

Monetary Policy Report

November 2021



Rectification 25 November 2021

Basis and note to Figure 49 corrected

Note to table adjusted on page 75

Rectification 2 December 2021

Weights in table on page 75 corrected

Monetary Policy Report

The Riksbank's Monetary Policy Report is published five times a year. The report describes the deliberations made by the Riksbank when deciding what is an appropriate monetary policy.¹ The report includes a description of the future prospects for inflation and economic activity based on the monetary policy that the Riksbank currently considers to be well balanced.

The purpose of the Monetary Policy Report is to summarise background material for monetary policy decisions, and to spread knowledge about the Riksbank's assessments. By publishing the reports, the Riksbank aims to make it easier for external parties to follow, understand and assess its monetary policy.

The Riksbank must submit a written report on monetary policy to the Riksdag (Swedish Parliament) Committee on Finance at least twice a year (see Chapter 6, Article 4 of the Sveriges Riksbank Act (1988:1385)). During the spring, a special material is submitted as a basis for the evaluation of monetary policy. During the autumn, the Monetary Policy Report is submitted as an account of monetary policy.

The Executive Board made a decision on the Monetary Policy Report on 24 November 2021. The report may be downloaded in PDF format from the Riksbank's website www.riksbank.se, where more information about the Riksbank can also be found.

¹ See "Monetary policy in Sweden" on the next page for a description of the monetary policy strategy and what can be regarded as an appropriate monetary policy.

Monetary policy in Sweden

Monetary policy strategy

- According to the Sveriges Riksbank Act, the objective for monetary policy is to maintain price stability. The Riksbank has defined this as a 2 per cent annual increase in the consumer price index with a fixed interest rate (the CPIF).
- At the same time as monetary policy is aimed at attaining the inflation target, it shall support the objectives of general economic policy for the purpose of attaining sustainable growth and a high level of employment. This is achieved by the Riksbank, in addition to stabilising inflation around the inflation target, endeavouring to stabilise production and employment around paths that are sustainable in the long term. The Riksbank therefore conducts what is generally referred to as flexible inflation targeting. This does not mean that the Riksbank neglects the fact that the inflation target is the overriding objective.
- It takes time before monetary policy has a full impact on inflation and the real economy. Monetary policy is therefore guided by forecasts for economic developments. The Riksbank publishes its own assessment of the future path for the repo rate. This repo-rate path is a forecast, not a promise.
- In connection with every monetary policy decision, the Executive Board makes an assessment of the repo-rate path needed, and any potential supplementary measures necessary, for monetary policy to be well balanced. The trade-off is normally a question of finding an appropriate balance between stabilising inflation around the inflation target and stabilising the real economy.
- There is no general answer to the question of how quickly the Riksbank aims to bring the inflation rate back to 2 per cent if it deviates from the target. A rapid return may in some situations have undesirable effects on production and employment, while a slow return may weaken confidence in the inflation target. The Riksbank's general ambition has been to adjust monetary policy so that inflation is expected to be fairly close to the target in two years' time.
- To illustrate the fact that inflation will not always be exactly 2 per cent each month, a variation band is used that spans between 1 and 3 per cent, which captures around three quarters of the historical monthly outcomes of CPIF inflation. The Riksbank always strives for 2 per cent inflation, regardless of whether inflation is initially inside or outside the variation band.
- According to the Sveriges Riksbank Act, the Riksbank's tasks also include promoting a safe and efficient payment system. Risks linked to developments in the financial markets are taken into account in the monetary policy decisions. With regard to preventing an unbalanced development of asset prices and indebtedness, however, well-functioning regulation and effective supervision play a central role. Monetary policy only acts as a complement to these.
- In some situations, as in the financial crisis 2008–2009, the repo rate and the repo-rate path may need to be supplemented with other measures to promote financial stability and ensure that monetary policy is effective.
- The Riksbank endeavours to ensure that its communication is open, factual, comprehensible and up-to-date. This makes it easier for economic agents to make good economic decisions. It also makes it easier to evaluate monetary policy.

Decision-making process

The Executive Board of the Riksbank usually holds five monetary policy meetings per year at which it decides on monetary policy. A Monetary Policy Report is published in connection with these meetings. Approximately two weeks after each monetary policy meeting, the Riksbank publishes minutes from the meeting, in which it is possible to follow the discussion that led to the current decision and to see the arguments put forward by the different Executive Board members.

Presentation of monetary policy decision

The monetary policy decision is presented in a press release at 09.30 on the day following the monetary policy meeting. The press release also states how the individual members voted and provides the main motivation for any reservations entered. A press conference is held on the day following the monetary policy meeting.

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IN BRIEF – Monetary policy November 2021



Demand for both goods and services has varied considerably during the pandemic. The consumption of services fell sharply when large parts of societies closed down partially or entirely. Goods consumption did not fall as much, as consumption shifted from services to goods. **In step with most countries having eased the restrictions that have hampered economic developments, demand has risen rapidly.** The gradual opening-up of service sectors has led to high GDP growth abroad in the first half of this year.



The rapid movements have strained global supply chains. Production and trade in goods have been restricted by a shortage of inputs such as semiconductors and by freight companies' difficulties meeting demand. Bottlenecks have also occurred in service production in many places. **The supply shocks are creating headwinds for growth but next year, these problems are expected to subside** when consumption patterns normalise, demand grows more slowly and production capacity is adjusted.



The difficulties in meeting the rapidly rising demand for goods has led to sharp rises in commodity and transport prices, which has also led to rising producer prices after a certain time lag. Some signs are emerging of more rapidly rising consumer prices for, for example, goods as a result of the supply problems but there are differences between countries. **In Sweden and the euro area, the effects on consumer prices has so far mainly been due to rapidly rising energy prices.** Energy prices are not expected to rise as quickly next year.



Inflation adjusted for energy prices is expected to continue to rise somewhat and be just over 2 per cent until the end of next summer. **When the supply problems subside, CPIF inflation excluding energy is also expected to fall back somewhat.** Monetary policy needs to give continued support to the economy for inflation to be close to the inflation target in the slightly longer term.



The Executive Board has therefore decided to hold the **repo rate at zero per cent.** The asset purchase programme initiated in March 2020 will expire on 31 December. The Executive Board has decided that the Riksbank **shall purchase bonds for SEK 37 billion in the first quarter of 2022 to compensate for forthcoming principal payments.** The Executive Board's forecast is that **holdings will be approximately unchanged in 2022 and then decrease gradually.** The forecast for the repo rate path indicates that **the repo rate will be raised in late 2024.**

1 With the support of monetary policy, inflation is expected to be on target going forward

In several parts of the world, infections are increasing and some restrictions have been reintroduced. But the sharp GDP falls during the initial stages of the pandemic have mainly been recovered abroad and in Sweden. Instead, companies now have problems meeting demand quickly enough. This is creating headwinds for growth in the short term and, in combination with rapidly rising energy prices, has led to upturns in inflation.

In October, CPIF inflation was 3.1 per cent. The upturn has largely been driven by rapidly rising energy prices. Energy prices are not expected to rise from their currently high level going forward, which, in combination with a gradually better balance between demand and supply conditions, means that the inflation rate for most of 2022 is expected to fall back to just over 1 per cent.

Monetary policy needs to give continued support to the economy for inflation to be close to the inflation target in the slightly longer term. The Executive Board has therefore decided to keep the repo rate at zero per cent. The asset purchase programme initiated in March 2020 will expire on 31 December this year. The Executive Board has decided that the Riksbank shall purchase bonds for SEK 37 billion in the first quarter of 2022 to compensate for forthcoming principal payments. The Executive Board's forecast is that holdings will be approximately unchanged in 2022 and then decrease gradually. The forecast for the repo rate path indicates that the repo rate will be raised in late 2024.

1.1 Rapid upturns in inflation in the wake of the pandemic

Demand out of step with supply characterising economic developments

Over the last two years, the pandemic has led to dramatic fluctuations in the global economy. However, in those countries that are most important for Swedish international trade, demand has risen rapidly in step with most countries having eased restrictions that have hampered economic developments. In the Riksbank's main scenario, the pandemic is assumed to have marginal effects on demand going forward. Recently however, infections have increased again in Europe in a worrying manner

and restrictions have been reintroduced in some countries. Economic developments may also be temporarily affected by the pandemic this winter.

Demand for both goods and services has varied rapidly during the pandemic. The consumption of services fell sharply when large parts of societies closed down partially or entirely. Goods consumption did not fall as much at the beginning of the pandemic and then rose relatively rapidly and substantially, at the same time as consumption switched from services to goods. In addition, households received support from fiscal policy, especially in the United States, which also contributed to high consumption of goods.

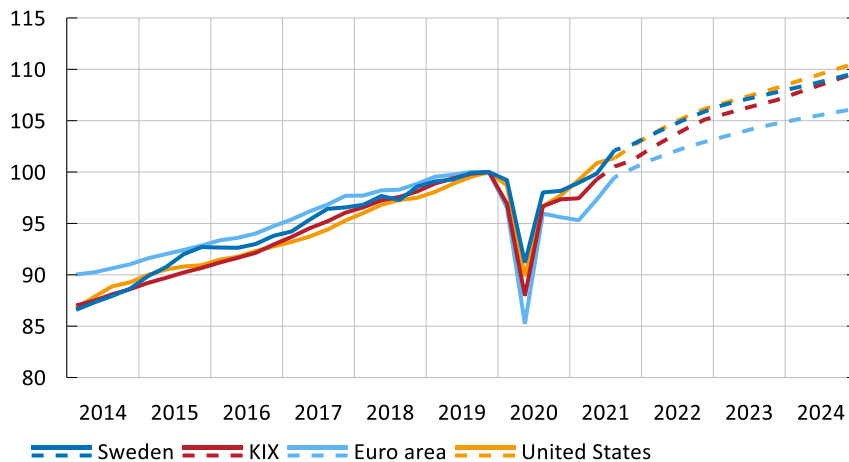
Global industrial production therefore recovered rapidly in the second half of 2020 and at the start of 2021. These rapid movements led to global supply chains becoming strained, in addition to which production plants and ports were periodically closed. This year, growth in both world trade and industrial production has slowed. Production and trade in goods have been restricted by a shortage of inputs such as semiconductors and by freight companies finding it difficult to adjust their supply to demand.

However, the fact that service sectors have gradually opened up has led to high GDP growth abroad in the first half of this year. As demand for services has increased rapidly, however, bottlenecks in service production have also arisen in many places, as staff have either moved to other sectors or left the labour force. The supply shocks are creating headwinds for growth in the second half of this year but next year, these problems are expected to subside gradually when consumption patterns normalise, demand grows more slowly and production capacity is adjusted (see Figure 1).

In light of this, the conditions for continued strong economic activity over the next few years are deemed favourable – both in Sweden and abroad. In addition, economic policy remains expansionary and, in many regions, households are saving more than prior to the pandemic, providing scope for increased consumption. In countries that are important for Sweden's international trade, confidence among companies and households is generally high and the high level of demand means that world trade is expected to continue growing. Overall, GDP abroad (KIX weighted) is expected to grow by just over 5 per cent this year, just over 4 per cent next year and just over 2 per cent in 2023 and 2024.

Figure 1. GDP in Sweden and abroad

Index, 2019 Q4 = 100, seasonally adjusted data



Note. KIX is an aggregate of countries that are important for Sweden's international trade. Solid line represents outcomes, broken line represents the Riksbank's forecast.

Sources: Eurostat, national sources, Statistics Sweden Bureau of Economic Analysis and the Riksbank.

Rapidly rising global inflation

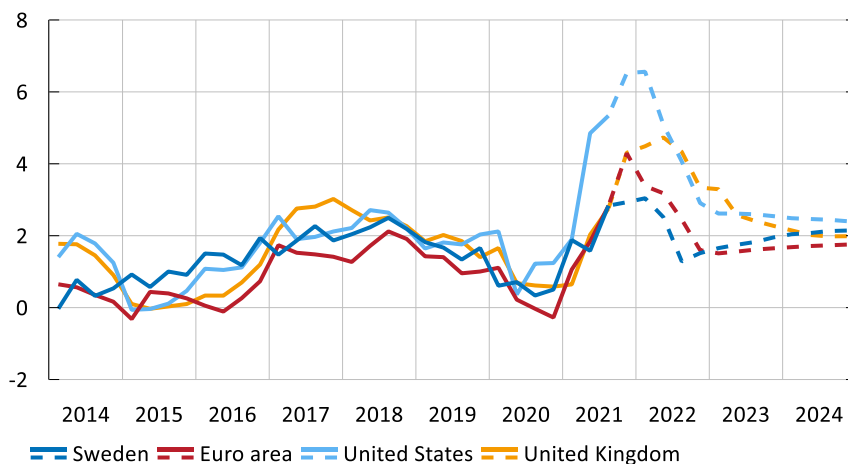
The difficulties in meeting the rapidly rising demand for goods has led to strong rises in commodity and transport prices, which has also led to rising producer prices after a certain time lag. In Sweden and the euro area, the effects on consumer prices has so far mainly been limited to rapidly rising energy prices. In the United States, however, goods prices and prices in certain service sectors that were closed during the pandemic have risen rapidly, which has also led to a substantial rise in core inflation.

Energy prices are not expected to continue to rise as rapidly next year (see the article "Higher inflation – temporary or persistent?"). Together with the fact that demand is also expected to increase at a slower pace and production to be adjusted accordingly, this means that inflation will fall back (see Figure 2). However, there are differences between countries, which is also reflected in market participants' expectations of monetary policy.

In countries where inflation has risen or is expected to rise the most, such as the United States and the United Kingdom, there are expectations that central banks will implement policy rate increases going forward. The FOMC members from the US central bank, the Federal Reserve, adjusted their forecasts for the policy rate upwards at their meeting in September, so that their median forecast indicates a raise of the policy rate at the end of 2022. Unlike the Federal Reserve, the European Central Bank (ECB) announced no change to its monetary policy at its October meeting.

Figure 2. Inflation in Sweden and abroad

Annual percentage change, quarterly data



Sources: Eurostat, Office for National Statistics, U.S. Bureau of Labor Statistics and the Riksbank.

Resource utilisation is rising in the Swedish economy

Economic activity in Sweden has continued to strengthen due to strong domestic and global demand. From last year's situation, strongly characterised by the pandemic, in which low demand slowed the economy, there has now arisen a situation in which companies in various parts of the economy are finding it difficult to produce enough to meet demand. As in the rest of the world, it is the shortage of inputs and logistic problems that is restricting production capacity in parts of the manufacturing sector. The trade sector is also being affected by delivery delays and shortages of certain goods. Sharp increases in the price of, for instance, commodities and energy, in combination with more expensive transport and shortages of components, have increased companies' costs. In the Riksbank's Business Survey, the shocks are now being reported as more comprehensive than at the start of the pandemic and they are also expected to persist next year.²

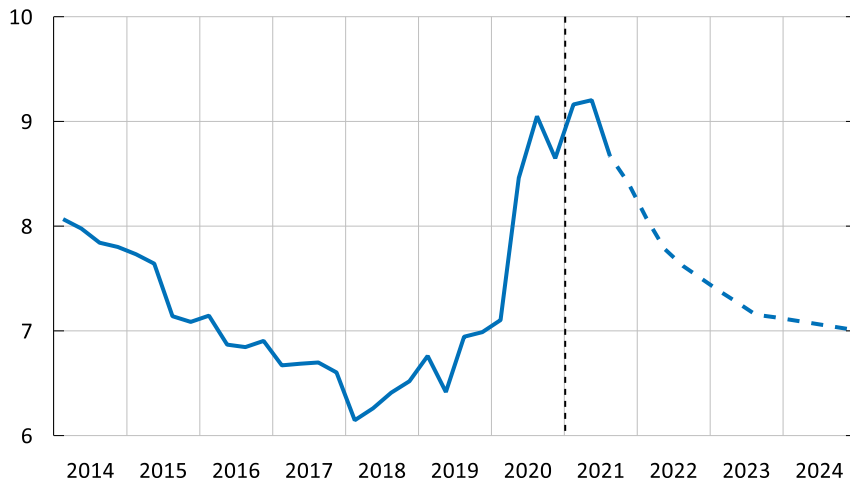
The problems in meeting demand sufficiently quickly will impede growth to a certain extent in the period ahead. But although the highest growth rates are now behind us, activity in the economy is expected to remain high going forward and employment will continue to rise. Employment has more than recovered after last year's fall, even though there are still differences between different industries and sectors. Demand for labour is high and the number of persons employed is therefore expected to continue to increase relatively significantly in the months to come. An increasing number of companies are reporting a shortage of labour and recruitment plans in the business sector are on a very high level, according to the Economic Tendency Survey. The number of newly registered job openings according to the Swedish Public Employment

² See "As soon as you find one component, you realise you're missing another", *The Riksbank's Business Survey*, September 2021, Sveriges Riksbank.

Service has been record-high while the number of redundancy notices is very low. Unemployment is expected to fall back towards 7 per cent at the end of the forecast period (see Figure 3).

Figure 3. Unemployment in Sweden

Percentage of labour force, 15-74 years, seasonally adjusted data.



Note. Solid line represents outcomes, broken line represents the Riksbank's forecast. The vertical line marks the date when the labour market statistics were reorganised.

