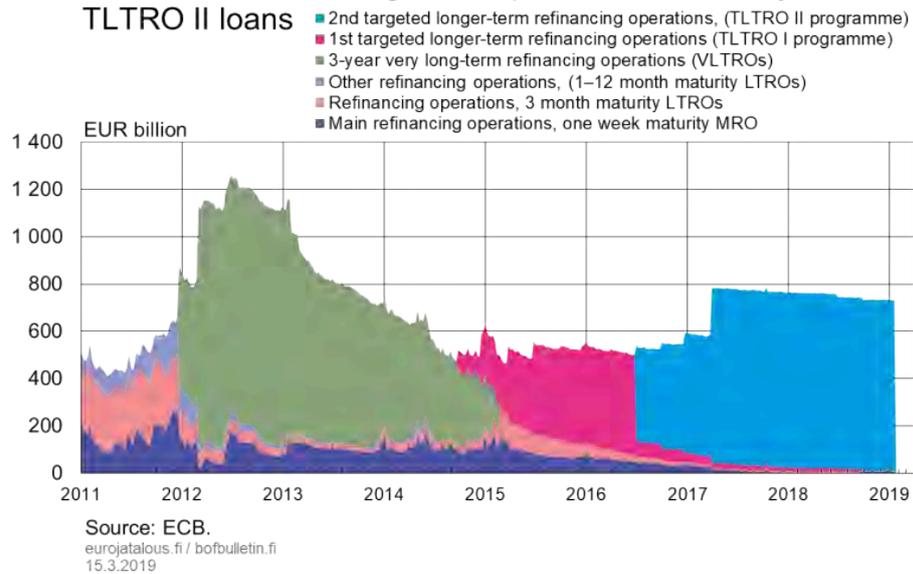
2. Eligible loans were defined as those to euro area non-financial corporations and households (excl. loans for house purchase), less any amount which was still outstanding under the TLTRO operations conducted in 2014.

3. See the ECB's press release for technical details: https://www.ecb.europa.eu/press/pr/date/2016/html/pr160310_1.en.html.

4. In December 2011 and February 2012, the ECB conducted very long-term refinancing operations (VLTROs) with a three-year maturity. The first TLTRO programme was conducted between September 2014 and June 2016. Loan maturity varied from two to four years, depending on when the loan was taken out.

5. In the first operation in June 2016, a total of 514 banks borrowed EUR 399 billion under the TLTRO II programme. The ECB publishes data on individual operations, including the number of bidding banks and the total amount allotted in the programme: <https://www.ecb.europa.eu/mopo/implementation/omo/html/index.en.html>

The ECB's outstanding credit operations are mainly TLTRO II loans

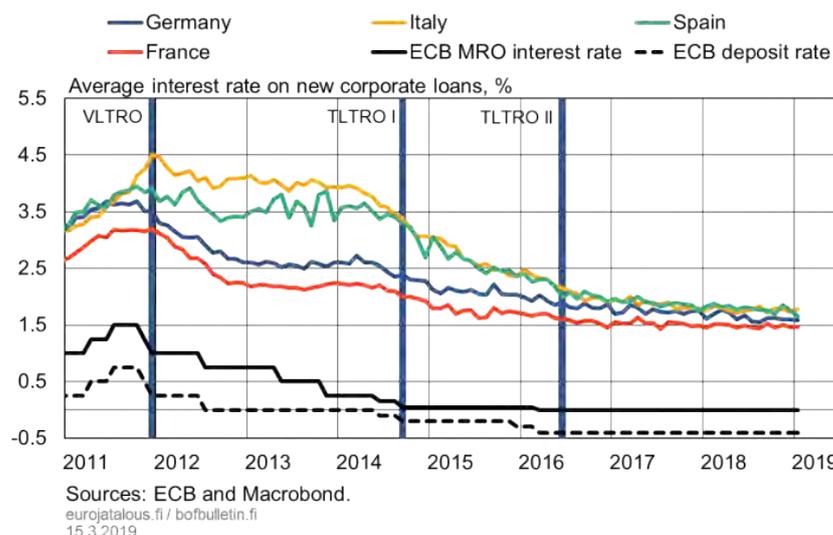


In 2013–2014, a problem for monetary policy in the euro area was that low interest rates did not pass through to lending rates and bank lending to firms was subdued. Chart 2 shows that bank lending rates did not decline in 2013–2014 although the ECB had lowered the policy rate. Through the targeted operations, the Governing Council has striven to lower the long-term funding costs of banks with the aim of lowering corporate loan interest rates. As the chart shows, the ECB's measures to support lending combined with other measures to lower the interest rates, such as lowering the policy rate and the expanded asset purchase programme, appear to have been effective. Research supports the assertion that lowered funding costs for banks caused by the refinancing operations lowered the interest rates on corporate loans.^[6] This development can, however, also be attributed to numerous other contributing factors, including decreased uncertainty.

Chart 2.

6. For instance, Altavilla et al. (2019) and Dijk & Dubovik (2018) have noted that the TLTRO loans have lowered the interest rates on corporate loans.

Interest rates on corporate loans have come down significantly in recent years



Banks that took TLTRO II funding appear to have increased corporate lending more than those that did not participate in the operations.^[7] Chart 3 examines the development of banks' corporate loan stocks in these two categories: the green line represents the average growth rate of corporate lending in banks that participated in TLTRO II, while the red line represents the respective growth rate in banks that did not participate in the operations. Loan stock development was very similar in both categories until the summer of 2016. At the beginning of TLTRO II, however, the corporate loan stock began to increase rapidly in banks that participated in the operations, while the loan stock in other banks began to decline. This means that TLTRO II most likely increased corporate lending in participating banks.^[8] A corresponding development can be seen in consumer credits. Therefore, it would seem that targeting the operations on corporate and household lending produced the desired effect.

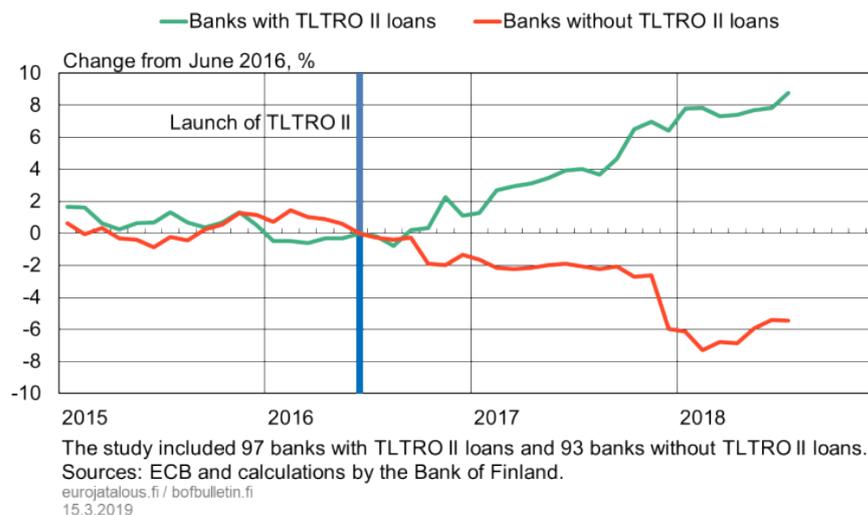
The ECB's refinancing operations have also sparked criticism. For example Crosignani et al. (2017) noted that as a result of the three-year LTROs (VLTROs) conducted in 2011 and 2012, banks increased their government bond holdings, consequently intensifying the negative feedback loop between banks and sovereigns. However, unlike the early VLTRO loans, loans granted under the TLTRO programmes since 2014 have been strongly targeted at the real economy.

Chart 3.

7. This analysis made use of the ECB's IBSI data featuring the monthly balance sheets of around 300 banks. Some banks were ruled out due to data deficiencies or because their balance sheets did not include corporate loans.

8. The research regarding TLTRO II loans is focused on the programme's effects on interest rates (see footnote 6). Andrade et al. (2018), Boeckx, De Sola Perea & Peersman (2017), Boeckx, Dossche & Peersman (2017), Carpinelli & Crosignani (2017) and Darracq-Paries & De Santis (2015) have noted that previous untargeted VLTRO loans increased bank lending, which is why there is reason to believe that TLTRO loans targeted to stimulate lending would increase bank lending significantly.

Banks that obtained TLTRO II loans have increased corporate lending significantly more than other banks



Because the ECB's refinancing operations have increased bank lending, they have also indirectly boosted consumption and investment as well as accelerated inflation.^[9] Thus, the ECB's recent refinancing operations have moved the economy in the desired direction. Banks have had the option to repay TLTRO II loans prematurely since last summer. So far, very few banks have been interested in early repayment of the cheap central bank credit.

In March, the Governing Council of the ECB decided to launch a new series of targeted longer-term refinancing operations (TLTRO III). The TLTRO III programme consists of quarterly operations starting in September 2019 and ending in March 2021. Each operation has a maturity of two years and the rate is indexed to the interest rate on the main refinancing operations over the life of each operation. Under TLTRO III, banks will be entitled to borrow up to 30% of the stock of eligible loans as at 28 February 2019. Like the outstanding TLTRO programme, TLTRO III will feature built-in incentives for credit conditions to remain favourable. These new operations will help to preserve favourable bank lending conditions and the smooth transmission of monetary policy.

