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How can we avoid a negative equilibrium of low growth and low inflation?

3 OCT 2019 11:00 AM • BANK OF FINLAND BULLETIN 4/2019 • EDITORIAL

Global economic growth began to moderate in early 2018. Industrial confidence has waned worldwide and global manufactures trade has seen its growth stall this year. Financial markets have avoided disruption for the time being, but the widening trade war has already slowed the expansion of the global economy.

In the euro area, growth has decelerated to about 1% and is not forecast to meaningfully pick up in the immediate years ahead. Recession has been avoided thus far, but the persistence of uncertainties – relating to geopolitical factors, rising protectionism and vulnerabilities in emerging markets – is sustaining a balance of risks that is tilted to the downside.

Inflation in the euro area will similarly remain subdued for the immediate years ahead. The ECB's latest forecast projects that inflation will remain at about 1% in 2020 and increase to 1.5% in 2021. Core inflation, which reflects the medium-term price pressures within the economy, has remained at about 1% for six years now, but is projected to gradually rise to 1.5% in 2021. The weakening of the economic cycle and shortfall in inflation expectations will maintain low inflation in the euro area.

At its meeting in September, the Governing Council of the ECB substantially increased its monetary accommodation in response to the continued shortfall of inflation with respect

to the ECB's target and recent data indicating weak economic growth in the euro area. In addition, the downside risks to growth have persisted, and the inflation outlook is projected to remain subdued well into the future. With this decision, financing conditions will remain accommodative for an extended period and will contribute to the euro area's growth outlook, both short-term and long-term. If monetary policy remains accommodative for a prolonged period, this will raise the need to examine its impact on the financial system, so as to avoid any potential unforeseen negative effects.

The discussions concerning a review of the ECB's monetary policy strategy have progressed over the year, and a broad consensus has emerged regarding its implementation. The ECB's incoming president Christine Lagarde has announced that she will conduct a strategy review. This will allow for a thorough and analytical debate on the operating environment for monetary policy, on the definition of price stability, and on the instruments of monetary policy. Successful implementation of the strategy review will deepen the research-based knowledge underpinning the monetary policy strategy and thereby strengthen the the common understanding on policy within the Governing Council. The review process will therefore contribute to better monetary policy decision-making and support consistent communication.

Key questions to be addressed in the strategy review might include the following. How will remaining in an environment of negative interest rates and low inflation for a prolonged period affect the monetary policy framework? How will the effective lower bound on interest rates limit the scope for monetary policy in the future, and how should this be factored into the policy framework? What is the effectiveness of non-standard monetary policy measures when interest rates are near the zero lower bound?

The strategy review, in keeping with the ECB's mandate, might clarify both the definition of price stability and the medium-term inflation aim as well as the monetary policy reaction function.

The relationship between different policy areas is also of material importance. Is monetary policy reconcilable with financial stability, and how might fiscal policy and structural reforms that facilitate growth, employment and productivity share the burden borne by monetary policy?

The shortfall in inflation and the stubborn decline of inflation expectations are key challenges for monetary policy. We should take care to avoid the sort of profoundly harmful equilibrium that might arise from prolonged low inflation and zero interest rates, as this would significantly undermine the effectiveness of monetary policy, fasten economic growth below its potential and hinder efforts to boost employment.

To steer clear of this equilibrium, it will be necessary to draw on an array of both monetary and other economic policy tools. Fiscal measures should be actively pursued, particularly towards the financing of public investment in countries with the fiscal space to do so. Structural reforms need to be harnessed to boost productivity and the economy's growth potential and to reduce structural unemployment. In this division of labour, monetary policy needs to bring about a rise in inflation expectations and ensure that they remain well anchored with the price stability objective. It is our ambition that as a result of our actions, we will eventually see a rebalancing of the euro area economy

and the normalisation of interest rates.

Recent studies, such as those looking at the experiences of Japan over the past decades, demonstrate that declining inflation expectations can become permanently stuck at low levels. This can lead the economy into a prolonged period of low inflation, where monetary policy has little room for manoeuvre. Consequently, a powerful monetary response is needed in situations where inflation expectations have become depressed for a protracted period, so as to prevent a scenario where inflation expectations become anchored at too low a level. This was one key reason for the ECB's decision to further ease financing conditions on 12 September 2019.

Helsinki, 3 October 2019

Olli Rehn
Governor of the Bank of Finland

Tags

inflation, inflation expectations, global economy, monetary policy, trade war

Only very subdued growth in sight

TODAY 4:00 PM • BANK OF FINLAND BULLETIN 4/2019 •
MONETARY POLICY, ECONOMIC OUTLOOK

The global economic cycle entered a phase of slower growth in early 2018. At the same time, the United States began to step up its protectionist measures. By September 2019, it had already imposed substantial additional tariffs on some 70% of imports from China. The US-China trade war is widely reflected in the global economy. Industrial confidence worldwide has deteriorated steeply. Services sector confidence has also waned, if, at least so far, to a notably lesser degree. The trade war and political uncertainty are dragging down and postponing investment. Growth in global trade in goods has been at a complete standstill this year. Financial markets have been volatile but have avoided significant disruptions for the time being. The Bank of Finland estimates that, so far, the trade war has contributed to slowing global economic growth by about 0.7 of a percentage point.

Global economic growth has already waned notably, from over 3.5% in 2018 to about 3% this year. However, a further substantial contraction may still lie ahead, caused by uncertainties such as an escalation of the trade war and a wider spillover of its effects on the financial markets, a faster-than-anticipated moderation of the Chinese economy and Brexit.

Economic growth has also waned in the euro area, which is, however, not in recession. Growth has slowed to about 1% and is not forecast to pick up meaningfully in the immediate years ahead. The trade war and Brexit are increasing the risk of a recession. For euro area growth to strengthen, the external environment would need to improve and uncertainties diminish. At present, growth in the euro area has slowed the most in manufacturing-intensive economies such as Germany. There is no turn for the better visible yet for German manufacturing. The concern is that the weakness of euro area manufacturing activity would begin to be reflected on the labour market and in the

services sector. There are already some slight signs pointing in this direction. Strengthening growth would, however, require this not to happen. The weaker cyclical conditions in the euro area are not reflected in euro area unemployment, at least thus far. The unemployment rate has already declined roughly to the level prevailing prior to the financial crisis.

In addition to growth, inflation in the euro area is similarly set to remain subdued in the immediate years ahead. The ECB's latest forecast projects that inflation will slow to 1% in 2020 and pick up to 1.5% in 2021. Core inflation, which reflects the medium-term price pressures within the economy, has remained at about 1% already for six years. Even though the ECB's latest forecast anticipates a gradual strengthening in core inflation to 1.5% in 2021, the forecast is subject to uncertainty. The decline in the unemployment rate and the pick-up in wage growth have not boosted core inflation for the time being. The weaker cyclical conditions will contribute to reducing price pressures further. In addition, inflation expectations have remained low relative to the ECB's target. The risk of deflation remains small, however, despite its recent slight increase. The weakening of the economic cycle and lower-than-target inflation expectations will prolong the period of low inflation in the euro area.

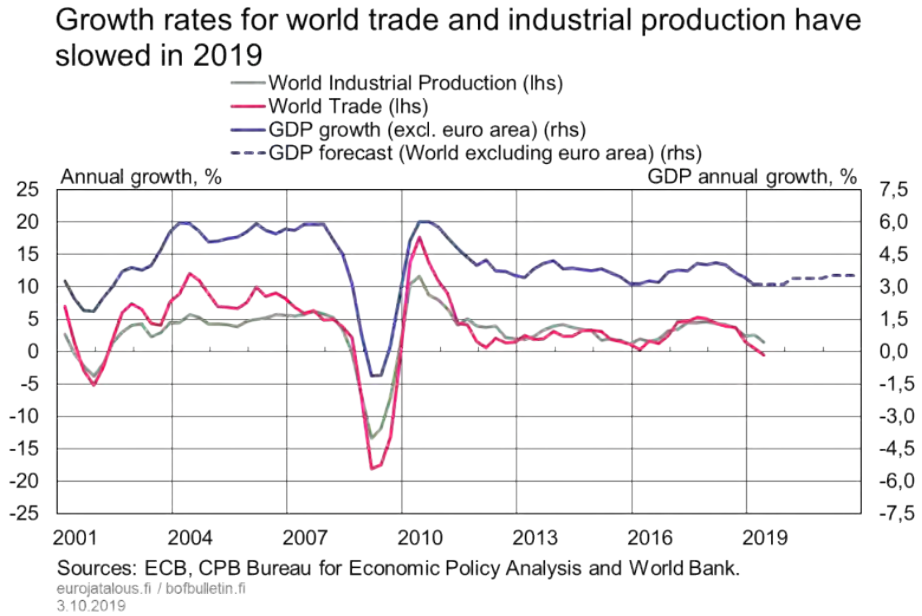
In this context, the Governing Council of the ECB decided at its meeting in September on a comprehensive package of monetary policy measures to provide further monetary policy stimulus and ensure that inflation moves towards the ECB's aim in a sustained manner. Financial conditions in the euro area will remain accommodative for an extended period and will also underpin investment, and hence the long-term growth outlook. Investment and productivity have continued to grow sluggishly in the euro area. Fixed business investment has so far recovered only slowly and has only recently reached pre-crisis levels. An extended period of accommodative financing conditions in the euro area means the period of negative nominal interest rates will continue.

The trade war between the United States and China has dampened world trade growth

During 2019, growth in world trade has moderated to around 3%. This is slower than the average rate between 2000 and 2018 (3.8%), and as recently as last year trade grew by 3.6% globally. According to the most recent projections, global growth is expected to accelerate only slightly and to remain close to 3% (Chart 1).[1] The latest OECD forecast from September predicts that the global economy will grow by 2.9% in the current year and by just 3.0% in 2020. The ECB September forecast (global, excluding euro area) and the updated IMF July forecast were slightly more optimistic, predicting growth will rise to around 3.5% in 2020.

1. IMF July forecast update, OECD September forecast and the ECB September forecast (global, excl. euro area).

Chart 1.

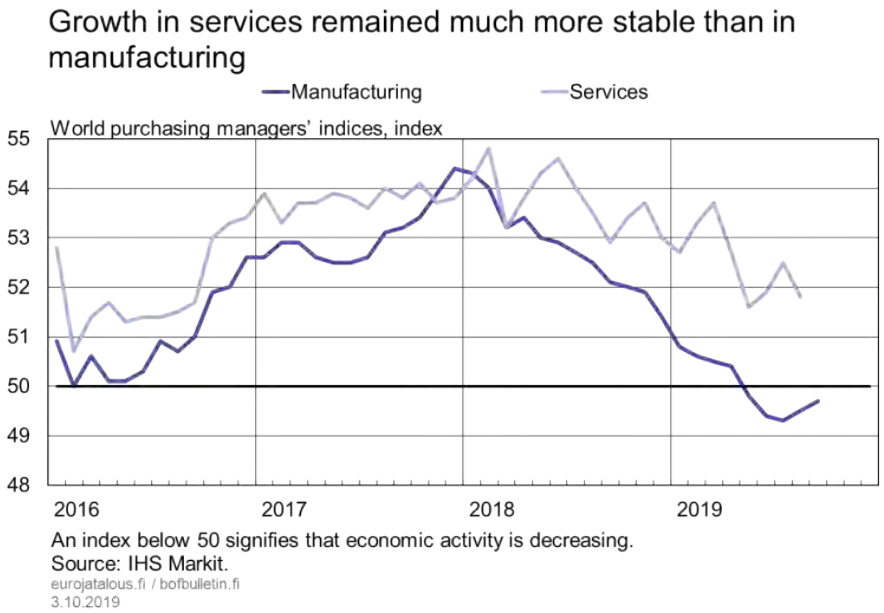


The trade dispute between China and the United States has further escalated since the spring. The tariff increases already cover a substantial proportion of China-US bilateral trade.[2] The dispute increases uncertainty about the future and is reflected in the current figures for manufacturing output and investment and, in particular, in bilateral trade flows between the United States and China. According to model simulations by the Bank of Finland, tariff increases currently in place will have a negative effect of around 0.7 of a percentage point on global growth.[3]

2. The tariff increases now cover roughly 70% of Chinese exports to the United States and 60% of US exports to China. General tariffs placed by the United States on washing-machines, solar panels, aluminium and steel are still in effect, apart for some individual countries that have been granted exemptions.

3. Read more about the effects of the trade dispute in: "The Trade war has significantly weakened the global economy".

Chart 2.

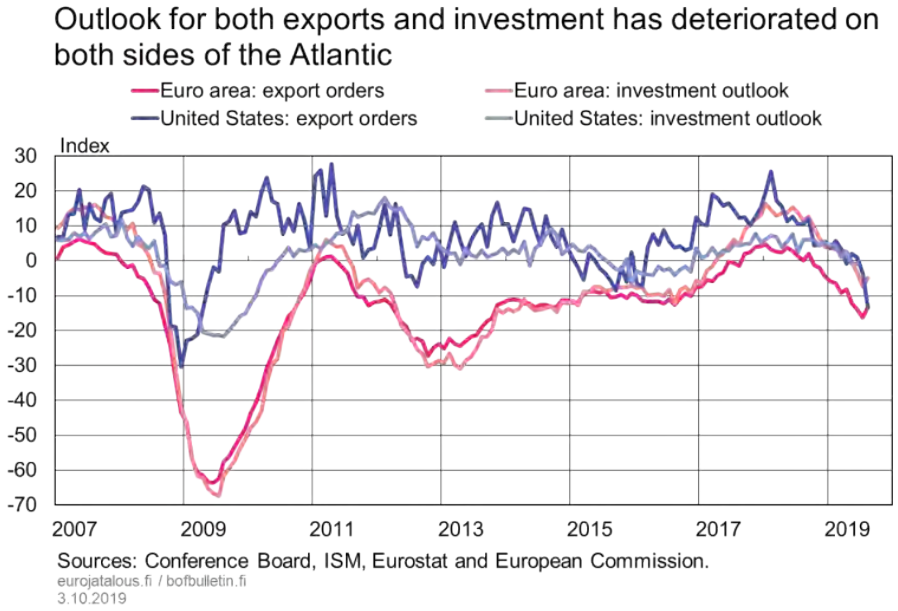


Growth in the manufacturing sector came to a standstill in the first half of 2019. The purchasing managers' indices (PMI) for manufacturing, used for anticipating future developments, has been on a downward trend for several months, pointing to a decline in industrial output (Chart 2). Protectionist measures and uncertainty about growth in the major economic areas have weakened the confidence climate and subdued global trade growth. Global growth in trade in goods has stagnated since the end of 2018. In the last few months, new export orders have further deteriorated. This suggests that global trade growth will remain subdued in the months ahead.

Despite the slow growth in manufacturing, the outlook for the service sector has so far remained relatively stable, as private consumption has kept rising. Positive developments on labour markets and in income growth as well as favourable financial conditions have continued to support this development. In the advanced economies, domestically produced market services account for around half of private consumption.[4] The longer the industrial slowdown persists, the more likely it becomes for employment to weaken, thereby increasing the risk of negative spillovers to the service sector through private consumption.

4. OECD Economic Outlook Box 1.1., May 2019.

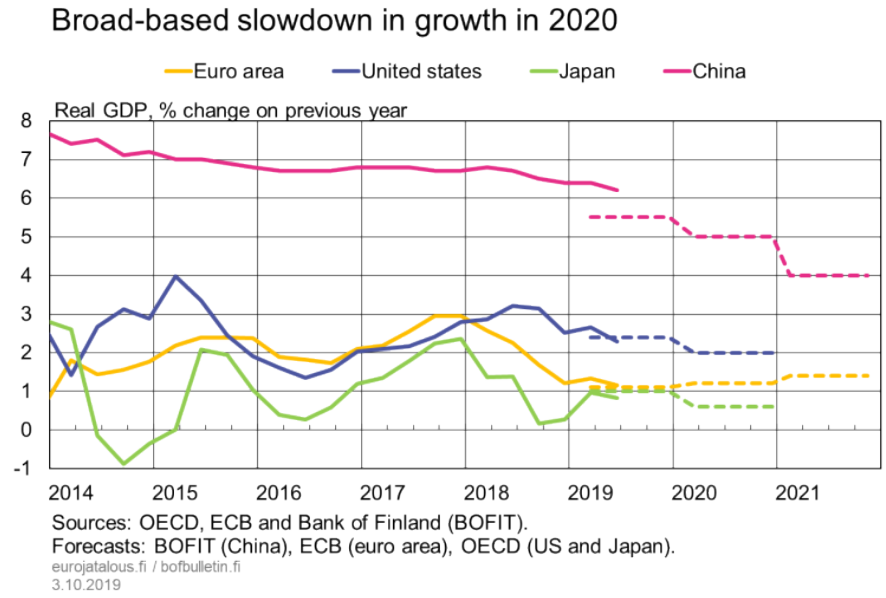
Chart 3.



Leading indicators of investment have weakened noticeably (Chart 3). The growth in actual investment has also slowed during the first half of 2019, especially in the United States. In large investments, the time between when an investment decision is made and when it is ultimately realised and reported in statistics can be considerable. It is therefore likely that any broad signs of the current uncertainty and postponing of investments will be reflected in the statistics for actual investment with a time lag.

Growth weaker in all major economic areas

Chart 4.



The United States' short-term growth outlook has weakened somewhat compared with

last winter, but the US economy is still expected to grow by more than 2% in 2019 (Chart 4). Industrial confidence as well as the outlook for investment and exports have declined substantially. One reason is the trade war and the uncertainty this has caused. Economic growth in the United States is bolstered by private consumption, having picked up after a poor winter season. Private consumption, in turn, is supported by strong consumer confidence, full employment and lower interest rates.

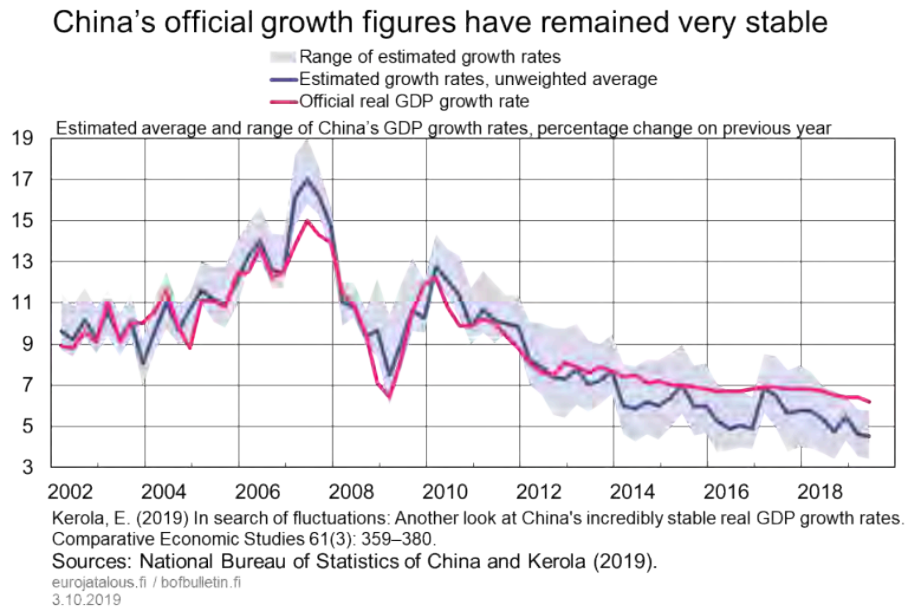
In early August, the United States raised the caps for discretionary government spending for 2020–2021 (Bipartisan Budget Act of 2019), essentially extending the fiscal spending measures introduced in 2018 over a longer period. Continuing the fiscal policy measures will improve growth in 2020 to some degree. However, in the years ahead, once the fiscal stimulus is over, economic growth in the United States is expected to stabilise at around 2%, in line with potential output.

By extending the fiscal policy measures, the United States' overall general government deficit will remain high for a longer period and increase government debt. The most recent OECD forecasts predict that the overall general government deficit will remain clearly above 6% of GDP in the immediate years ahead, and the general government debt will rise to around 113% of GDP in 2020. Large general government deficits also serve to support strong demand for imports, thus raising deficits in the trade and current accounts.