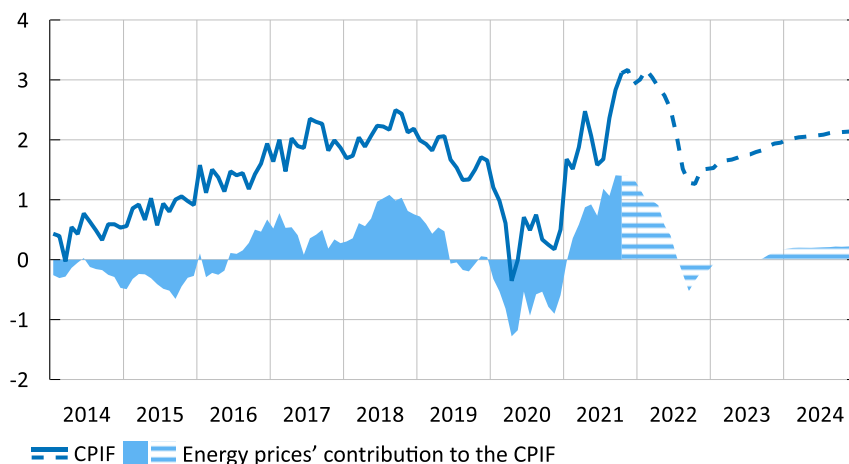
Sources: Statistics Sweden and the Riksbank.

Higher inflation as a result of rapidly rising energy prices and companies' problems in meeting demand

Inflation has also risen rapidly in Sweden in 2021. In October, CPIF inflation was 3.1 per cent. The upturn has largely been driven by rapidly rising energy prices (see Figure 4). The high energy prices are expected to help sustain CPIF inflation for a few months more. Forward prices indicate that energy prices will not continue to increase at the same pace going forward. The contribution from energy prices will therefore decrease next year, which is an important reason for why inflation is expected to fall back.

Figure 4. The CPIF and contributions from energy prices

Annual percentage change and percentage points



Note. The contribution of energy prices to the CPIF in the forecast is calculated as the annual percentage change in energy prices multiplied by their current weight in the CPIF. Solid line represents to outcomes, broken line represents the Riksbank's forecast.

Sources: Statistics Sweden and the Riksbank.

Prices in the producer channel have increased substantially over the last year. The rate of increase in producer prices for inputs is on its highest level since at least the early 1990s. There are some signs that consumer prices for goods, for example, are rising more quickly as a result of this, but the effect on consumer prices of higher producer prices is normally relatively limited (see the article “Higher inflation – temporary or persistent?”). Adjusted for energy prices, inflation amounted to 1.8 per cent in October, which means that the upward trend in this inflation measure over the last few months is continuing. Other underlying inflation measures, which constitute an indicator of inflation in the slightly longer run, have also continued to rise. The median of the various measures amounted to 2.1 per cent in October (see Figure 50 in Chapter 3).

Price plans in the retail trade and purchasing managers' indices are high and the short-term inflation expectations of households and companies have risen rapidly according to the Economic Tendency Survey. Companies' increased costs due to supply problems are expected to be transferred gradually to consumers over the next year. Inflation adjusted for energy prices is therefore expected to continue to rise somewhat, and be just over 2 per cent until the end of next summer. Towards the end of next year, the supply problems are expected to diminish, causing CPIF inflation excluding energy to fall back somewhat.

For inflation to be persistently close to 2 per cent, a more sustained upturn in cost pressures is required. So far, no impression of the higher inflation and rapidly rising shortages can be seen in wage formation. Wage increases in excess of agreed levels have not risen over the past year. While increasing numbers of companies state in the Riksbank's Business Survey that they expect wage drift to be higher in twelve months' time, at the same time, Prospera's surveys show that expected wages are not rising by

much. The Riksbank's assessment is that it will take some time before cost pressures rise in such a way as to bring inflation more persistently up to 2 per cent.

1.2 Continued expansionary monetary policy for inflation close to the target of 2 per cent in the longer term

Strong economic activity and inflation temporarily above target

Financial conditions remain very expansionary. Credit supply is working well. The opportunities of companies to fund their operations via banks or via borrowing in the securities market are good. Activity both abroad and in the Swedish economy is developing strongly, unemployment is falling and inflation is rising. The Riksbank's revisions of the economic outlook are small, particularly for the Swedish economy. New information received since the Monetary Policy Report in September supports the picture of rising cost pressures. Supply problems are expected to become a little larger and slightly more persistent in the current forecast and thus to lead to a slightly higher rate of price increase in 2022 and 2023 (see Figures 5 and 6).

But inflation is not expected to exceed the target persistently. As in the Riksbank's forecast in September, the inflation upturn is expected to be temporary. The currently high level of inflation is expected to fall back next year. Above all, this is due to energy prices not being expected to increase from the current high levels in the period ahead. A gradually better balance between demand and supply conditions will also contribute to falling inflation. Monetary policy affects the economy with a time lag and needs to disregard changes in inflation that are expected to be temporary. As in the previous forecast, it will take until 2024 until inflation more lastingly is close to 2 per cent (see Figures 5 and 6). A prerequisite for the inflation forecast is that monetary policy remains expansionary.

Figure 5. CPIF

Annual percentage change

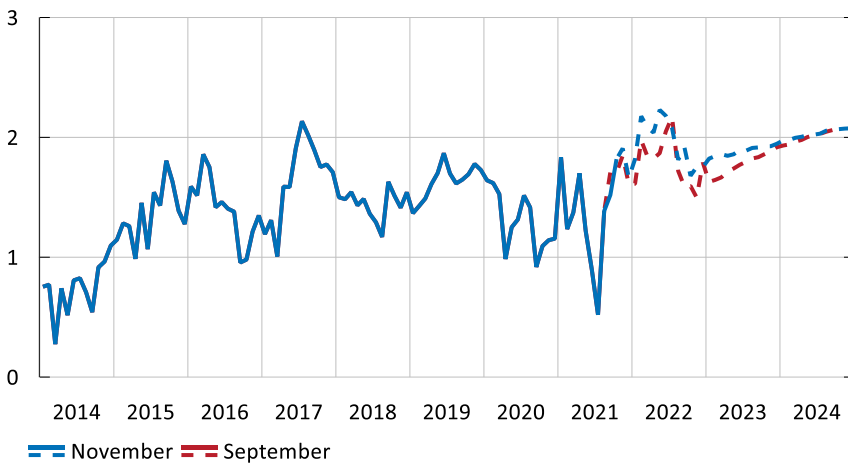


Note. Solid line represents outcomes, broken line represents the Riksbank's forecast.

Sources: Statistics Sweden and the Riksbank.

Figure 6. CPIF excluding energy

Annual percentage change



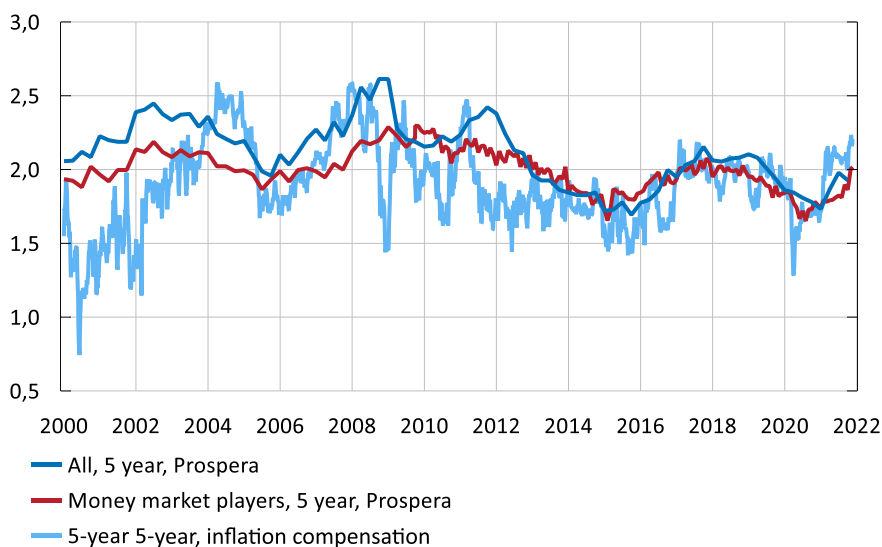
Note. Solid line represents outcomes, broken line represents the Riksbank's forecast.

Sources: Statistics Sweden and the Riksbank.

At the start of the pandemic, long-term inflation expectations fell slightly but started to recover fairly quickly. In the wake of the upturn in inflation, expectations have continued to rise both abroad and in Sweden. The long-term expectations measured using the market pricing of various financial contracts have been above 2 per cent this year. Expectations according to survey measurements has also risen this year and the overall picture is that long-term inflation expectations are close to 2 per cent (See Figure 7).

Figure 7. Long-term inflation expectations

Per cent



Note. The inflation compensation refers to a 5-year period starting in 5 years' time, calculated from bond yields. Both inflation compensation and expectations from Prospera refer to the CPI. For money market participants, Prospera, the line refers to quarterly data up to September 2009 and then to monthly data.

Sources: Kantar Sifo Prospera and the Riksbank.

In recent decades, inflation has undershot the target on average. The fact that it has now risen and will be above target for a time may help to more clearly anchor price and wage expectations in a way that is compatible with close-to-target inflation. If monetary policy were to be tightened too soon, the risk is high that inflation will not be persistently close to target in the period ahead.

Zero interest rate and unchanged asset holdings

Monetary policy needs to give continued support to the economy for inflation to be close to the inflation target in the slightly longer term. The Executive Board has therefore decided to keep the repo rate at zero per cent. The asset purchase programme initiated in March 2020 will expire on 31 December this year. The Executive Board has decided that the Riksbank shall purchase bonds for SEK 37 billion in the first quarter of 2022 to compensate for forthcoming principal payments.³

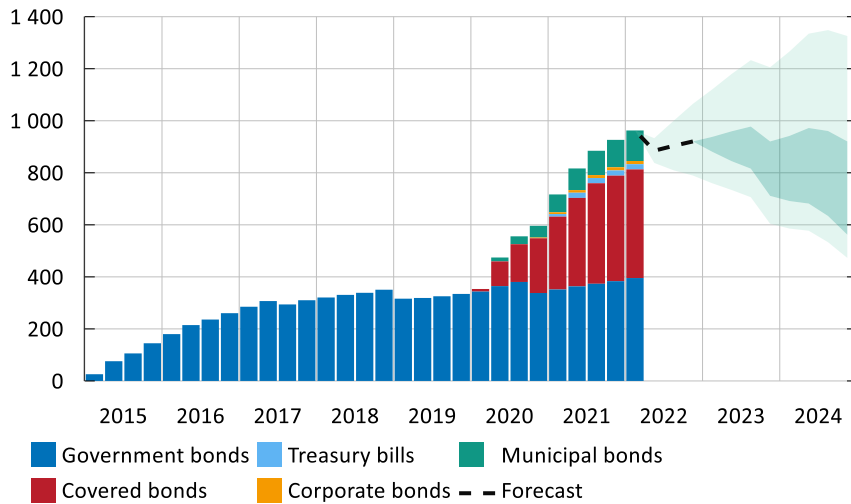
The Executive Board's forecast is that the asset holdings will remain approximately unchanged in 2022 and that the total holdings will gradually decrease thereafter by purchases not fully compensating for principal payments (see Figure 8). The forecast

³ In 2022, bonds in the Riksbank's asset portfolio to a value of SEK 154 billion will fall due. The bond purchases in the first quarter thereby correspond approximately to the average principal payment of the bonds per quarter in 2022.

for the repo rate path indicates that the repo rate will be raised in late 2024 (see Figure 9). Monetary policy will therefore be cautiously less expansionary in the period ahead.

Figure 8. The Riksbank's holdings of securities and forecast for holdings

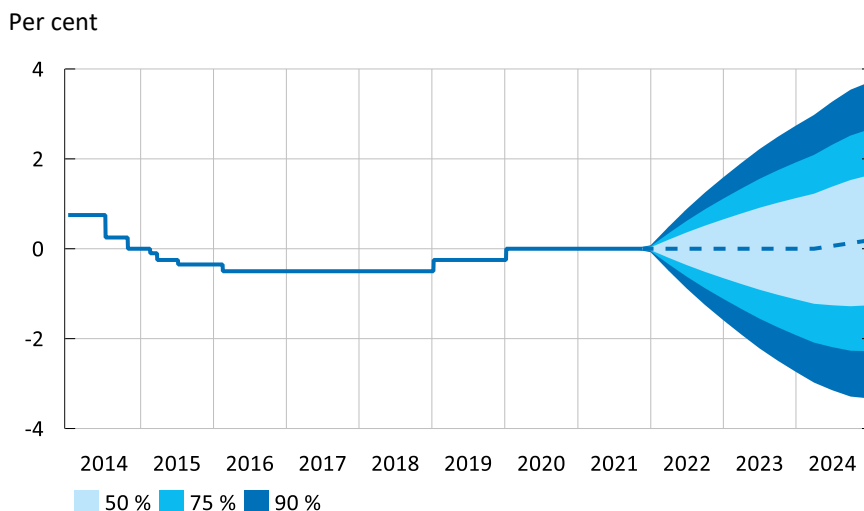
Nominal amounts, SEK billion



Note. The bars refer to executed and decided purchases. Broken line shows a forecast for holdings on the assumption that purchases in 2022 Q2–2022 Q4 will be made at the same pace as those purchases decided on for 2022 Q1, which means that the holdings will be on approximately the same level at the end of 2022 as at the end of 2021. The lower interval limit is a projection of the holdings assuming that no more asset purchases are made after 2022 Q1. Its upper limit reflects a development in which the Riksbank's asset purchases continue at the same pace as during 2021. The darker area's lower limit is a projection of the holdings assuming that no more asset purchases are made after 2022 while its upper limit shows the development of holdings with an even purchasing rate in each year respectively, which means that holdings will be on the same level at the end of 2023 and 2024 as at the end of 2022.

Source: The Riksbank.

Figure 9. Repo rate with uncertainty bands



Note. The uncertainty bands are based on the Riksbank's historical forecasting error and on risk-premium-adjusted forward rates' forecasting error for the period 1999 until the Riksbank began publishing forecasts for the repo rate in 2007. The uncertainty bands do not take into account the fact that there may be a lower bound for the repo rate. Outcomes are daily rates and the forecasts refer to quarterly averages.

Source: The Riksbank.

To compensate for principal payments, the Riksbank will purchase assets for a nominal amount of SEK 37 billion in the first quarter of 2022

The asset purchase programme decided by the Riksbank during the coronavirus crisis expires on 31 December 2021. In accordance with previous decisions, the Riksbank will purchase bonds for a total nominal amount of SEK 68.5 billion in the fourth quarter. This means that the purchase programme's envelope of SEK 700 billion will be fully utilised. In September, the Executive Board decided to conclude its loan facilities as demand had been very low for some time.⁴ The Riksbank's offer to purchase commercial paper will also be concluded when the current decision expires on 31 December 2021.

The inflation prospects justify continued monetary policy support and the holdings therefore need to develop in a way that is compatible with continued expansionary financial conditions. For 2022, this is expected to mean, in practice, that the holdings will remain approximately unchanged as a result of purchases that compensate for principal payments. As the principal payments are unevenly spread over time, this means that the Riksbank's asset holdings will vary, even during periods when the aim is to keep the holdings approximately unchanged. The purchase decisions take account of operational and practical limitations and the purchases are expected to take place at a fairly even rate.

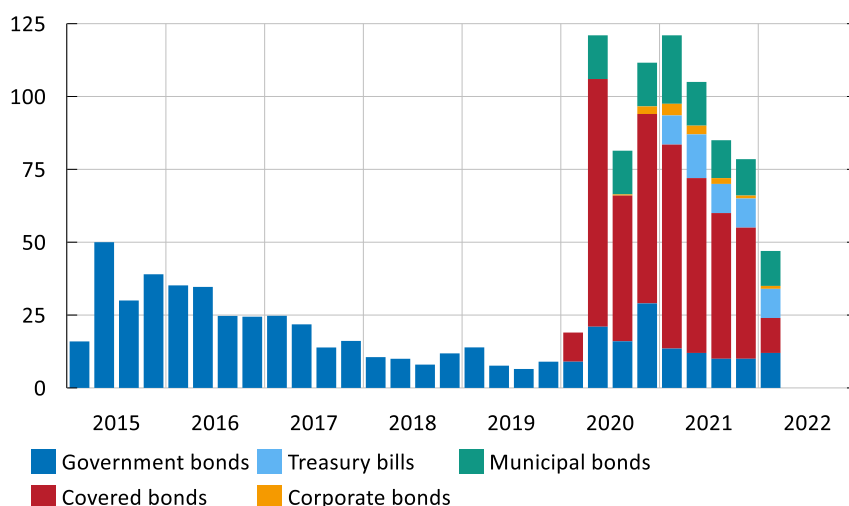
⁴ See decision guidance on [The Riksbank's website](#): Monetary Policy Report, September 2021, Annex B to the minutes: The Riksbank is terminating the programme for funding to the banks to support corporate lending and some other measures implemented as a result of the pandemic, and Annex C to the minutes: The Riksbank stops offering three- and six-month loans.

During the coronavirus crisis, the Riksbank has purchased various types of assets. The aim has been to keep interest rates low, but purchases of different assets have somewhat different effects. For example, apart from contributing to a generally low interest rate environment, purchases of private assets can maintain market functionality and thereby promote the pass-through of monetary policy.

To compensate for forthcoming principal payments, the Executive Board has now decided on bond purchases for the first quarter of 2022 for a total nominal amount of SEK 37 billion (see Figure 10). The Riksbank will purchase nominal and real Swedish government bonds and Swedish sovereign green bonds for an aggregate nominal amount of SEK 12 billion, municipal bonds for a nominal amount of SEK 12 billion, covered bonds for a nominal amount of SEK 12 billion, and corporate bonds for a nominal amount of SEK 1 billion. The Riksbank will also purchase treasury bills so that the total holding of treasury bills in the Riksbank's securities portfolio is maintained at a level of around SEK 20 billion.

Figure 10. The Riksbank's purchases of securities

Nominal amounts, SEK billion



Note. The bars refer to executed and decided purchases.

Source: The Riksbank.