Sources

Altavilla, C., Canova, F. & Ciccarelli, M. (2019) Mending the broken link: heterogeneous bank lending rates and monetary policy pass-through. *Journal of Monetary Economics*.

Andrade, P., Cahn, C., Fraise, H. & Mésonnier, J. S. (2018) Can the Provision of Long-term Liquidity Help to Avoid a Credit Crunch? Evidence from the Eurosystem's LTRO. *Journal of the European Economic Association*.

Balfoussia, H. & Gibson, H. D. (2016) 'Financial conditions and economic activity: the

9. The consequences of TLTROs have been studied by Balfoussia & Gibson (2016), whereas the consequences of VLTROs have been studied by Boeckx, Dossche & Peersman (2017) and Darracq-Paries & De Santis (2015).

potential impact of the targeted long-term refinancing operations (TLTROs)', *Applied Economics Letters* 23(6), 449–456.

Boeckx, J., De Sola Perea, M. & Peersman, G. (2017) The transmission mechanism of credit support policies in the Euro Area.

Boeckx, J., Dossche, M. & Peersman, G. (2017) 'Effectiveness and Transmission of the ECB's Balance Sheet Policies', *International Journal of Central Banking* 13(1), 297–333.

Carpinelli, L. & Crosignani, M. (2017) The effect of central bank liquidity injections on bank credit supply.

Crosignani, M., Faria-e-Castro, M. & Fonseca, L. (2017) The (unintended?) consequences of the largest liquidity injection ever.

Darracq-Paries, M. & De Santis, R. A. (2015) 'A non-standard monetary policy shock: The ECB's 3-year LTROs and the shift in credit supply', *Journal of International Money and Finance* 54, 1–34.

Dijk, M. van & Dubovik, A. (2018). Effects of Unconventional Monetary Policy on European Corporate Credit. CPB Discussion Paper, 372.

Tags

[euro area banking sector](#), [longer-term refinancing operations](#), [TLTRO](#), [lending](#)

Dollar dominance means US risks also pose risks to others

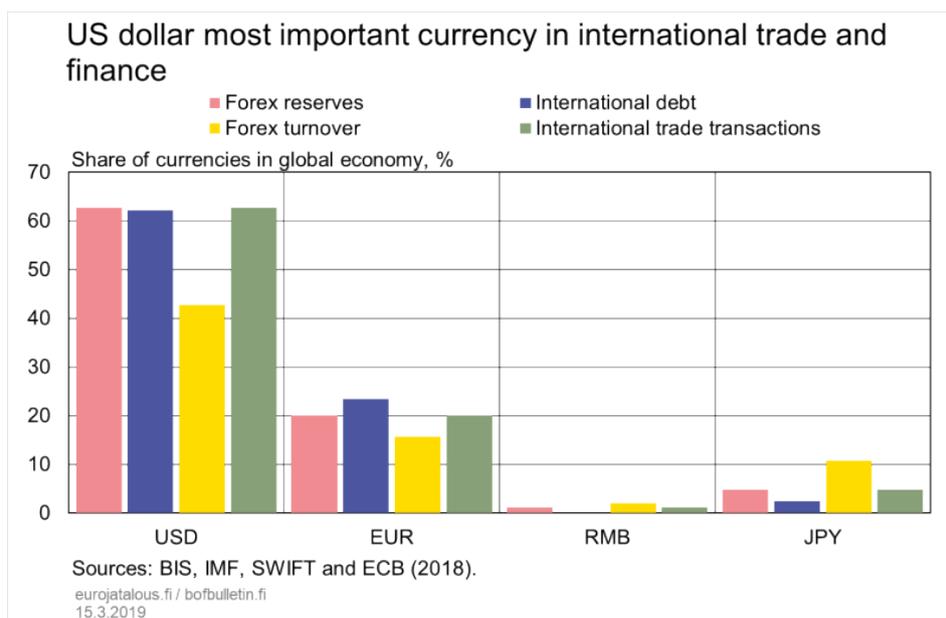
TODAY 1:00 PM • BANK OF FINLAND BULLETIN 1/2019 • ECONOMIC OUTLOOK

The dominant position of the US dollar exposes other countries to changes in the economy and domestic policies of the United States, while also creating global systemic risks. The role of the dollar is expected to decrease with time as the roles of other economic areas and their currencies increase. Given the lack of a realistic competing currency, however, it is rather unlikely that the status of the dollar will weaken at the moment, which highlights the need for cooperation in terms of managing risks to the international financial system.



The US dollar has been the most important international currency since the introduction of the Bretton Woods system after World War II. Despite the collapse of the Bretton Woods system and instabilities in the 1970s, the dollar was able to maintain its status as a safe haven and as the most important reserve currency. The dollar has not only obtained reserve currency status; it is also the most important international currency used as a unit of account in international trade, payment transactions and financial commitments (Chart 1).

Chart 1.



Through the decades, the dollar-centric financial system has attracted criticism for a variety of reasons. The dominance of the dollar exposes other countries to policy and financial developments in the United States and makes other countries dependent on the smooth flow of dollars (IMF 2016). It has been asserted that the United States enjoys an exorbitant privilege compared with other countries, benefiting from the reserve currency status of the dollar. The key benefit is that reserve asset demand lowers funding costs (Canzoneri et al., 2013). In recent years, increasing political uncertainty has sparked growing criticism of the dollar's current status. The international financial system is built on trust, which current policy unpredictability and the weakening conditions for international cooperation do not encourage.

The existence of a dominating vehicle currency facilitates trade and financial intermediation, but also creates system-wide risks. One key vulnerability – the structural liquidity risk of dollar funding – was exposed by the financial crisis, when the supply of short-term dollar funding suddenly declined after uncertainty increased.^[1] In order to restore financial stability on the international financial markets, the US Federal Reserve had to offer dollar liquidity to several central banks outside of the United States.

Another systemic risk is the long-term sustainability of the US federal debt, which has been discussed in connection with the Federal Government's fiscal stimulus policy. According to the Triffin Dilemma presented in economic literature, the growing demand for dollar reserves may raise US external debt unsustainably (Bordo & McCauley, 2018). The risk is that, at some point, assets considered as safe havens cease to live up to that expectation. However, the dollar's status makes it especially difficult to define how much debt is too much debt for the United States.

In the last few decades, the economic power of the United States has decreased, for

1. Koskinen & Laakkonen (2018) detail the risks of the international financial system related to dollar dependency and the evolution of those risks in the years following the financial crisis.

example in terms of the country's share of global GDP. Many have expected the dollar's role to decline over time (Seghezza & Morelli, 2018). However, in addition to the size of the economy, the internationalisation of a currency also requires financial market depth, the importance of which may have been underestimated in the literature on the dollar's role (Frankel, 2012). Measured by the size of its economy, the United States' role may be weakening, but the country is still by far the most important financial market. The current dollar-centric financial system is the result of decades of development and has become a hybrid system consisting of central, commercial and shadow banks, where a major part of liquidity creation takes place beyond US borders. A large financial market also equals a wide supply of safe assets in the form of US Treasury bonds and other high-quality collateral (Tooze & Odendahl, 2018).

Other key components in modern financial intermediation are laws and regulations that guarantee property rights, supervisory and executive bodies, and the trust of the international community that the system is reliable and efficient. According to Seghezza and Morelli (2018), at present no competing currency fulfils these requirements. In the euro area, legislation and regulation are still highly diverse across different countries and progress in Capital Markets Union and Banking Union is slow. As for China, property rights legislation is still in an evolutionary phase. In the long term, if European integration moves forward and China opens its financial markets, and if both Europe and China seek to actively facilitate the internationalisation^[2] of their respective currencies, this could enhance the capacity of the euro and renminbi to challenge the dollar's reserve currency status. It is, however, highly unlikely that the dollar will lose its current key currency status in the years ahead.

Due to the status of the dollar, the international interconnectedness of the United States' economy and financial markets is more complex than traditional macroeconomic models are able to describe. This makes it more difficult to predict the impact channels for potential market disruptions and their final impacts. Even though post-crisis regulatory reforms have improved the stability of the financial system, there is no way to eliminate all risks. From the perspective of global financial risk management, this stresses the importance of international cooperation to improve regulation and cooperation between central banks to improve their ability to react to potential shocks.

Sources

Bordo, D., McCauley, R. (2018) Triffin: Dilemma or myth? NBER Working Paper 24195.

Canzoneri M., Cumby, R., Diba, B., Lopez-Salido, D. (2013) 'Key currency status: An exorbitant privilege and an extraordinary risk'. *Journal of International Money and Finance* 37, 371–393.

EKP (2018) The international role of the euro. Interim report, June 2018.

Frankel, J. (2012) Internationalization of the RMB and Historical Precedents. *Journal of Economic Integration*.

2. For more on the ambitions to internationalise the renminbi and the euro, see for example Nuutilainen (2018) and Pösö (2018).

IMF (2016) Strengthening the International Monetary System – A Stocktaking. IMF Staff Report.

Koskinen, K., Laakkonen, H., (2018) Dollaririippuvuus luo globaaliin rahoitusjärjestelmään riskin. [Dollar dependency creates a risk in the global financial system.] Bank of Finland Bulletin analysis, 7 February 2018.

Nuutilainen, R. (2018) Juanin kansainvälistyminen ei etene suoraviivaisesti. [The internationalisation of the yuan is not a straightforward process.] BOFIT Policy Brief 2018 No. 11.