In 2019, the consumer price index (CPI) in the United States has largely remained significantly below 2%, mainly because the price of crude oil has been lower than in 2018. Core inflation has remained slightly over 2%. Unemployment has dropped below 4%, and annual wage growth, based on average hourly earnings, has remained above 3%. Full employment is helping to keep the inflation rate at around 2%, but subdued inflationary pressures and current developments in the global economy led the US Federal Reserve to lower its key interest rates in July and September.

China's growth is expected to slow in the years ahead largely due to domestic factors (see BOFIT Forecast for China). Economic uncertainty is increased by the growing trade tensions. China's imports have fallen from last year, and export growth has slowed substantially. Corporate willingness to invest has also suffered from the tariff increases imposed on each other by the United States and China and from the unpredictability of the situation. China has increased fiscal stimulus to support growth, further increasing the general government deficit. The biggest concerns relate to rapidly increasing indebtedness and the growing financial market risks.

Chart 5.



The problems relating to China's growth figures also make it increasingly difficult to assess the current state of the global economy as a whole. In 2018, China accounted for more than a third of global growth. According to official statistics, China's economy is still growing considerably faster than the global economy as a whole, and growth has remained very stable (Chart 5). However, many alternative indicators and estimates suggest that in recent years the economy has grown more slowly than officially reported. The uncertainty surrounding China's actual growth increases the concerns relating to global growth expectations.

Japan's economy will continue to grow moderately in the years ahead, at around the potential growth rate of almost 1%. The Japanese population is ageing and declining at a brisk pace. As a result, while GDP growth may have been slow, when measured in terms of per capita GDP over the last ten years, it has actually accelerated faster than euro area growth and almost as much as in the United States. The shrinking working-age population is reducing the growth potential of the economy and weakening the dependency ratio. In order to curb high indebtedness and balance the public finances, Japan desperately needs measures to improve labour productivity and increase the foreign labour force. Inflation has remained subdued. The Bank of Japan has continued its highly accommodative monetary policy and also indicated that the will be maintained until the inflation target has been achieved in a sustained manner.

In the United Kingdom, the GDP growth rate fluctuated in early 2019 as the country was preparing for Brexit, originally due at the end of March. However, the UK's departure from the EU was postponed to the end of October. In the second quarter, the economy contracted and confidence indicators continued to decline. The UK's economic outlook for the years ahead depends on how the Brexit process progresses.

In Sweden and the other Nordic countries, economic growth has recently slowed slightly, in pace with the global economy. In Sweden and Norway, the GDP growth rate is

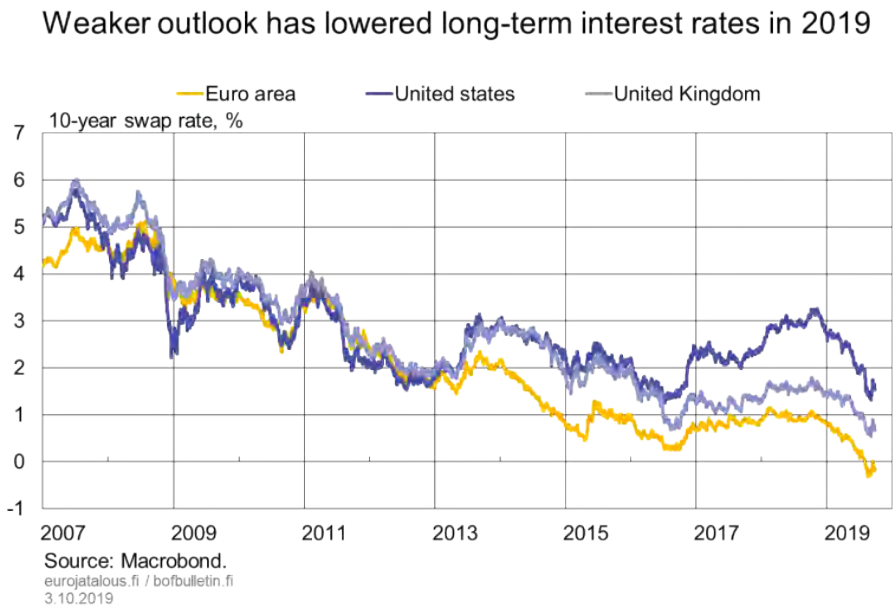
currently around 1.5%, and in Denmark, close to 2%. Sweden's net exports are supporting growth, but domestic demand and investment growth have been poor. The depreciating Swedish krona has also had a negative impact on domestic demand.

The Russian economy has performed more weakly than anticipated in early 2019, and annual GDP growth is expected to be around 1%. According to the BOFIT Forecast for Russia, growth is expected to pick up in 2020 to close to 2%, largely due to public investment. Public investment alone will not boost the potential growth rate, and after 2020 growth will gradually slow.

Economic growth in **emerging economies** in 2019 has turned out to be significantly slower than anticipated. The slowing growth in China and the effects of the trade war on global value chains have slowed growth in Emerging Asia (excl. China). The economic outlook is also bleak for Latin America, where countries are suffering from their own economic policy problems. It is hard to see a clear and rapid improvement in the economic situation in emerging economies.

Sharp decline in long-term interest rates

Chart 6.

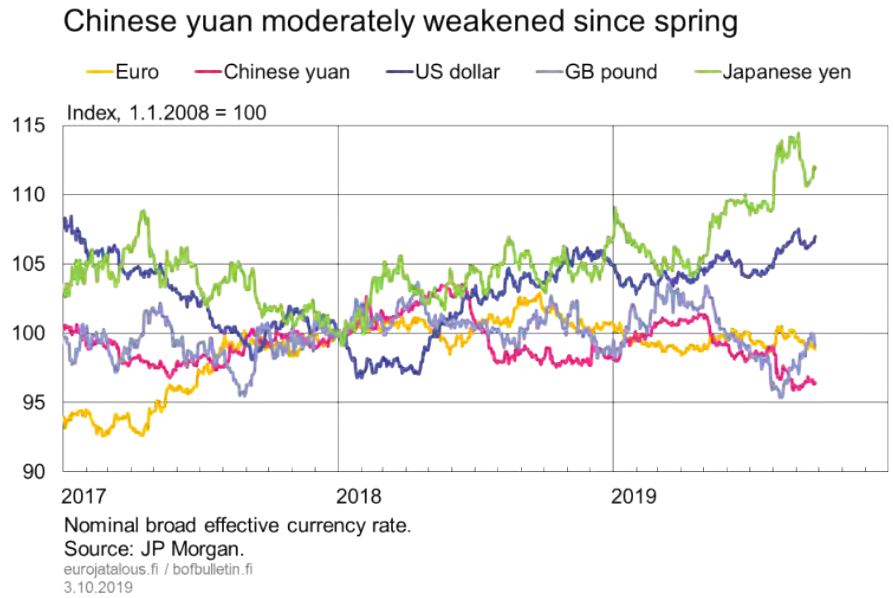


Compared with the beginning of the year, long-term interest rates have declined sharply due to the weaker economic outlook (Chart 6). The decline is attributable to both the increase in demand for safe havens and the decline in expected short-term interest rates.[5] At the beginning of the year, the financial markets were still expecting monetary policy in the major economic areas to tighten, and the United States, for example, was expected to continue its moderate interest rate rises. However, as the economic outlook has weakened, many central banks have eased their monetary policy. In the United

5. Read more [in Finnish] about declining long-term interest rates and the reversed interest rate curve in the Bank of Finland blog.

States, the Fed made its first interest rate cut in July, followed by a second cut in September. Likewise, in the euro area, the ECB lowered its deposit rate in September. In the United Kingdom, the Bank of England kept its key interest rate unchanged in September, but expectations of an interest rate cut have increased.

Chart 7.



Global economic uncertainty has also boosted demand for safe havens on the foreign exchange markets, which is reflected particularly in the appreciation of the Japanese yen and the US dollar (Chart 7). The value of the pound sterling fluctuates in response to new information regarding Brexit. Since the trade war escalated, China has let its currency depreciate slightly.

Headline and core inflation rates in OECD countries have remained around 2% in recent months. Inflation has been subdued by the decline in oil prices that began in late April, bringing the barrel price back to around USD 60 in August, about 18% lower than a year ago. This shift is attributable to both demand and supply factors. Demand has weakened due to slowing economic growth and uncertainty caused by the trade war. On the supply front, OPEC and its allies have continued to cut production, but at the same time other countries, including the United States, have increased production. The attack on Saudi Arabia's oil plants temporarily raised the price of oil to almost USD 70 per barrel, but thereafter it quickly eased back down.

The ECB's comprehensive monetary policy stimulus package supports euro area inflation developments

Economic developments in the euro area have remained subdued and the difficulties experienced in the manufacturing sector, in particular, have persisted longer than previously anticipated. Inflation has fallen short of the targeted level of slightly below 2%, and inflation expectations have weakened further since the summer. In September, the ECB revised down its forecasts for both euro area GDP growth and inflation. The

Governing Council of the ECB assessed that the risks surrounding the euro area growth outlook were still tilted firmly on the downside.

For these reasons, the Governing Council decided at its meeting in September on a comprehensive package of monetary policy stimulus measures. The interest rate on the deposit facility was lowered by 10 basis points to -0.50% (Chart 8). The Governing Council adjusted its forward guidance concerning interest rates by stating that the key ECB interest rates were expected to remain at their present or lower levels until the Governing Council had seen the inflation outlook robustly converging to a level sufficiently close to, but below, 2%. This convergence must also be consistently reflected in underlying inflation dynamics. Previously, the Governing Council expected the key ECB interest rates to remain at their present or lower levels through the first half of 2020.

While the expectations about the future level of interest rates had previously been also dependent on a pre-defined point in time, they were now linked solely to the development of inflation. Thus, the ECB's forward guidance on interest rates shifted now to purely state-contingent forward guidance.

In addition to the lowering of the deposit facility rate, the Governing Council also decided to restart net purchases under the expanded asset purchase programme (APP) at a monthly pace of EUR 20 billion as from 1 November. The purchases will run for as long as is necessary to reinforce the accommodative impact of the key interest rates. The Governing Council expects the purchases to end shortly before it starts raising the policy rates. In addition, the Governing Council intends to continue reinvesting, in full, the principal payments from maturing securities purchased under the APP for an extended period after it starts raising interest rates, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation.

The advantages of a negative central bank rate seem to have outweighed the disadvantages in the euro area.[6] To ensure the continuance of as smooth transmission of monetary policy as possible, the Governing Council took measures in September to ease the costs to the banking sector from negative interest rates. Namely, it decided to introduce a two-tier system for reserve remuneration in which part of banks' holdings of excess liquidity will be exempt from the negative deposit facility rate. This exempt tier will be subject to a rate of 0%.[7]

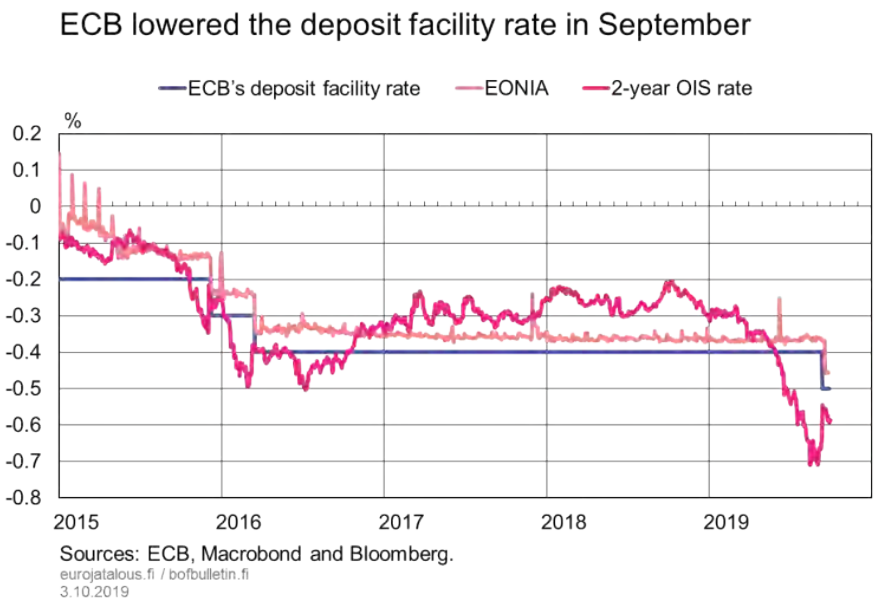
Furthermore, the Governing Council eased the modalities of the third series of targeted longer-term refinancing operations (TLTRO III) commencing in September by lowering the interest rate of the operations by 0.1 of a percentage point. The interest rate in each operation will be set, at most, at the level of the average rate applied in the Eurosystem's main refinancing operations over the life of the respective TLTRO. If banks increase their credit supply over a specific benchmark, the rate applied in the operations can be as low

6. For more information on the effects of negative interest rates in the euro area, see Slightly negative central bank interest rates ease financial conditions.

7. For more information on the two-tier system for reserve remuneration, see The Eurosystem's two-tiered deposit facility.

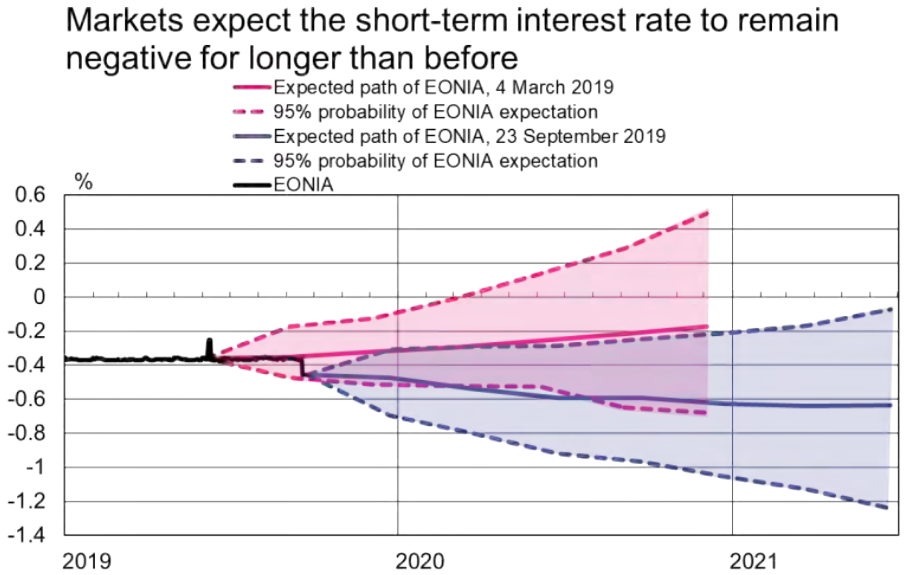
as the average interest rate on the ECB's deposit facility. In addition, the maturity of the operations was extended from two to three years.

Chart 8.



As a reaction to weakening growth prospects, market expectations of interest rates have already been declining since the spring. The ECB's September decisions supported expectations of a prolonged period of low interest rates. The markets currently expect the short-term rate to remain negative for many years ahead (Chart 9). Based on market expectations, the return of the short-term reference rate to positive territory is now more unlikely than in the early part of the year.

Chart 9.



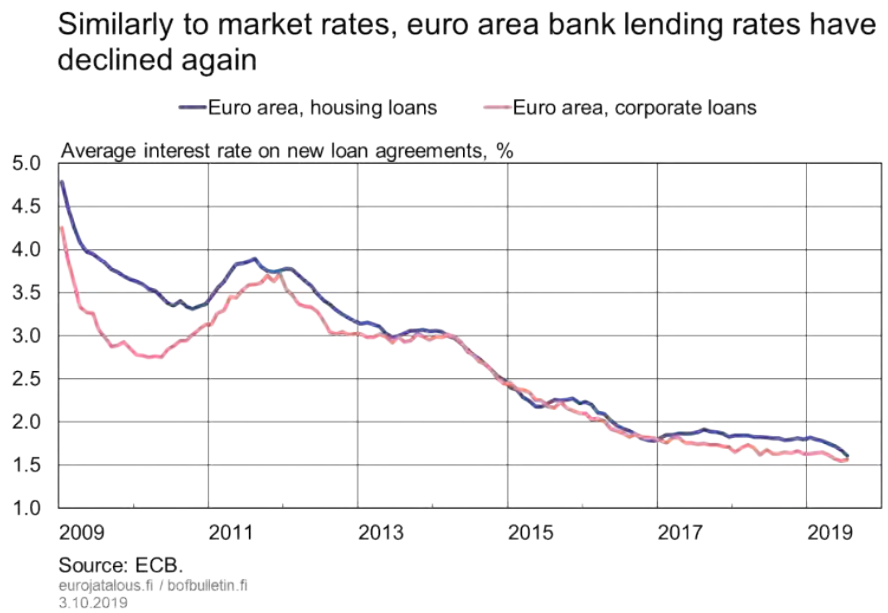
The solid lines reflect the path of EONIA expected by the markets and the shaded areas between the dotted lines contain 95% of the EONIA rates expected by the markets.
Sources: Bloomberg, Macrobond and calculations by the Bank of Finland.
eurojatalous.fi / bofbulletin.fi
3.10.2019

The Governing Council's September decisions provide a further monetary policy stimulus, as the euro area financing conditions will remain favourable for an extended period and hence underpin economic growth. The Governing Council also emphasised that, besides monetary policy stimulus, the euro area also needs economic policies that support economic growth.

The cut in interest rates has been transmitted as lower bank lending rates in the euro area

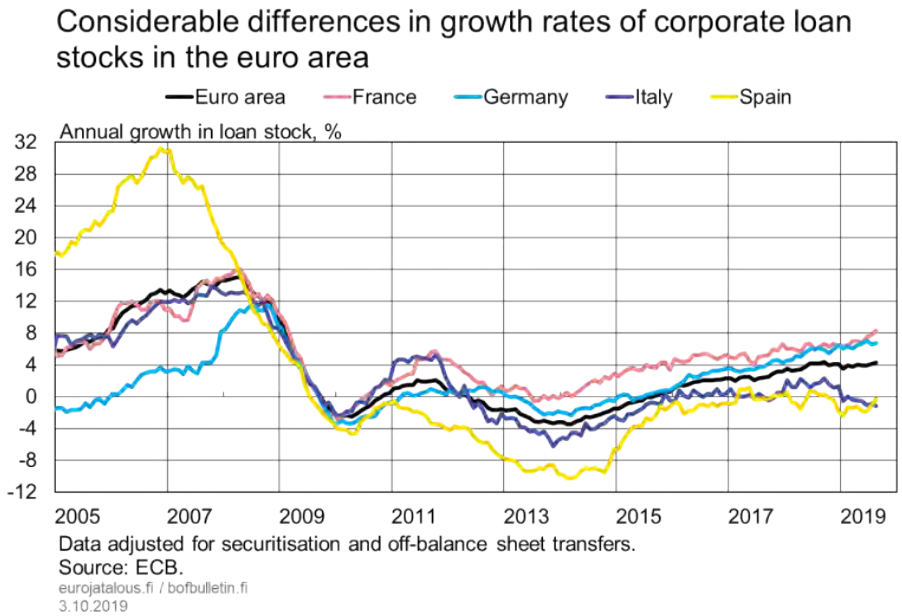
The weaker interest rate expectations have also led to a decline in interbank rates. The Euribor rates, which are widely used in the euro area as reference rates in bank loans to the private sector, fell notably from the early part of the year. This has been reflected in the average interest rates on new bank loans, which continued on the downward trend witnessed since the early part of summer 2019 (Chart 10). Before this, average rates had been fairly stable for a few years.

Chart 10.



Country-specific differences in the average interest rates on new bank loans to non-financial corporations have narrowed further. However, the growth rates of loan stocks still diverge considerably (Chart 11). In Germany and France, for example, the corporate loan stock is growing at an annual rate of around 7%, while in Italy and Spain corporate loan stocks have continued to contract over the year. In the euro area as a whole, the average annual growth rate of the corporate loan stock has stabilised to close to 4%.