The vulnerabilities have been exacerbated

The expansionary economic policy during the pandemic has been necessary to mitigate the crisis and support the recovery and inflation. But it has also exacerbated vulnerabilities and risks. Combined with support measures from governments, the central banks' monetary policies have led many countries, companies and households to increase their debts. This may lead to future recessions being both deeper and more prolonged than would otherwise be the case. Interconnectedness between the government, banks and companies in individual countries has increased, not least due to government loan guarantees. Problems in one sector can therefore rapidly affect

other parts of the economy. It is particularly risky for countries in which various agents were already heavily indebted before the crisis.

Low interest rates can also lead to excessive risk-taking, cause homes and other assets to be overvalued, and lead to risks being incorrectly priced. The most appropriate approach for managing vulnerabilities is to use targeted structural measures, well designed financial regulation and macroprudential policy. One step in increasing the resilience of the financial system is that Finansinspektionen (FI) has announced that the value of the countercyclical capital buffer will be raised to 1 per cent. The Riksbank considers it urgent that FI continues to raise the buffer level.

The Swedish economy has long been characterised by high indebtedness among households. Household debt continues to increase more rapidly than both income and GDP, making households increasingly sensitive to both price falls in the housing market and rising interest costs. Resolving the fundamental problems in the housing market and reducing the risks inherent in the high household indebtedness will require broad reforms in housing and tax policy. It is problematic that these are still lacking. New macroprudential policy measures may therefore need to be introduced, or the measures already implemented may need to be tightened going forward. Macroprudential policy measures need to limit households' scope for borrowing or reduce their interest-rate sensitivity.

The banks' exposure to property has increased during the pandemic. In addition to mortgages, the banks also lend extensively to commercial property companies, which in turn have issued a significant part of the outstanding volume of corporate bonds in Swedish kronor. Property companies have continued to increase their indebtedness, making them more sensitive to changing economic conditions. The Riksbank considers that the high and increasing indebtedness and the extensive lending to commercial property companies are making the Swedish economy vulnerable, and that financial stability, in an unfavourable scenario, may be affected.⁵

Fiscal policy and monetary policy complement each other

In recent years, monetary policy and fiscal policy both in Sweden and abroad have complemented each other and thereby been able to mitigate the crisis more effectively and facilitate the recovery. Fiscal policy measures have a greater effect on growth and resource utilisation if the policy rate is kept unchanged when they are implemented. Several central banks also have a clear intention to keep policy rates low and maintain extensive asset holdings. It is therefore probable that the fiscal policy measures currently being implemented in many countries are being strengthened by the expansionary monetary policy. The low level of interest rates and the strong public finances in Sweden have resulted, not least, in a favourable situation in which to implement structural reforms that strengthen the long-term growth potential of the Swedish economy.

⁵ See *Financial Stability Report 2017:2*, Sveriges Riksbank.

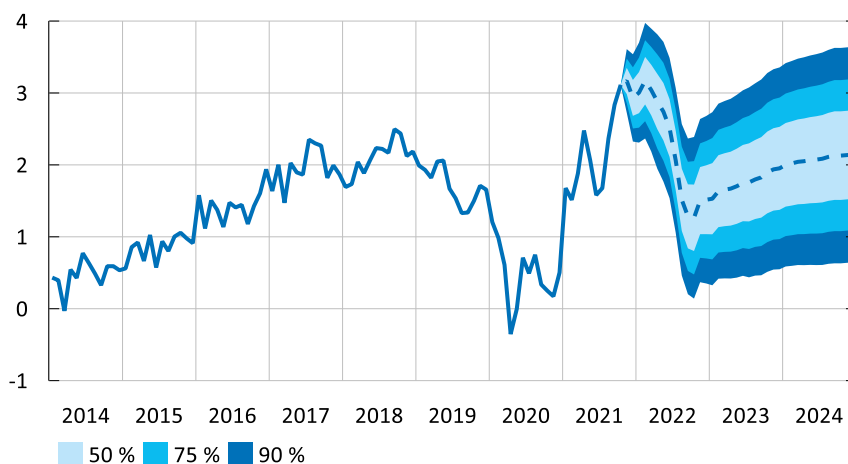
1.3 Risks on both the upside and the downside for inflation

Even if many economies have recovered after the sharp downturns in GDP, the development of the pandemic is continuing to create uncertainty over the economic outlook and inflation prospects of the world economy. The spread of infection has again picked up in a number of countries, not least in Europe, and restrictions have been re-introduced in some areas. If the pandemic were to worsen and several major economies introduced restrictions in social life at the same time as sentiment deteriorated among households and companies, this would probably lead to lower GDP and higher unemployment.

Inflation is currently high but is expected to fall back over the next year. Like other forecasts, inflation forecasts are surrounded by uncertainty in both the short and long terms. There are factors that could lead to both higher and lower inflation. In Figure 11, this is illustrated by the uncertainty band around the Riksbank's main scenario.

Figure 11. CPIF with uncertainty bands

Annual percentage change



Note. The uncertainty bands are based on the Riksbank's historical forecasting errors.

Sources: Statistics Sweden and the Riksbank.

The rapid upturn in inflation since the middle of this year has surprised many analysts and led to substantial upward revisions in forecasts. This reflects the uncertainty surrounding inflationary pressures. It is not least uncertain how supply shocks affect production and inflation. The Riksbank's forecasts expect the supply problems to lead to higher inflation in the short term, which will gradually subside when demand grows more slowly and supply is adjusted. It is difficult to say, with any degree of certainty, how long this adjustment will take and how long shocks will affect prices in different channels.

As economic developments during this pandemic are so different from all previous episodes in the global economy, it is difficult to draw lessons from history. If the disruptions are resolved sooner than expected, inflation may be lower than in the Riksbank's main scenario. Inflation may also be lower, in the short term at least, if the

development of the pandemic worsens again and dampens demand in the economy. But if the supply problems become more prolonged, inflation may be higher. In particular, this will be the case if the higher rate of inflation also has effects on wages and inflation expectations in a way that gives rise to a broader upturn in cost pressures than the Riksbank's forecast shows.

Energy prices also have considerable impact on how inflation develops. The forward pricing indicates that energy prices will not increase as rapidly in the period ahead as they did in 2021. However, developments over recent months show that the EU energy market is sensitive to disruptions and it is difficult to assess what will happen going forward. Both weather and political decisions, including the future gas supply from Russia, will affect how energy prices change. Neither can it be ruled out that the rapidly rising energy prices will affect corporate and household expectations of future wages and inflation more substantially than we have seen so far, which could drive up inflation more than in the Riksbank's main scenario.

The link between inflation in Sweden and abroad is complicated and depends on the driving-forces behind the movements. However, it is reasonable to assume that higher inflation abroad will also lead to higher Swedish inflation via a higher rate of increase in import prices. If global inflationary pressures were to become significantly stronger than expected, inflation in Sweden could also become higher. Higher international inflation could also lead to higher interest rates abroad. The direct economic consequences for Sweden of such an interest rate increase are probably minor. However, it cannot be ruled out that an upturn in market rates would contribute to turmoil in financial markets and that this would also have relatively large consequences for the Swedish economy.

The rapid upturn in inflation in many countries, not least in the United States, follows a longer period of unusually low inflation. During this period, global real interest rates have been low. This means that the scope for monetary policy to counteract low inflation has been limited. Inflation is now higher, but the upturn is temporary according to many analysts. At the same time, there are several factors indicating that global interest rates will remain low going forward (see the article "Are low global interest rates set to continue?"). There is therefore a risk of the global economy returning to a situation of persistently low inflation, in which the scope for monetary policy to act continues to be limited.

Monetary policy needs to be constantly adapted to changes in the economic outlook and inflation prospects. The Riksbank stands prepared to adjust expansiveness in either direction. The Executive Board may cut the repo rate or, in some other way, make monetary policy more expansionary if inflation prospects weaken. This applies in particular if confidence in the inflation target were to be under threat. On the other hand, if inflation were expected to exceed the target in a substantial and lasting manner, a less expansionary monetary policy would be justified. One adjustment to reduce expansiveness could take place via repo rate rises and/or the reduction of asset holdings.

2 High inflation is characterising the financial markets

Developments in international financial markets have recently been characterised by investor expectations of a more persistent period of high inflation. Market-based inflation expectations are rising, which is contributing to rising bond yields and expectations that central banks will raise policy rates and phase out their asset purchases sooner than market participants have anticipated. Differences between yields on risky and risk-free assets continue to be small, while equity market has recovered after a downturn in September. This indicates that demand for risky assets remains high.

International developments have affected Swedish conditions and interest rates have risen slightly from very low levels. Households and companies are also expected to continue to have good access to inexpensive funding. A mild trend depreciation of the krona this year was followed by a clear appreciation in October. The financial conditions are expected to remain highly expansionary overall due to economic developments and the economic policy.

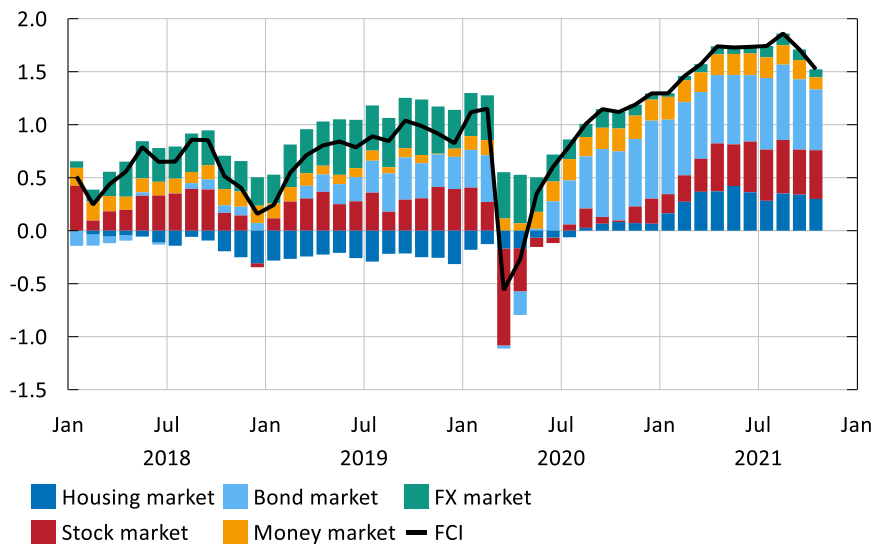
2.1 Slightly higher interest rates in the wake of rising inflation expectations

Despite a slight increase in the spread of infection in Europe, uncertainty about the economic effects of the pandemic in the period ahead has eased somewhat. Demand for goods and services is high and continued shocks in the producer channel and rising energy prices have contributed to higher inflation over the autumn. In international financial markets, market participants have adjusted their inflation expectations upwards, which is reflected by the yield spreads between nominal and real government bonds having increased further since September. However, despite the nominal interest rates having risen slightly, the level of interest rates continues to be very low from a historical perspective. According to market pricing, the central banks are expected to raise their policy rates sooner than market participants expected just a few months ago. Nonetheless, demand for risky assets still seems to be strong. Equity prices have recovered after a downturn in September and the yield spreads between risky bonds and government bonds remain very small.

International developments have caused Swedish yields to rise, but the continued low level of interest rates remains an important explanation for the expansionary financial conditions in Sweden (see Figure 12).⁶

Figure 12. Index for financial conditions in Sweden

Standard deviations. A higher value indicates more expansionary financial conditions



Source: The Riksbank.

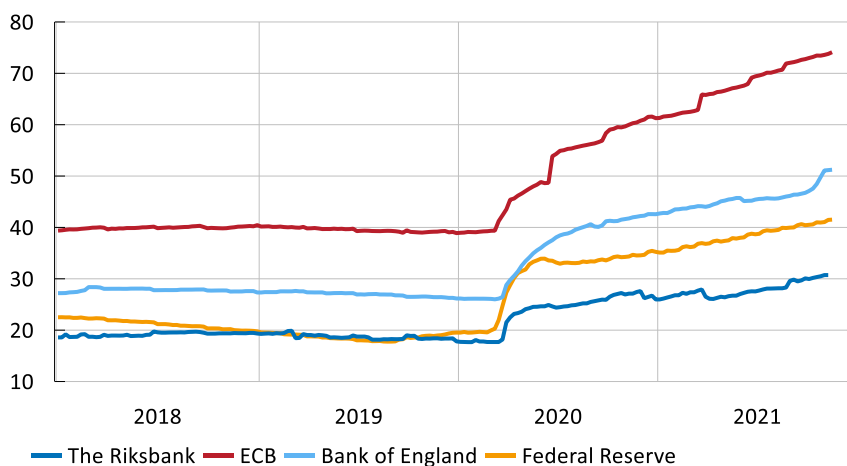
Central banks are adapting monetary policy to the recovery in economic activity

The major central banks around the world are conducting highly expansionary monetary policies. During the pandemic, they have supplemented low policy rates with initiatives such as asset purchases and, overall, the central banks' balance sheets have therefore grown strongly as a proportion of GDP (see Figure 13). However, with the rapid recovery in economic activity and the upturn in inflation, central banks have now increasingly started to taper their asset purchases and discuss the need for policy rate rises going forward.

⁶ For details on this index, see J. Alsterlind, M. Lindskog and T. von Brömsen, "An index for financial conditions" *Staff memo* February 2020, Sveriges Riksbank. Note that, unlike previously, the index now also includes yields on corporate bonds

Figure 13. Central banks' balance sheet totals

Per cent of GDP



Note. GDP is calculated as the sum of the present quarter and the three previous quarters. For any quarter(s) that GDP has not yet been published, the most recently-published GDP statistics are used.

Sources: Bank of England, ECB, Federal Reserve, Macrobond and the Riksbank.

At the meeting in November, the US central bank, the Federal Reserve, held its policy rate unchanged within the interval of 0.0–0.25 per cent. At the same time, it decided on a gradual tapering of net purchases of assets, meaning that the holdings are increasing at a declining rate. In mid-November, net purchases were reduced from USD 120 billion to 105 billion per month and the rate will be reduced further in December. No new forecasts were presented at the November meeting, but, at the September meeting, the FOMC members adjusted their forecasts for the policy rate upwards so that their median forecast indicated a policy rate rise at the end of 2022.

In addition to communicating its view of how monetary policy may be made less expansionary in the period ahead, the Bank of England has signalled an increased need for policy rate rises in the near future. However, it chose to hold the policy rate unchanged at its monetary policy meeting at the start of November. Furthermore, it decided to continue purchasing government bonds to increase its holdings to the equivalent of GBP 875 billion and to maintain its holdings of corporate bonds at GBP 20 billion.

Unlike the Federal Reserve, the ECB announced no changes to monetary policy at its meeting in October. Policy rates were held unchanged at present levels and, within the framework of the asset purchase programme determined prior to the pandemic (APP), it will continue to purchase bonds in an amount corresponding to EUR 20 billion per month, beyond the purchases required to compensate for part of the bonds holdings falling due. The ECB also retained the envelope of EUR 1,850 billion for the asset purchases made within the special pandemic programme (PEPP) and the programme for lending to households and companies via the banks (TLTRO-III). As it had done in September, the ECB also communicated that a slightly slower increase of the holdings within the pandemic programme than in the

two previous quarters would be enough to preserve the favourable financing conditions.

After the ECB's meeting, the differential between long-term interest rates in economies with relatively weak public finances increased and equivalent German rates increased slightly. This is probably linked to some concern among investors that the ECB's purchases of these countries' government bonds will decline when the pandemic programme is concluded, as expected, next March.

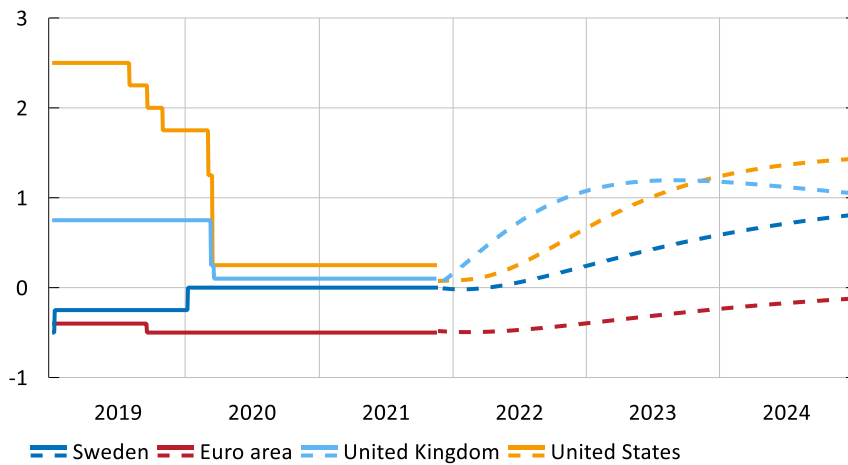
Other central banks have also begun tapering their asset purchases, signalling, and in some cases already initiating, rate increases. Norges Bank raised its policy rate in September, in light of the strong economic developments and to prevent the accumulation of financial imbalances.⁷ At its meeting in November, it confirmed that the next rate rise is expected in December. At the end of October, the Bank of Canada, which had already decreased the rate of its asset purchases, announced that, going forward, it would only be purchasing bonds to compensate for principal payments and would thus no longer be increasing its asset holdings. In addition, it plans to raise its policy rate in mid-2022, which is earlier than in its previous assessment. At its meeting in November, the Reserve Bank of Australia, which started tapering its asset purchases in September, terminated its commitments regarding yield curve control, which in this case had consisted of holding the yield on three-year government bonds below 0.1 per cent. The Reserve Bank of New Zealand concluded its asset purchases in July and raised the policy rate, as expected, at its meeting in October.

Since September, market pricing has also started to show signs of expectations of early rate rises in several economies. Despite the shift in expectations, central bank policy rates are overall expected to remain at historic lows for a long time to come (see Figure 14). Another indication that market participants expect earlier rate increases is the upturn in yields on two-year government bonds (see Figure 17).