Pösö, M. (2018) Pitäisikö euron ottaa vahvempaa kansainvälistä roolia? [Should the euro take a stronger international role?] Bank of Finland Bulletin blog post, 31 December 2018.

Seghezza, E., Morelli, P. (2018) 'Rule of law and balance of power sustain US dollar preeminence'. Journal of Policy Modelling vol. 40, 16–36.

Tooze, A., Odendahl, C. (2018) Can the euro rival the dollar? CER Insight, 4.12.2018.

Tags

[dollar](#), [financial system](#), [monetary system](#), [systemic risks](#)

Low inflation and interest rates challenge central banks to review their monetary policy strategies

15 MAR 2019 11:00 AM • BANK OF FINLAND BULLETIN 1/2019 • MONETARY POLICY



Tomi Kortela
Senior Adviser

Monetary policy strategy specifies the key principles that a central bank adheres to in pursuit of its objective. The primary objective of the ECB is to maintain price stability. Central banks' operating environment has changed on the back of the protracted financial and debt crisis, population ageing and the low level of interest rates. New monetary policy instruments have been introduced. Research on monetary policy tools and the effectiveness of the measures implemented has increased. Changes in the operating environment and increased economic knowledge challenge central banks to review their monetary policy strategies.



A successful monetary policy strategy increases the effectiveness of monetary policy

Monetary policy strategy demonstrates with what kind of monetary policy a central bank aims to achieve its objectives. For example, the objective of the ECB – or more precisely that of the European System of Central Banks – has been laid down in the Treaty on the Functioning of the European Union (Article 127): “The primary objective ... shall be to maintain price stability”. Without prejudice to the objective of price stability, the ECB

shall also “support the general economic policies in the Union”, which include, inter alia, balanced economic growth. Deciding on the monetary policy objective is not usually the task of a central bank, but deciding on the monetary policy strategy is.^[1]

Monetary policy strategy is an important part of monetary policy because a successful strategy increases the effectiveness of monetary policy in two ways. First, expectations regarding future monetary policy – e.g. the path of the key interest rates – affect consumption and investments, among other things. If a central bank succeeds in steering expectations in the desired direction, the effectiveness of monetary policy increases. However, this requires that monetary policy be predictable and consistent over time.

Second, a central bank’s commitment to predictable decision-making in its monetary policy means that unexpected economic changes will have a smaller impact than compared with a situation in which the central bank conducts monetary policy solely on the basis of case-by-case discretion.^[2] The risk to a policy without a commitment is that the decisions taken will be inconsistent over time. In such a case, economic agents’ expectations may deviate from the monetary policy objectives, weakening the effectiveness of monetary policy.^[3]

However, monetary policy that is consistent over time brings about significant benefits only when it is believed that the central bank will actually adhere to the policy. If economic agents do not believe that the central bank is committed to the announced monetary policy, the announcement will not affect expectations as desired. With its monetary policy strategy, the central bank seeks to increase its credibility in the achievement of its objective by, for example, increasing the transparency of its activities.

Its monetary policy strategy reflects the optimal course of action for a central bank to achieve its objectives based on the information available at the time the strategy is formulated. This does not mean that the strategy might never be adjusted. If a central bank’s view on monetary policy transmission or challenges changes over time, it is natural that it at least reviews – and possibly also adjusts – its strategy. In fact, in the course of history, central banks have substantially adjusted their monetary policy strategies in pursuit of price stability.

1. In the case of the ECB, however, the operational definition of the price stability objective is part of the strategy specified by the ECB. The ECB’s monetary policy strategy is described [here](#).

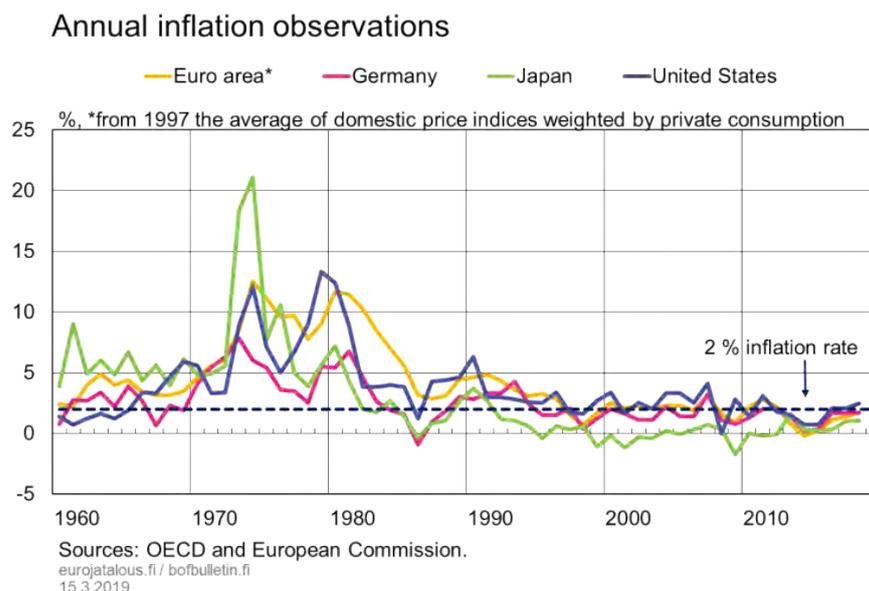
2. See Clarida – Gali – Getler (1999) and Woodford (2003).

3. The phenomenon pertains to all aspects of economic policy and is known as the time-inconsistency problem (Kydland – Prescott, 1977). A time-inconsistency problem arises when a central bank wishes to change an already-announced policy ex post. For example, a central bank may target low inflation and unemployment, which are inversely dependent on each other. In an environment of low inflation, the central bank can considerably reduce unemployment by an accommodative monetary policy that stimulates inflation. When economic agents have an understanding of the central bank’s temptation to do so, inflation expectations will rise and the economy will run into a situation of high inflation and unemployment. To avoid such a development path, the central bank must commit to a policy of low inflation.

Various strategies applied in the past to achieve price stability

In the mid-1970s, the oil crisis pushed up energy prices and hence also inflation. As a result of the then functioning of monetary policy, high inflation became a persistent phenomenon. It accelerated to over 10% in many countries and was notably faster than in the 1960s (Chart 1).

Chart 1.



As inflation was high, the challenge for monetary policy was to bring it down. There was also a need for a new strategy because the fixed exchange rate regime of Bretton Woods had collapsed in 1971. The objective of fixed exchange rates and the convertibility of the US dollar to gold had determined the framework for monetary policy since the Second World War. Central banks responded to the new conditions by adjusting their monetary policy strategies. Central banks of the major economic regions, such as Germany, the United States and Japan, adopted a monetary policy strategy based on monetary targeting, i.e. controlling the growth rate of a specific monetary aggregate.^[4]

The monetary targeting strategies initially led to diverging results. At the beginning of the 1980s, inflation was close to 10% in the United States, while in Japan and Germany it moderated at a faster pace (Chart 1). This was partly due to the different degrees of commitment among central banks to their policy strategies: the commitment was credible in Japan and Germany, whereas in the United States inflation expectations turned downward only after the introduction of tighter monetary policy following Paul Volcker's nomination as Chairman of the Federal Reserve.

4. The Bundesbank and the Federal Reserve announced targets for growth rates of monetary aggregates starting from 1975, while the Bank of Japan began to announce forecasts for monetary growth rates in 1978. The prominent role of money in the strategies was due to economic research findings which demonstrated that inflation was determined by monetary growth rates. This approach is well presented by Friedman (1968).

By the turn of the 1980s and 1990s, inflation had already declined. However, it became difficult to commit to monetary targeting strategies because the relationship between inflation and monetary growth became increasingly unstable. There was a need for a new monetary policy regime.

At the beginning of the 1990s, a group of central banks – Finland included in 1993 – adopted as their monetary policy regime a flexible inflation-targeting strategy. Underlying the regime switch was a change in the perception among economic researchers in that the most efficient way to manage inflation was by making a commitment to an inflation target.^[5]

The strategy of flexible inflation targeting typically contains three elements: 1) a publicly announced numerical inflation target; 2) pursuit of the inflation target over the medium term; and 3) transparent central bank activities and accountability.^[6]

The influence of a flexible inflation-targeting strategy is predominantly based on the central bank's aspiration to steer inflation expectations so they are consistent with the monetary policy objectives. Through its strategy, the central bank shows its commitment to a consistent monetary policy, the objective of which is to stabilise inflation to close to a specific target. This way the central bank can anchor inflation expectations to its inflation target, and this is the fundament on which the strategy and effectiveness of monetary policy are largely based.