Chart 11.



In Italy, the muted growth of the corporate loan stock is mainly due to the ongoing recovery of the banking sector, a protracted period of sluggish economic growth and uncertainties surrounding the economic outlook. In Spain, the main contributory factor

is the property bubble that burst during the financial crisis and rendered the bulk of loans linked to the construction and real-estate sector worthless. Even though the economic conditions in Spain have already improved markedly, the banking sector is still struggling with a corporate loan stock that grew at a very rapid pace before the crisis. However, the fact that the annual growth rate of the corporate loan stock has remained negative does not mean that the situation is equally weak across all sectors. For example, the stock of loans to manufacturing companies in Spain has grown at a fairly robust pace for over two years already.

Profitability remains a challenge in the banking sector

The profitability of euro area banks weakened amid the turbulence early in the year. In the first quarter of 2019, the return on equity (ROE) of euro area banks was 5.8%, compared with 6.6% a year earlier. The uncertainties surrounding the global economy are also weighing on banks' short-term profitability prospects. Markets and banks anticipate only a slight improvement in ROE for the large euro area banks by 2020, to about 8%. In response to the subdued prospects, euro area banks' equity prices have experienced markedly weaker developments in the course of 2019 than broad market indices.

Euro area banks are particularly strained by long-term structural problems, and the subdued economic outlook may further emphasise these problems. Core banking business is still suffering from weak profitability. Growth in net interest income, which constitutes a key source of revenue for banks, has been muted amid persistently low interest rates and a flat yield curve. Net interest income has partly been supported by the return of credit growth to an upward trajectory. A problem, however, is that the growth rates of loan stocks diverge across the different euro area countries.

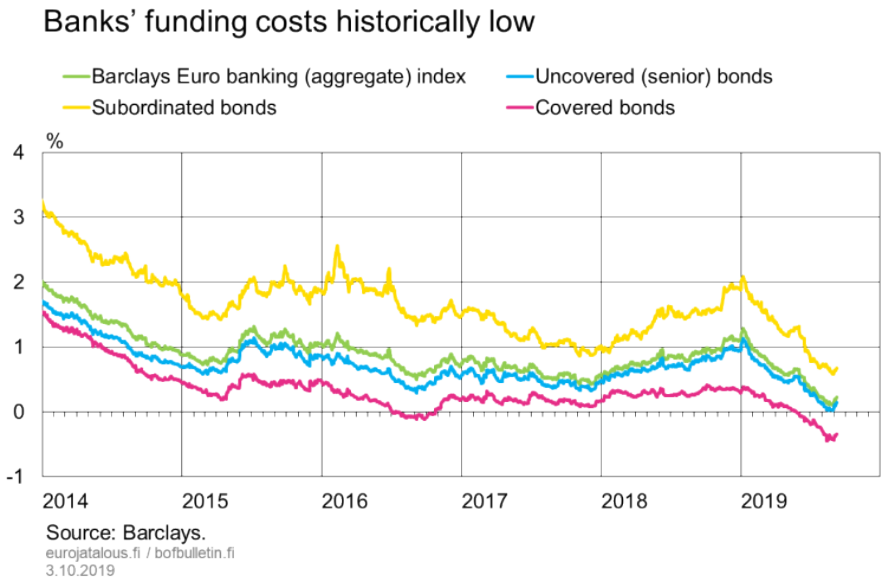
In light of revenue developments, one of the key challenges has been that banks have not sufficiently succeeded in compensating for their weak net interest income growth with other sources of revenue. Financial market uncertainties have eroded banks' net fee and commission income, in particular. In addition, euro area banks are still very locally oriented, which limits their ability to broaden their revenue sources. Cross-border banking activity has decreased in Europe since the financial crisis. The fragmentation and heterogeneity of Europe's capital markets provides a weak support against international competitors. In fact, competitors from the United States, which are backed by solid domestic capital markets, have increased their market shares in Europe, too. Weak profitability has weighed particularly on large euro area investment banks and banks specialising in corporate finance.

In many countries, banks that struggle with weak profitability are also strained by too heavy cost structure. There are many factors explaining banks' high costs, such as an extensive branch network or a large number of staff. Actually, bank profitability appears to be heavily dependent on banks' cost structure. Banks operating with a lighter cost structure can also adjust more easily to challenging market conditions. Going forward, banks must also respond to the challenges brought by major new trends, such as digitalisation. The related investments will put a considerable strain on banking sector

profitability, especially in the short term.

From the perspective of banks' long-term profitability, completion of projects such as Banking Union and Capital Markets Union are of utmost importance. Similarly, efforts to promote the cross-border integration of the banking sector should also be stepped up.

Chart 12.

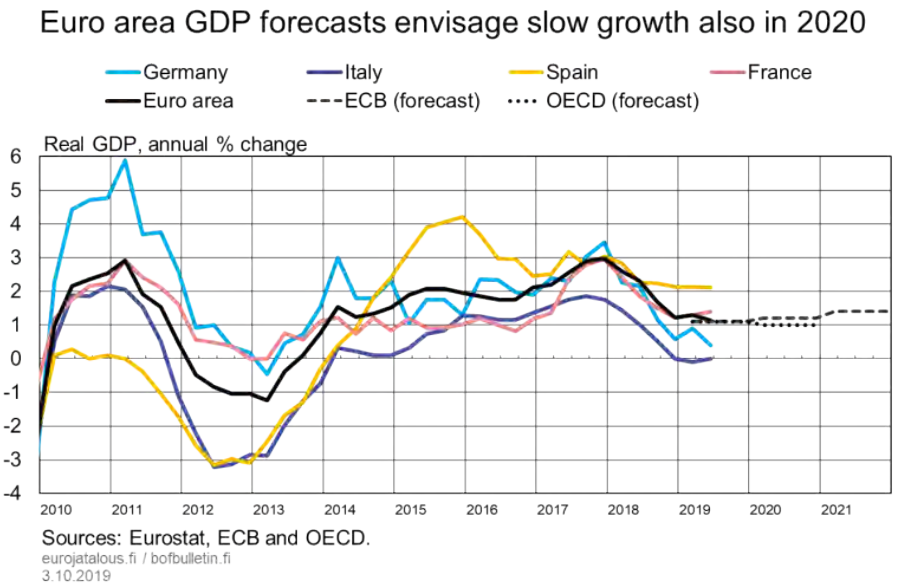


Over the past few years, the profitability of euro area banks has been supported particularly by declining loan losses. Lower loan losses and credit risks have contributed significantly to the profitability of banks, particularly in countries that bore the brunt of the sovereign debt crisis. The accommodative stance of monetary policy has supported banks in reducing problem loans on their balance sheets. In the first quarter of 2019, euro area banks still had some EUR 587 billion worth of non-performing loans on their balance sheets, which is almost 16% less than a year earlier. In proportion to the aggregate loan stock, non-performing loans accounted for 3.7% in the first quarter. Bank profitability also continues to be underpinned by low funding costs (Chart 12) as well as the ECB Governing Council's decisions September to introduce a two-tier system for reserve remuneration and ease the modalities of TLTRO operations.

Euro area domestic demand struggling against industrial sector weakness

GDP growth in the euro area has remained subdued since the second half of 2018. In 2018, it was still 1.9%, but this year it has slowed to around 1% (Chart 13). The slowdown reflects, in particular, the decline in net exports.

Chart 13.



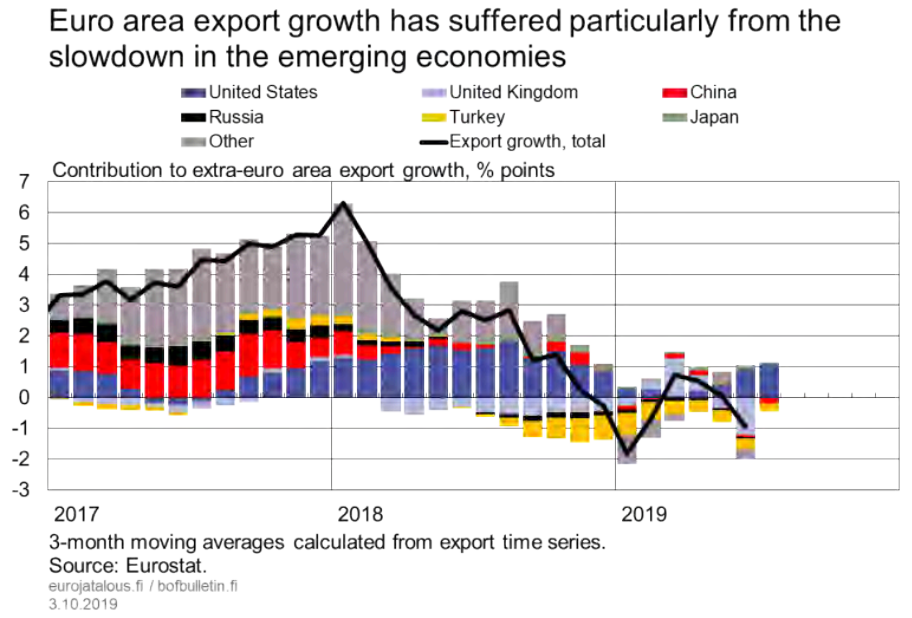
GDP growth in the euro area in 2019 is thus expected to be lower than previously anticipated, and projections for growth in 2020 have also recently been revised downwards. According to the ECB's projections, euro area growth is however expected to recover slightly by 2021. The September 2019 ECB staff macroeconomic projections for the euro area foresee annual real GDP increasing by 1.1% (June projections: 1.2%) in 2019, 1.2% (June: 1.4%) in 2020 and 1.4% (1.4%) in 2021. According to the European Commission's June forecast, GDP will grow by 1.2% in 2019 and by 1.4% in 2020. These projections are, however, subject to a significant downside risk. The OECD projections published in September foresee a stronger slowdown in euro area GDP growth than the projections by the ECB and the Commission. The OECD expects GDP to grow at a rate of 1.1% in 2019 and 1.0% in 2020.

Growth has been supported by solid private consumption, which has been bolstered by an improvement in the employment situation and an increase in disposable household income. Accommodative financing conditions and the mildly expansionary fiscal policy stance will continue to support private consumption. Solid private consumption is reflected in an improvement in retail trade from the previous year and in the purchasing managers' index for the service sector, which has remained at levels that signal growth.

Chart 14.

In contrast, the purchasing managers' index for manufacturing has fallen in 2019 to levels that signal a decline in activity. This type of strong divergence in the manufacturing and service sector purchasing managers' indices is exceptional in the euro area (Chart 14). The outlook for manufacturing has suffered from weak export demand and the uncertainty caused by trade tensions. In addition, sector-specific factors have burdened manufacturing output, particularly in Germany. The latest confidence indicators point to a continued decrease in euro area export orders, which does not promise a rapid improvement in manufacturing output.

Chart 15.



Euro area export growth has stagnated since the end of 2018 and has suffered

particularly from the slowdown in the emerging economies. Export demand to particularly China, Turkey and Russia has been weak (Chart 15). The uncertainty triggered by Brexit has been reflected as a shrinking of exports to the United Kingdom, even though preparations for the assumed Brexit date at the end of March boosted export volumes temporarily. The euro area's three most important partners for goods trade are the United States, the United Kingdom and China. In all these economies, growth is expected to slow in the immediate years ahead, and it is therefore hard to foresee a positive turn in the outlook for euro area exports.

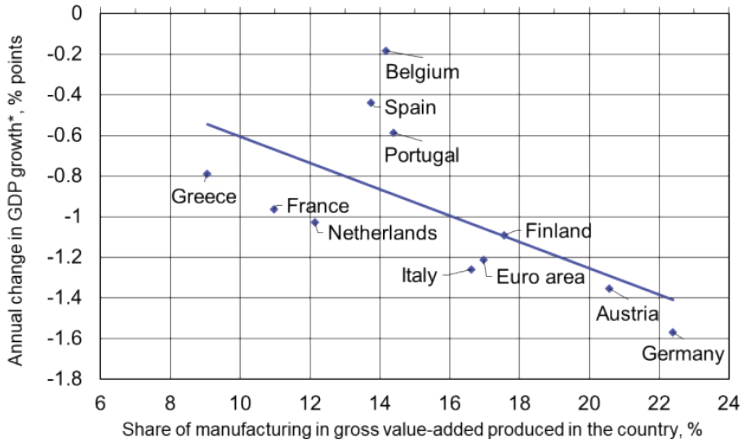
In the second quarter, fixed business investment was growing by 2.5%, year-on-year. The rate of growth was, however, slower than in previous quarters. The weakness of exports and manufacturing is dampening the outlook for fixed business investment, and leading indicators of investment have declined further in recent months. In addition, the capacity utilisation rate has declined in the past year.

Manufacturing-intensive Member States have suffered most from the shrinkage in world trade

Manufacturing output has been subdued throughout the euro area. The importance of manufacturing to the economy does, however, vary considerably between Member States. The share of manufacturing in the gross value added produced in the country is the largest in Germany and Austria, whereas in, for example, Greece, France and the Netherlands, the share is significantly smaller. In Finland, the share of manufacturing in gross value added is close to the euro area average.

Chart 16.

Economic slowdown most pronounced in manufacturing-intensive economies



*Annual change in GDP growth in the period 2018H1–2019H1.
Sources: Eurostat and calculations by the Bank of Finland.
eurojatalous.fi / bofbulletin.fi
3.10.2019

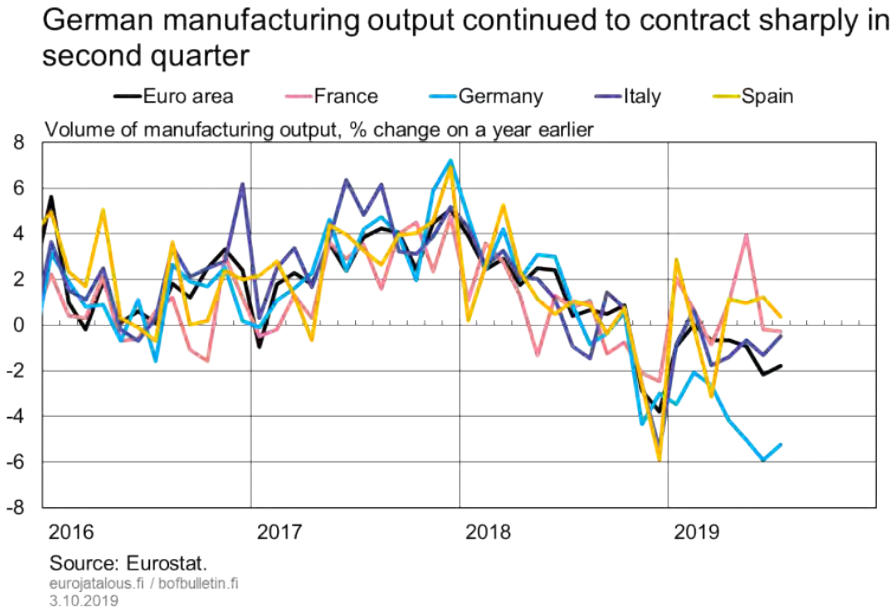
Differences in the share of manufacturing have been reflected in the economic slowdown witnessed in the current year. This is reflected in Chart 16: the higher the share of manufacturing, the stronger the decline in GDP growth compared with the early part of 2018. Due to the strong link between euro area manufacturing output and exports, the

decrease in export demand, partly in response to the trade disputes, will at least initially hit hardest the manufacturing-intensive Member States.

Weakness of the German economy has persisted for longer than expected

The growth prospects for the four largest economies in the euro area continued to diverge during the summer. In Spain, GDP growth has remained robust, and in France, too, GDP is growing at a stable rate. Italy's growth prospects have remained unchanged at very weak levels since late winter. The weakness of Germany's manufacturing output became more pronounced during the summer (Chart 17). Germany is an economy with a high degree of manufacturing intensity and openness,[8] which makes it more dependent on exports and more sensitive to the structure of global trade than other countries. Difficulties in the German car industry may also reflect more extensively on the euro area economy, due to the sector's high degree of global integration and the fact that developments in the sector start to show rapidly in the orders received by subcontractors.[9]

Chart 17.



Sluggish growth in the German economy has a significant effect on the performance of the euro area economy, both directly based on its large weight, and indirectly via economic relationships. Germany's GDP contracted slightly in the second quarter, compared with the first quarter. This was particularly due to the weakness of exports. In the early part of the year, developments in German investments were still favourable. Investment continued to grow in the manufacturing sector, but the construction sector witnessed a significant drop in investment. Private consumption has been supported by

8. In Germany, the share of foreign trade (exports + imports) in GDP is over 60%, compared with some 40% in the other large euro area countries.

9. For discussion of Germany's car industry see the BoF blog [in Finnish only].

the still good level of employment (unemployment rate 3%) and wage growth. Real net wages grew in the second quarter by 4.8%, year-on-year. Consumer confidence in Germany has, however, declined since March. German GDP growth seems to be set to reach some 0.5% in 2019, which is only one third of the growth recorded in 2018. There is heated debate in the country on whether, in the name of fiscal stimulus, budget deficits should be allowed. The IMF, too, has encouraged the German authorities to use the available fiscal space to bolster potential growth.[10]

Italy's economic growth was modest throughout the first half of the year, and GDP growth in 2019 is expected to be close to zero. In 2018, the economy still grew by nearly 1%. Industrial output has contracted for several consecutive months – albeit clearly less than in Germany. Growth in private consumption has slowed. The situation of the Italian economy has been complicated by political uncertainty – which nevertheless decreased in September with the formation of the new government. Italy's problems nevertheless remain, namely high unemployment, weak competitiveness and a large general government debt (over 130% of GDP).

France's GDP is expected to grow in 2019 and 2020 by some 1.3%, i.e. only slightly slower than in 2018. The Macron administration is trying to speed up its economic reforms that were slowed down by the 'yellow vest' protests. France increased public spending as a concession to protesters. This acts now as fiscal stimulus. In France too, general government finances have been in deficit for a long time, and the general government debt-to-GDP ratio is approximately 100%.

Spain, the fastest growing large euro area country in recent years, has succeeded in maintaining a pace of growth higher than that of the others also in the first half of 2019. GDP growth for the year is expected to reach a good 2%. The Spanish economy is protected by its smaller dependence on exports and the smaller weight of manufacturing in GDP. In Spain too, general government finances are still in deficit, but the deficit has shrunk year after year, and the general government debt-to-GDP ratio has slowly decreased.

Euro area investment rate persistently low

Estimates of growth in euro area potential output have decreased slightly in the course of 2019, to 1.4%. Developments in labour productivity, in particular, have been weak in the euro area. According to the study described in one of the theme articles, slow productivity growth might be due to the weakening of innovation and postponement of the adoption of new technologies by companies, reflecting weaker aggregate demand (Euro area productivity growth could slow further in the event of a downturn).

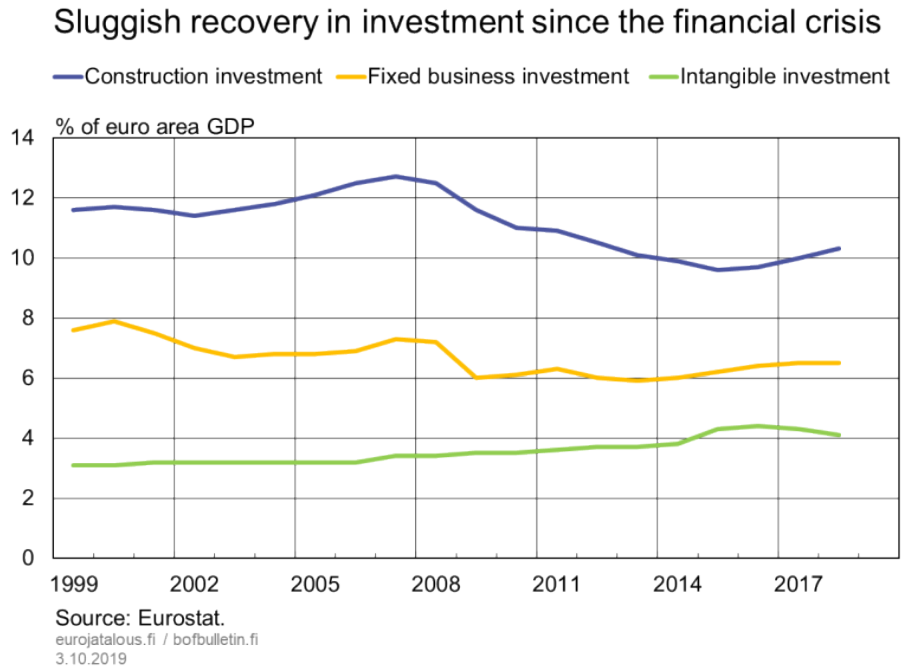
The contraction in the working-age population has been compensated by the ongoing rise in the labour force participation rate, particularly among older cohorts. The decrease in the working-age population is, however, likely to strengthen towards the mid-2020s. In the absence of new reforms to support the participation rate and economic growth, the balanced rate of growth in the economy is therefore expected to slow as a result of

10. IMF article IV consultation with Germany, July 2019.

population ageing. The Governing Council of the ECB stressed in September the importance of implementing structural policies to boost euro area productivity and potential growth.