⁷Norges Bank's monetary policy mandate states that in addition to fulfilling the inflation target, it shall counter the build-up of financial imbalances, see *Monetary Policy Report with Financial Stability Assessment* 2021:3, Norges Bank.

Figure 14. Policy rates and rate expectations according to forward pricing

Per cent



Note. Forward rates describe market-based expectations of the overnight rate, which do not always correspond to the policy rate. Broken lines represent forward rates 22 November 2021.

Sources: Macrobond and the Riksbank.

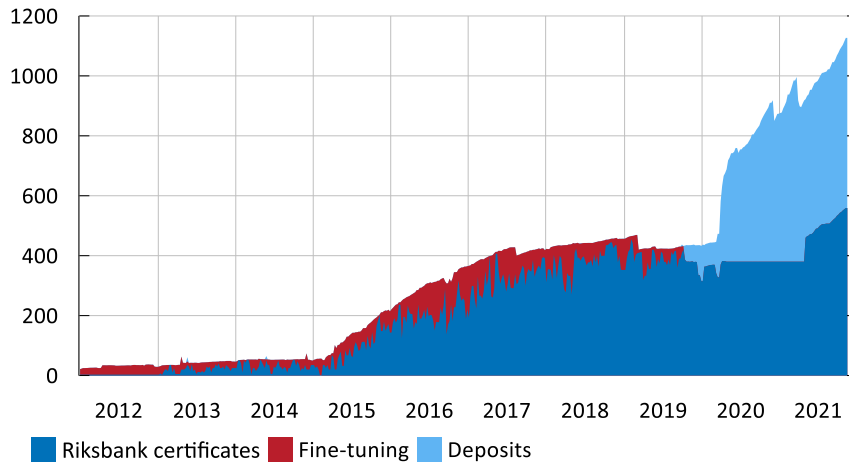
Low interest rates on the Swedish money market

Expectations of continued expansionary monetary policy from the Riksbank are an important explanation for the low interest rates on the Swedish money market. Forward pricing indicates that the Riksbank is expected to have raised its policy rate to 0.25 per cent by the end of 2022 (see Figure 14). According to Kantar Sifo's Prospera survey in November, money market participants, on average, now expect the repo rate to have been raised to 0.25 per cent in two years' time. The distribution of responses in the survey has also changed somewhat and the median respondent now also expects the rate to be raised in two years' time, in contrast to the survey in September. According to the same survey, the median respondent, in line with the Riksbank's communications, expects continued net purchases in the fourth quarter, with the Riksbank's asset portfolio being maintained over the first three quarters of next year.

The Riksbank has purchased bonds for monetary policy purposes since 2015, which has led to an increase in the liquidity surplus in the banking system. The Riksbank's decisions to implement new asset purchases and lending programmes during the pandemic have substantially strengthened this trend (see Figure 15).

Figure 15. Liquidity in the banking system, deposits and Riksbank Certificates

SEK billion



Note. The banks' liquidity surplus towards the Riksbank represents the Riksbank's liquidity debt to the banking system. Around half of this liquidity debt is comprised of the banks' deposits with the Riksbank, and the rest comprises Riksbank Certificates that are promissory notes with a short maturity issued by the Riksbank.

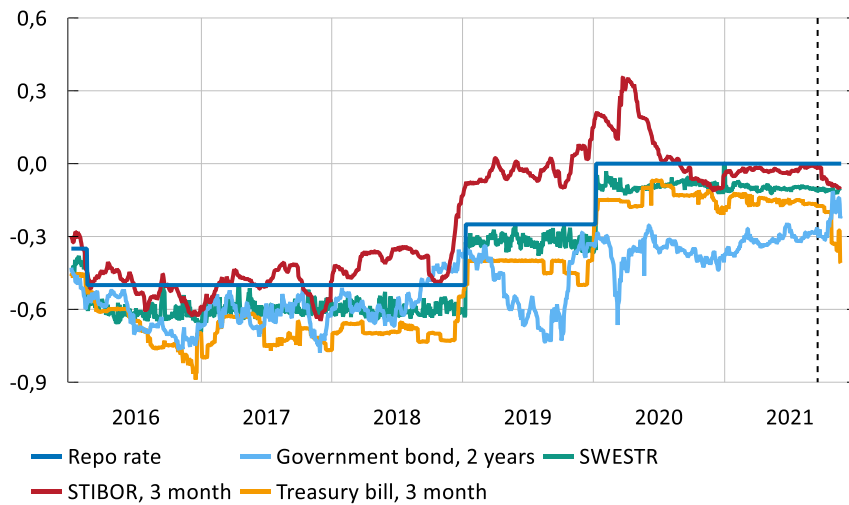
Source: The Riksbank.

Swedish money market rates remain very low (see Figure 16). The Riksbank's reference rate, SWESTR, shows that the actual transactions made in Swedish krona from one business day to the next banking day are at an interest rate close to the deposit rate in the Riksbank's standing facility, which is to say slightly below the repo rate.⁸ The interest rate on a three-month treasury bill and the three-month STIBOR fell in October. Above all, this development is considered to be a manifestation of the banks shrinking their balance sheets towards the end of the year to reduce their annual resolution fee. They do this by temporarily cutting interest rates for deposits, with the consequence that participants with deposits instead demand relatively safe assets, such as treasury bills or short mortgage bonds. Yields on government bonds with maturities of up to two years are still lower than the repo rate. The 2-year rate has certainly risen recently but not to the extent that would be implied by expectations of earlier repo rate rises.

⁸ SWESTR can be used in financial contracts as of 1 September 2021. For further information see <https://www.riksbank.se/en-gb/statistics/swestr/>.

Figure 16. Repo rate and market rates

Per cent



Note. For the period 4 January 2016 to 31 August 2021, SWESTR has been estimated using the calculation method and transaction selection currently used by the Riksbank to obtain daily values. SWESTR falls very sharply on the last banking day of each year, values that have been omitted from this figure. The broken line marks the time of the monetary policy meeting in September.

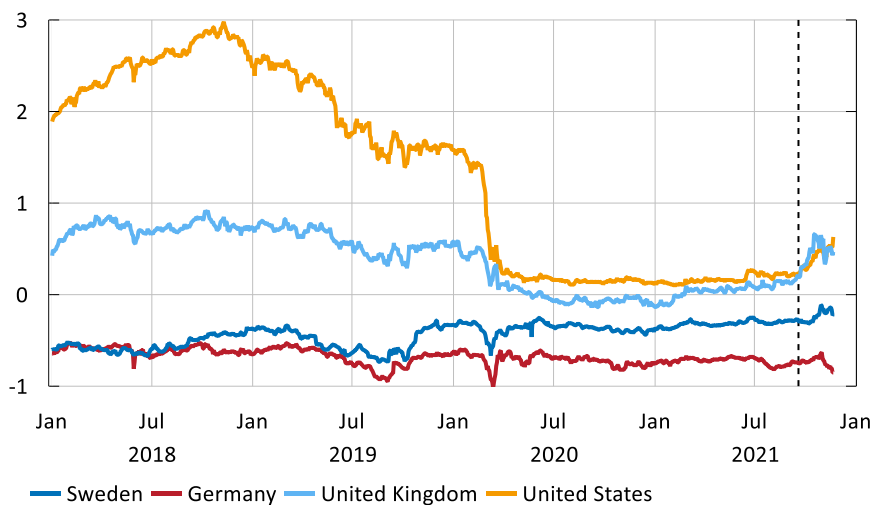
Sources: Macrobond, Refinitiv and the Riksbank.

Yield upturn reflects market expectations of earlier rate rises

Government bond yields continue to be low around the world. Recently, however, the high demand in the economy, combined with bottlenecks in production and rising energy prices, has contributed to higher inflation and many market participants expect greater and more persistent effects on inflation than they had previously anticipated. As investors are trying to compensate for this, nominal yields have risen slightly. On shorter maturities, the yield upturn to a large extent also reflects expectations of earlier rate rises.

Figure 17. Yields on 2-year government bonds

Per cent



Note. Zero coupon rates for Sweden, Germany and the United Kingdom. 2-year benchmark rate for the US. The broken line marks the date of the monetary policy meeting in September.

Sources: National central banks, US Treasury and the Riksbank.

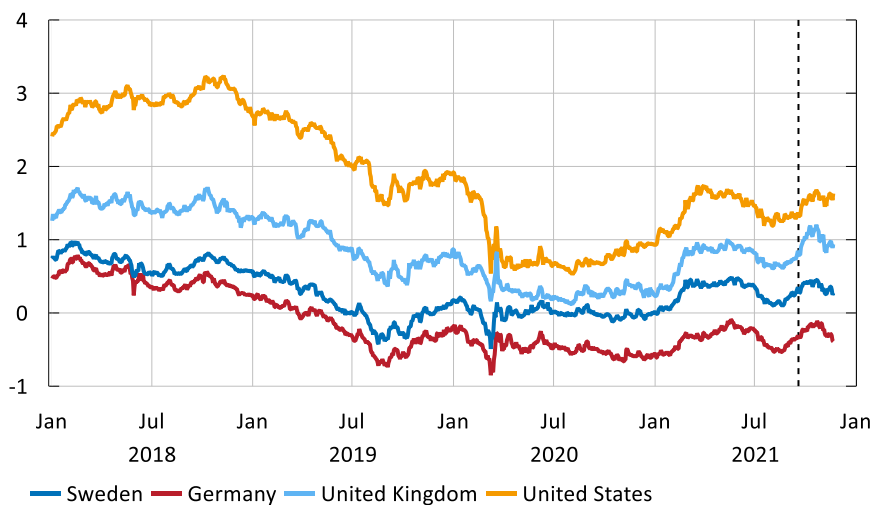
As the driving forces behind the upturn in inflation are largely international, it is natural for these developments to affect Swedish interest rates too. The yield upturn on government bonds have been smaller in Sweden and Germany where market participants' expectations have shifted less in the direction of earlier rate rises than in the United States and the United Kingdom (see Figure 17). In Sweden, the yield upturn is also dampening the temporarily high demand for risk-free assets. This effects is probably also reinforced by the low supply of risk-free assets. A downward adjustment in the borrowing requirement for the state means that a lower amount of government bonds will be issued next year at the same time as the Riksbank now owns a significant share of outstanding volumes of government bonds.

An indication that the high demand, combined with the low supply, has been significant for the financial markets is the results from the Riksbank's Financial Markets Survey in November. For example, a majority of respondents state that liquidity on the secondary market for nominal government bonds is very poor. The assessment of the functioning of the fixed-income market has also worsened since the survey in April 2021 and is now on approximately the same level as prior to the pandemic.

Even though Swedish government bond yields have risen slightly, they remain very low from a historical perspective (see Figure 18).

Figure 18. Yields on 10-year government bonds

Per cent



Note. Zero coupon rates for Sweden, Germany and the United Kingdom. 10-year benchmark rate for USA. The broken line marks the date of the monetary policy meeting in September.

Sources: National central banks, US Treasury and the Riksbank.

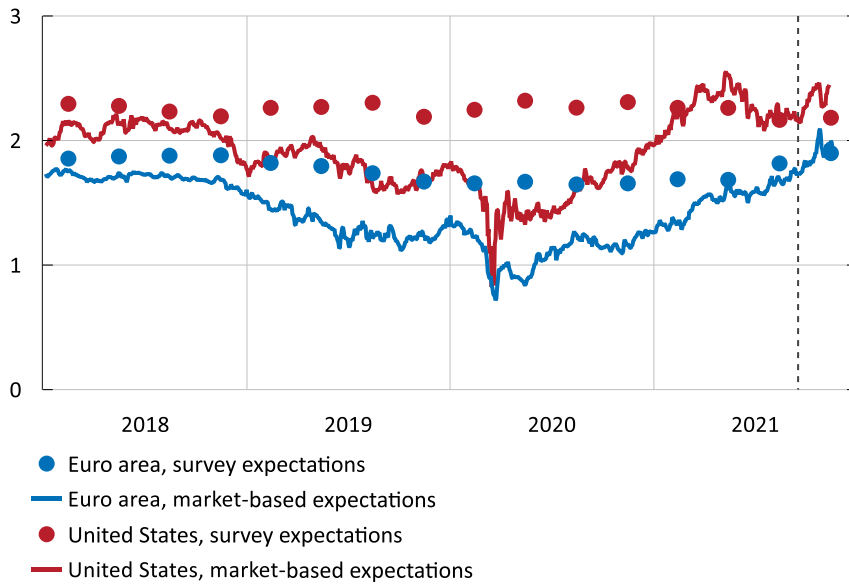
Rising inflation expectations

Inflation has also remained high after the summer and rose slightly further in October in both the United States and the euro area. Compared with the situation at the monetary policy meeting in September, market-based measures of long-term inflation expectations have continued to rise slightly (see Figure 19).

In Sweden too, inflation has continued to rise in recent months and, since the monetary policy meeting in September, both market and survey-based measures of long-term inflation expectations have risen (see Figure 7 in Chapter 1). As in the case for the foreign counterparts, the market-based measures are not necessarily pure measures of expectations, as they also reflect market conditions. This could explain why these measures are slightly higher than the survey-based measures. According to Kantar Sifo's Prospera survey in November, money market participants, on average, expect inflation five years ahead to be 2 per cent (according to the CPI), which is a small increase since the survey in October. This is on a significantly higher level than those observed prior to the pandemic. For inflation expectations one year ahead, the increase since October has instead been slightly larger.

Figure 19. Long-term inflation expectations in the euro area and United States

Per cent



Note. Market-based measures of inflation expectations refer to a 5-year period starting in 5 years' time. For the euro area, they are calculated on the basis of inflation swaps and refer to the HICP. For the United States and Sweden, they are calculated on the basis of bond yields and refer to the CPI. Survey-based expectations refer to inflation 5 years ahead for the euro area (ECB Survey of Professional Forecasters), and the average inflation 5–10 years ahead for the United States (Federal Reserve Bank of Philadelphia). The broken line marks the date of the monetary policy meeting in September.

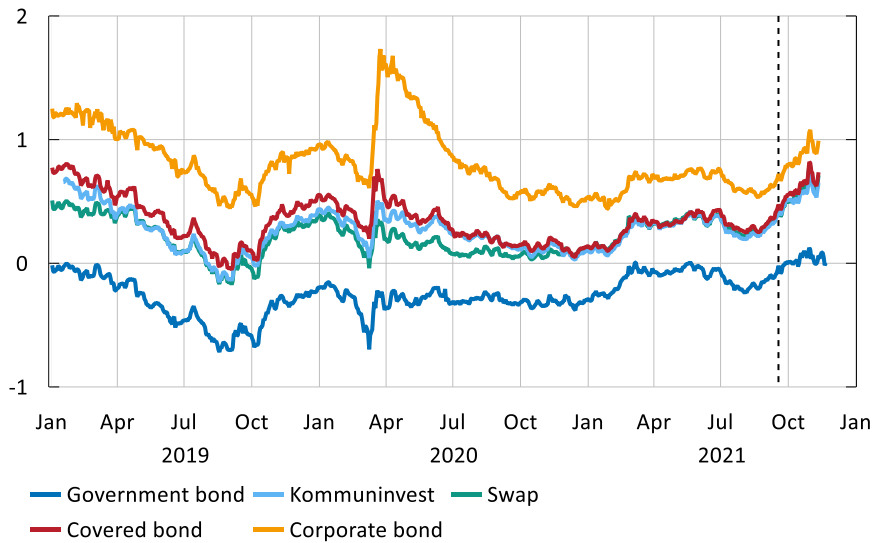
Sources: Bloomberg, Macrobond and the Riksbank.

Continued low risk premiums on the bond markets

The upturn in government bond yields in many economies has also led to an increase in yields on risky bonds over the autumn. However, yield spreads between corporate bonds and government bonds have continued to be very small in both the United States and the euro area. In Sweden, yield spreads between risky bonds and government bonds have instead risen slightly, although they remain low in a historical perspective. However, the Riksbank does not consider this upturn to reflect increased risk premiums on the Swedish bond markets. Another way of estimating risk premiums is to compare the yield on risky bonds with the yield on interest rate swaps. Using this measure, risk premiums are largely unchanged in Sweden since the monetary policy meeting in September and, like with the developments abroad, does not suggest any significant changes in risk premiums in the bond markets (see Figure 20).

Figure 20. Yields on 5-year bonds in Sweden

Per cent



Note. Yields on covered bonds, corporate bonds and government bonds are zero coupon rates calculated using the Nelson-Siegel method. Corporate bonds refer to companies with a high credit rating. Covered bonds refer to bonds issued by Stadshypotek and municipal bonds are issued by Kommuninvest i Sverige AB. The broken line marks the date of the monetary policy meeting in September.

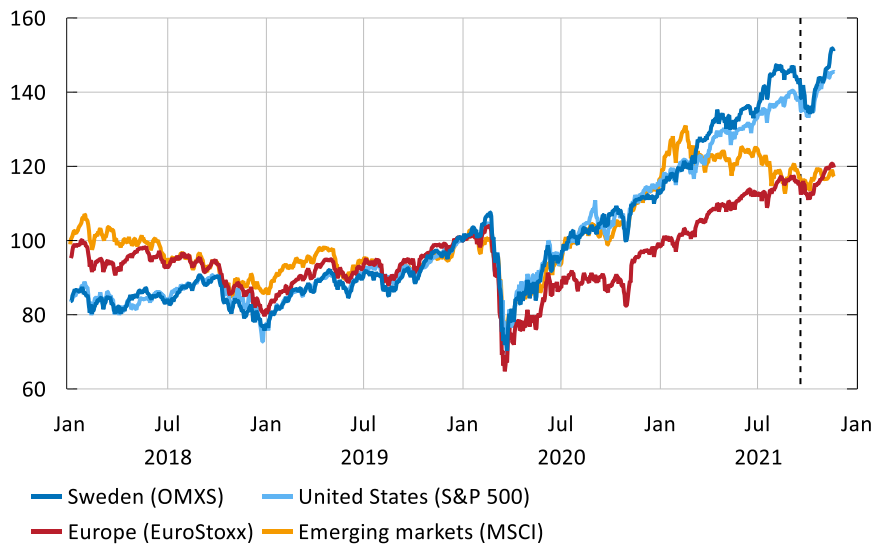
Sources: Bloomberg, Macrobond, Refinitiv and the Riksbank.