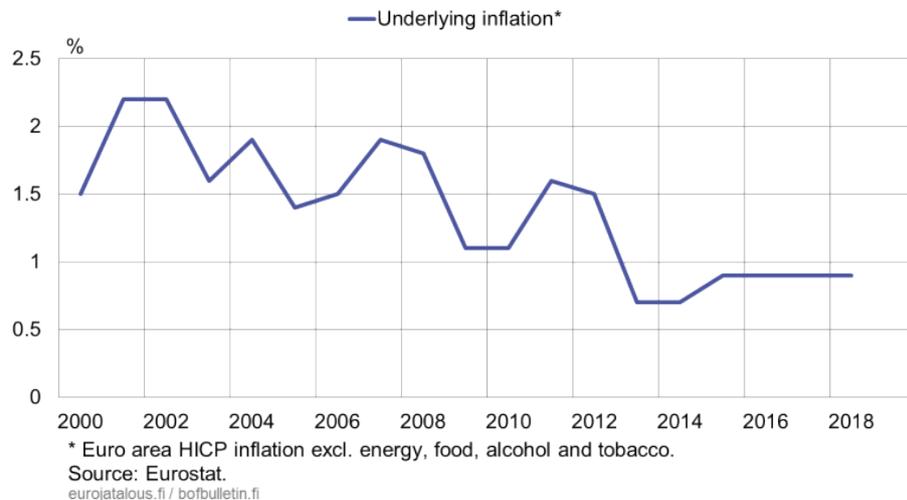
With the introduction of a flexible inflation target strategy, central banks by and large achieved their respective price stability objectives. During the 1990s, inflation declined to around 2% and fluctuated only slightly in the major economic regions (Chart 1). However, in the era of a flexible inflation target strategy, monetary policy has been faced with the challenge of inflation being persistently lower than the target. In Japan, inflation has averaged 0% over the past 25 years, while in the euro area and the United States it has been subdued in the past 5 years. The post-crisis period has been particularly characterised by a moderation of underlying inflation in the euro area to around 1% (Chart 2). An analysis of the past 50 years shows that the situation is exceptional, as central banks have previously been tackling the problem of inflation being too high rather than too low.

Chart 2.

5. See e.g. Woodford (2003).

6. These three dimensions are based on Svensson (2010).

Inflationary pressures as measured by underlying inflation have weakened in recent years



Why should monetary policy strategy be reviewed?

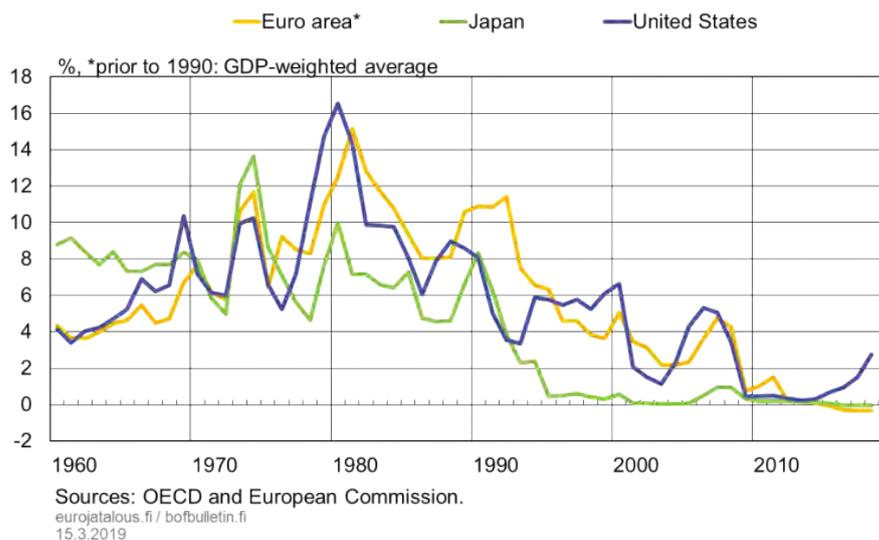
In the flexible inflation-targeting strategy, central banks respond to lower-than-target inflation with accommodative monetary policy – in normal times by lowering the key interest rates. Accommodative monetary policy raises aggregate demand and hence inflation. However, there have been two changes in central banks' current operating environment which have reduced their ability to affect inflation and inflation expectations through this traditional channel.

First, since the financial crisis, short-term nominal interest rates have declined close to zero in all economic areas, and, of advanced economies, only in the United States, the central bank has been able to raise short-term rates significantly from the zero lower bound (Chart 3). One explanation for this may be that there has been a downward level shift in the natural rate of interest, in which case short-term interest rates will remain below their average historical level also over the longer term.^[7] Hence, the zero lower bound would also constrain monetary policy in future more than could be concluded based on historical data. In other words, it is likely that cuts in the key interest rates may not stimulate the economy to the same extent as before.

Chart 3.

7. The fall in the natural interest rate is due to factors independent of monetary policy, e.g. demographic ageing. For more information, see [Bank of Finland Bulletin 4/2018](#).

Short-term interest rates in selected economies



In the environment of the zero lower bound, central banks have responded to additional stimulation needs with non-standard monetary policy measures, such as extensive asset purchases. These unconventional measures have had a positive impact on GDP growth and inflation.^[8] Nevertheless, inflation may still remain below the central bank's target – as has been the case in Japan. At present, it is still unclear whether non-standard monetary policy measures can adequately stimulate the economy in all cases.

When monetary policy is constrained by the zero lower bound, the central bank can announce that it will continue the conduct of accommodative monetary policy for a longer period than under normal conditions. Central banks have used this forward guidance extensively and successfully in recent years. Forward guidance that is tied to the continuation of the low-interest-rate policy and quantitative easing, i.e. extensive asset purchases, have pushed interest rates down and smoothed the yield curve so that long-term interest rates are also at a record low. In the United States, this policy has been effective, which has enabled the central bank to move to a path of gradual normalisation of monetary policy. The central bank has raised interest rates and has started to unwind its balance sheet. In the United States, monetary policy strategy, tools and communication can be reviewed in the conditions of full employment and price stability without the debate being affected by the current monetary policy stance.

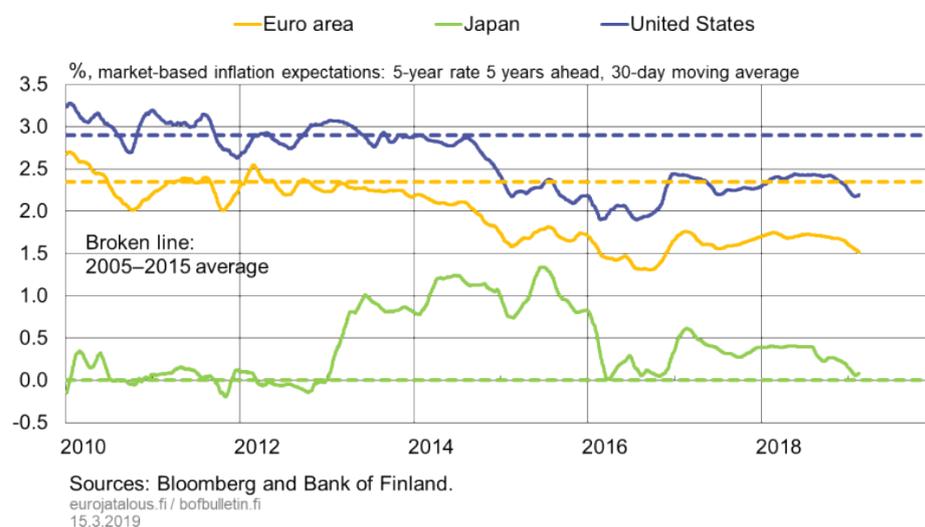
Secondly, it appears that the slope of the Phillips curve has possibly declined. This means that aggregate demand (economic activity), or variables fundamentally affecting it, such as unemployment, impact inflation less than before. If changes in aggregate demand have a smaller impact on inflation than before, monetary policy should be applied to bring about greater changes in aggregate demand than before, in order to achieve the required effect on inflation. This is significantly hampered by the fact that the zero lower bound on nominal interest rates has reduced the leeway for monetary policy to influence aggregate demand.

8. For a summary of research findings, see Dell'Ariccia et al. (2018).

If the central bank's ability to stimulate the economy is constrained, inflation will naturally deviate from the target level. This is not necessarily a temporary phenomenon – achievement of the inflation target may also be hampered in the longer term. This is due to the weakening of inflation expectations, reflecting lower-than-target inflation. If economic agents realise that the zero lower bound on nominal interest rates significantly constrains the ability of monetary policy to push up inflation, inflation expectations will weaken.^[9] As a result, lower-than-target inflation will remain permanent. Lower inflation expectations also make it increasingly difficult to push up inflation during downturns, as inflation is slowed by not only low aggregate demand but also by subdued inflation expectations. The decline in inflation expectations may thus be one of the reasons behind the recent slower-than-expected rate of inflation (Chart 4).^[10]

Chart 4.

Inflation expectations have declined in recent years



If there is a threat of a scenario as described above, central bank can temporarily overshoot its inflation target. A period of inflation that is temporarily lower than target would thus be followed by a period in which inflation is higher than target. As a result, both average inflation and inflation expectations would be consistent with the central bank's target.^[11]

To achieve higher-than-target inflation, it has been proposed that central banks transition to a price level target, in which case the central bank would compensate lower-than-target inflation with higher-than-target inflation in future to remain on target. Monetary policy would thus also respond to past deviations of inflation from the target. The advantage of price-level targeting is that, if there is confidence in its effectiveness, it would change expectations on the future path of inflation in the direction desired by the central bank when inflation is higher or lower than target. This would improve the

9. See Hills et al. (2018), Reifschneider – Williams (2000), and Coenen – Orphanides – Wieland (2004).

10. For a more detailed analysis of developments in euro area inflation expectations, see Lyziak – Paloviita (2017).

11. See Nakata – Schmidt (2019).

effectiveness of monetary policy. No central bank has thus far announced that it will apply a permanent price-level targeting regime. Its advantages over flexible inflation targeting are estimated as marginal under normal conditions. It has, however, been estimated that the advantages of price-level targeting would be larger at the zero lower bound. This is based on the stabilising impact of price-level targeting on aggregate demand as expected real interest rates decline in an environment of slowing inflation.^[12]

As price-level targeting would seem to include substantial advantages at the zero lower bound, but in normal times, an inflation-targeting monetary policy would be more flexible – the idea of temporary price-level targeting has been proposed. When monetary policy is constrained by the zero lower bound on the nominal interest rates, the central bank would promise to keep inflation higher than target until the lower-than-target inflation would be fully compensated. Subsequently, the central bank would return to the inflation-targeting monetary policy regime.^[13]

Temporary price-level targeting can also be interpreted as an extension of the flexible inflation-targeting regime, achieving it by applying the policy of average inflation targeting.^[14] In this case, the inflation target is interpreted as symmetrical and the emphasis of monetary policy is rather on the past performance of inflation. This prevents the inflation target and, before long, also inflation expectations from falling. If the central bank, in its conduct of monetary policy, pays more attention to higher-than-target inflation, there is a risk of a decline in the effective inflation target.^[15] The average inflation targeting regime complements the flexible inflation targeting strategy by introducing predictable monetary policy to an environment of low inflation.