Compared with pre-crisis levels, the savings rate in the euro area is still high and investment rates are markedly lower. The current account surplus has remained stable, at 3%. While the current account surplus provides a buffer against population ageing and potential economic shocks, it may also signal weak incentives for investment and a low level of investment opportunities. As a result of the higher savings rate and low level of residential investment in the larger euro area countries, household debt ratios have declined steadily in recent years.

Chart 18.



The investment rate in the euro area is notably below the levels of the early post-millennium years. Construction investment, in particular, has been sluggish, and its share of euro area GDP is only slightly higher than at its historical trough in 2015 (Chart 18). Construction activity is particularly subdued in Spain and Italy.

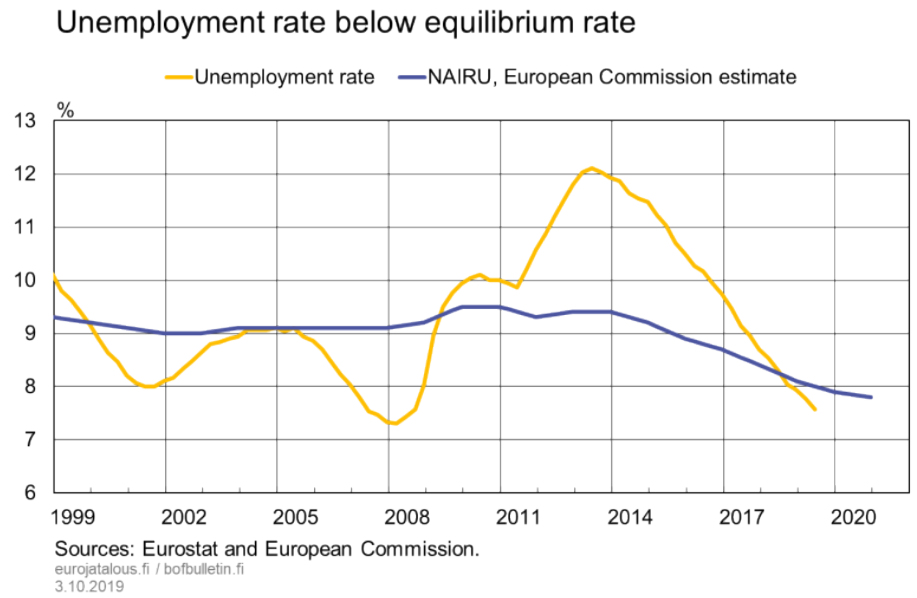
Fixed business investment started to recover slowly only in 2015 and its share of total output is still smaller than before the crisis. The recent weakening of the growth prospects for investment may weigh on investment rates in the future. Of the large Member States, only in Spain has the share of fixed business investment risen above pre-crisis levels. In Spain, the recovery of fixed business investment reflects the strong performance of the manufacturing sector, which has been supported by structural changes implemented during the financial crisis. The share of intangible investment in total output has continued to grow steadily and is now notably higher than before the crisis.[11]

Growth has been sustained by the still positive labour market situation

Unemployment in the euro area has already dropped close to historically low pre-crisis levels. In July, the unemployment rate was 7.5%. This reflects, in particular, the decline in the unemployment rate in Germany to a record low of 3%. In contrast, of the large euro area countries, the rate of unemployment is still well above pre-crisis levels in Spain and Italy. The pace of decrease in unemployment has, however, slowed in 2019, and in some Member States, e.g. Belgium, the unemployment rate has remained more or less unchanged.

According to current estimates, the unemployment rate is already slightly below e.g. the NAIRU[12], i.e. equilibrium unemployment, as estimated by the European Commission (Chart 19). According to the ECB, unemployment is projected to decline further, despite the deceleration in activity. On the other hand, the deceleration of economic activity may be reflected in unemployment rates slowly, as, in the event of a deterioration in demand, companies first reduce the number of hours worked and use labour market flexibilities, for example the time credit system. Germany is in fact already witnessing a slight decrease in the number of hours worked per employee, following the upward trend in 2018.

Chart 19.



The employment market has thus far been supported by the increase in the labour participation rate, particularly among older cohorts. The participation rate of 15–64-year-olds has already climbed to the level of the United States, i.e. close to 75%. Due to population ageing, future improvements in employment will require labour

11. The rise in 2015 and 2016 reflects Ireland's exceptionally large R&D investment, which levelled off in 2017 and 2018.

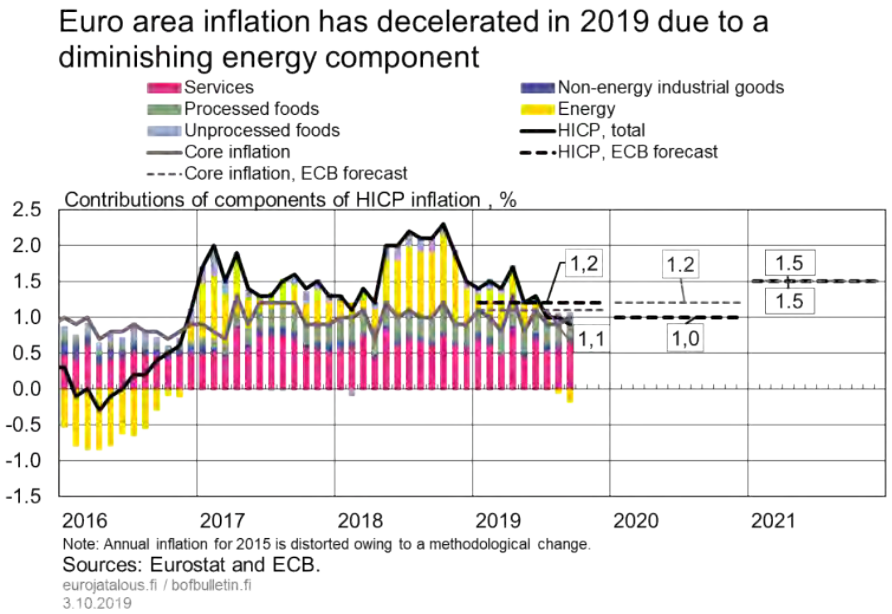
12. NAIRU refers to the non-accelerating inflation rate of unemployment.

market reforms that would support the labour market participation of young people, in particular. The participation rate of the young is still below pre-crisis levels.

Inflation outlook dampened by expectations shortfall

The pace of rise in prices in the euro area has decelerated since the 1.8% recorded in 2018. During summer 2019, headline inflation slowed to 1%. The decline in inflation is almost entirely due to a slowdown in energy price growth, largely attributable, in turn, to developments in the oil price. Annual growth in the price of oil has turned notably negative in 2019, significantly reducing the energy component's contribution to headline inflation (Chart 20). The ECB's September 2019 macroeconomic projections predict headline inflation of 1.2% in 2019, 1.0% in 2020 and 1.5% in 2021.

Chart 20.

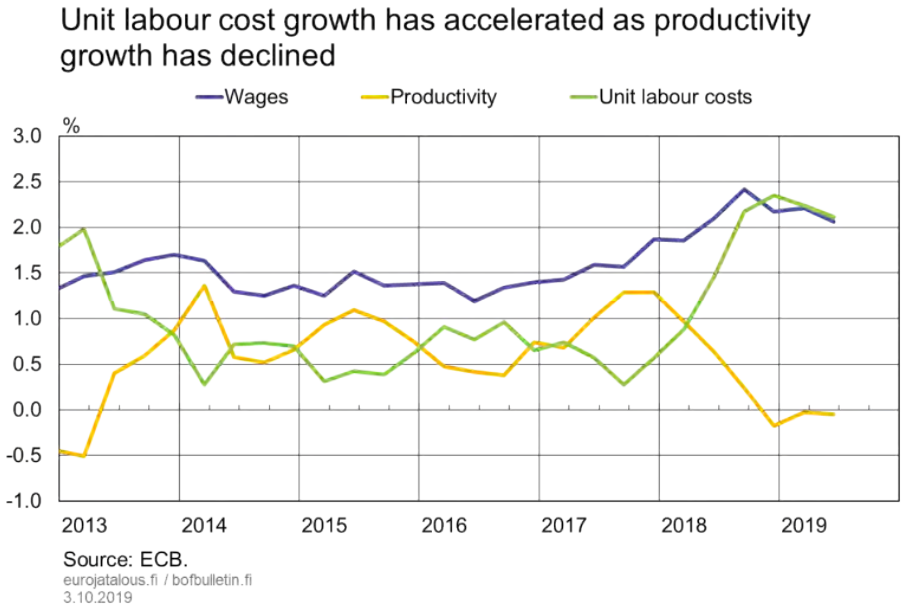


Core inflation in the euro area has stood at an annual rate of about 1% for six years now. Core inflation, which omits the effects of changes in energy and food prices, reflects the euro area's domestic cost pressures. The ECB's September projections forecast core inflation picking up slightly, from 1.1% in 2019 to 1.2% in 2020, and again to 1.5% in 2021.

Wage inflation has gathered pace in recent years. Wage growth does not give rise to inflationary pressures, however, when labour productivity increases at the same time, as a higher wage bill then corresponds with a larger quantity of goods produced. This can be measured by unit labour costs. As wage inflation started to pick up in the euro area, labour productivity also increased at first, leaving little room for price pressures to build up (Chart 21). The sharp cyclical decline in productivity at the turn of 2018/2019 resulted in a substantial rise in unit labour costs. Unit labour costs are expected to level out, however, as soon as productivity growth begins to normalise. Indeed, the rise in unit labour costs has so far remained absent from inflation, with firms having instead lowered

their profit margins for the time being.

Chart 21.

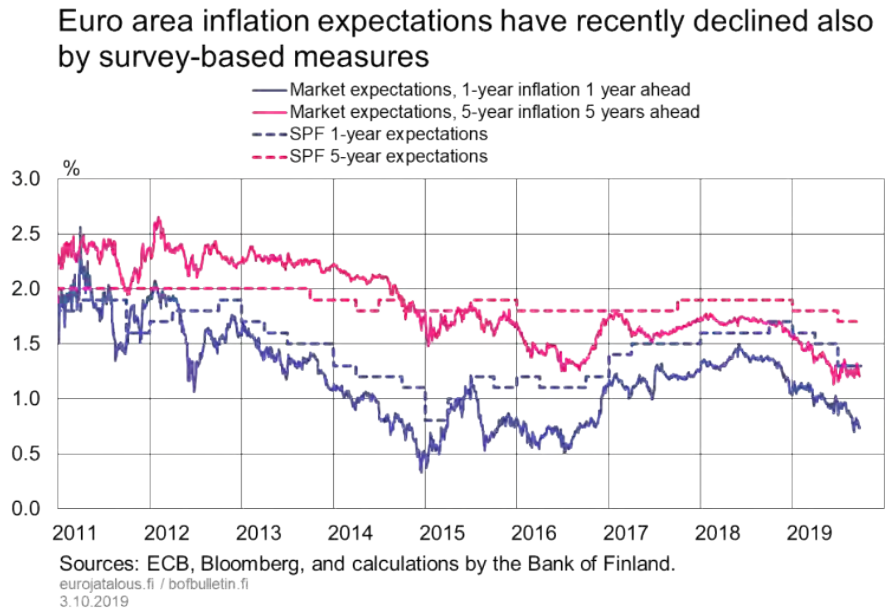


Capacity utilisation in the euro area is approaching full capacity, and this is contributing to an accumulation of cost pressures. Unemployment is below the NAIRU, and the output gap, which reflects the difference between measured aggregate output and its potential level, has closed according to various estimates.

Euro area inflation expectations have been steadily declining for a year now, in terms of both market-based measures and survey-based measures (Chart 22). Short-term inflation expectations have fallen in response to the deteriorating cyclical outlook and one-off shocks, such as movements in the price of oil. By contrast, longer-term inflation expectations reflect how economic agents perceive inflation in the long term, extending over business cycles. Accordingly, longer-term market-based measures reached historical lows during the summer and still remain very low.

Similarly, longer-term measures based on the ECB's Survey of Professional Forecasters (SPF) are also lower than ever before, although remaining appreciably above market-based measures. The fall in longer-term inflation expectations is troubling, as muted expectations can eventually lead to a self-perpetuating cycle of low inflation.

Chart 22.



The probability distribution for expected inflation can also be derived from market information. This distribution has recently skewed towards lower levels of inflation, which reflects the aforementioned decline in market expectations. Since the summer, the odds of inflation falling below 1% have increased markedly, but the probability of deflation has not significantly increased.

Overall, the near-term outlook for euro area inflation is muted, with inflation projections having been widely downgraded. Euro area inflation is set to remain well below 2% in the medium term. In 2019 and 2020, inflation will be constrained by oil price base effects, barring significant developments in the oil price. Inflation will gradually accelerate towards the end of the forecast period, but will remain moderate. Inflation will be supported by continued robust labour market developments. It would be of paramount importance, however, for inflation expectations to rise to ensure the sustained convergence of inflation towards the ECB's inflation aim of below, but close to, 2%.

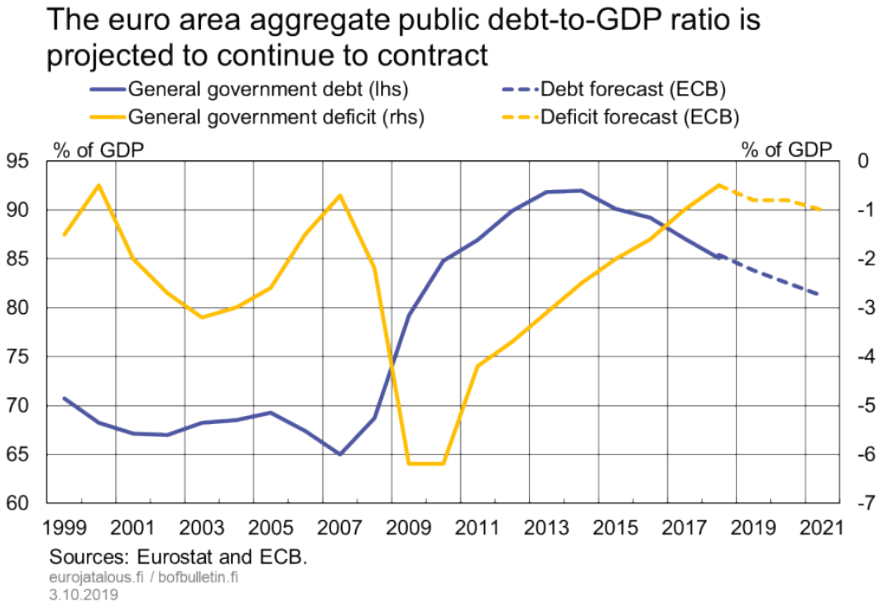
Euro area fiscal stance mildly expansionary

The aggregate fiscal stance for the euro area is forecast to be mildly expansionary in 2019, and the aggregate general government deficit ratio is expected to increase from 0.5% of GDP in 2018 to slightly below 1% of GDP in 2019 (Chart 23). The fiscal stance is currently contributing some support to the expansion of economic activity in the euro area. At the press conference[13] following its monetary policy meeting in September, the Governing Council of the ECB stressed that governments with fiscal space should act in an effective and timely manner to pursue growth-supporting measures. On the other hand, in countries where public debt is high, governments need to pursue prudent policies that will create the conditions for automatic stabilisers to operate freely.

13. Watch the introductory statement to the press conference following the ECB Governing Council's September monetary policy meeting.

The euro area aggregate public debt-to-GDP ratio is projected to gradually decline from its current level of about 85% of GDP. Yet significant differences still persist with respect to each country's level of public debt. In France and Spain, general government debt stood at almost 100% of GDP in 2018, while Italy and Germany had public debt-to-GDP ratios of 130% and about 60%, respectively. These differences are expected to remain sizeable, as, of the large euro area economies, only Germany's public debt is shrinking.

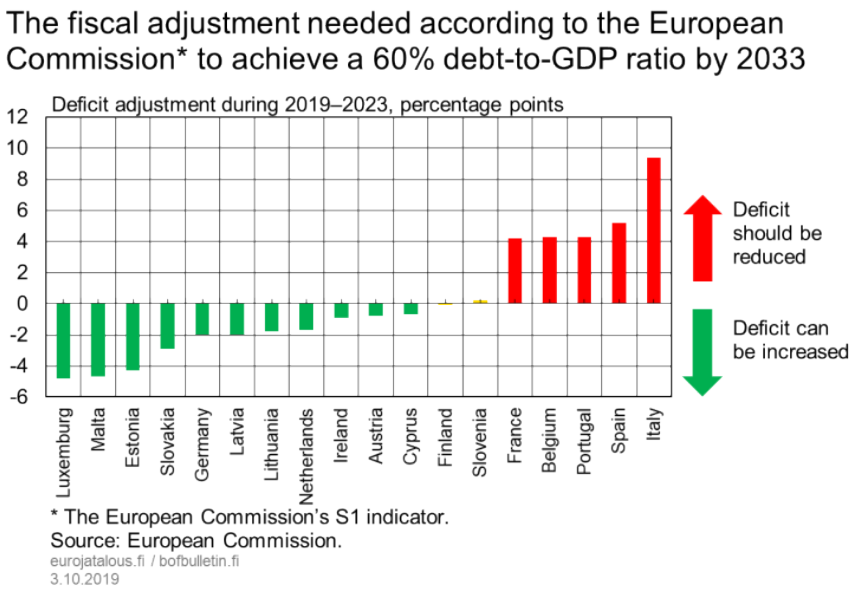
Chart 23.



A sustainable level of general government debt allows for effective countercyclical fiscal policy. One measure of the sustainability of public debt over the medium term is the European Commission's S1 indicator (Chart 24). This shows the additional fiscal adjustment required to reach a 60% public debt-to-GDP ratio, as stipulated in the Growth and Stability Pact, by 2033. By this measure, only Germany and the Netherlands would appear to have meaningful fiscal space when looking at the euro area's large economies. By contrast, Italy, Spain and France would each have to narrow their fiscal gaps over the next few years to achieve a 60% public debt-to-GDP ratio. [14]

14. This is based on the European Commission's S1 medium-term fiscal sustainability indicator as outlined in its 2018 Fiscal Sustainability Report. The S1 indicator is by itself, however, only one measure of risk to medium-term fiscal sustainability and should not be taken as a policy recommendation.

Chart 24.