Broad price increases on the stock markets

Economic policy stimulus and the economic recovery have contributed to the very strong development of the stock markets this year, even though movements in September were marked by some concern over, among other things, the course of the pandemic in the United States and signals of tighter monetary policy abroad. The upturn in equity prices has been particularly large in the United States and Sweden, where OMXS has risen by approximately 30 per cent so far this year (see Figure 21).

Figure 21. Stock market movements in domestic currency

Index, 31 December 2019 = 100



Note. The broken line marks the date of the monetary policy meeting in September.

Source: Macrobond.

Stable development of the Swedish krona

The krona, normally considered by investors as a higher risk currency than the dollar or euro, for example, depreciated in conjunction with the outbreak of the pandemic, but has since appreciated clearly. This entails a certain break with the trend depreciation that characterised the behaviour of the krona in the previous years. This year, the krona has stabilised and is now a few per cent weaker than it was at the start of the year (see Figure 22). Recent variations correspond relatively well with movements in equity prices. This indicates that variations in willingness to hold risky assets have affected the development of the krona recently. In the second half of November, the krona is more or less unchanged compared with what it was at the monetary policy meeting in September. Recently, the development of the krona has been slightly weaker, especially against the US dollar. This is probably a result of high US inflation and of market participants adjusting their expectations of an earlier policy rate increase.

Figure 22. Nominal exchange rate, KIX

Index, 18 November 1992 = 100



Note. The KIX (krona index) is a weighted average of the currencies in 32 countries that are important for Sweden's international trade. A higher value indicates a weaker exchange rate. The broken line marks the date of the monetary policy meeting in September.

Sources: The Riksbank.

2.2 Swedish households and companies have good access to low-rate credit

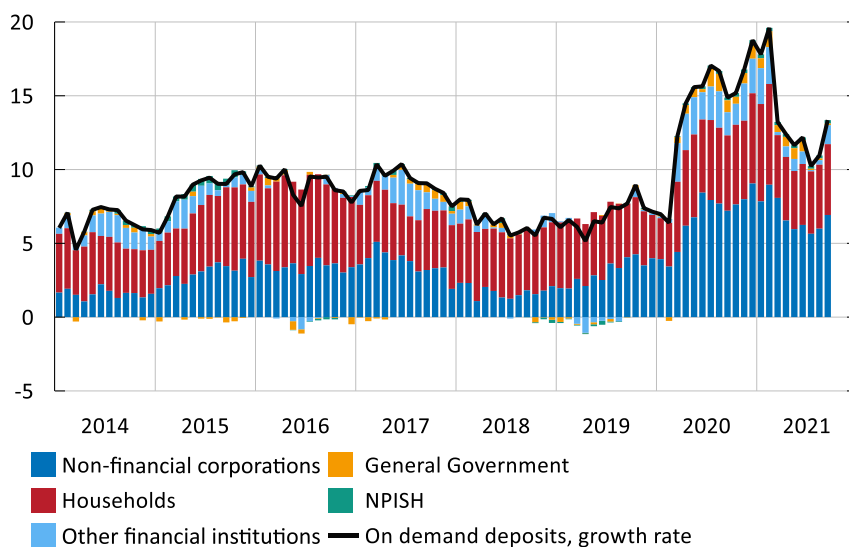
Favourable funding conditions for Swedish banks

Swedish banks are being charged very low interest rates on Swedish and foreign money markets and can thereby obtain inexpensive short-term funding. The banks arrange more long-term funding primarily through the issue of covered bonds. Yields on these bonds are also historically low, partly as a result of the Riksbank's monetary policy (see Figures 16 and 20).⁹ Another important source of funding for the banks is deposits from households and companies. This has increased in recent years, even if growth fell back somewhat in 2021 (see Figure 23). The banks' good access to inexpensive funding is helping them offer low-rate credit to households and companies.

⁹ For a discussion of the market for covered bonds, see the article "The market for Swedish covered bonds during the coronavirus pandemic" in *Financial Stability Report 2021:2*, Sveriges Riksbank. For a discussion of the development of risk premiums in this market during the pandemic, see J. Alsterlind, "The development of risk premiums on covered bonds during the coronavirus pandemic", *Economic Commentaries* No. 13, 2021, Sveriges Riksbank.

Figure 23. Deposits and contributions to deposits in MFIs

Annual percentage change and percentage points



Note. Deposits refer to on-demand deposits and deposits with certain conditions in MFIs. Households refer to households excluding non-profit institutions serving households. Financial companies refer to financial companies excluding MFIs.

Source: Statistics Sweden.

Rapidly growing lending to households and smoothly-functioning credit supply to companies

In the spring of 2020, the Riksbank initiated a series of measures to avoid a situation in which banks and investors on the asset markets would rapidly tighten their lending and thereby impair the credit supply in the Swedish economy. In combination with measures from governments and other central banks and authorities, this meant that the overall flow of credit in the economy could be maintained and a deep recession could be avoided.

For households, mortgages are responsible for just over 80 per cent of total loans. As housing prices have increased sharply during the pandemic and housing purchases are largely financed by mortgages, this has also led to higher household debt. In September, debt was approximately 7 per cent higher than the corresponding month last year (see Figure 24). However, overall growth for households was slightly lower, among other reasons because consumption loans grew at a slightly slower rate.¹⁰

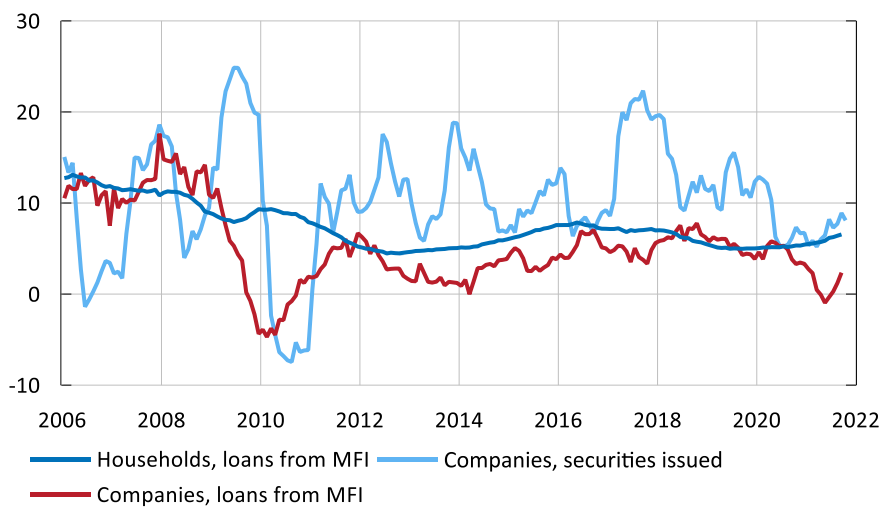
For the large majority of Swedish companies, bank loans are the dominant way of borrowing money, even if wholesale funding stands for an increasing share of the corporate sector's total borrowing in recent years. This is because many larger companies, not least in the property sector, issue certificates and bonds. At the same time as lending to companies from banks and other Monetary Financial Institutions (MFIs) in-

¹⁰ For a more detailed discussion of household debt, see *Financial Stability Report 2021:2*, Sveriges Riksbank.

creased by just over 2 per cent in September, companies' wholesale funding continued to rise at an increasing pace (see Figure 24). Growth in outstanding volumes of issued securities is now increasing by close to 10 per cent compared with the same period in the previous year. The relatively slow growth of lending from MFIs is probably due to weak demand for credit and to major companies having borrowed a lot last year and now not needing to borrow as much.¹¹ On the other hand, smaller companies have increased their loans in 2021, but these account for a much smaller share of total lending than the large companies.

Figure 24. Household and corporate borrowing

Annual percentage change



Note. Lending by monetary financial institutions to households and non-financial corporations adjusted for reclassifications and bought and sold loans. Securities issued by non-financial corporations have been adjusted for currency impact. Loans from MFIs constitute around two thirds of total lending to companies, while securities issues constitute around a third.

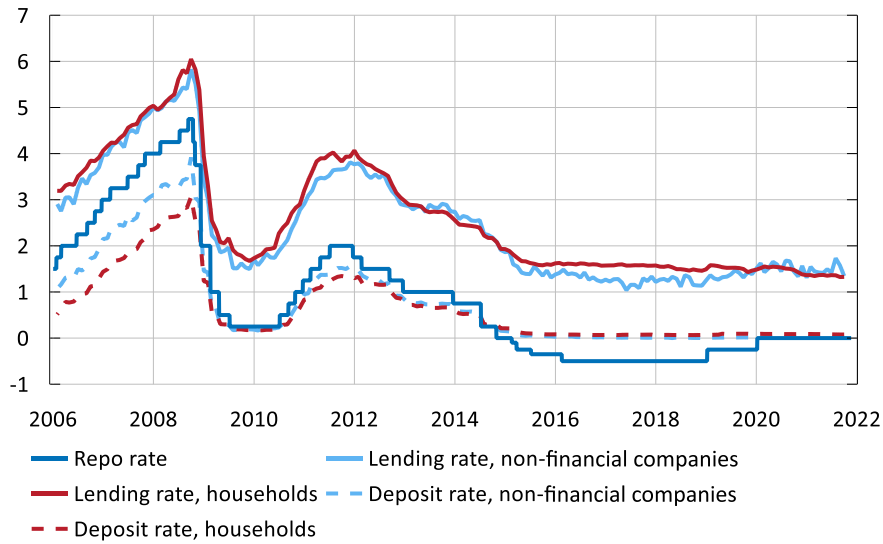
Source: Statistics Sweden.

Average interest rates for both new or renegotiated household mortgages and non-financial corporations' loans were just over 1.3 per cent in August. Lending rates to households and companies have been low and largely unchanged for some time, even before the outbreak of the pandemic (see Figure 25). Together with surveys from ALMI and the National Institute of Economic Research, this development supports the picture of companies still finding it easy to obtain funding.

¹¹ Companies in some sectors have also utilised temporary support measures to reduce their running costs, reducing the funding requirement. It is also conceivable that some companies may have chosen to wait before making investments, due to the uncertainty over economic developments.

Figure 25. Repo rate, and average deposit rate and lending rate to households and companies, new and renegotiated loans

Per cent



Note. Deposit and lending rates are volume-weighted averages of monetary financial institutions' deposits and lending at all maturities.

Sources: Statistics Sweden and the Riksbank.

3 High demand abroad and in Sweden

The recovery abroad is expected to continue, but at a slower pace. The growth prospects are still deemed favourable in most of the countries that are important for Swedish trade, but growth will be impeded in the near term by high energy prices and bottlenecks in production. Infections have increased again in Europe, but more and more people are vaccinated and in the main scenario, the effects of the pandemic on the economy are assumed to be marginal. In the euro area and the United States, elevated energy prices in particular have contributed to a rapid rise in the inflation rate, but the increase is deemed temporary and inflation abroad is expected to fall back during 2022.

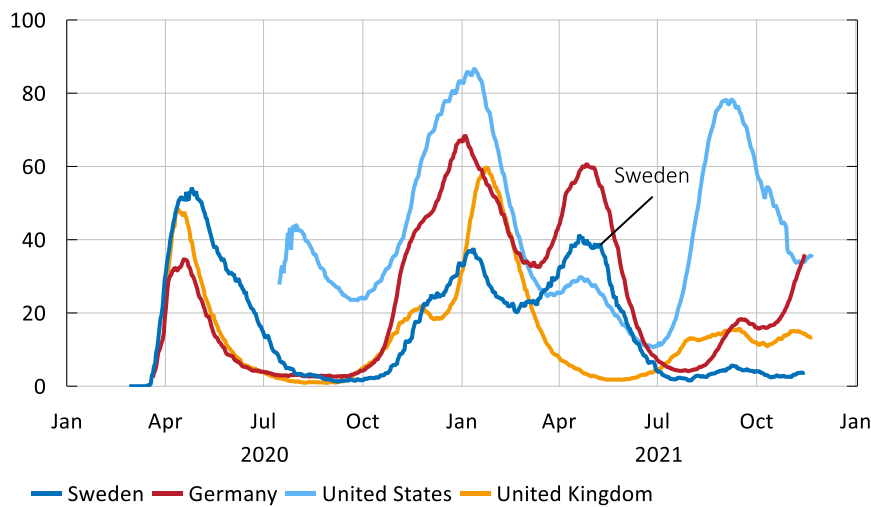
Demand in Sweden is strong but, as in other countries, growth is being subdued somewhat by the shortage of inputs and logistic problems. As domestic demand is high, activity in the economy is expected to develop strongly in the period ahead – employment will rise and the economy will strengthen. Rising energy prices in combination with bottlenecks in production and supply chains will help sustain inflation some way above the inflation target in the coming months. CPIF inflation amounted to 3.1 per cent in October and is expected to continue to be around 3 per cent for a few months before falling back next year. Inflation will rise again from the end of 2022 onwards. Demand will then have been high for some time, wages will rise more rapidly and inflation abroad will rise. Towards 2024, inflation is estimated to be more permanently close to the target of 2 per cent.

3.1 Good growth prospects abroad, temporarily higher inflation

In developed countries, the proportion of the population that is vaccinated is now relatively high while the vaccination process in many emerging economies is still moving slowly. Since September, the number of people in intensive care has fallen in several developed economies, although it has risen in some of our important European trading partners most recently (see Figure 26). It is still unclear how the pandemic will develop going forward. Infections are increasing in some of our neighbouring countries and there is a risk of new variants arising, against which the vaccines will not provide the same protection. The development of the pandemic, the restrictions introduced and any behavioural changes among households and companies will affect economic developments. In the main scenario, the effects of the pandemic, on both human health and the economy, are assumed to decrease gradually.

Figure 26. Number of COVID-19 patients in intensive care

Per million inhabitants



Note. The series show the number of patients in intensive care for COVID-19 up to end of week 46 (starting 15 November) 2021. Outcomes for recent weeks are uncertain due to time delays in reporting.

Source: Our World in Data.

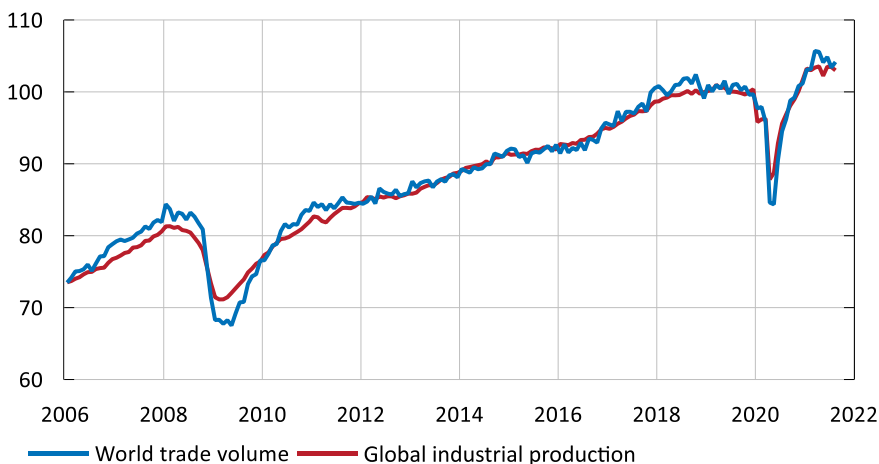
Supply disruptions and rising energy prices hampering developments abroad

Global industrial production grew rapidly during the second half of last year and at the beginning of 2021. Since March, however, the level of both world trade and global industrial production has gone sideways (see Figure 27). Production and trade in goods are being restricted by, for example, the shortage of semi-conductors and other inputs, as well as by disruptions in global supply chains. Several factors are contributing to this development. The distribution of containers became skewed during the pandemic and some ports needed to close periodically as a result of COVID-19 outbreaks. At the same time, the recovery after the most acute stage of the pandemic has meant that households have demanded more goods instead of services, which has led to more trade in certain types of goods. For example, semi-conductor exports from Asia are now noticeably higher than in 2019. The continued shortage of semi-conductors has caused major problems in, among other sectors, the automotive industry, which are clearly noticeable in countries like Germany.

As freight companies have not been able to adjust their supply to the rising demand fast enough, freight prices have continued to rise significantly since the spring. It is not just sea freight that is being affected – in Europe, for example, there is also a shortage of lorry drivers. The effect of the supply shocks on production and global trade is expected to decrease gradually next year when demand shifts back towards more services and freight companies adjust their supply.

Figure 27. World trade volume and global industrial production

Index, 2019 Q4 = 100



Note. World trade refers to trade in goods.

Source: CPB Netherlands Bureau for Economic Policy Analysis.

Energy prices have risen significantly in recent months. The oil price, which fell rapidly last spring and then recovered gradually, has risen sharply and is now around 80 dollars a barrel (see Figure 28). High demand, rising natural gas and coal prices and communication from the OPEC+ countries that they do not intend to increase production more than previously announced have contributed to the increase. Forward prices indicate that the oil price is expected to fall going forward and be just below 70 dollars a barrel at the end of 2024.

Figure 28. Crude oil price

USD per barrel



Sources: Intercontinental Exchange and the Riksbank.