Commitment to one of the monetary policy options described above requires adjustments to the monetary policy strategy, or at the least refinements. This is due to the fact that the central bank's pursuit of temporarily higher-than-target inflation without a credible strategy could create a time inconsistency problem with the flexible inflation targeting strategy. Thus, the strategy options described above are effective only if the central bank is committed to them in a credible manner.

Raising the inflation target has also been proposed as a solution for the zero lower bound constraints.^[16] This would relax zero lower bound constraints, due to higher average nominal interest rates. However, inflation could still be lower than the central bank's target, reflecting the possible zero lower bound constraints. In this sense, raising the inflation target does not necessarily resolve the problem posed for monetary policy by the zero lower bound constraints. The costs of a higher inflation target to economic efficiency would also be greater.

12. Price level-targeting monetary policy has been analysed by e.g. Svensson (1999) and Gaspar et al. (2007) and the average inflation targeting regime by e.g. Nessen – Vestin (2005). The impacts of the monetary policy options presented here are analysed in more detail in Mertens – Williams (2019).

13. This type of monetary policy is proposed by Bernanke (2017) and its effects are assessed by Bernanke et al. (2019).

14. See Mertens – Williams (2019).

15. See e.g. Paloviita et al. (2017).

16. See Summers et al. (2018).

Some central banks are already reviewing their monetary policy strategies

The monetary policy strategies of key central banks can be considered as different versions of the flexible inflation targeting strategy. This strategy has turned out to be effective in the sense that high and volatile inflation has become moderate and stable. A good historical outcome does not, however, guarantee that the same monetary policy strategy will also be successful under different conditions. This is reflected in the fact that central banks have adjusted their monetary policy strategies over time to achieve their price stability objective.

It remains to be seen whether central banks will consider it necessary to adjust their monetary policy strategies. Central banks may also come to the conclusion that the current slower-than-target inflation only shows that, in future, they must use their policy tools more aggressively. Moreover, the period of low inflation may turn out to be temporary. In that case, the low rate of inflation could be due to reasons other than monetary policy strategy, for example, larger-than-expected economic slack.

In the current operating environment, the key monetary policy challenges are low interest rates and lower-than-target inflation. As stated above, the zero lower bound has already had an adverse effect on the effectiveness of monetary policy. This may have been reflected as a low level of inflation expectations and actual inflation. From this perspective, it is well justified for central banks to review their strategies. Many central banks have indeed launched a review or have already reviewed their monetary policy strategy.^[17] Some central banks review their strategy regularly, whereas others conduct a discretionary review at various points in time. The longer it takes for the monetary policy strategy to take into account changes in the operating environment, the higher the cost to the economy. Thus, there is scant justification why monetary policy strategy should not be reviewed from time to time.

References

Bernanke, B. – Kiley, M. – Roberts, J. (2019) Monetary policy strategies for a low-rate environment. Finance and Economics Discussion Series, No. 2019-009, Federal Reserve Board.

Bernanke, B. (2017) Temporary price-level targeting: An alternative framework for monetary policy. Brookings Blog, available here.

Clarida, R. – Gáli, J. – Getler M. (1999) The science of monetary policy: A new Keynesian perspective. *Journal of Economic Literature*, Vol. XXXVII, pp. 1661–1707.

17. The Federal Reserve announced that it will review its monetary policy strategy (more detailed information available [here](#) and in Clarida, 2019); also the Bank of Canada has announced a review of its monetary policy framework (more information available [here](#)). The Bank of Japan announced in 2016 a temporary inflation-overshooting commitment, and the Swedish Riksbank adopted in 2017 a new measure for inflation (the consumer price index with a fixed interest rate, CPIF) and at the same time announced a variation band for outcomes for CPIF inflation.

Coenen, G. – Orphanides, A. – Wieland, V. (2004) Price Stability and Monetary Policy Effectiveness when Nominal Interest Rates are Bounded at Zero. *The B.E. Journal of Macroeconomics*, vol. 4, No. 1, pp. 1–25.

Dell’Ariccia, G. – Rabanal, P. – Sandri, D. (2018) Unconventional Monetary Policies in the Euro Area, Japan, and the United Kingdom. *Journal of Economic Perspectives*, vol 32, No. 4, pp. 147–172.

Friedman, M. (1968) The role of monetary policy. *The American Economic Review*, vol LVIII, No. 1, pp. 1–17.

Gaspar, V. – Smets, F. – Vestin D. (2007) Is time ripe for price level path stability?. Working Paper Series, No. 818, European Central Bank.

Hills, T. – Nakata, T. – Schmidt, S. (2018) Effective Lower Bound Risk. Mimeo. Available here.

Kydland F. – Prescott E. (1977) Rules Rather than Discretion: The Inconsistency of Optimal Plans. *Journal of Political Economy*, Vol. 85, No. 3, pp. 473–492.

Lyziak, T. – Paloviita, M. (2017) Formation of inflation expectations in turbulent times: Can ECB manage inflation expectations of professional forecasters? Research Discussion Papers 13/2017, Bank of Finland.

Mertens, T. – Williams, J. (2019) Monetary Policy Frameworks and the Effective Lower Bound on Interest Rates. Staff Reports No. 877, Federal Reserve Bank of New York.

Nakata, T. – Schmidt, S. (2019) Gradualism and liquidity traps. *Review of Economic Dynamics*, vol 31, pp. 182–199.

Paloviita, M. – Haavio, M. – Jalasjoki, P. – Kilponen, J. (2017) What does “below, but close to, two percent” mean? Assessing the ECB’s reaction function with real time data. Research Discussion Papers 29/2017, Bank of Finland.

Summers L. – Wessel D. – Murray J. (2018) Rethinking the Fed’s 2 percent inflation target. Hutchins Center on Fiscal & Monetary Policy at Brookings, June 2018.

Svensson, L. (1999) Price-Level Targeting versus Inflation Targeting: A Free Lunch?. *Journal of Money, Credit and Banking*, vol. 31, No. 3, pp. 277–295.

Svensson, L. (2010) Inflation Targeting. *Handbook of Monetary Economics*, edition 1, volume 3, chapter 22, pp. 1237–1302, (ed.) Benjamin M. Friedman & Michael Woodford, Elsevier.

Reifschneider, D. – Williams, J. (2000) Three Lessons for Monetary Policy in a Low-Inflation Era. *Journal of Money, Credit and Banking*, vol. 32, No. 4, pp. 936–966.

Woodford, M. (2003) *Interest & prices*. Princeton University Press.

Tags

monetary policy, monetary policy strategy

Authors



Tomi Kortela
Senior Adviser
firstname.lastname(at)bof.fi

Alternative scenarios linked to the global impact of US fiscal and trade policies

TODAY 1:00 PM • BANK OF FINLAND BULLETIN 1/2019 • ECONOMIC OUTLOOK



Pasi Ikonen
Economist



Lauri Vilmi
Senior Economist

US economic policy has recently been marked by procyclical fiscal stimulus and a gradual but decisive shift towards protectionism. Concerns have been raised over the global ramifications of such policies coming to a head. This article presents alternative scenarios to illustrate how the global economy might be affected by different US economic policy outcomes. The calculations suggest that even if the United States were to extend its fiscal measures, a simultaneous expansion of the trade war would significantly slow growth, especially in the United States and China. An intensifying trade war may also lead to tighter financial conditions in emerging market economies. The euro area would appear particularly sensitive to a slowdown brought on by tightening financial conditions in emerging economies. If the financial disturbances were to spill over into the entire global economy, the calculations demonstrate a significant decline in global GDP growth, of up to about 2.5 percentage points — or approximately half the impact of the global financial crisis.



Modelling helps illustrate alternative paths for global economy

Expansionary fiscal policy has boosted economic growth in the United States. Yet, as the effects of the stimulus measures dissipate, growth will return to a markedly lower level,^[1] leaving behind a substantial rise in general government debt. At the same time, the country's increased protectionism is weighing on global growth by casting uncertainty over the entire world economy, and is thus having detrimental effects even on the US economy itself. Slower growth is anticipated both for the world economy as a whole and for the United States. Yet, what if the United States were to try to avoid the slowdown by extending its fiscal measures while simultaneously increasing its protectionist policies? How would this affect the economic expansion of the euro area, China and the global economy?