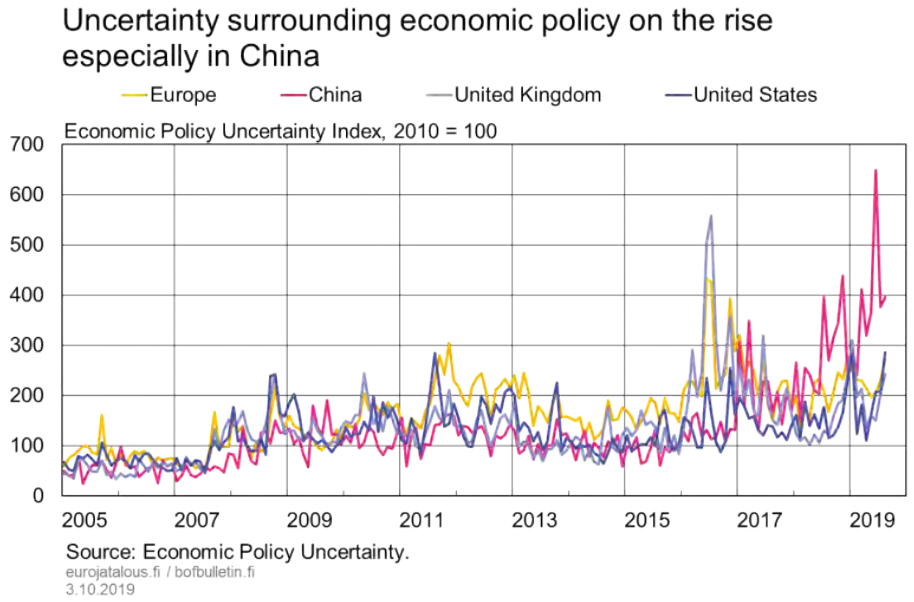


Several euro area countries face prominent long-term fiscal sustainability risks relating especially to population ageing. According to an assessment by the Commission, high-level fiscal sustainability risks are associated with Belgium, Spain, Italy and Luxembourg. In addition, ten Member States face medium-level risks. Fiscal sustainability assessments are heavily influenced by growth forecasts and projected yields on long-term sovereign bonds.

Growth risks skewed to the downside on account of trade war and Brexit

Some of the risks identified in earlier forecasts relating to trade war escalation, the slowing of the Chinese economy and the United Kingdom's withdrawal from the EU have already materialised to an extent. The Economic Policy Uncertainty index has risen markedly over the course of the year (Chart 25), and the balance of growth risks remains tilted on the downside.

Chart 25.



The United Kingdom's new withdrawal date from the European Union is set for the end of October. The odds of a no-deal Brexit may have increased, although according to the law the Government is required to seek an extension to the withdrawal date if a divorce deal fails to win support in Parliament. A no-deal Brexit would prove highly disruptive to the economies of the United Kingdom and the remaining EU Member States. The impact would be significant especially for the Republic of Ireland, but also for other key trading partners of the United Kingdom. The impact for any given country will depend on its external trade volume, its supply-chain crossovers, and its financial connections. An orderly no-deal departure would entail adopting World Trade Organization rules for foreign trade. Under this scenario, the remaining EU area's aggregate real GDP would decline by 0.3–1.5% in the long term, depending on the impact assessment and compared with a situation where the United Kingdom would not leave the EU.[15] In the case of a disorderly departure, this outlook would be further exacerbated by financial market disruption. Nevertheless, different assessments suggest that most of the decline in aggregate output caused by a no-deal Brexit would fall on the United Kingdom. In the Bank of England's worst-case scenario of a disorderly no-deal withdrawal, the United Kingdom's real GDP would contract by about 5.5% in the short term.[16] Overall, impact assessments suggest that the negative impact on GDP in EU countries would, on average,

15. The National Bank of Belgium's January 2019 report on different impact assessments published during the past two years. The results are based on seven different impact assessments: link.

16. The Bank of England's Brexit calculations from November 2018: https://www.bankofengland.co.uk/report/2018/eu-withdrawal-scenarios-and-monetary-and-financial-stability that were updated in September 2019: https://www.bankofengland.co.uk/-/media/boe/files/letter/2019/governor-letter-to-chair-of-tsc-re-updated-brexit-scenarios.pdf?la=en&hash=2E567C985959FCF2D80A4F803A7D17392E2855DE. In September 2019 the impact on GDP was estimated to be 2 percentage points smaller than in November 2018, largely owing to various sectors successfully preparing for a no-deal scenario. In terms of severity, the Bank of England's calculations are at the high-end of different impact assessments. For instance, the OECD's latest calculations, published in September 2019, estimate a no-deal withdrawal as having a 2% smaller effect on GDP in the immediate following years than the Bank of England's baseline forecast.

be about 10–30% of that suffered by the United Kingdom.

The trade dispute between the United States and China escalated further during the summer and has already had a clear impact on economic developments (The trade war has significantly weakened the global economy). It would appear that the trade dispute is set to drag on, threatening to increase the barriers to international trade.[17] The rise of protectionist policies weakens growth conditions and may in the worst case even precipitate severe financial market disruption.

There are already signs of the trade dispute affecting the Chinese economy, which has also been weakened by domestic issues. The weakening of the economy together with a worsening debt problem means that episodes of market disruption may become more frequent. A sharp decline in Chinese growth could have considerable effects on the global confidence climate, on commodity prices and international trade, and on global growth. A slowdown in China would also exacerbate issues in other emerging economies.

Tags

monetary policy, inflation, global economy, euro area

17. The economic impact of protectionist measures has been estimated in the following articles, among others: Bank of Finland Bulletin (1/2019) Alternative scenarios linked to the global impact of US fiscal and trade policies, published 3 April 2019; Bank of Finland Bulletin (4/2018) Trade policy tensions casting shadow on economic horizon, published 18 October 2018, and ECB (2018) Implications of rising trade tensions for the global economy, ECB Bulletin 3/2018.

The trade war has significantly weakened the global economy

TODAY 4:00 PM • BANK OF FINLAND BULLETIN 4/2019 • ECONOMIC OUTLOOK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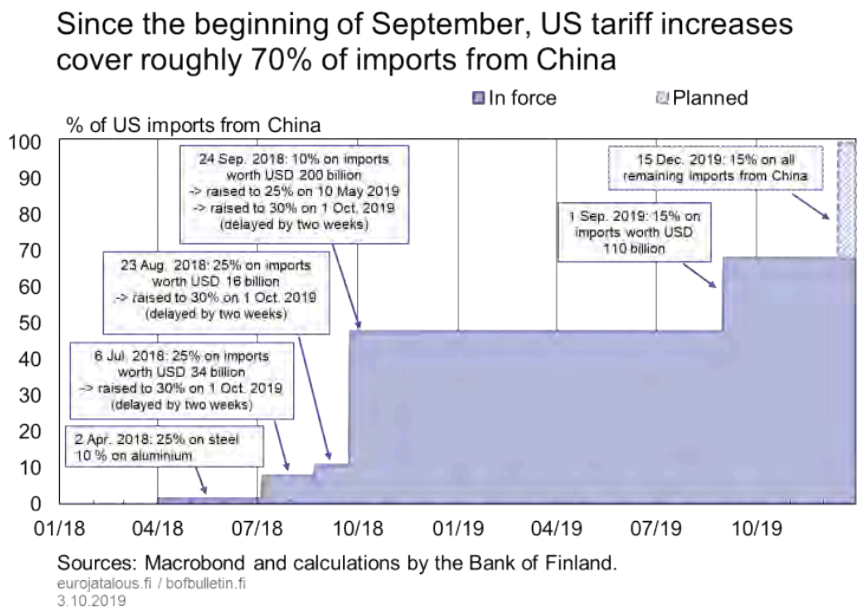
According to a model-based assessment by the Bank of Finland, tariff increases currently in place will slow global GDP growth by around 0.7 of a percentage point. The trade dispute has already diminished trade flows between the United States and China. The growth of uncertainty has been reflected in investment sentiment, and manufacturing purchasing manager indices have fallen globally. News updates on the current negotiation situation have caused volatility in share prices and securities market risk premia, but significant disruptions on the financial markets have so far been avoided. In an adverse scenario calculated by the Bank of Finland, further escalation of the trade war and subsequent widespread disruptions to the financial markets would slow global GDP growth by a further two percentage points.

To date, additional tariffs placed by the United States cover around 70% of total imports from China (Chart 1). China has countered by introducing its own additional tariffs, leading to a situation where the tariff increases cover a majority of trade in goods between the two countries. In addition to the tariffs imposed on China, the United States has announced that it is still considering an additional 25% tariff on the import of cars and car parts from countries outside the North American Free Trade Agreement.

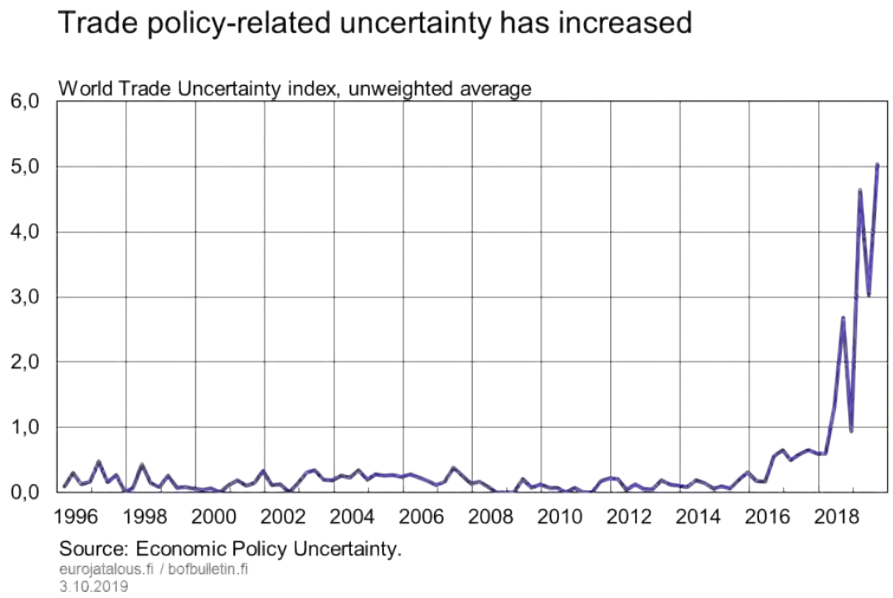
Chart 1.



The trade war escalated in May and flared up again in August. At the beginning of September, the United States introduced yet another round of additional tariffs on new product categories. Furthermore, in mid-December, the tariff increases will begin to apply to all remaining imports from China as well. The United States also plans to raise the majority of current additional tariffs by 5 percentage points in the middle of October. The trade dispute has spread from mere tariffs and now also encompass business restrictions on individual companies and accusations of currency manipulation. There is a possibility that the trade war will escalate into disputes over access to technology. Although a rapid improvement in the situation is increasingly unlikely, the United States and China are still pushing ahead with negotiations and publicly asserting their willingness to settle their trade disputes. However, the continuation of the trade war has increased uncertainty globally and has raised the World Trade Uncertainty index for trade policy uncertainty[1] to a record high this year (Chart 2).

1. See https://www.policyuncertainty.com/.

Chart 2.



Trade war already reflected in trade flows, overall confidence and the financial markets

The tariffs will hit the foreign trade of both countries the hardest. Figures show that in 2019, US imports from China have dropped substantially from 2018. At the same time, the European Union has increased its market share on the US market (Chart 3). Trade flow changes have not been reflected in the United States' trade deficit, which has remained almost unchanged at around 3% of GDP.

Chart 3.

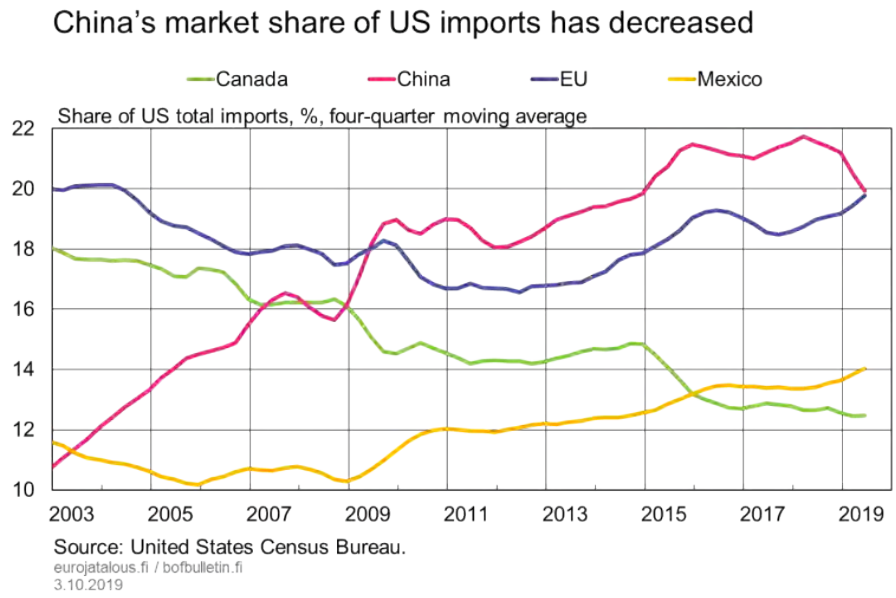
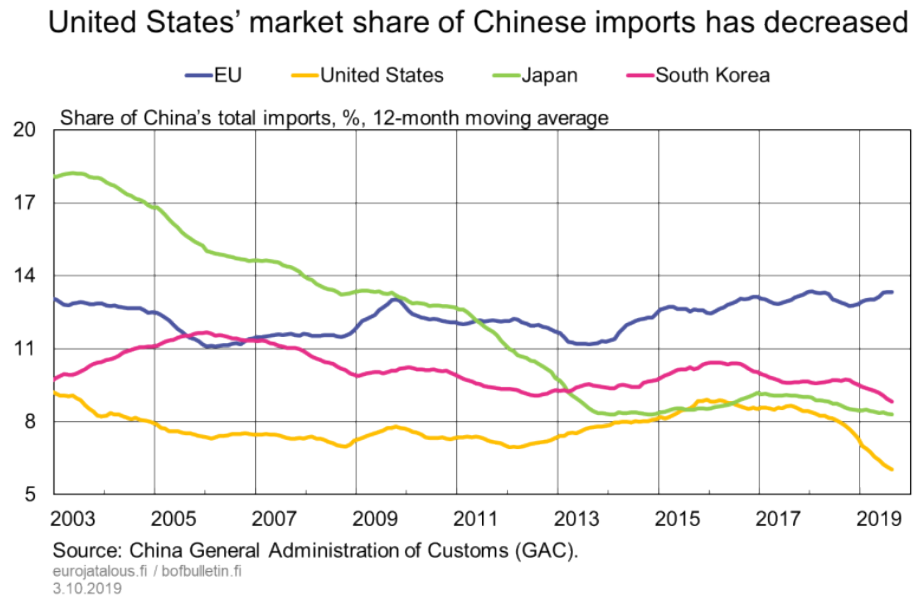


Chart 4.



The trade war that has been going on for more than a year and the weakened economic developments in China have been reflected particularly in the decline in foreign trade. China's goods imports have decreased from last year. Especially, the value of goods imports from the United States has dropped sharply and was more than 25% less in July 2019 than a year earlier. Lower demand and the fragmentation of production chains caused by the trade war have diminished the foreign trade flows of goods from China's neighbouring countries as well. In the current year, annual growth in the value of imports from the EU has almost come to a standstill, while just last year the value of imports grew by more than 10% year-on-year. The United States' share of Chinese imports has fallen sharply since early 2018, whereas the European Union's market share has recently increased slightly (Chart 4). In a survey[2] by the American Chambers of Commerce, three out of four American companies in China said that increases in US and Chinese tariffs are having a negative impact on their businesses. According to the same survey, around 40% of respondents are considering relocating or have already relocated manufacturing facilities outside China, mostly to other Asian countries or Mexico.

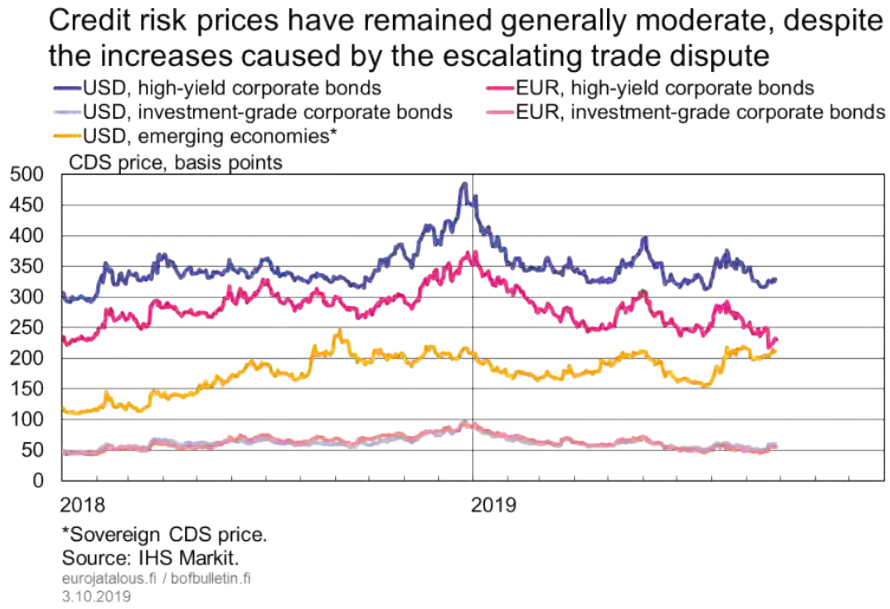
Manufacturing purchasing manager indices have weakened considerably in the major markets, and export order levels have been poor. The uncertainties and reduced confidence caused by the trade war are weakening the global economy more than the direct impacts on trade flows might suggest. This is particularly evident in the deteriorating investment outlook.

On the currency markets, the Chinese yuan has depreciated against the dollar, as China has allowed a slight depreciation of its currency in response to the new tariff increases by the United States. On the financial markets, news of a trade war has sparked anxiety and

2. The American Chambers of Commerce representing US companies in China (AmCham China and AmCham Shanghai) published the joint survey of their member companies in May 2019. The survey received nearly 250 responses. Link to the survey.

increased volatility on the stock market. The effects of the trade war have been particularly visible on the stock markets in emerging economies, and especially in China. Trade negotiation developments have also affected credit risk prices (Chart 5). Increases in credit risk prices coincided with escalations in the trade negotiations in May and August. In emerging economies, risk premia have increased slightly since early 2018, but in global terms they remain on a generally moderate level.

Chart 5.



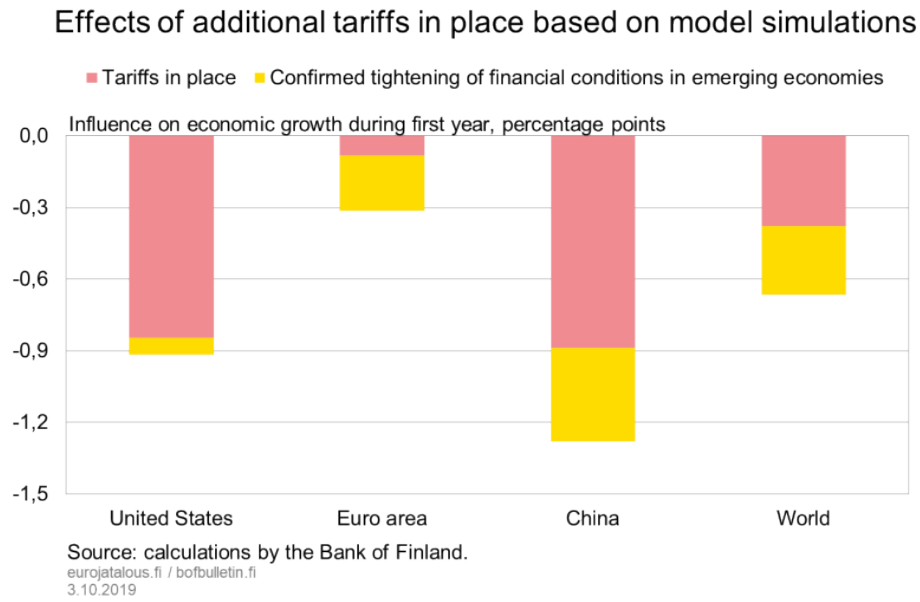
So far, the negative effect of the trade war on global growth is around 0.7 of a percentage point

At the beginning of September, the increased tariffs covered around 70% of bilateral trade between the United States and China. The investment outlook has deteriorated globally due to the increased uncertainty caused by the trade war. Several indicators also support an assessment that the dispute has tightened financial conditions in emerging economies, consequently raising risk premia on their corporate bonds by some 50 basis points.[3] However, to date there have been no significant disruptions on the financial markets. Chart 6 shows the actual GDP effects of the trade war in major economic areas based on model calculations.[4]

3. Risk premia are influenced by different factors and are globally correlated. The calculations assume that the trade war has not yet affected risk premia in the advanced economies. The increase in risk premia on corporate bonds in emerging economies caused by the trade war has been assessed by comparing their average growth against the average growth of risk premia on US investment-grade corporate bonds after 22 January 2018. On that date, the United States made the first official announcement on additional tariffs (washing machines and solar panels).