The price of other types of energy have also increased rapidly during the autumn and in Europe, the price of both electricity and natural gas has risen rapidly (see Figure

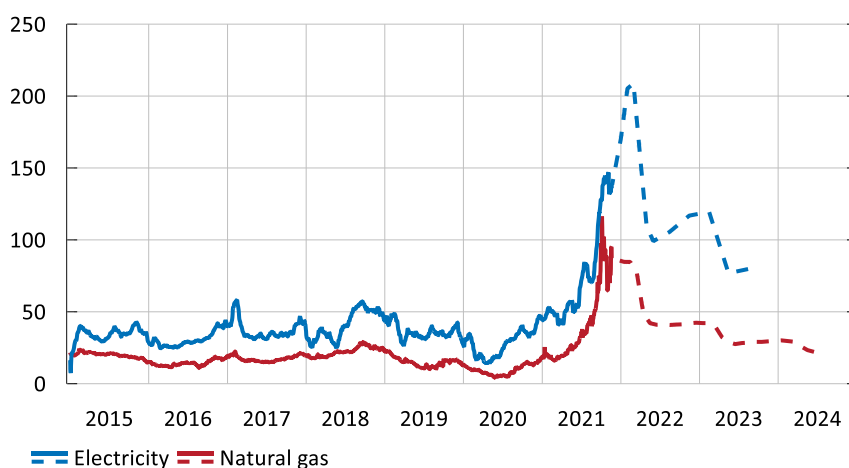
29). Factors such as increased global demand, unusually low storage levels for the season and lower exports than usual from Russia have contributed to the rise in European natural gas prices. At the end of October, the natural gas price fell back somewhat when Russia promised to export more natural gas to Europe. At the same time, Norwegian gas deliveries to the rest of Europe increased in October.

Higher European natural gas prices are in turn contributing to higher electricity prices. Natural gas makes up around a fifth of the EU's electricity production. Furthermore, less access to natural gas contributes to a higher demand for coal, which raises the price of coal as well as the price of emission allowances as coal is more carbon-intensive than natural gas. This contributes in turn to even higher electricity prices.

Although electricity prices are expected to fall significantly after the winter, developments over the last few months show that the European energy market is sensitive to shocks. Developments going forward are difficult to predict and both weather and political decisions, including future gas supply from Russia, will be of significance.

Figure 29. German energy prices

EUR/MWh



Note. For the electricity price, solid line represents a 30-day moving average for spot price. For natural gas prices, solid line represents forward prices for the current month. Broken lines represent forward pricing.

Sources: European Energy Exchange and Intercontinental Exchange.

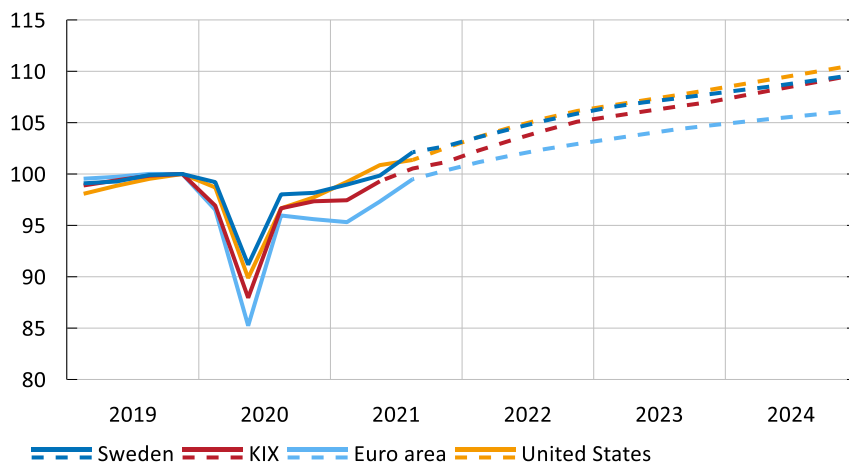
Continued good global growth prospects

As more people have been vaccinated and restrictions have been eased, the recovery has continued in the second quarter in those countries that are important for Sweden's international trade. GDP (KIX-weighted) rose by the historically high figure of 1.9 per cent. Demand is still high. In the second half of the year, however, growth is expected to slow as supply will not manage to rise as quickly as demand. As discussed above, these shocks are expected to wear off gradually next year. Overall, continued strong demand and an ever-stronger labour market, together with low interest rates, will contribute to continued good growth prospects abroad. Increased infections in

certain parts of Europe and recent new restrictions in some countries are expected to hamper growth only to a limited extent. After the fall in KIX-weighted GDP of just under 5 per cent last year, it is expected to grow by just over 5 per cent this year, just over 4 per cent next year and then by just over 2 per cent in 2023 and 2024 (see Figure 30).

Figure 30. GDP in Sweden and abroad

Index, 2019 Q4 = 100, seasonally adjusted data



Note. The KIX is an aggregate of 32 countries that are important for Sweden’s international trade. Solid line represents outcomes, broken line represents the Riksbank’s forecast.

Sources: Eurostat, national sources, Statistics Sweden, the U.S. Bureau of Economic Analysis and the Riksbank.

Rapidly rising energy prices combined with weak price growth in the second half of last year are contributing to rapidly rising inflation abroad (see Table 6 in the forecast tables). Although inflation is significantly higher in the United States than in the euro area, there are common elements. For example, energy prices have clearly contributed to inflation in both regions and the annual rate of price increases has risen significantly in those industries that were hardest hit by the pandemic, but that have now been able to re-open. The inflation upturn is judged temporary to a large extent. In line with forward pricing and historical patterns, energy prices are expected not to rise significantly in the period ahead and the unusually weak price growth last year is affecting the annual rate of price increases less and less. Aggregate inflation (KIX-weighted) abroad is expected to be about 2.6 per cent in 2021 and 2.7 per cent in 2022 and then slow to around 2 per cent.

Recovery continuing in the euro area

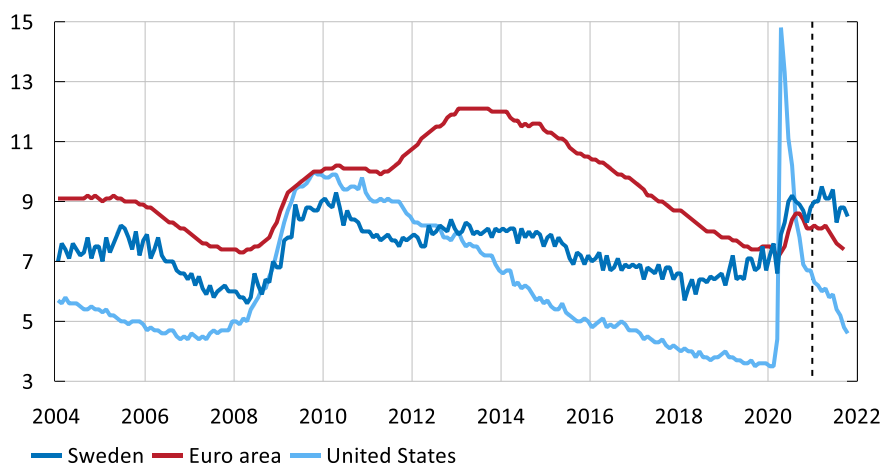
GDP in the euro area grew in the third quarter by 2.2 per cent compared with the second quarter and is now approaching its pre-pandemic level (see Figure 30). Up to the end of the third quarter, GDP has more or less recovered to its pre-pandemic level in Germany, France and Italy. At the same time, GDP in Spain, whose economy is more dependent on international tourism, is still significantly lower than before the pandemic. Industrial production in the euro area remains on approximately the same

level as at the beginning of the year, which is due to weak developments in Germany, among other factors.

Unemployment in the euro area has continued to decline. In September, it was 7.4 per cent (see Figure 31). Although unemployment has fallen during the year as a result of the number of persons employed rising more than the labour force, wages continue to grow at a modest pace. Neither are there any signs that significantly faster wage growth is to be expected. For example, German wage demands put forward by employee organisations so far have been low compared to before the pandemic.

Figure 31. Unemployment in Sweden, the euro area and the United States

Percentage of the labour force, seasonally adjusted data



Note. Refers to 15–74 years in the euro area and Sweden and 16 years and older in the United States. The vertical line marks the date when the labour market statistics were reorganised within the EU.

Sources: Eurostat, Statistics Sweden and the U.S. Bureau of Labor Statistics.

Demand is strong. Order inflow is high among companies, confidence is strong among households and companies, and the labour market continues to improve. The recovery in the economy is therefore expected to continue during the forecast period although in the short term it will be hampered by, for example, a lack of material linked to disruptions in global supply chains and the shortage of semi-conductors. Although real disposable household income is being somewhat subdued by the rapid rise in energy prices, households' high savings during the pandemic, together with a stronger labour market and low interest rates, are helping to improve the prerequisites for a continued increase in household consumption. After a fall of more than 6 per cent last year, GDP in the euro area is expected to rise by just over 5 per cent this year and 4 per cent next year. The recovery is supported by continued expansionary monetary and fiscal policy. Favourable financial conditions, deferred investments and the common European stimulus package, "Next Generation EU", will help to support investment growth in the coming years.

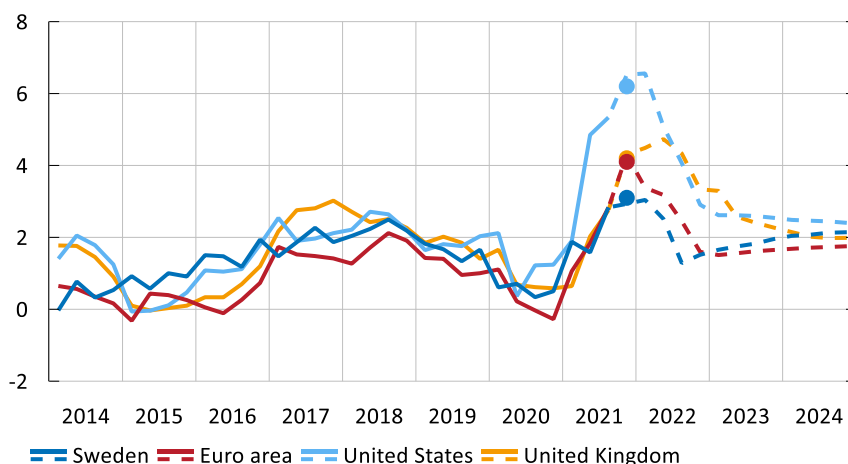
Temporary effects contributing to temporarily high inflation in the euro area

In October, HICP inflation in the euro area rose to 4.1 per cent. This can be compared with the figure for June, for example, which was 1.9 per cent. The upswing since June is partly due to rapid energy price rises and higher food prices. But also underlying inflation, measured as the HICP excluding energy, food, alcohol and tobacco, has risen to 2.0 per cent in October compared with 0.9 per cent in June. Strong general demand and relatively rapidly rising prices in those sectors that have reopened are deemed to have contributed to a relatively high price upturn in the second half of the year.

However, the fact that underlying inflation in the euro area has now reached its highest level since 2008 can nevertheless be explained to a large extent by factors that are deemed temporary. The second half of 2020 was characterised by very weak price growth linked to the lockdown of economies and to which Germany’s temporary VAT reduction also contributed. These low price increases, and in some cases even falling prices, are now reflected a year later during the second half of 2021 in higher annual rates of price increases. In the forecast, many of these base effects for the twelve-monthly figures will disappear in the first quarter of next year while energy prices will make an ever-smaller contribution (See Figure 32). Resource utilisation is expected to continue to increase going forward and all in all, underlying inflation is expected to rise marginally in 2021–2024 and amount to 1.7 per cent in 2023 and 1.8 per cent in 2024 on average. The fact that consumer energy prices are expected to grow significantly more slowly going forward will contribute to a fall in HICP inflation during the latter stages of the forecast period. HICP is expected to rise by 2.5 per cent this year, 2.6 per cent next year and 1.6 and 1.7 per cent respectively in 2023 and 2024 (see Figure 32).

Figure 32. Consumer prices in various countries and regions

Annual percentage change



Note. For Sweden the CPI is shown. Solid line represents quarterly outcomes, broken line represents the Riksbank’s quarterly forecast. Dots refer to monthly outcomes in October.

Sources: Eurostat, national sources, U.S. Bureau of Labor Statistics and the Riksbank.

UK inflation has risen rapidly

As a result of a relatively high number of infections and extensive restrictions, the UK economy has been hit harder by the pandemic than most other European countries. The country's departure from the EU has also had a negative effect on exports. GDP rose by 5.5 per cent in the second quarter and by 1.3 per cent in the third quarter, but despite this, the GDP level in the third quarter was just over two per cent lower than in the fourth quarter of 2019. GDP is expected to grow by just under 7 per cent this year, just over 5 per cent next year and 1–1.5 per cent the following two years.

UK inflation has risen rapidly and amounted to just over four per cent in October, measured as the CPI. The upturn is largely due to rapidly rising energy prices but also a normalisation of prices in sectors where they fell sharply last year due to the pandemic (for example, clothes, shoes and restaurant and hotel services). Increased demand has led to rising prices for cars and furniture, which has also contributed to higher inflation. Inflation is expected to rise to almost 5 per cent at the beginning of next year and then gradually fall to 2 per cent in 2023.

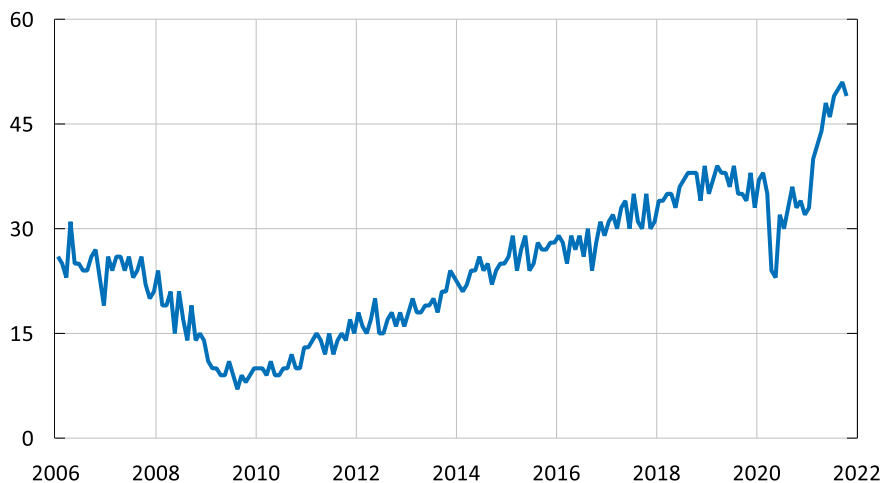
Signs that growth is slowing in the United States

In the United States, the spread of the delta variant led to an increase in the number of COVID-19 patients in intensive care late in the summer. In September, the number was almost as high as during the second wave of the pandemic around the turn of the year (see Figure 26). In the last few months, infections, as well as the number of serious cases of illness, have decreased significantly. But in combination with reduced fiscal policy support, such as terminated pandemic-related unemployment benefits to households, higher inflation and supply restrictions, the new wave of the pandemic late in the summer caused household consumption and thus GDP growth to slow significantly in the third quarter. Companies' stock investment was strong while other investment decreased somewhat. The retail trade index for October indicates that consumption in the fourth quarter began stronger than it was in the third quarter. Confidence among companies is still high, but a continued shortage of components and long delivery times in the manufacturing industry are expected to hold GDP growth back for some time to come.

Last year, the pandemic and the weak labour market contributed to lower labour force participation. Despite the economy having continued to recover this year, labour force participation has not risen much at all. The low labour force participation rate is probably due to continued apprehension about the coronavirus and more early retirements. At the same time, labour demand has continued to rise sharply in the United States and there are now clear signs of labour shortages despite the employment rate being significantly lower than prior to the pandemic. About half of small companies say that they are having difficulty filling their vacancies, which is a historically high level (See Figure 33). As the number of persons employed has risen at the same time as many have not returned to the labour force after the crisis, unemployment has continued to fall and in October was 4.6 per cent (see Figure 31). Although the number of persons employed is expected to continue to increase in the coming years, the development risks being slowed by low labour supply.

Figure 33. Share of small companies that say they cannot fill vacancies in the current period in the United States

Per cent, seasonally adjusted data



Source: National Federation of Independent Business.

The fiscal policy stimulus package approved by the US Congress in March is now helping to increase growth. The stimulus measures will also have positive effects on GDP over the next two years. Fiscal policy is increasingly being focused on investment and social insurance systems and less and less on stabilisation policy. For example, the recently reached, cross-party congressional agreement is expected to lead to significantly higher infrastructure investment for many years ahead, mainly funded by higher taxes. Overall, the public sector's budget deficit is expected to decrease in the years ahead, albeit from high levels. US GDP growth is expected to amount to just over 5 per cent this year and then shift down to just under 4 per cent in 2022 and just over 2 per cent in 2023 (see Figure 30). The forecast is uncertain, however, due in part to ongoing negotiations about new reforms.¹²

CPI inflation is currently high and in October was 6.2 per cent, the highest level in 30 years (see Figure 32). Underlying inflation, measured as the CPI excluding energy and food, is also high and in the same month was 4.6 per cent. In September, inflation measured as the personal consumption expenditures (PCE) index was 4.4 per cent and inflation measured as the PCE excluding energy and food was 3.6 per cent.

The high inflation in recent months is largely due to increased demand in service industries such as hotels and air travel and in goods such as used cars. These categories were hit hard by declining demand last year, but this has now increased again as various restrictions have been phased out. The price of used cars has also risen due to the shortage of semi-conductors, which has led to reduced car manufacture.