To examine these questions, this article looks at four alternative scenarios for the global economy — each based on different US economic policy outcomes.^[2] In scenario 1, the United States extends the duration of its accommodative fiscal measures announced in 2017–2018. In scenario 2, the United States' tariff dispute with the European Union and China intensifies, and the parties impose additional tariffs on each other. In scenario 3, emerging economies see their financial conditions tighten. In scenario 4, the financial shock spills over into the advanced economies as well. The impact of each scenario is assessed in terms of first-year change in GDP compared with the baseline, as the first year is when these effects will be most pronounced. Nevertheless, each scenario would have lasting effects on output for several years.

Scenario 1: The United States extends its fiscal measures

The United States introduced significant cuts to corporate and personal taxation effective from the beginning of 2018.^[3] Together, the tax cuts and increased government spending for 2018–2019 have led to a strong fiscal stimulus during an economic upswing. Yet, growth is expected to moderate from about 3% in 2018 to just under 2% in 2020, as the effects of the policy measures dissipate.^[4] Scenario 1 assumes that the United States will look to sustain its growth rate and extends the duration of its fiscal measures. Fiscal spending measures planned to expire after a two-year period are assumed to persist beyond 2019.^[5] Similarly, the personal tax cuts are assumed to remain in place after 2025.

1. This baseline is shared by the major forecasts, e.g. IMF (2019).

2. These scenarios describe alternative growth paths for the global economy; they are not forecasts; nor do they represent most probable outcomes. The calculations are based on the IMF's Global Integrated Monetary and Fiscal model (GIMF). See, for example, Kumhof et al. (2010).

3. Most importantly as regards corporate taxation, the corporate income tax rate was permanently lowered, from 35% to 21%. As a counterbalance, corporate tax deductibles were eliminated or limited. Since the tax reforms, the average wage income tax rate is about 1 percentage point lower and marginal tax rate about 2.5 percentage points lower. The cuts to personal taxation are set to expire after 2025.

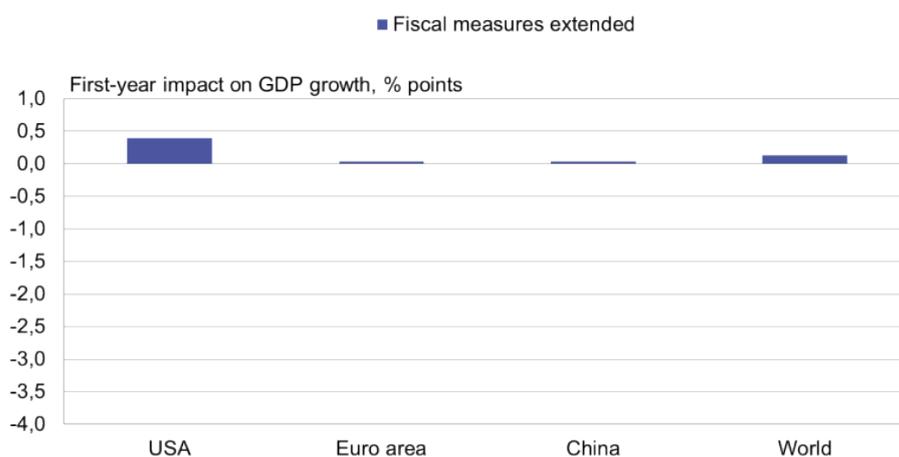
4. See e.g. IMF (2018b and 2019).

5. A similar assumption seems to have been made in the OECD's (2018) forecast published in November 2018.

Chart 1 illustrates how an extension of the US fiscal measures would affect aggregate output in different economies. Each column shows the percentage-point deviation from baseline GDP growth during the first year. The results suggest that output growth in the United States would rise by 0.4 percentage points during the first year: if growth were to decelerate to 1.8% without an extension of the measures (i.e. baseline), then it would stand at 2.2% in scenario 1. However, extending the fiscal measures in the United States would do little to strengthen global economic growth: there is little discernible change in GDP growth in other individual economies or in the global economy as a whole.

Chart 1.

The United States extends its fiscal measures



Source: Bank of Finland calculations.
eurojatalous.fi / bofbulletin.fi
15.3.2019

In the United States, an extension of the fiscal measures would accelerate inflation slightly and prompt the central bank to raise its policy rate appropriately. The US dollar would appreciate by about 1%. The United States' current account deficit would widen somewhat, due to import growth. Conversely, the current account surpluses of the euro area and China would grow slightly. The United States' public debt-to-GDP ratio would rise above baseline.

Scenario 2: The United States imposes further tariffs

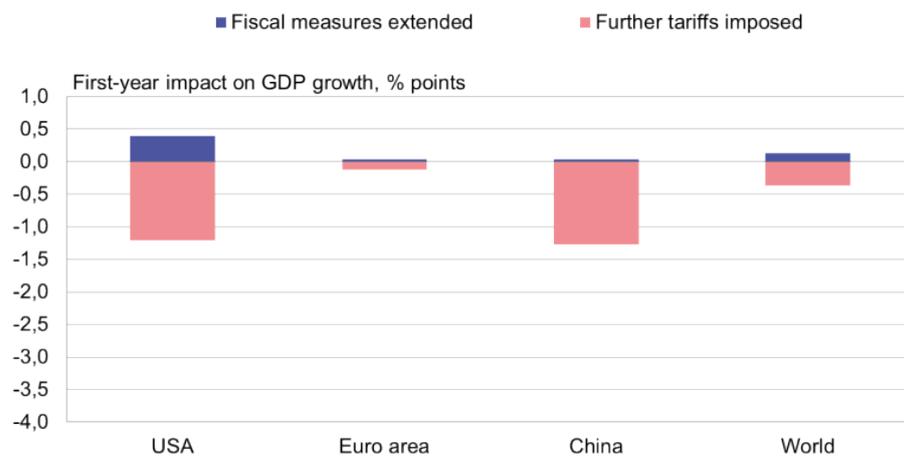
The United States has so far imposed additional tariffs on about half of its imports from China, as well as on solar panels and washing machines and on aluminium and steel imports.^[6] This alternative scenario examines how the global economy might be affected if the United States were to pursue even further tariffs. Scenario 2 assumes an escalation

6. So far the United States has imposed additional 25% and 10% duties on USD 50 billion worth and USD 200 billion worth of Chinese imports, respectively. The latter is subject to a potential 15 percentage point increase, also to 25%, if the countries' trade negotiations don't progress. In addition, the United States has proposed further duties on effectively its entire volume of imports from China, worth some USD 500 billion, as well as on car imports and car parts.

of the US–Chinese trade dispute, with 25% additional duties permanently imposed on all bilateral trade.^[7] It is further assumed that the United States will impose permanent additional duties of 25% on all car imports from the European Union, and that the European Union will retaliate with 25% additional import duties on a volume of US goods that matches the dollar value of its car exports. The tariff shock would reach past the direct trade channel and also reduce global investment, as the new tariffs would cast uncertainty over future trade flows and disrupt supply chains.^[8] Following these assumptions, scenario 2 yields a similar impact assessment to that published in Bank of Finland Bulletin 4/2018.^[9]

Chart 2.

The United States imposes further tariffs



Source: Bank of Finland calculations.
eurojatalous.fi / bofbulletin.fi
15.3.2019

Scenario 2 suggests that further tariffs would isolate the United States from global trade. Investment demand would also be weakened by a higher uncertainty. As a result, GDP growth in the United States would come in just over 1 percentage point below baseline in the first year (red column in Chart 2). Even if the United States were to also extend its fiscal measures, growth would still come in 0.8 percentage points below baseline (blue and red stacked in Chart 2). A trade war escalation would raise global trade costs and have a significant impact on US foreign trade (first-year effects of -7% on exports and -5% on imports). At the same time, the United States' current account deficit would widen. Additional tariffs would also have an adverse impact on consumption (-0.5%). Inflation would be reduced somewhat by the slower pace of growth, and the central bank would pursue a lower policy rate. China would also have to contend with markedly slower growth, with investment, foreign trade and consumption all negatively affected.

7. Here the protectionist measures are assumed to be permanent; the earlier impact assessment published in Bank of Finland Bulletin (2018) looks at the effects of tariffs imposed for two years. However, there is little discernible difference in their effects during the first years.

8. A shock has been brought into the model that reduces investment by 1.25% in countries who impose tariffs. This shock is assumed to gradually dissipate at a persistence parameter of 0.6.