4. The calculations are based on a GIMF model simulation presented in the Bank of Finland Bulletin 1/2019.

Chart 6.



According to calculations by the Bank of Finland, the trade war is currently slowing GDP growth the most in China (over 1 percentage point) and in the United States (around 0.9 of a percentage point). In the euro area, the downward impact of the trade war on GDP growth so far is around 0.3 of a percentage point. A major setback for euro area growth is the weakening growth in emerging economies. According to model simulations by the Bank of Finland, tariff increases currently in place will slow global GDP growth by around 0.7 of a percentage point.[5] A recent OECD analysis[6] points in the same direction, predicting that because of the trade war and increasing uncertainty, global GDP will be 0.6 of a percentage point lower by the end of 2021. The OECD calculations also conclude that the greatest effects will be felt in the economies of the United States and China.

Risk scenario: trade war escalates and the effects spread to the financial market

In the Bank of Finland's adverse scenario[7] the trade war escalates to the point where 25% tariff increases will affect all bilateral trade between the United States and China. In this scenario, 25 % tariff increases are implemented on all of the remaining 30% of the United States' imports from China. In addition to that, the United States imposes a 25% import tariff increase on cars imported from the EU, and the EU responds with an

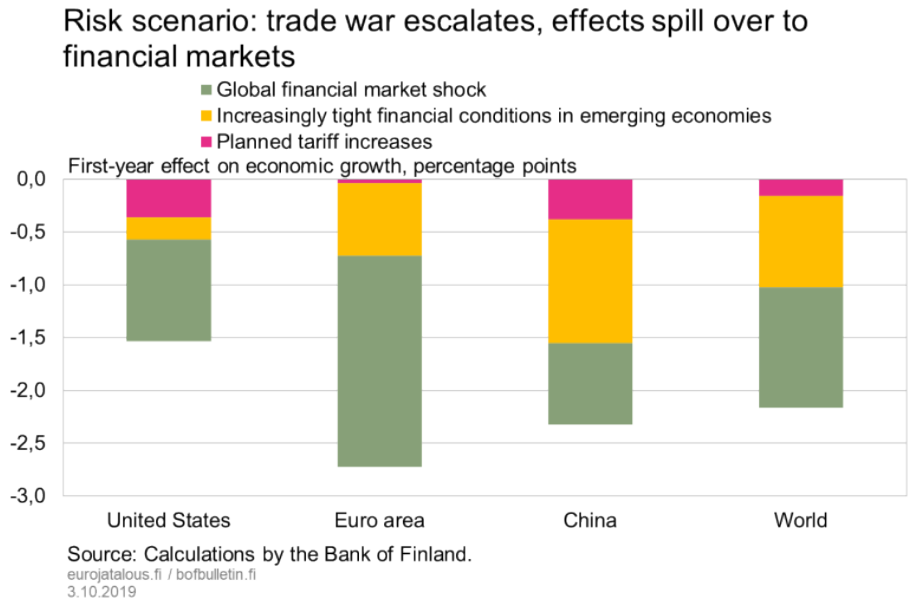
5. The calculations are based on a scenario where all effects are immediate and reflect in the growth numbers for the first year. In practice, however, the tariffs have been implemented gradually and the impact of the increased uncertainty on investment may be reflected in actual investments with a delay. Thus, the effect on economic growth may be spread over several years in the observed data.

6. The OECD calculations take into account the tariff increases planned for the remainder of the year and a global rise of 50 basis points in investment risk premia. See OECD Interim Economic Outlook, 19 September 2019.

7. The confirmed effects of the trade war presented in the previous chapter combined with the calculated effects of the adverse scenario correspond the total effects of the trade war according to the adverse scenario presented in Bank of Finland Bulletin 1/2019. The calculations are based on analogous simulation assumptions.

import tariff increase of 25%, imposed on the same amount in dollars for US imports. The risk scenario assumes that the trade war leads to a two-phased tightening of financial conditions. In the first phase, risk premia on corporate loans in emerging economies rise by an additional 150 basis points on the previously estimated rise of 50 basis points. In the second phase, the financial market disturbances extend into the global economy, consequently raising risk premia on corporate loans in advanced economies as well, and on sovereign bonds all over the world.[8] Due to the financial market disturbances, the impacts on the global economy in the risk scenario may grow to be far greater than the effects materialising through the direct trade channel or uncertainty-related reduced investment.

Chart 7.



In the risk scenario, the new tariffs would slow growth during the first year directly by around 0.4 of a percentage point in both the United States and China (pink columns in Chart 7). Additional and considerable global consequences would follow if the trade disagreement triggers financial market disturbances in emerging and advanced economies (Chart 7, yellow and green columns). As a result, GDP would grow in the first year around 1.5 percentage points less in the United States and almost 2.5 percentage points less in China than without escalated trade tensions and substantial market disturbances (Chart 7). The financial disturbances would have much larger consequences in the euro area than in these two countries, mostly because the calculations assume that the euro area has limited space for monetary policy to respond. In the case of severe financial market disturbances as depicted in this scenario, euro area GDP growth would be more than 2.5 percentage points slower in the first year.

In the model calculations, the extent of slowdown in global growth is also influenced by

8. The calculations presented in Bank of Finland Bulletin 1/2019 assumed that the risk premia on corporate loans will rise by 200 basis points in emerging economies and by 100 basis points in advanced economies. Further, the risk/term premia on sovereign bonds were assumed to be subject to a global increase of 100 basis points.

economic policy reactions, i.e. the degree to which monetary and fiscal stimulus are assumed to support the economy. The calculations assume that in the euro area and Japan the space for monetary policy to respond is limited, and that expansionary discretionary fiscal policy is not used. In this sense, the model calculations may exaggerate the economic impacts of financial market disturbances, especially in the euro area.[9] If the policy measures in response to slowdown are stronger than assumed in the simulations, the escalation of the trade war and financial market disturbances would have a smaller negative impact on global growth than presented here.

Tags

trade war, trade flows, economic outlook

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9. The calculations are also subject to modelling uncertainties. For example, the model's parameters may not capture all real-world channels correctly, and the extent and persistency of the shocks may deviate from the assumptions.

The Eurosystem's two-tier system for remunerating excess liquidity holdings

TODAY 4:00 PM • BANK OF FINLAND BULLETIN 4/2019 • MONETARY POLICY

Kristian Tötterman
Market Analyst

As a part of the broad monetary policy stimulus package introduced at its September meeting, the Governing Council of the ECB decided to introduce a two-tier system for reserve remuneration. The goal of the system is to support the transmission of monetary policy through banks to firms and households by lowering banks' costs caused by negative interest rates. The system applies as of the seventh maintenance period of 2019 starting on 30 October 2019.

Banks deposit funds with the central bank to fulfil their minimum reserve requirements, to transfer payments among each other and to safely store their assets.[1] The Eurosystem pays a remuneration rate on the minimum reserve requirements equal to the main refinancing operations rate, which is currently 0%. Funds that exceed the minimum reserve requirements either remain on the banks' central bank accounts as excess reserves or are deposited overnight with the Eurosystem through the deposit facility. In

1. Euro area banks are required to hold a certain amount of funds as reserves in their current accounts at their national central bank. These are called minimum reserves. A bank's minimum reserve requirement is set for about six-week periods called maintenance periods. The level is calculated on the basis of the bank's balance sheet prior to the start of the maintenance period.

the negative interest rate environment, both of these options have so far been remunerated with the ECB's deposit facility rate, which is currently -0.5%.

The total amount of excess reserves and overnight deposits held with the Eurosystem is called 'excess liquidity in the banking system'.[2] Excess liquidity has increased substantially due to the non-standard monetary policy measures implemented by the Eurosystem. The primary reason for the increase lies in asset purchases, which are financed by crediting the central bank account of the selling bank. Since the deposit rate is negative, banks are currently required to pay for their excess liquidity held with the Eurosystem, generating expenditure for the banks.

The two-tier system for remunerating excess liquidity holdings will reduce these costs.[3] The system aims to prevent a situation where low interest rates no longer pass on to the interest rates on bank lending due to narrowing net interest margins. Banks' net interest margins are narrowed when they refrain from passing on the negative rates to their retail deposits.[4] The euro area financial system remains very bank-oriented, which is why the reflection of low interest rates on bank lending rates is important for the transmission of monetary policy.[5]

In the new scheme, the excess reserves of each bank are divided into two tiers. The threshold level of the first tier, the exempt tier, is six times the minimum reserve requirement for that bank, and excess reserves up to this level are remunerated at zero per cent. Excess reserves beyond this level will be remunerated at the ECB's deposit facility rate. The two-tier system creates a difference between excess reserves and overnight deposits, since only excess reserves can be exempt from the negative deposit facility rate. Overnight deposits will continue to be remunerated at the ECB's deposit facility rate.

Chart 1 is an illustration of the effects on the euro area of the two-tier system for reserve remuneration. In the fifth maintenance period of 2019, the minimum reserve requirements of euro area banks amounted to EUR 132 billion. If banks' minimum reserve requirements remain at the same level, the threshold for excess reserves exempt from the negative rates will be set at EUR 792 billion. If the banking system, in turn, utilises the exempt tier to its full capacity, the excess liquidity affected by the negative deposit facility rate would be reduced to around EUR 1 000 billion.

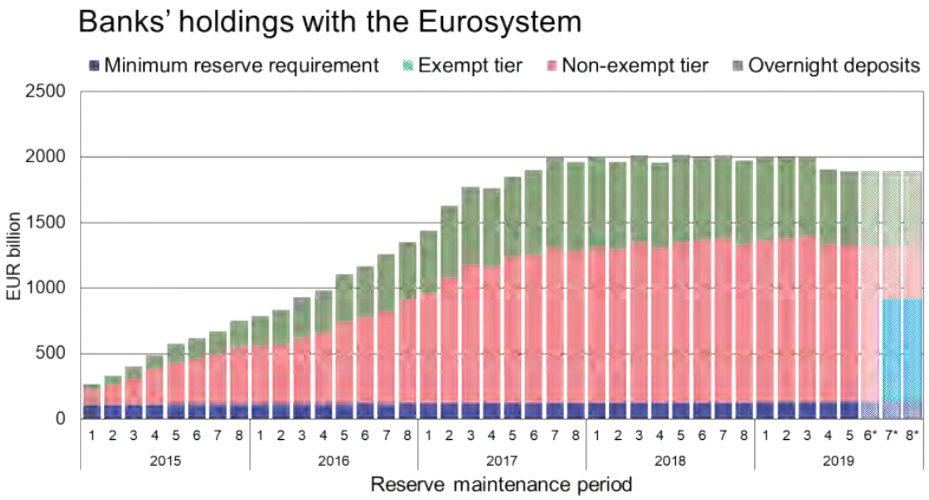
2. Excess liquidity simply refers to all funds deposited with central banks exceeding the minimum reserve requirements. More specifically, excess liquidity is calculated as reserve holdings – minimum reserve requirements + overnight deposits – marginal lending.

3. See ECB press release about the two-tier system for remunerating excess liquidity holdings.

4. The net interest margin is the difference between interest income and interest expenses.

5. Read more about the pass-through of negative interest rates in the feature article: Slightly negative central bank interest rates ease financial conditions.

Chart 1.



* The figures for maintenance periods 6, 7 and 8 are based purely on maintenance period 5 and are not predictions for said periods. For example, the new net asset purchases and TLTRO III operations will influence the amount of excess liquidity and have not been taken into account in this chart.

Source: ECB Statistical Data Warehouse.

eurojatalous.fi / bofbulletin.fi

3.10.2019

Multi-tiered deposit rates are not a new phenomenon around the world, with central banks in, for example, Switzerland, Japan and Denmark having relied on corresponding systems for many years. In practice, all these schemes are designed to exempt a part of the banks' central bank reserves from negative interest rates, thereby ensuring that the low interest rates are passed on to the bank lending rates. In fact, in Switzerland and Japan, the central banks introduced the systems immediately after adopting negative rates in January 2015 and February 2016, respectively. The Danish system was in use even before the introduction of negative rates, due to Denmark's fixed exchange rate policy.[6] Notice, however, that Denmark's central bank also tripled the total limit of higher-rate deposits at the same time it lowered the interest rate on one-week certificates of deposit below zero in July 2012.[7]

Excess liquidity is not evenly distributed in the euro area, but rather concentrated in countries with higher credit ratings, such as Germany, the Netherlands, France, Finland and Luxembourg[8]. Furthermore, excess liquidity is also unevenly distributed across different banks within individual countries. As the two-tier system for reserve remuneration is introduced, some banks will not use the exempt tier to its full capacity,

6. The purpose of the Danish system is to reduce banks' ability to speculate on the foreign exchange market by limiting the amount of central bank deposits available for immediate use. See web page of Danmarks Nationalbank, viewed 24 September 2019.

7. See Danmarks Nationalbank's press release about the interest rate reduction, 5 July 2012.

8. During the debt crisis, excess liquidity was concentrated in these countries, primarily because bank deposits flew to safety to banks in countries with higher credit ratings. After the crisis, however, concentration has also been driven by other factors, such as the asset purchase programme. A large share of the assets in the programme are purchased from banking groups whose head institution is domiciled outside the euro area. These banks, in turn, typically keep their central bank accounts in euro area countries with high credit ratings. Furthermore, the opportunity cost of excess liquidity is lower for banks in countries with higher credit ratings, since the interest rates on these countries' domestic sovereign bonds are lower than the interest rates on the sovereign bonds of lower-rated countries. See ECB (2017).

whereas other banks will still be required to hold large amounts of excess liquidity with the Eurosystem at a negative rate. Banks will presumably even out the under-usage of the exempt tiers, which could, in principle, raise money market rates.

This is, however, not necessarily the outcome. Firstly, in efficient markets, money market rates should be determined by the marginal cost of liquidity rather than the average cost. The marginal cost of liquidity will continue to be determined by the ECB's deposit facility rate. Secondly, in the new scheme, the amount of excess liquidity affected by the negative interest rates will remain at around EUR 1 000 billion, and restarting the net asset purchases in November will increase this amount even further. Historically, with this level of excess liquidity, unsecured money market interest rates in the euro area have closely followed the ECB's deposit facility rate. Thirdly and most importantly, the Governing Council of the ECB has announced that it is prepared to adjust the parameters of the tiering system in order to ensure the effective transmission of changes in policy rates to market rates.[9] In other words, if money market rates begin to rise, the Governing Council could respond by, for example, lowering the threshold level for the exempt tier from the negative deposit facility rate. And if necessary, the Governing Council can also raise the threshold or the rate at which the exempted reserves are remunerated.

According to Philip Lane, Member of the Executive Board of the ECB, the aim of the two-tier system is to strike a balance between two goals: the system should offset the direct costs of negative interest rates on banks, thereby helping to sustain the pass-through of low policy rates to bank lending rates; at the same time, it should preserve the positive contribution of negative rates to the Eurosystem's accommodative monetary policy stance. In this way, the two-tier system for reserve remuneration, along with the other monetary policy instruments, provides the best support in the pursuit of the price stability objective of the Eurosystem.

Tags

unconventional monetary policy, negative interest rate, monetary policy, euro area

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9. See "Reflections on monetary policy", Philip Lane 16 September 2019.

Slightly negative central bank interest rates ease financial conditions

TODAY 4:00 PM • BANK OF FINLAND BULLETIN 4/2019 • MONETARY POLICY

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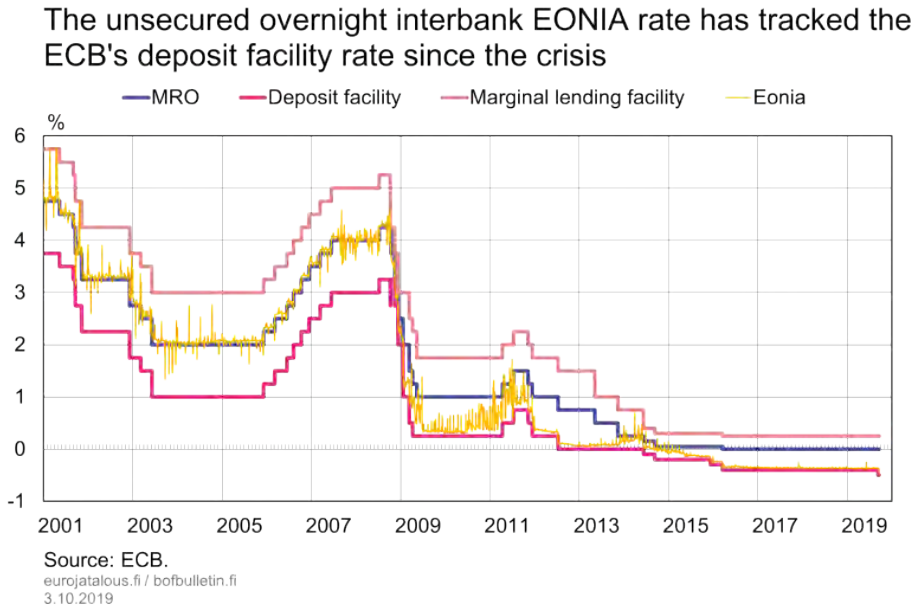
Negative interest rates have been an integral part of the ECB's overall monetary accommodation for just over five years now. The ECB lowering its deposit facility below zero has especially reduced the cost of market-based funding for banks and has been passed through to the real economy as lower interest rates on bank loans. Although low levels of interest rates do compress banks' net interest margins, challenges to bank profitability in the euro area are largely related to long-term structural issues. Studies suggest that the benefits of negative interest rates outweigh their drawbacks.

Negative interest rates at work in the euro area for six years now

The ECB was the first major central bank to lower one of its key interest rates below zero. The ECB initially lowered its deposit facility rate to -0.1% in June 2014. Since then it has lowered its key interest rates four times, most recently in September 2019. Currently, the deposit facility rate is -0.50% and the main refinancing operations rate 0.0%. In Denmark, the central bank lowered its deposit facility rate into negative territory for the first time already in July 2012, with similar rate cuts in Sweden in July 2014, in

Switzerland in December 2014, and in Japan in January 2016.

Chart 1.



Because there is a large amount of excess liquidity in the euro area banking system[1], the shortest money-market interest rates have tracked the Eurosystem's deposit facility rate since late 2008, instead of the main refinancing operations (MRO) rate (Chart 1). Accordingly, there is immediate pass-through from the central bank's negative deposit facility rate to the money market rates. Additional excess liquidity is created by the ECB's expanded asset purchase programme when the central bank purchases a security and a counterparty bank's current account balance is increased. At present, there is a total of some EUR 1,700 billion in excess liquidity. Current account holdings that exceed the minimum reserve requirement are remunerated at the deposit facility rate.[2] When the deposit facility rate is negative, a bank will have fewer funds available for withdrawal the following morning than what it had deposited with the central bank the night before. Although individual banks can reduce their own excess liquidity by lending it out to other banks, purchasing assets, or by processing their clients' payments, the banking system as a whole cannot shed its total excess liquidity. Liquidity is always passed on from one bank to another, and the banking system is, in this sense, fully self-contained. The interest expense carried by the banking sector from the negative deposit facility rate is mitigated by two decisions taken by the ECB Governing Council at its meeting in September, namely to introduce a two-tier system for reserve remuneration[3] and to ease

1. Banks need liquidity to e.g. satisfy the demand for cash and meet their minimum reverse requirements. Prior to the financial crisis, the ECB operated on the basis of ensuring that the banking system as a whole received the new liquidity it required. Once inside the banking system, this new liquidity was divided up among banks through interbank lending, to meet the needs of individual banks. The onset of the financial crisis brought liquidity sharing on the interbank market to a halt, and in October 2008 the ECB began carrying out its main refinancing operations as fixed-rate tenders with full allotment. This introduced a build-up of liquidity inside the banking system.