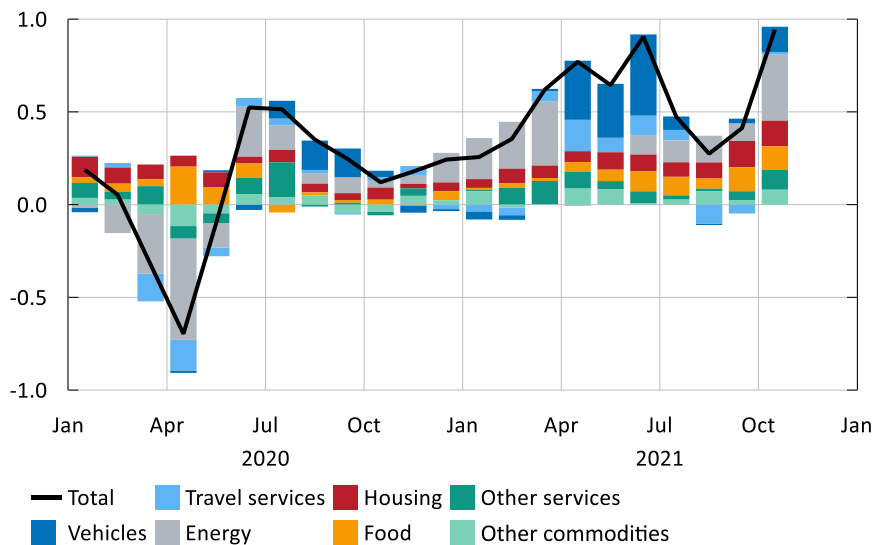
¹² Using President Biden's American Jobs and Families Plan as a starting point, Democrats in Congress are now working on a proposal for further significant increases in federal expenditure that are expected to take place over a ten-year period. It is still unclear exactly how large the proposed increases in expenditure are and how they will be funded.

After the summer, there were signs that inflation had begun to slow. In August and September, car prices overall were more or less unchanged compared with the level in July, while travel prices fell somewhat (See Figure 34). In the outcome for October, however, car prices rose again, partly due to the reduced number of infections and in the wake of Hurricane Ida, which is estimated to have destroyed or damaged more than 200,000 cars. Higher energy prices also contributed significantly to the high inflation.

Although the unusually rapid price increases of recent months are largely deemed transitory, there have also been some upturns in living costs and in prices of goods other than used cars since the spring. For example, medical care prices also rose significantly in October. In addition, surveys show that many companies, due to difficulties in filling vacancies, are willing to raise wages over the next few months, which to some extent is expected to spill over into higher consumer prices. Wage growth has increased in recent months and according to several measures was above 4 per cent in October. Falling energy prices going forward will contribute to gradually falling inflation during the forecast period. CPI inflation in the United States is expected to be 4.7 per cent this year and 4.6 per cent next year, and then fall back to almost 2.5 per cent at the end of the forecast period (see Figure 32).

Figure 34. Consumer prices in the USA

Monthly change, per cent



Note. Solid black line shows the percentage, monthly rate of increase in the CPI. The columns show the contribution to the rate of price increase from different categories of product in the CPI. Prices especially impacted by the coronavirus pandemic are marked in blue.

Sources: The U.S. Bureau of Labor Statistics and the Riksbank.

Growth in China has slowed

The Chinese economy continued to recover rapidly in the second quarter, but between the second and third quarter, GDP only rose by 0.2 per cent, which corresponds to 4.9 per cent growth compared with the corresponding quarter last year.

There are several reasons for the slowdown including restrictions linked to new outbreaks of infection, floods and an energy shortage in the manufacturing industry. The liquidity crisis in the highly indebted property company Evergrande has fuelled concerns within the property sector, in which a continued downturn is expected to burden the economy going forward. Although the company's future is uncertain, and a number of other property companies have exhibited financial problems, the risk of spillover effects to the financial system are considered relatively low. The authorities have also stated that they are prepared to act to combat any spillover effects. GDP growth is expected to grow by just under 8 per cent this year after having grown by just over 2 per cent last year. Going forward, growth is expected to slow and during the forecast period to amount to around 5.5 per cent per year (see Table 6 in the forecast tables).

3.2 Strong development in the Swedish economy, inflation above target in the short term

Demand is high but bottlenecks are restricting production capacity

Over the past year, demand in the Swedish economy has recovered. For a long time, the pandemic caused people to stop consuming services that involve close contact with others. However, as more and more people have been vaccinated, infections have fallen and restrictions eased, households' consumption of services has largely returned to pre-pandemic levels. In addition, demand has risen so quickly in, for example, the hotel and restaurant sector, that prices have increased and a shortage of labour has arisen. Some consumption is still relatively low, for example of foreign travel and taxi journeys, but this is expected to have minor effects on the economy as a whole. Recently, the number of infections has risen in different parts of Europe, restrictions have been reintroduced, and developments may again be affected by the pandemic. In Sweden, the Government has announced that it intends to introduce a vaccine pass requirement at indoor events attended by more than 100 people from 1 December. However, the overall economic effect of this is expected to be minor and the forecast is based on no new restrictions being introduced that significantly dampen economic developments.

Demand has risen at a rapid rate. Companies are receiving many new orders/assignments and fewer and fewer companies see demand as an obstacle to production. From a situation in which the shortage of demand was slowing the economy, there is now a supply shortage, in which companies in various parts of the economy cannot produce enough to meet the high demand. Manufacturing companies are struggling with a shortage of inputs and with delivery problems. Some service companies are simultaneously having to tackle an increased labour shortage due in part to a sudden, very rapid rise in demand as COVID restrictions have been relaxed. This is hampering growth and causing prices to rise.

It is uncertain how long these limitations will last, but the assessment is that the situation will gradually return to normal next year. In the manufacturing sector, the demand for goods is expected to decline as household demand more services instead,

and the supply of goods will then catch up. The assertion that manufacturing companies' bottleneck problems are deemed temporary is supported by their plans to recruit more new workers than usual, which indicates that they assume output will recover relatively quickly. In some service industries, such as the restaurant industry, the problems associated with hiring staff are expected to decrease as demand rises at a more normal pace. Overall, activity in the economy is expected to be high going forward; employment expected to rise and the economy expected to strengthen.

Fiscal policy continuing to stimulate demand

Fiscal policy will continue to stimulate demand in the coming years, but to a lesser extent than in 2020 and 2021. Last year, the Government implemented extensive pandemic-related fiscal policy measures and the government fiscal balance was significantly weakened. Many of the measures were temporary and came to an end in September this year. The cost of the year's measures is expected to amount to about SEK 180 billion, which will lead to a deficit in the fiscal balance this year as well. The government budget for 2022 includes unfunded measures of SEK 74 billion and in the forecast, it is assumed that the Swedish parliament, the Riksdag, will adopt a budget that includes measures of the same magnitude.¹³ Together with the measures presented in the budget bill for 2021, this entails continued fiscal policy stimulus measures, although the cost of the measures is expected to be less next year than they have been this year and last year. In combination with the strengthening of the economy, the reduced costs mean that the fiscal balance will increase and a surplus achieved in 2023. As the need to stimulate demand decreases, fiscal policy is expected to be adjusted to the economic situation and to the objectives specified in the fiscal policy framework.

Strong growth in the third quarter

GDP increased by 1.8 per cent in the third quarter, seasonally adjusted and compared with the second quarter, according to the preliminary GDP compilation by the National Accounts (GDP indicator).¹⁴ So far, only total GDP has been published for the third quarter and not the various components of GDP. Monthly statistics for consumption and foreign trade in goods, however, give an indication of how these developed during the quarter. Consumption grew strongly when the spread of infection decreased and many restrictions were lifted. At the same time, growth is deemed to have been subdued by the decrease in exports for the second consecutive quarter.

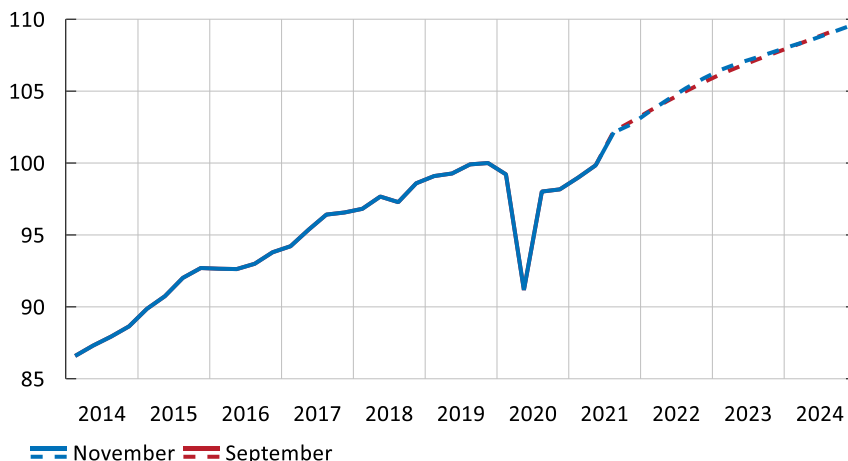
¹³ Unfunded reforms refer to the amount that has been announced and that is not funded by active decisions on expenditure cuts or tax increases. However, the government fiscal balance increases via a so-called automatic budget strengthening measure. This means that the balance is strengthened in the event of unchanged rules since tax revenue develops approximately in line with GDP while expenditure tends to decrease. The unfunded reforms of SEK 74 billion are thus partly financed via the automatic budget strengthening measure.

¹⁴ Previous quarters are also revised when the GDP indicator for the third quarter is published. The new series indicates that the GDP level was higher in the second quarter of 2021 than previously published. Figure 35 shows the Riksbank's estimate of the new GDP level for the third quarter based on the GDP indicator. However, the previous quarter corresponds to Statistics Sweden's publication of the National Accounts on 27 August 2021, which means that the quarterly rate will be higher than the one published for the GDP indicator.

Now in November, the highest growth figures are behind us and in 2022, growth will slow gradually as spare capacity decreases (see Figure 35 and Figure 44).

Figure 35. GDP in Sweden

Index, 2019 Q4 = 100, seasonally adjusted data



Note. Solid line represents outcomes, broken line represents the Riksbank's forecast.

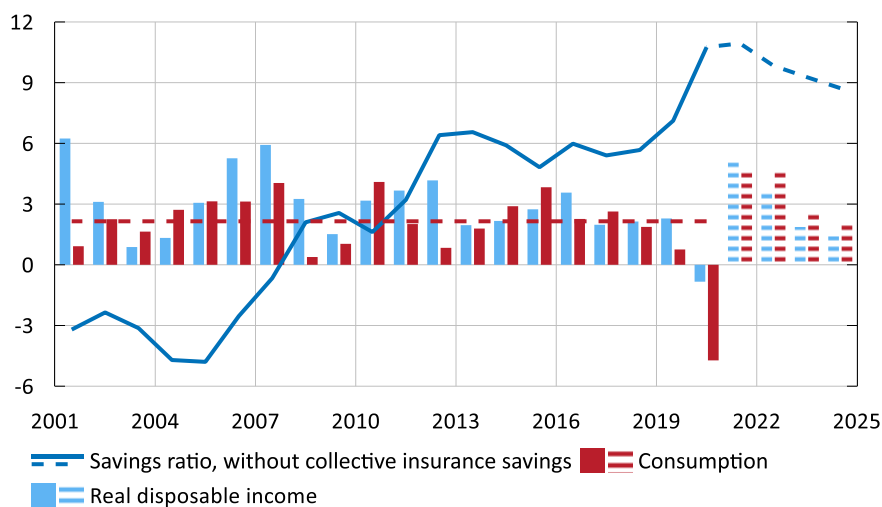
Sources: Statistics Sweden and the Riksbank.

Households' consumption of services on the increase

Consumption among Swedish households has risen rapidly in recent months and is largely back at its pre-pandemic level. In the quarters ahead, the consumption of services will continue to rise as households start to consume things again that they could not or did not wish to during the pandemic, for example going to restaurants, the cinema, large events, night clubs, travel, etc. According to the Economic Tendency Survey, the household confidence indicator is higher than a historical average, although it has fallen recently, indicating that households are optimistic about the future. In addition, their income is rising at a high rate. Consumption growth is therefore expected to be strong in the quarters ahead. According to the Riksbank's Business Survey in September, however, companies in the trade sector state that they have major supply shocks, which are causing some shortages of goods. Growth in the consumption of goods, that has been relatively high during the pandemic, is expected to slow down gradually now when it is once again possible to consume services that involve close contact with others. Continued delivery problems for a time is another reason for temporarily lower growth in goods consumption.

During the pandemic, household consumption has risen more slowly than disposable income, which means that households have saved more (see Figure 36). In 2020, households saved about 11 per cent of their income, which is a high figure in a historical perspective. Some of this increase is probably due to households not having been able to consume certain services and not fully replacing this consumption with other products. As households once again start to consume services at the same extent as they did before the pandemic, saving is expected to decrease somewhat.

Figure 36. Households' real disposable incomes, consumption and saving ratio
Annual percentage change and percentage of disposable income



Note. Disposable income has been deflated using the household consumption deflator. The broken line represents average consumption growth in 1994–2020. Collective insurance savings consist of savings that households do not control themselves, for example premium pensions and group insurance policies.

Sources: Statistics Sweden and the Riksbank.

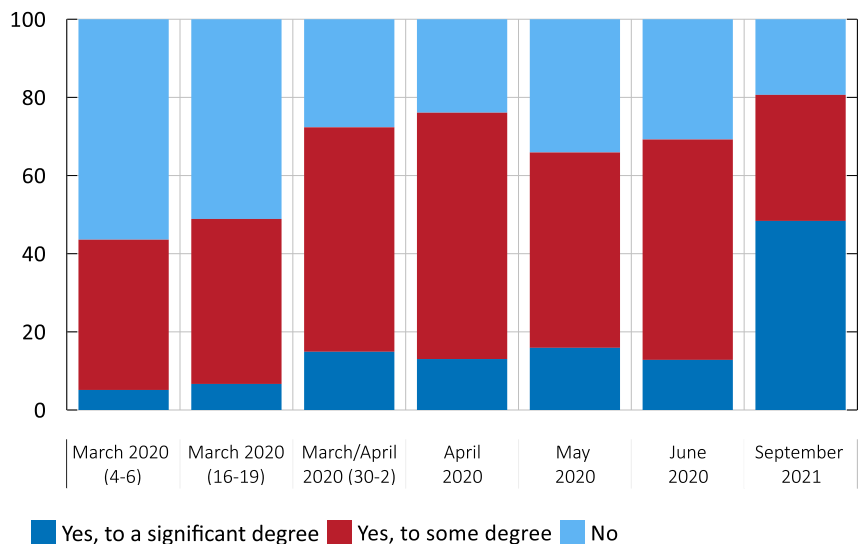
Exports and industrial production hampered by bottlenecks

Goods exports have decreased over the last six months, after having developed strongly at the end of 2020 and the beginning of 2021. According to the Economic Tendency Survey, optimism in the manufacturing industry is high, but there are some problems. For example, companies in the automotive industry say that their production is low despite well-filled order books, and almost 50 per cent of all industrial companies state that a shortage of capacity or material is the main obstacle to their production. Similar concerns are raised in the Riksbank’s latest Business Survey, where 80 per cent of respondents have experienced disruptions in production or had problems delivering their products (see Figure 37).¹⁵ A majority of the companies surveyed expect the bottlenecks to affect their operations for another six months or more.

¹⁵ See “As soon as you find one component, you realise you’re missing another”, *The Riksbank’s Business Survey*, September 2021, Sveriges Riksbank. The Business Survey does not present the responses from manufacturing companies separately; the responses presented in Figure 37 also cover companies in the trade sector and construction.

Figure 37. Companies experiencing disruptions in production or deliveries in Sweden over the past three months

Percentage of companies



Note. The figure shows results from the manufacturing sector, construction sector and trade sector. The figure heading reflects the question asked to companies in the manufacturing sector. To trade companies: Have you experienced disruptions to deliveries to Sweden in the last three months? To construction companies: In the last three months, have you noticed disruptions to output, construction projects and/or problems in deliveries of construction material?

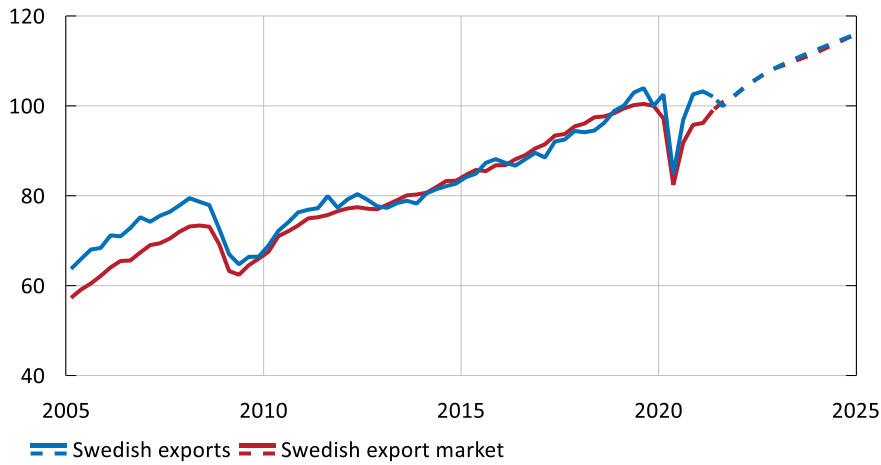
Source: The Riksbank.

As demand is higher than supply in many areas, both with regard to inputs and logistics, companies are experiencing higher cost pressures, which in turn have led to rising sales prices for Swedish exports. Export prices in the producer channel have risen and record pace according to the export price index. The prices of inputs in particular have been increased. In August and September, export prices rose by 18 per cent compared with the same month last year.

At the same time, manufacturing companies are optimistic about the future and exports and industrial production benefit when global activity rises (see Figure 38). These sectors are therefore expected to develop at a good pace going forward, even though growth could have been even higher without bottlenecks.

Figure 38. Exports and the Swedish export market

Index, 2019 Q4 = 100, seasonally adjusted data



Note. The Swedish export market aims to measure import demand in the countries to which Sweden exports. This is calculated by aggregating imports in the countries included in KIX and covers around 85 per cent of the total Swedish export market. Solid line represents outcomes, broken line represents the Riksbank's forecast.