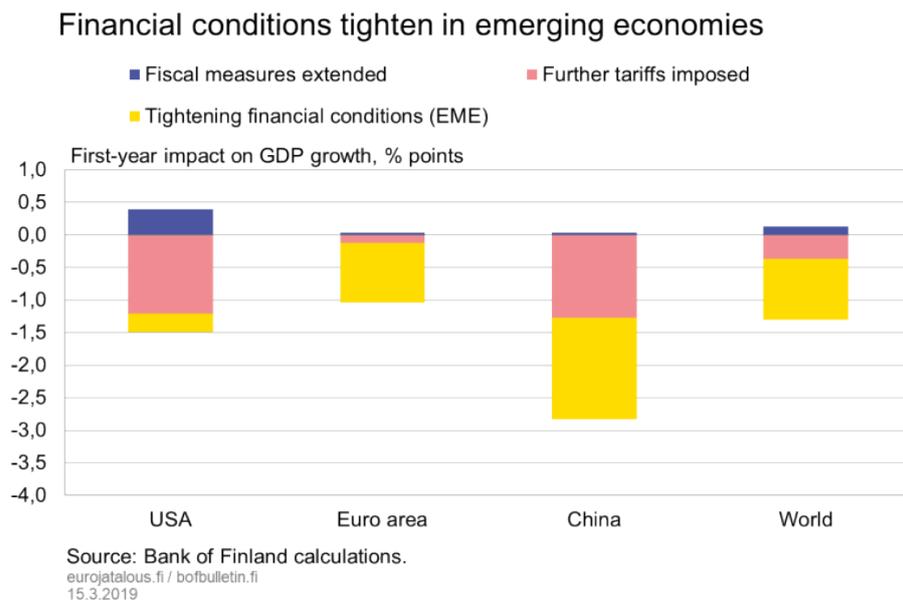
9. For further analysis of the tariffs' impact, see: Bank of Finland Bulletin (2018), ECB (2018), Obstfeldt (2016), Banque de France (2018b) and CPB (2018).

European growth would only be slightly dampened, as the modelling suggests that the euro area would see its market shares expand. Both the euro and the US dollar would appreciate somewhat, while the Chinese yuan would depreciate.

Scenario 3: Financial conditions tighten in emerging economies

Financial conditions in emerging economies could tighten if the global economic outlook were dampened, e.g. by the trade war. The cost of corporate borrowing in particular might see a rapid and substantial rise: a diminished outlook anticipates lower earnings and raises firms' risks. Scenario 3 assumes that investors, confronted by an escalating trade war and a diminished global growth outlook, now demand higher compensation for taking on risk. Corporate sector risk premia are raised by 200 basis points.^[10] Because firms in emerging market economies are subject to more risk than those in advanced economies, the financial shock in scenario 3 is assumed to be twice as large as in scenario 4, where advanced economies are hit by the shock.^[11]

Chart 3.



In scenario 3, where financial conditions are assumed to deteriorate in emerging economies, GDP growth in China would come in 1.5 percentage points below baseline during the first year (yellow column in Chart 3). The results suggest a considerable impact on investment (-7.3%). The slowdown would also reduce China's imports, by

10. The growth in emerging economy risk premia is fed into the model by raising borrowers' riskiness until corporate risk premiums see an immediate and direct rise of about 200 basis points. The shock is assumed to gradually dissipate at a 0.6 persistence parameter. According to the IMF (2017), risk premiums on dollar-denominated emerging market corporate debt increased by approximately 450 basis points at the height of the financial crisis.

11. Based on IMF (2017), risk premia on dollar-denominated corporate loans in emerging economies increased almost twofold compared with investment grade corporate loans in advanced economies at the height of the financial crisis.

about -2.5%. Similarly, consumption and export growth would both dampen. The slowdown would reduce inflation by 0.4 percentage points during the first year, and the central bank would lower its policy rate by 0.9 percentage points. Emerging market currencies would weaken, while the euro and the yen would slightly appreciate. The calculations assume that the fiscal stance in emerging economies is not adjusted.

In the United States only a slight slowdown in growth is discernible under scenario 3 (yellow column in Chart 3). In spite of this, the effect on US exports would be clear in the first year (-2.1%), and even the country's current account deficit would widen somewhat. For the euro area, growth in the first year would come in almost one percentage point below baseline, with exports (-2.3%) and investment (-1%) most affected. The effect on consumption would be -0.5%. Inflation would decelerate somewhat in the first year. In scenario 3, the euro area looks to be considerably more sensitive to the weakening growth in emerging economies than the United States is. This is both because the euro area sells a larger proportion of its exports to emerging economies (over 40% of total euro area exports in 2017) and because of the assumed more limited monetary policy space in the euro area.

Together, an escalating trade war (scenario 2) and tighter financial conditions in emerging economies (scenario 3) would reduce China's growth rate by almost 3 percentage points in the first year (yellow and red stacked in Chart 3). Even if growth picked up during the second year, the shocks would have a lingering effect on the output level for quite some time. Similarly, global economic growth would come in almost 1.5 percentage points below baseline (yellow and red stacked).

Scenario 4: Financial conditions tighten globally

A weakened global outlook would anticipate lower earnings for and raise the riskiness of businesses in the advanced economies as well. In addition, a more muted outlook would alter the amount of external finance needed by general governments, potentially increasing risk premia on sovereign bonds. Scenario 4 assumes that the financial shock spills over into the global economy: corporate bond markets are affected in advanced economies, and sovereign bond markets are affected in both emerging and advanced economies. Corporate risk premia in the advanced economies are assumed to rise by 100 basis points.^[12] Global risk simulations carried out by other institutions typically suggest a 50–100 basis point rise in corporate risk premia in the advanced economies.^[13]

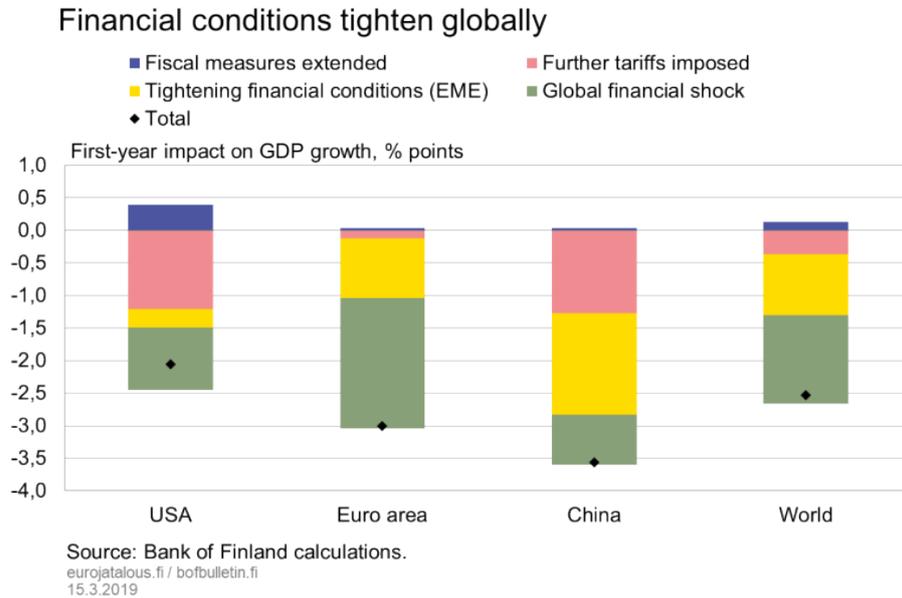
The scenario also assumes that risk (term) premia on both emerging market and advanced economy sovereign bonds are subject to a 100 basis point shock. In practice,

12. The growth in advanced economy risk premia is fed into the model by raising borrowers' riskiness until corporate risk premia see an immediate and direct rise of about 100 basis points. The shock is assumed to gradually dissipate at a 0.6 persistence parameter. Based on IMF (2017), risk premia on dollar-denominated investment-grade corporate bonds rose by about 250 basis points in the advanced economies, at the height of the financial crisis. For the United States, 100 basis points corresponds with approximately one standard deviation (data from 1996 onwards) based on the spread between ten-year BBB-rated corporate and sovereign bonds. Measured like this, corporate bond spreads rose by about 400 basis points in the United States at the height of the financial crisis.

13. IMF (2018a) about 50 basis points and Banque de France (2018a) 50–100 basis points.

this shock raises the interest rates on sovereign bonds (i.e. yields) relative to central bank policy rates.^[14]

Chart 4.



A widespread financial shock on global markets would have significant economic consequences worldwide (green columns in Chart 4). The results for scenario 4 suggest that GDP growth in the United States would come in about 1 percentage point below baseline during the first year. Similarly, growth in the euro area would come in 2 percentage points below baseline, and it would be more than 0.5 of a percentage point below baseline in China. Significant effects on investment would be seen in the euro area (-8.6%) and China (-4.2%) as well as in the United States (-7.0%). Effects on imports and exports in the major economies would be about -1.5%. In the United States and China, inflation would decelerate by more than 0.2 of a percentage point in the first year, and by almost twice as much in the euro area. The Fed would lower its key interest rate by 0.5 of a percentage point but in the euro area and Japan the responses of monetary policy in scenario 4 are dampened due to the assumed more limited monetary policy space.

The calculations illustrate a course where global growth may slow substantially

These alternative scenarios illustrate a path where trade policy escalations lead to tighter financial conditions in emerging economies, slowing global growth and also raising the risk of a global financial shock. If financial conditions were to deteriorate globally,

14. US sovereign bonds are widely considered risk-free and are thought to only have a 'term premium'. Thus, the risk premium on emerging market sovereign bonds is often seen as their yield spread against US bonds. The shock is assumed to gradually dissipate at a 0.6 persistence parameter. An IMF (2018a) simulation of the impact of tighter global financial conditions placed a 100 basis point shock on US sovereign bond yields that spills over into other countries. In the ESRB risk scenario (2018), yields on long-term sovereign bonds issued by EU countries increase by almost 100 basis points on average.

growth would fall sharply in the euro area and the United States, and especially in China (black diamonds in Chart 4). According to the calculations, global GDP growth would slow by about 2.5 percentage points in the first year. Put into context, the global financial crisis suppressed world GDP by over 5% compared with its pre-crisis trend in 2010. The slowdown seen under these alternative scenarios corresponds to approximately half the impact of the global financial crisis. The effects would be especially visible in the development of exports, imports and investment. The slowdown would also raise public debt levels. Growth in the euro area would decelerate sharply, by about 3 percentage points during the first year; investment and consumption would see effects of -10.5% and -1.2%, respectively.