2. Banks are required to maintain a certain proportion of their received deposits as reserve holdings with the central bank. Minimum reserve holdings are remunerated at the main refinancing operation rate (currently 0.0%).

the modalities of the new series of targeted longer-term refinancing operations (TLTROs).

Because negative interest rates are a relatively new phenomenon and the ECB Governing Council further lowered its deposit facility rate in September, it is worth examining how negative interest rates differ from positive ones. This article looks at the effects of negative interest rates in light of the current research literature, and examines their pass-through to the real economy in the euro area. A key transmission channel for negative interest rates in the euro area is the bank lending channel, which serves as the focus of this article. When evaluating the effects of negative interest rates, it is important to look at both sides of banks' balance sheets, so as to understand the benefits of negative interest rates as well as their drawbacks.

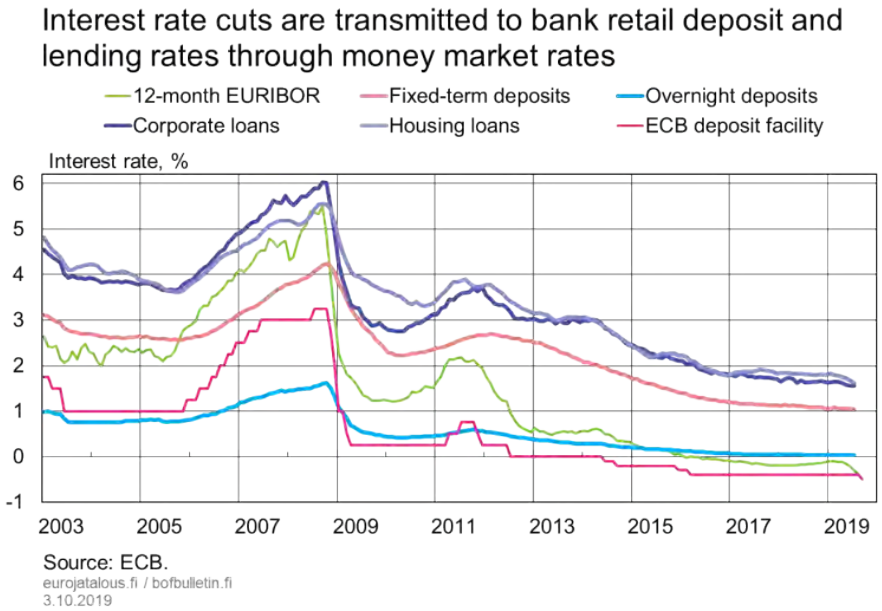
How are interest rate cuts below zero different from rate cuts in the past?

Let us begin by examining the transmission of monetary policy in normal circumstances, i.e. when interest rates are positive. When the central bank lowers its main policy rate, this change has immediate pass-through to money market rates with different maturities. Because banks are also able to lend and borrow funds from one another, the reference rates on interbank overnight deposits and fixed-term deposits (EONIA and EURIBOR, respectively) will follow the central bank policy rate fairly smoothly. As a result, both interbank and market-based (wholesale) funding become more affordable. Banks will also cut the rate of interest paid on retail deposit accounts, reducing banks' interest expenditure even further. Lowering the central bank's policy rate thus results in an overall reduction in banks' financing costs.

Because firms can turn to financial markets for at least some their funding and banks have to compete with one another for customers, any reduction in banks' borrowing costs will be channelled to households and firms as lower interest rates on bank loans. As the cost of finance provided by the banking sector declines, the demand for bank loans goes up and thus results in increased lending, investment and private consumption.

3. The two-tier system for reserve remuneration means that banks will have part of their excess liquidity holdings exempted from the negative deposit facility rate. For an individual bank the maximum amount of holdings exempt is six times the bank's minimum reserve requirement. This exempt tier is remunerated at the main refinancing operations rate (currently 0.0%).

Chart 2.



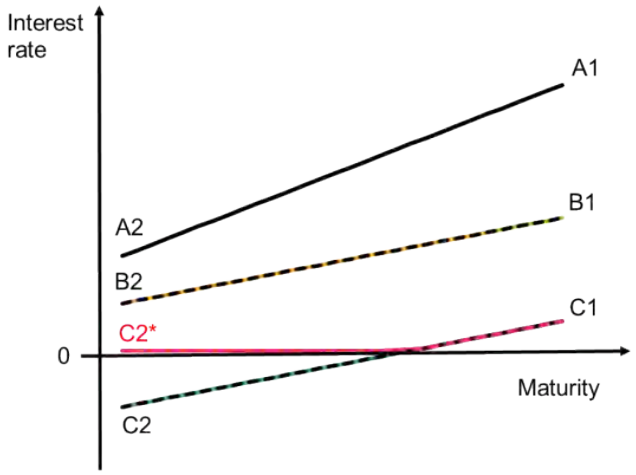
In countries where bank loan rates on both household and corporate loans are primarily based on the EURIBOR rates, as is the case in Finland, an easing of the ECB's monetary policy will be quickly transmitted to the private sector. In addition to households and firms that rely on bank loans, firms which finance their investments by issuing bonds also directly benefit from low interest rates.

How negative interest rates and central bank asset purchases influence banks' interest rate income and expenses is illustrated in Chart 3. In the context of traditional banking, a bank earns its profits by transforming short-term deposits and other short-term debt finance into longer maturity loans or other receivables. Put simply, a bank draws its profits from the long-end of the yield curve (interest rate at point A1, Chart 3) and pays its expenses at the short-end (interest rate at point A2). The net interest margin, i.e. the profit earned by the bank, is the difference of these two levels of interest rates (A1–A2). The steeper the yield curve, i.e. the greater the difference between the short-term and long-term rates, the greater the bank's profit.

The central bank can steer the short end of the yield curve by adjusting its policy rate. Similarly, central bank asset purchases will compress the long end of the yield curve. This is one reason why the yield curve has flattened out in the euro area in recent years (yield curve B). However, the transmission of monetary policy through the bank lending channel becomes less straightforward when the central bank lowers its policy rate into negative territory.

Chart 3.

The flattening of the yield curve and its decline into negative territory has compressed banks' net interest margin



Source: Bank of Finland.
eurojatalous.fi / bofbulletin.fi
3.10.2019

When the short end of the yield curve settled below zero (yield curve C), banks' funding costs did not come down by as much as they had before. This was because banks generally did not want to lower their own retail deposit rates into negative territory. Retail customers, such as households and small firms, might at a relatively low expense either change banks or withdraw their deposits in full and hold cash, whose nominal interest rate is zero. Motivated by fears of deposit withdrawals, banks have predominantly remunerated their retail deposits at an interest rate of at least zero.

This has implications for the pass-through of interest rates, especially since retail deposits have become increasingly important for euro area banks after the financial crisis.[4] From a bank's perspective, the short end of yield curve C in the chart rises from point C2 to C2*, flattening the yield curve further and compressing the interest rate margin. If the lion's share of bank funding becomes immune to lower levels of interest rates, this will also dampen the transmission of monetary policy, if private sector loan rates respond less to changes in the central bank's policy rate.

The ECB's longer-term refinancing operations (TLTROs) have also contributed to lowering banks' funding costs, as these operations provide banks with the opportunity to receive central bank liquidity at very affordable terms. The interest rates on these loans are lower the more the recipient bank increases its lending to the private sector. These operations guarantee banks affordable longer-term funding, which enhances the pass-through of interest rates to households and firms. Studies show that the longer-term refinancing operations have also had a favourable impact on lending volumes (Laine, 2019 and Bank of Finland Bulletin 1/2019).

4. Retail deposits currently comprise almost 70% of bank funding, on average.

Prolonged negative interest rates may prompt banks to change their practices

Over time banks will adapt to changes in their operating environment. When the ECB lowered its deposit facility rate to -0.40% in March 2016, banks increasingly began charging negative interest rates on the deposits of large corporate customers and institutional investors. Yet although a fifth of all enterprise deposits in the euro area are already subject to negative remuneration, this only amounts to 5% of all bank deposits. Germany's share is the euro area's largest—negative interest rates are charged on every second enterprise deposit, which amounts to 15% of Germany's total deposits (Altavilla et al., 2019). Charging firms negative deposit rates has become increasingly common in recent times, which may be related to growing expectations of the current situation persisting. In spite of this, not a single bank has begun charging negative remuneration on household retail deposits.*

Banks have also modified their practices surrounding reference rates for residential mortgages. Interest rate floors on reference rates, which set the lower bound for mortgage rates at 0%, have already been widely adopted in Finland. If the reference rate dips below zero, these effects are not passed on to the loan rate as the borrower will always pay the bank its negotiated loan margin. The bank can thus protect some of its interest income from negative interest rates. On the other hand, increasing monetary accommodation by lowering the main policy rate will no longer have pass-through to the borrower's debt-servicing costs, as long as the reference rate is below zero.

Bank funding costs have gone down in the wake of firmly negative market interest rates and the central bank conducting TLTROs at extremely affordable terms. In addition, banks have begun charging their large enterprise clients negative deposit rates. In Chart 3, all of these measures contribute to pushing down the short end of yield curve C below zero (C2*[5] shifts downwards). At the same time, the transmission of monetary policy is constrained by practices like interest rate floors, which banks use to lock in the decline of the long end of the yield curve (C1) no less than zero.

The profitability of euro area banks is not determined by interest rates alone

The euro area banking sector's net interest income[6] began growing in 2018, when banks' returns on lending started to stabilise. This was because most of the decline in bank loan rates was now behind and credit growth remained favourable throughout the year. The cost of banks' wholesale funding has clearly gone down on account of the Eurosystem's negative deposit facility rate, and the prices of covered bonds in particular have fallen to historical lows. In addition, the affordable terms on the central bank's longer-term refinancing operations (TLTROs) have contributed to lowering bank funding costs.

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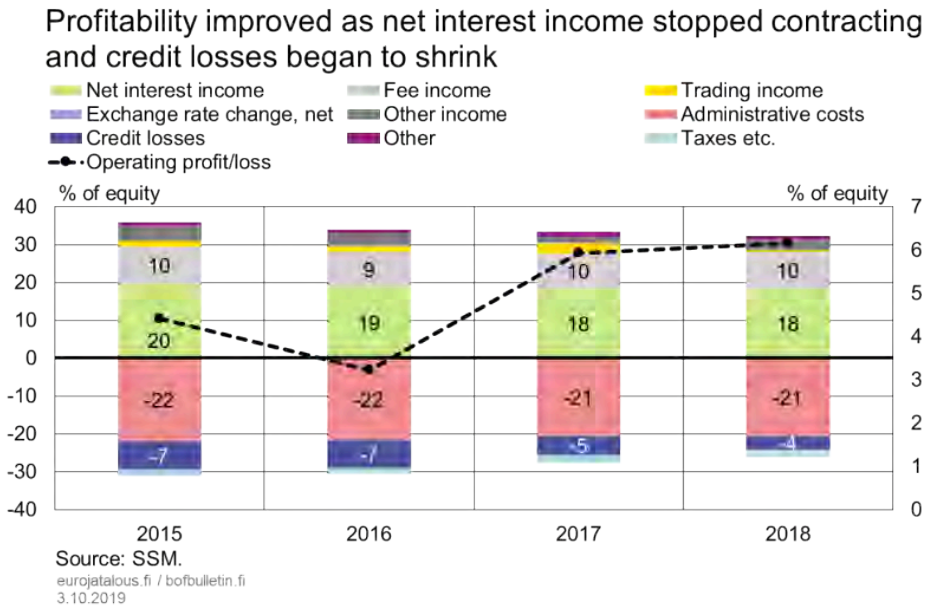
5. * Retail deposits refer to deposits under EUR 100,000.
6. Net interest income is the difference between a bank's interest income and expense. In addition to the level of interest rates, net interest income is affected by quantities—such as lending and deposit volumes, portfolio holdings, or outstanding issued bonds. Even if the average return earned on a single loan declines, a bank can increase its net interest income by sufficiently raising its lending volume.

Chart 4.



Negative interest rates together with central bank asset purchases have raised asset prices and increased the capital gains on securities held by banks. Monetary accommodation has also strengthened the capacity for banks to expunge credit risk from their balance sheets, on account of low financing costs and the improved availability of finance. Indeed, the ECB's monetary policy has given rise to favourable effects on both sides of banks' balance sheets. Banks' net interest income will continue to remain under pressure, however, given the deterioration of the economic outlook in 2019 and the decline in the overall interest rate level.

Although net interest income is a key component of banking, the interest rate environment is hardly the sole determinant of bank profitability in the euro area. The euro area banking sector is especially blighted by long-term structural issues.

One of the main issues underlying bank profitability has to do with the weak ability of banks to substitute net interest income with other income sources. European banks are highly locally concentrated, which limits the ability of banks to expand their income sources. In many euro area countries banks continue to operate under rigid cost structures and within a banking sector in dire need of efficiency improvements. There is often a large number of banks relative to the size of the economy, and banks sometimes have sprawling and inefficient branch networks. In the coming years, banks will increasingly need to rise to the challenge of major trends, such as digitalisation. This will require investments that are not only expensive outright but which may strain profitability in the short term. On the other hand, investment is also needed to increase future efficiency. Using monetary policy measures to address the banking sector's structural ailments is not only unfeasible in practice but also unwarranted.

The research literature suggests the benefits of negative interest rates outweigh their drawbacks

The research literature has examined the pass-through of negative interest rates into the real economy both theoretically and empirically. The positive effects of negative interest rates are especially associated with improved economic conditions, which contributes to bank profitability (Altavilla et al., 2018; Genay and Podjasek, 2014; Erikson and Vestin, 2017; Bräuning and Wu, 2017; Dell'Ariccia et al., 2017). When the interest rates on loans decline and borrowing becomes cheaper, the demand for loans goes up. Even though the returns earned on an individual loan will decline as the interest rate margin shrinks, a significant enough rise in lending volumes will raise a bank's total profits. Loan stocks, private consumption, and investment all increase, which improves overall economic conditions and further boosts demand. Lowering interest rates is also often associated with external depreciation of the domestic currency, which contributes to foreign trade. Lower debt-servicing costs lead to lower credit losses and a smaller number of non-performing loans, which in turn boosts lending activity and bank profitability. These positive effects have been seen to compensate for the narrowing of interest margins. In addition, when risk-taking and demand increase, banks will see a variety of their balance-sheet items appreciate.

Research findings support the course of events depicted in Chart 3, where a policy rate cut by the central bank to, and especially below, 0% compresses banks' net interest income and profitability more than when the policy rate is lowered from a higher level of interest rates (Borio et al., 2017; Claessens et al., 2017). This is because banks cannot reduce their interest expense by as much as they lose interest income on lending.

In addition, susceptibility to negative interest rates varies by bank. The more banks rely on retail deposits for funding—deposits on which they are hesitant to impose negative interest rates—the more susceptible they are towards negative interest rates affecting their profitability. When the central bank policy rate is lowered further and further into negative territory, banks who strongly rely on retail deposits have been observed to have reduced their lending more than other banks and reposition their lending towards risker firms (Heider et al., 2018)[7]. These banks' share prices have also been observed to decline more sharply in the wake of interest rate cuts, thus reflecting a greater decline in their profitability compared with other banks (Ampudia et al., 2017). Dell'Ariccia et al. (2014) and Molyneux et al. (2019) find that banks which have primarily relied on market funding have benefited more, in relative terms, from negative interest rates and their effect on lowering market funding costs, and that this has supported their lending to the private sector. On the other hand, Demiralp et al. (2019) obtained results suggesting that banks that had more retail deposits and, at the same time, excess liquidity on their central bank current accounts, displayed a greater proportion of lending on their balance sheets. Although counter to some earlier research (e.g. Heider et al., 2018), this finding may be due to more robust bank data and the study's inclusion of banks' excess liquidity holdings.

Brunnermeier and Koby (2019) postulate a theoretical lower bound (the reversal rate) on

7. The study focused on syndicated lending in the euro area after the first interest rate cut in June 2014.

how much the central bank's policy rate can be lowered into negative territory before additional rate cuts lead to monetary tightening. Past certain a theoretical threshold, further policy rate cuts will force banks to raise their lending rates, resulting in a decline in lending and a slowdown in aggregate output growth. In a theoretical framework, this threshold is reached when banks can no longer offset the negative effects of rate cuts on loan earnings by raising their lending volumes. Eventually banks' capital constraints will lead to the loan stock not being able to grow quickly enough to offset the impact of lower loan rates.

So far relatively little empirical research has been done on this front. Molyneux et al. (2019) observe that up until 2016 lending growth was slowest in those OECD countries with negative central bank interest rates. In their study, Eggertsson et al. (2019) use a macro model calibrated on Swedish data. According to their findings, even a -0.50% interest rate will lead to such a decline in profitability that banks will begin to increase their loan rates. However, relevant statistical data mostly provides evidence to the opposite effect (e.g. Erikson and Vestin, 2019). In Switzerland, on the other hand, there have been documented cases of especially longer-maturity mortgage rates increasing in the wake of negative policy rates (Basten and Mariathasan, 2018).

In Brunnermeier and Koby (2019), the authors also theoretically demonstrate that the reversal rate for monetary policy rises when interest rates are at extremely low levels for an extended period. Prolonged negative interest rates cause banks to take on excessive risk in hopes of profit. When bank profitability declines at the same time, the economy faces risk to financial stability (Arteta et al., 2017). In addition, studies including Genay and Podjasek (2014), Busch and Memmel (2015) and Bundesbank (2015), among others, reaffirm the view that it is especially the duration of low interest rates that poses the greatest risk to bank profitability.

Negative interest rates are an integral part of the ECB's overall monetary accommodation

The transmission of negative interest rates has occurred fairly smoothly in the euro area so far, reducing bank loan rates on both household and corporate loans. In the couple of years following the introduction of negative interest rates, banks lowered their rates on both household and corporate loans by just over one percentage point. In recent months average bank rates have once again begun to edge down, in response to a decline in the overall level of interest rates. In addition to the transmission of negative interest rates, bank loan rates have been reduced by other measures that have eased funding costs. These include the TLTRO programmes and purchases of banks' covered bonds.

Assessing the impact of negative interest rates on banks in a way that is both straightforward and independent of the effects of other monetary policy measures is challenging. The ECB's policy measures since the financial crisis have acted simultaneously (and partly to opposite effect) on both banks' interest rate income and expenditure. The new interest rate environment has also prompted banks to partly change their operating models.

A growing number of banks have introduced negative interest rates on enterprise

deposits, and others have protected their interest income by setting interest rate floors on loan reference rates. At the same time, the majority of funding available to banks is unlikely to become markedly cheaper, as banks have been reluctant to impose negative interest rates on households' retail deposits so as to prevent these from being turned into zero-interest holdings of cash. In the future, these practices may together slow down the transmission of policy rate changes through the banking sector. On the other hand, policy rates will continue be reflected in the cost of banks' market-based funding and will also be directly passed through to firms' market funding.

Negative interest rates also have constraints from the perspective of monetary policy transmission. It has been postulated that there is a certain level of interest rates beyond which rate cuts are no longer effective or may even prompt banks to raise loan rates and reduce lending. Because this particular interest rate level depends on the structure of the banking system[8], it may vary considerably by country, but also change over time.

Prolonged periods of extremely low interest rates inevitably carry risks. Yet the introduction of negative interest rates has also allowed for substantial monetary easing where demanded by the price stability objective. A much greater risk would have been taken if nominal interest rates had not been lowered into negative territory in June 2014. Negative interest rates have successfully contributed to easing financing conditions in the private sector, and are still needed to support economic activity in the euro area.