A decline in growth would also dampen inflation globally. Inflation in the euro area would decelerate, remaining 0.6 to 1 percentage points lower for several years. The effects on inflation in the United States would be less pronounced. Emerging market currencies would depreciate against the euro and the US dollar.

Scenarios put US public debt growth above baseline expectations

Looking at the impact of each scenario from the perspective of the United States, it becomes clear that the country will not be able to sustain its 2018 growth rate of about 3% even if it supports its economy with fiscal policy. Chart 5 illustrates the cumulative impact of each alternative scenario. For example, the red dotted line represents the cumulative effects of scenarios 1 and 2, where extended fiscal measures are paired with further tariffs. Extending the fiscal measures beyond 2019 would improve growth somewhat (blue dotted line), but a growth rate of, say, 3% would still remain firmly out of reach.

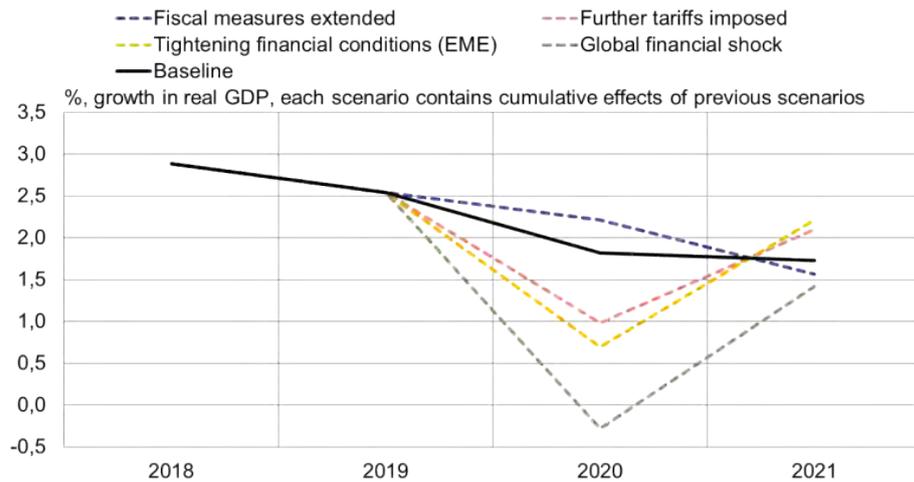
Growth in the United States may also decelerate considerably if the country escalates its trade policies and a resulting global slowdown reflects back on the US economy. In the scenario of a global financial shock (green dotted line), GDP growth in the United States would come in about 2 percentage points below baseline (black line) in 2020. This would entail a slight contraction in aggregate output.

The United States' public debt-to-GDP ratio is already growing on the back of existing fiscal policies (black line in Chart 6). Yet under the conditions presented in this article, an even more rapid accumulation of public debt is indicated, either because of looser fiscal policy or because of weaker-than-baseline GDP growth. While general government debt reaches 117% of GDP (black line) in the baseline scenario by 2023, extending the fiscal measures would push it to about 120% within the same period (blue dotted line). The slight recession observed in the scenario of a global financial shock would push the debt-to-GDP ratio even higher, to about 122% (green dotted line in Chart 6).

For the United States, fiscal space is limited by a mounting public debt burden. To ensure that this debt burden remains sustainable over the long term, the country will have to raise taxes and/or reduce public expenditure.

Chart 5.

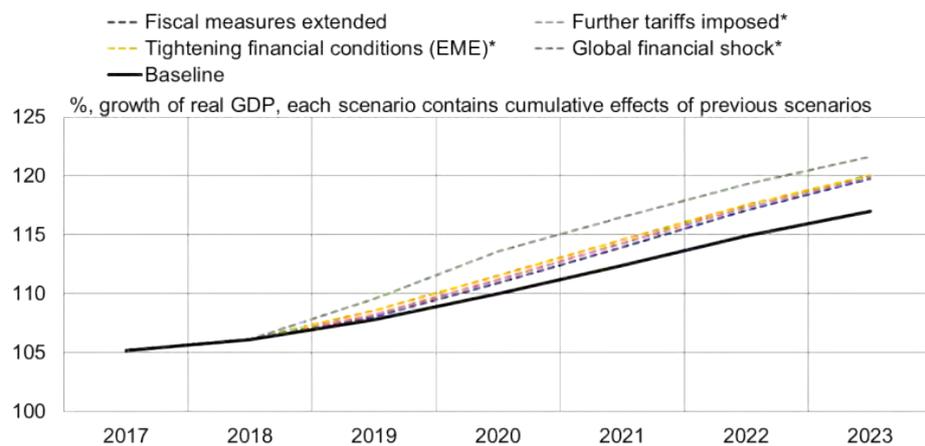
US economic growth under each scenario



Sources: IMF WEO October 2018 and calculations by the Bank of Finland.
eurojatalous.fi / bofbulletin.fi
15.3.2019

Chart 6.

Growth of US general government debt-to-GDP ratio under each scenario



*Net effect of customs duties (customs income minus growth effect) is assumed to be zero.
Sources: IMF WEO and calculations by the Bank of Finland.
eurojatalous.fi / bofbulletin.fi
15.3.2019

Economic policy reactions will influence extent of slowdown in global growth

The alternative scenarios presented in this article illustrate how global economic developments are influenced by fiscal and trade policy decisions taken by the United States. These policies are also reflected back on the US economy itself. The scenarios demonstrate that the effects are particularly potent when a policy shock leads to a sequence of events giving rise to a global financial shock. The precise magnitude of these effects may deviate from the calculations; for example, a tightening of financial conditions, when realised, may not follow the scenarios' assumptions. The calculations are also subject to modelling uncertainties. For example, the model's parameters may not

fully capture real-world transmission mechanisms, and the persistency of the shocks may deviate from the assumptions. In addition, the calculations do not capture all the potential ramifications of an escalating trade war. For example, the consequences of supply chain disruptions caused by tariffs may prove more severe than assumed.

Further still, the results are influenced by the degree to which monetary and fiscal stimulus are assumed to support the economy. The global financial crisis increased debt-to-GDP ratios in the euro area, the United States and Japan. The calculations, however, assume that general government deficits are allowed to grow in response to declining GDP growth, i.e. that automatic stabilisers are allowed to operate freely and thus support economic recovery. Similarly, the scenarios assume that monetary policy is allowed to respond to declining growth, also supporting recovery. Despite this, the capacity for monetary stimulus in the euro area and Japan is assumed to be limited, which indeed translates into a stronger negative impact on output growth.

These calculations suggest a significant decline in China's pace of growth, of about 3.5 percentage points, when the effects of the alternative scenarios are taken as a whole. The calculations assume that China will likewise implement monetary stimulus and allow for a higher general government deficit to facilitate the recovery of its output. However, its growth rate demonstrates a significant decline despite these measures. This means that under the assumptions of the scenarios, China won't successfully use stimulus to stave off a significant decline in output growth. This is reasonable, given the significant rise in China's public and private debt levels compared with before the financial crisis. Indeed, the calculations assume China would not implement fiscal stimulus precisely because of its lowered fiscal space. The monetary stimulus is similarly assumed to prove moderate, which, on the upside, does mitigate the risk of excessive growth of private sector debt. All of this, however, stands in contrast to the extensive stimulus measures undertaken by China during the global financial crisis, which lent broad support to the entire global economy. Under these alternative scenarios, Chinese stimulus is held to be subdued, which partly explains the significant slowdown in global growth.

Sources

Banque de France (2018a) [Costs and consequences of a trade war: a structural analysis](#). Rue de la Banque No. 72.

Banque de France (2018b) [Quantifying the losses from a global trade war](#). Banque de France 7/2018.

BoF Bulletin (4/2018) [Monetary policy to be normalised gradually and in a predictable manner](#). Bank of Finland Bulletin. Published 4.10.2018.

CPB (2018) [Trade wars: economic impacts of US tariff increases and retaliations: An international perspective](#). Background Document (November 2018).

EKP (2018) [Implications of rising trade tensions for the global economy](#). EKP Bulletin 3/2018.

ESRB (2018) [Adverse macro-financial scenario for the 2018 EU-wide banking sector](#)

stress test.

IMF (2017) Global Financial Stability Report, October 2017.

IMF (2018a) Impact of Tighter Global Financial Conditions. World Economic Outlook, April 2018.

IMF (2018b ja 2019) World Economic Outlook, October 2018 ja January 2019.

Kumhof et al. (2010) The Global Integrated Monetary and Fiscal Model (GIMF) – Theoretical Structure. IMF Working Paper 10/34.

Obstfeld, M. (2016) [Tariffs do more harm than good at home](#). IMF-blogi, September 2016.

OECD (2018) OECD Economic Outlook, November 2018 (2).

Tags

[alternative scenario](#), [tightening financial conditions](#), [trade war](#), [US economy policy](#)

Authors



Pasi Ikonen
Economist
[firstname.lastname\(at\)bof.fi](mailto:firstname.lastname(at)bof.fi)



Lauri Vilmi
Senior Economist
[firstname.lastname\(at\)bof.fi](mailto:firstname.lastname(at)bof.fi)