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Tags

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Euro area productivity growth could slow further in the event of a downturn

3 OCT 2019 11:00 AM • BANK OF FINLAND BULLETIN 4/2019 • ECONOMIC OUTLOOK

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Economist

The euro area productivity slowdown in the early 2000s can mainly be attributed to weakening innovation. However, since 2008 productivity growth has slowed due to a crisis-induced drop in technology adoption. This implies that a shortfall in aggregate demand may spill over to the supply side, as weak demand depresses technology investments and thus makes recessions deep and long-lasting. These findings contrast with conventional macroeconomics, which assumes that cyclical fluctuations do not affect technology growth. Policies which support sound economic conditions are therefore also key for productivity growth.

Productivity has slowed since the early 2000s and decelerated further during the crises

Understanding the causes of subdued productivity in the euro area is key, as productivity growth constitutes an important determinant of long-run growth and workers' real income growth. In the euro area, productivity began to slow already at the beginning of the 2000s: average labour productivity growth both in the euro area aggregate and its major member states has ranged substantially below the productivity growth

performance realized in the past (Table 1). In the euro area, for example, average yearly labour productivity growth came down from 1.4% in the 1990s to 1.2% during 2000–2007. The productivity slowdown intensified during the euro area crises, with euro area productivity growth dropping to 0.7% on average. Productivity growth in the subsequent upswing ranged somewhat above the productivity growth performance observed during the crises.[1]

Table 1.

Euro area labour productivity growth decreased in the early 2000s and the slowdown intensified during the crises

	1990–1999	2000–2007	2008–2012	2013–2018
Euro area*	1.39	1.24	0.70	0.82
DE	2.42	1.65	0.55	0.78
FR	1.82	1.50	0.19	0.85
IT	1.40	0.41	–0.08	0.21
ES	1.24	0.44	1.72	0.59

*Data availability for EA aggregate from 1996 onwards.

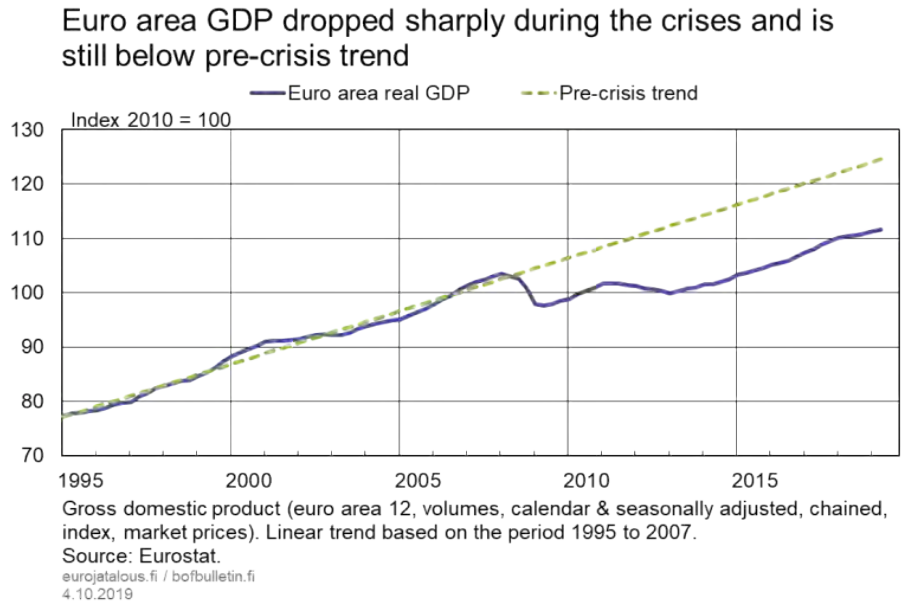
Average labour productivity growth rates. Labour productivity per hour worked.

Source: The Conference Board.

Conventional macroeconomic models, however, are not designed to give answers on the underlying causes and drivers of slowing productivity. Standard macroeconomic frameworks in particular postulate that total factor productivity, which can be understood as the economy's technology stock, is determined solely by structural factors that are independent of, say, firms' and households' consumption and investment decisions. As a consequence, total factor productivity growth is unaffected by cyclical fluctuations in economic activity, which stands in contrast to the procyclical drop in productivity growth observed during the euro area crises. Moreover, this class of models is geared to explain small-scale economic fluctuations and hence cannot explain the marked and lengthy drop in euro area GDP observed in the context of the recent crises (Chart 1).

1. Spain constitutes an exception to this pattern, as the country experienced pre-crisis a large-scale misallocation to low productivity sectors and its respective reversal following the crises, which led to productivity gains.

Chart 1.



This article presents the main results from an estimated structural macroeconomic model for the euro area which features endogenous technology growth and through that overcomes the shortcomings of the standard macroeconomic modelling approaches outlined above.[2] Technology growth in this model evolves in a two-phase process. First, new technologies are invented as the result of research and development (R&D) efforts. Second, firms make a decision about whether or not to put into use the invented technologies in their production processes by weighing the corresponding gains from these technologies against their respective costs. This is called the technology adoption stage. The following sections summarize the most important drivers of the euro area productivity slowdown, the main insights for explaining the patterns of euro area output as of 2008 and the respective policy implications.

Slowing innovation an important driver, but as of 2008 subdued technology adoption predominant

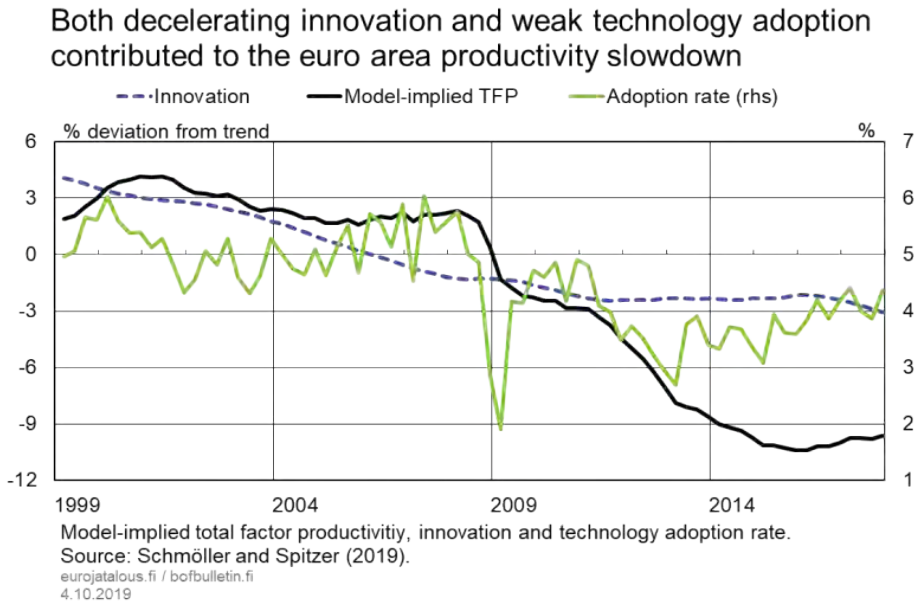
Total factor productivity (TFP) growth measures changes in economic output that do not directly result from movements in production factors, such as labour and capital. It can also be understood as a measure of the growth of the technology stock in the economy and constitutes the main determinant of long-run labour productivity and output growth. When analysing total factor productivity, it is important to note that it is not a directly empirically observable variable and instead has to be estimated, which implies that any TFP measure also always reflects the respective underlying assumptions made.[3] The

2. Technically, the model this article is based on is a medium-scale DSGE model with endogenous technology growth through R&D and technology adoption, as proposed by Anzoategui, Comin, Gertler and Martinez (2019), estimated on euro area data. For a more detailed overview of our methodology and results, see Schmöller and Spitzer (2019).

3. TFP in the model underlying this article consists of a part which is the direct consequence of innovation and technology adoption as well as of a technology shock which captures fluctuations in technology growth not directly

estimated model this analysis is based on (Schmöller and Spitzer (2019)) gives insights on the respective roles of innovation and technology adoption in explaining the slowdown in euro area total factor productivity growth.

Chart 2.



In this setting, innovation, i.e. the creation of new technologies, results from investment in research and development (R&D). Innovations, however, naturally only translate into productivity gains once firms incorporate (adopt) them in their production processes. If firms do not adopt new innovations, productivity will not improve even if the innovations have been substantial. In reality, technology adoption does not occur instantaneously, but usually with a lag, given its costs and firms' initial observing approach to the potential gains from using the new technology. Chart 2 illustrates total factor productivity[4] and its underlying driving factors as implied by the model. The results suggests that the euro area productivity slowdown can in its early stages be predominantly ascribed to decelerating innovation, which is discernible in the chart from total factor productivity (black line) decelerating in synch with innovation through R&D (blue line) over this period. This finding supports the explanation for the productivity slowdown proposed, among others, by Gordon (2015), which considers slowing innovation capacity as a key explanation of the productivity slowdown. The model-based analysis suggests that also during the euro area crises and onward weak innovation has acted as a drag on productivity, demonstrated in the chart by the corresponding flattening of innovation. As from 2008, however, the shortfall in technology adoption (green line), which dropped substantially during the crises and improved only slowly in the subsequent recovery, has constituted the most important driving force. This channel has also been emphasized by other studies on the topic (see Anzoategui et al. (2019) and

explicable by the model. Importantly, the endogenous part of TFP which results from R&D and technology adoption activities constitutes the lion's share of TFP, suggesting that the importance of standard technology shocks is strongly reduced in this framework vis-à-vis the standard macroeconomic setup.

4. For simplicity, only the endogenous component of TFP is illustrated in this chart since, as demonstrated earlier, it constitutes a close measure of overall TFP throughout the sample.

Bianchi et al. (2019)). The result is also closely linked to the discussion on the potential lagged effect the key innovation of artificial intelligence may have once it diffuses to the wider economy, given the presently prevailing lags in firms' technology adoption (Brynjolfsson et al. (2017)).

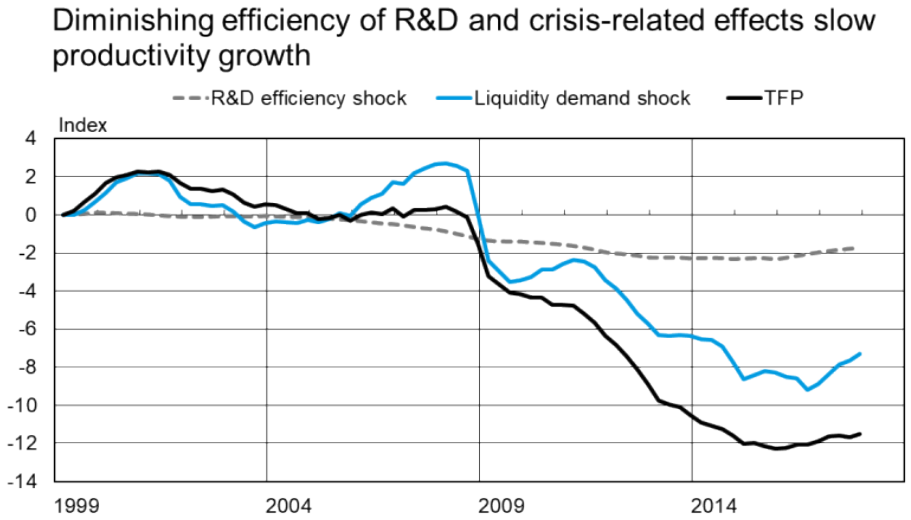
Innovation has decelerated, and the crises have also weighed on productivity

Chart 3 demonstrates the driving forces behind slowing innovation and technology adoption underlying the euro area productivity slowdown from the model-based analysis.[5] It illustrates total factor productivity (black line), as well as two central contributors to technological progress in the model. The illustrated downward movement in the R&D efficiency contribution (grey line) to total factor productivity growth suggests that a decline in the power of research and development investments in generating new innovations added to the euro area productivity slowdown in the 2000s and has weighed on productivity also in subsequent periods. The decline in the efficiency of R&D efforts in generating new innovation has, for instance, also been empirically documented by Bloom, Jones, Van Reenen and Webb (2019) for a wide range of sectors in the US economy. They propose that innovations may have become more difficult to find and maintaining a certain level of innovations may require higher R&D efforts than was necessary in the past. The results propose that as of 2008 a recessionary shock (blue line) constitutes the most important driver of slowing technology adoption and hence productivity.[6] Put differently, these findings imply that the euro area crises substantially weighed on firms' capacity for adopting new innovations in production, which may have delayed measurable productivity gains from existing innovation. In the aftermaths of the euro area crises the deceleration in TFP came to a halt, shown in the chart by the fall in the black line coming to an end, which reflects the improving overall economic conditions in the euro area and the fading out of adverse crises-related effects translating into improvements in technology adoption.

5. More specifically, the chart illustrates the contribution of two central shocks to total factor productivity, namely the liquidity demand shock and the shock to R&D efficiency.

6. Technically, the recessionary shock referred to constitutes the shock to liquidity demand, which features transmission properties as a financial shock.

Chart 3.

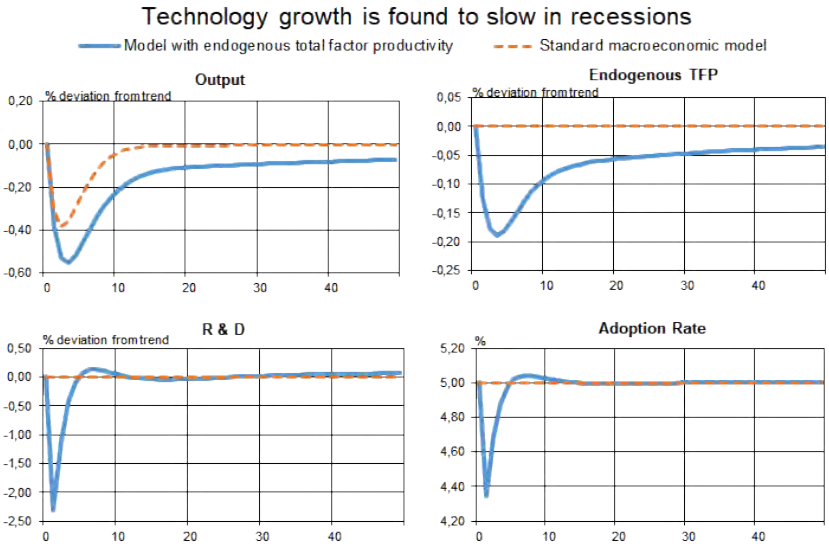


Aggregate demand matters for technology growth

The finding that the worsening of euro area productivity growth performance since 2008 can be considered at least partly as crises-induced holds important implications, as it suggests that demand-side shocks can spill over to aggregate supply – in contrast to the conventional view in macroeconomics. It also has important consequences for euro area economic dynamics, since demand-supply spillovers can lead to deep and long-lasting recessions, as illustrated by Chart 4, which compares the response of the economy following a recessionary shock in the model underlying this analysis (blue line) and in a conventional macroeconomic model without endogenous technology growth (red line).[7] The most important difference in the model used in this analysis is that total factor productivity falls relative to trend, as illustrated in the fall of the blue line in the upper right panel, as the incentive to invest in R&D and above all firms' capacity for technology adoption falls during a recession (lower left and right panel). This described feedback from overall economic conditions to the evolution of technology growth can generate deep and lengthy recessions, as visible in a marked and prolonged output drop, demonstrated in the blue line of the upper left panel, while the output in standard macroeconomic models (red line in the upper left panel) returns substantially faster to equilibrium. Hence, spillovers from aggregate demand to productivity and thus aggregate supply help in explaining two phenomena: firstly, the pronounced acceleration of the euro area productivity slowdown during the crises, and secondly, the marked output drop, the slow nature of the subsequent recovery, and the ongoing shortfall of output below its pre-crisis trend level in the euro area.

7. The event of a recession is simulated by means of a contractionary liquidity demand shock, as the latter generates the typical co-movement of key economic variables over the business cycle and moreover constitutes the main driving force of economic fluctuations in the model underlying this analysis.

Chart 4.



Response of the economy to a recessionary demand shock.
Source: Schmöller and Spitzer (2019).
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Demand-supply spillovers may render the effects of the zero lower bound more severe

Given the possibility of adverse spillovers from aggregate demand to the supply side of the economy, policies stabilizing aggregate demand take on a crucial role in this context. It is well established that the zero lower bound[8] constraint can be a severe obstacle to monetary policy in economic stabilization. More specifically, output losses and the deviation of inflation from target can generally be considered more severe when the zero lower bound binds, in the absence of further measures such as non-standard monetary policy tools.[9] The results of this analysis imply that the effect of the ZLB may be yet more detrimental than conventionally assumed, given the adverse effects that shortfalls in aggregate demand may exert on aggregate supply.[10] The drop in aggregate demand owed to a binding ZLB intensifies the deceleration in TFP due to the yet more diminished incentive for technology-enhancing investments, rendering the corresponding drop in output even more marked. Hence, the ZLB constraint intensifies spillovers from aggregate demand to aggregate supply, which emphasizes the importance of additional policy measures, such as non-standard monetary policy tools, in stabilizing aggregate demand in zero lower bound episodes. This finding naturally also highlights the potential gains from additional policy tools outside the scope of monetary policy at the ZLB, in

8. In practice, the effective lower bound, i.e. the actual lower bound for nominal interest rates, is understood to be slightly negative, without loss of generality in our findings.

9. For reference see, for instance, Eggertsson and Woodford (2003).

10. We simulate a binding zero lower bound constraint by a large-scale adverse liquidity demand shock hitting the economy, which – as stated previously – induces the standard co-movement of key economic variables over the business cycle. The size of the liquidity demand shock is picked as sufficiently large to make the zero lower bound constraint on monetary policy bind. When this large shock hits the economy, monetary policy will be constrained in economic stabilization given the constraint on nominal interest rates.

particular of well-targeted expansionary fiscal policy in countries with sufficient fiscal space.

The productivity slowdown may further intensify in the event of a euro area downturn

There is a risk at the current juncture that the productivity slowdown would intensify further if the euro area economic outlook were to worsen. This concern is based on the results from a macroeconomic model for the euro area in which total factor productivity grows when new technologies are invented and subsequently adopted by firms in production (Schmöller and Spitzer (2019)). A central finding of this analysis is that the worsening of the productivity slowdown as of 2008 can be predominantly attributed to a crises-induced drop in firms' adoption of new technologies, since amidst the recession firms postponed productivity-enhancing investments to the future. This result implies that weak aggregate demand may feed through also to aggregate supply via its depressing effect on technology growth. This challenges the conventional macroeconomic take on the interaction between demand and supply, which assumes that technology growth is uninfluenced by cyclical fluctuations in the economy. Importantly, these demand-supply spillovers can adversely feed back to GDP and turn into deep and long-lasting recessions, as for instance observed in the context of the euro area crises.

As to the implications for policy, the risk of adverse spillovers from deficient aggregate demand to the economy's supply side further underlines the importance of maintaining a sound state of the economy. Consequently, constraints to policies stabilizing aggregate demand, such as the zero lower bound on nominal rates, may be more detrimental than generally envisaged, which emphasizes the role of supplementary policies. Moreover, the documented subdued technology adoption by firms implies that ensuring a smooth diffusion of key technologies to the wider economy and reducing the productivity differentials between frontier and laggard firms may hold substantial productivity gains. Strengthening education and retraining would foster firms' capacity to absorb new technologies by providing them with an adequately skilled workforce and would at the same time boost the potential for future R&D and innovation in the euro area.

Furthermore, from the perspective of this analysis, measures boosting innovation constitute a straightforward policy choice. Well-targeted infrastructure investments in research and development would have the benefit of boosting aggregate demand at present, while lifting euro area productivity growth in the future, especially when aimed at key technologies. As the efficiency of R&D in generating innovations may have declined, R&D investments may have to be increased significantly to attain a given level of innovation output. In addition to the quantity also the quality of R&D could be improved, for instance by reaping multiplier effects by means of cross-border research efforts in the euro area.

The model underlying this analysis naturally only captures a subset but not all possible channels determining euro area productivity growth, and the discussed policy measures should not be considered exhaustive, but merely a selection of adequate options in line with the model-based analysis. Finally, it is well-documented that the euro area productivity slowdown is due to a host of structural factors which, in the absence of

major unexpected shifts in technology growth, will continue to weigh on productivity growth in the future.

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Tags

productivity slowdown, monetary policy, euro area, economic growth

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