Sources: National sources, Statistics Sweden and the Riksbank.

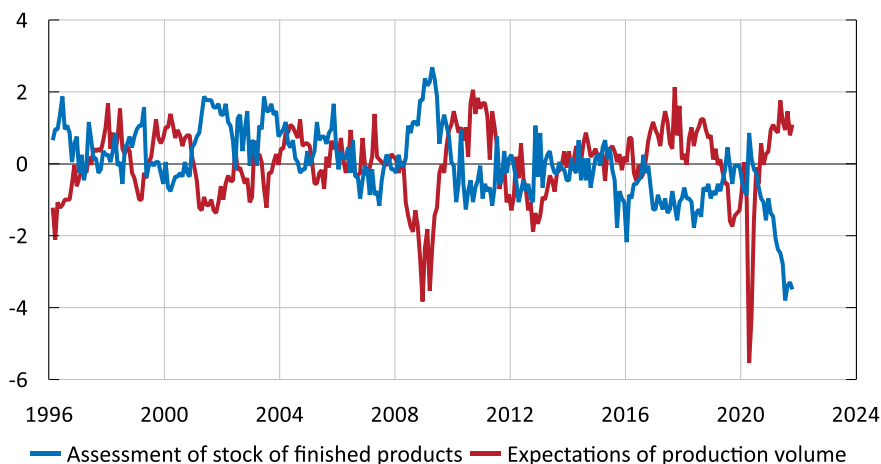
Rising investment and too low stock levels

The sharp rise in housing prices has led to an increase in housing construction this year. Although the price upturn has softened in recent months, the continued high price level suggests that housing construction will continue to be profitable and buoyant. As industrial activity has strengthened, the willingness to invest among companies in the rest of the business sector (excluding housing) has risen and business investment excluding housing will continue to grow as a share of GDP during the entire forecast period.

In the trade sector and the manufacturing industry, companies currently feel that their stock levels are too low. Manufacturing companies normally say their stock levels are too low when production increases rapidly, but even in relation to output expectations, companies are unusually dissatisfied with the size of their stocks (see Figure 39). The shortage of inputs and delivery problems have probably contributed to the problems. As the bottlenecks are resolved, companies' stocks are therefore expected to rise somewhat next year.

Figure 39. Stock estimates and output expectations in the manufacturing industry

Normalised data, mean = 0, standard deviation = 1



Note. The stock estimate shows whether manufacturing companies consider their stocks of finished goods to be currently too large or too small.

Source: National Institute of Economic Research.

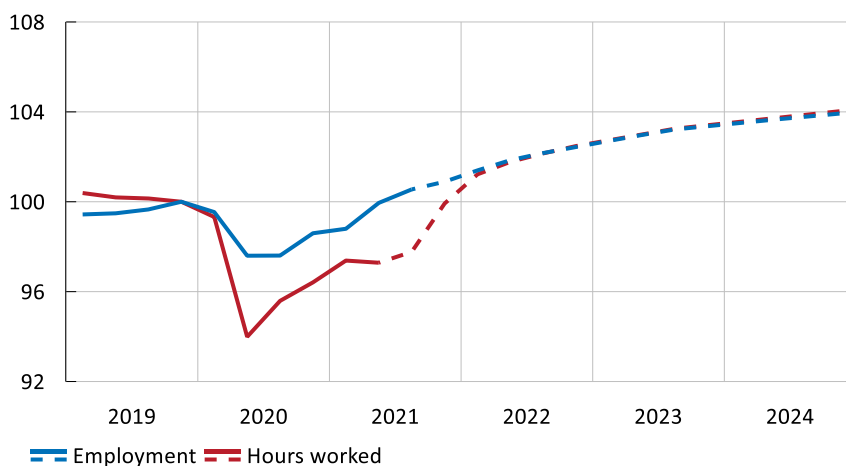
Employment continuing to increase rapidly

Employment increased rapidly in the third quarter and has more than recovered after last year's fall (see Figure 40). However, there are still differences between different industries and sectors as regards how far the recovery has come. Among property and ICT companies, for example, employment is on significantly higher levels than before the crisis, while employment in sectors such as hotel and restaurant, transport and culture, entertainment and leisure is still lower. That employment has not yet recovered in the hotel and restaurant sector, for example, is reflected in the fact that employment figures among young people aged 15–24 are still lower than before the pandemic.

Despite the number of persons employed having recovered after last year's fall, the number of hours worked has not done so (see Figure 40). During the pandemic, companies have been able to put their workers into short-time work schemes, with extra government support. At the beginning of the crisis, this meant that companies could largely retain their personnel but at the same time quickly reduce the number of hours worked when demand fell. This sustained productivity but at the same time resulted in weak growth in the number of hours each employee worked. The strengthened support to short-time work schemes was phased out completely at the end of September and, given the high demand for labour, the number of hours worked is also expected to recover quickly.

Figure 40. Employment and hours worked

Index, 2019 Q4 = 100



Note. Solid line represents outcomes, broken line represents the Riksbank's forecast. Employment is adjusted for the time series break in January 2021. Statistics Sweden has made an adjustment for the estimated effect of the change in the definition of employment. They have used RAMS, which was previously used as help information instead of AGI, and adjusted for changes in the target population. However, these adjustments are not all-inclusive, for instance no adjustments have been able to be made for changes in the unemployment issue.

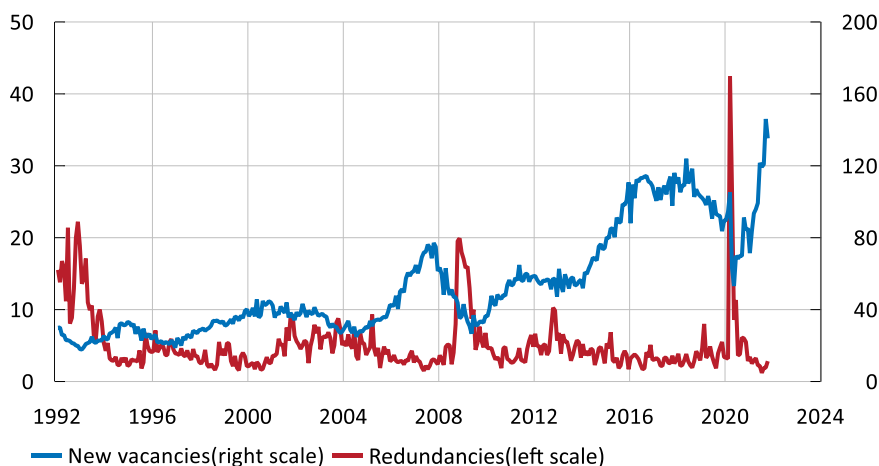
Sources: Statistics Sweden and the Riksbank.

Indicators also point to a high demand for labour. Recruitment plans in the business sector are, according to the Economic Tendency Survey, on a very high level and the number of newly registered job openings has, according to the Swedish Public Employment Service, risen to a record-high level while the number of redundancy notices is very low (see Figure 41). Recently, it has become more difficult for companies to find workers, which is illustrated by the rise in the share of companies reporting a labour shortage, according to the Economic Tendency Survey.

The shortage of certain skilled occupational groups was already evident before the pandemic and is a more persistent problem that is not expected to disappear in the short term. However, when demand rose very suddenly during the summer in some of the industries hardest hit during the pandemic, difficulties in recruiting unskilled workers also arose. According to the Riksbank's Business Survey in September, companies in the tourism industry had relatively low expectations of rehiring previous workers, as many have retrained or switched industries. However, the assessment is that there are workers who can take these jobs, but they will need to be trained. When labour demand rises at a more normal pace and more new recruits gain experience, this shortage is therefore expected to disappear gradually. Overall, the number of persons employed is expected to increase relatively quickly in the period ahead. From the middle of next year, employment is expected to grow at a more normal pace from a historical perspective. Growth is still higher than what the Riksbank considers sustainable in the long term.

Figure 41. Newly-registered job openings and redundancies

Thousands



Note. Newly registered job openings represents seasonally adjusted data. Seasonally adjusted data for newly registered job openings.

Source: Swedish Public Employment Service.

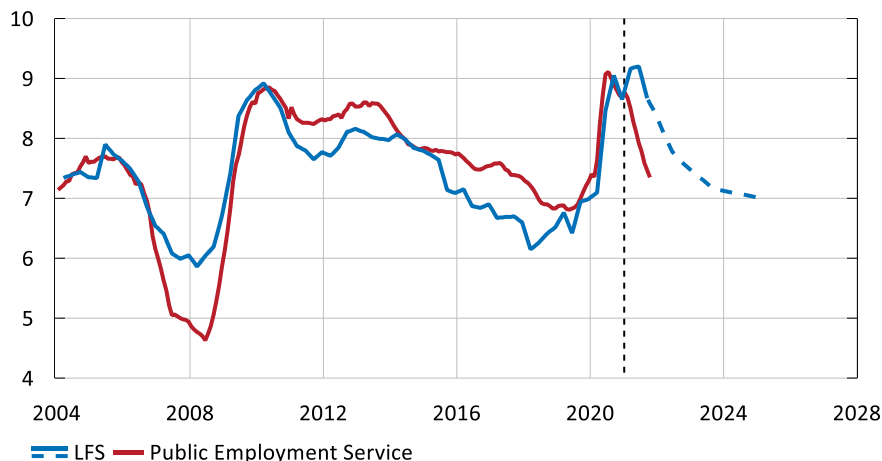
Unemployment set to fall going forward, but developments in 2021 differ according to statistical sources

Having peaked at 9.2 per cent in the second quarter, unemployment according to LFS fell to 8.7 per cent in the third quarter. The decline continued in October when unemployment amounted to 8.5 per cent. According to the Swedish Public Employment Service's statistics, unemployment has fallen back more rapidly and in October was 7.4 per cent (see Figure 42). Unemployment according to the Public Employment Service has therefore fallen back to its pre-crisis level, while unemployment according to LFS continues to be relatively far from this level. However, the employment level according to LFS has also recovered well, but as the labour force according to LFS has simultaneously risen to a surprising degree, unemployment is higher.¹⁶ As the economic recovery continues, employment is expected to rise faster than the labour force and unemployment will fall back towards 7 per cent at the end of the forecast period (see Figure 42).

¹⁶ The upturn in the labour force is partly due to the reorganisation of statistics by LFS. As from January 2021, LFS asks "have you looked for or tried to find a job in the last 4 weeks?". Previously, the question was "have you looked for work in the last 4 weeks?" The change makes the concept a broader one. The order of the questions in the survey has also been changed. The Riksbank assesses that this has increased the potential work force and raised the long-term sustainable level of unemployment as measured by LFS. However, it is difficult to assess the size of the effect. See also the discussion in the article "The LFS reorganisation and the Riksbank's analysis of the labour market" in the *Monetary Policy Report*, February 2021, Sveriges Riksbank.

Figure 42. Unemployment according to LFS and the Swedish Public Employment Service

Percentage of labour force, 15–74 years and 16–64 years respectively, seasonally adjusted data



Note. Unemployed persons according to the Swedish Public Employment Service include openly unemployed persons and participants in labour market programmes. Solid line represents outcomes, broken line represents the Riksbank's forecast. The vertical line marks the date when the labour market statistics were reorganised within the (LFS).

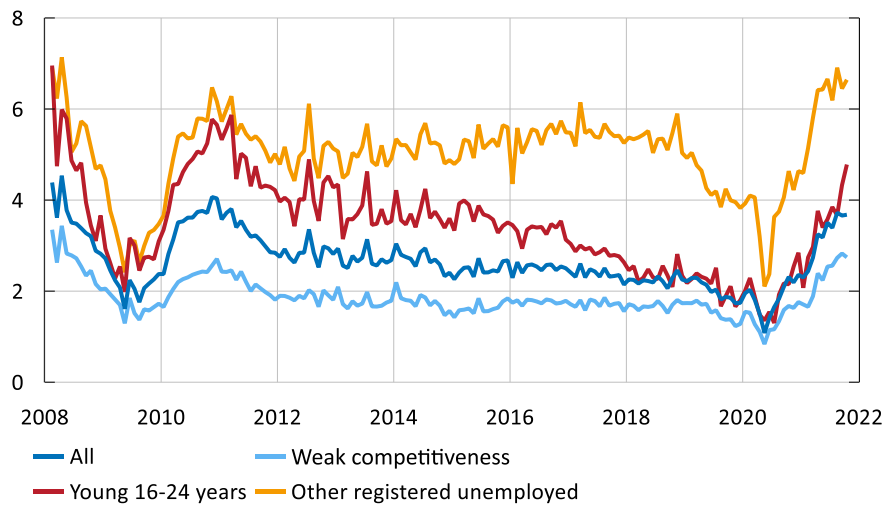
Sources: Swedish Public Employment Service, Statistics Sweden and the Riksbank.

Long-term unemployment, but more are now finding work

The pandemic has led to a rapid increase in the number of persons unemployed for over twelve months and they now constitute almost half of all those registered as unemployed. Long-term unemployment has increased relatively broadly among various groups during the crisis. This indicates that the pandemic could lead to major long-term negative effects in the labour market. At the same time, however, data shows that the job-finding rates for those who have been unemployed between one and two years, that is, the share of the long-term unemployed who have found a job each month, have increased (see Figure 43). This is a positive sign and supports the Riksbank's view that the long-term negative effects on the labour market from the pandemic will nevertheless be relatively limited. According to the Swedish Public Employment Service, the decline in unemployment has mainly occurred among those who have been unemployed for a shorter time, although the number of persons who have been unemployed between one and two years has also decreased somewhat in recent months. However, those who have been unemployed for a very long time, that is for more than two years, still have difficulty finding work and are increasing somewhat in number. In October, they totalled about 98,000, or 26 per cent of the registered unemployed.

Figure 43. Job-finding rate for those who have been unemployed 12–24 months

Per cent of registered unemployed the previous month



Note. Refers to long-term unemployed who have found unsubsidised work. Job-seekers with weak competitive capacity are made up of those that have a disability restricting their ability to work, are older than 55, have no secondary school education or were born outside Europe. Other registered unemployed are made up of the difference between the total number and those with weak competitive capacity and thus also include young people.

Sources: Swedish Public Employment Service and the Riksbank.

Resource utilisation is approximately normal

The amount of spare capacity in the economy is affecting the development of wages and prices with a certain time lag. However, resource utilisation cannot be measured exactly and the Riksbank therefore makes an assessment based on a number of different indicators.

An increasing number of companies in the business sector say that they have a labour shortage according to the Economic Tendency Survey. The shortage of labour has increased relatively broadly, and in both service industries and the manufacturing industry, it is significantly higher than the historical average. The fact that it has become more difficult to find personnel is also illustrated by the increase in the average recruitment time in the business sector. At the same time, capacity utilisation in the manufacturing industry is higher than normal although it fell somewhat in the third quarter, probably as a result of the shortage of inputs hampering production (see Figure 44).¹⁷

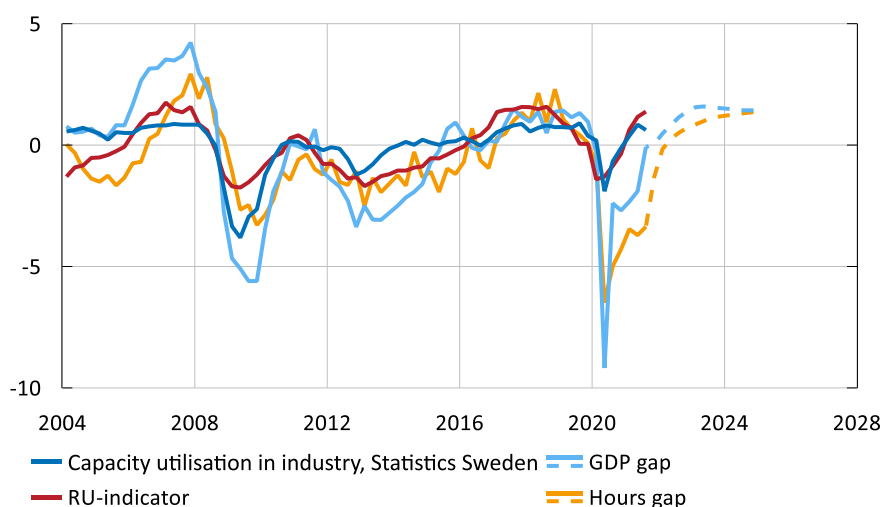
The Riksbank's resource utilisation indicator is a composite of several different indicators that are considered able to provide a picture of resource utilisation in the economy. According to this indicator, resource utilisation is higher than normal. The Riksbank's overall assessment is that resource utilisation has risen rapidly during the

¹⁷ Capacity utilisation within the manufacturing industry refers to the proportion of the existing machine fleet and planned working hours are used. It is expressed in per cent and can exceed 100 per cent if the workforce needs to work overtime. A shortage of inputs is not therefore counted as high capacity utilisation.

year and is now approximately normal, which is illustrated by the fact that GDP is in line with its expected trend and the GDP gap is close to zero. Supported by the expansionary economic policy, resource utilisation is expected to continue to rise and be higher than normal in the first half of 2022. The economic situation is thereafter expected to remain stronger than normal in the coming years, which is illustrated in the Riksbank’s forecasts for the GDP gap and the hours worked gap (see Figure 44).

Figure 44. Measures of resource utilisation

Per cent and standard deviation respectively



Note. The gaps refer to the deviation in GDP and number of hours worked respectively from the Riksbank’s assessed trends. The RU indicator is a statistical measure of resource utilisation. The RU indicator and capacity utilisation in the manufacturing industry are normalised so that the mean value is 0 and the standard deviation is 1, since 1996. Solid line represents outcomes, broken line represents the Riksbank’s forecast.

Sources: Statistics Sweden and the Riksbank.

Wage growth on the up

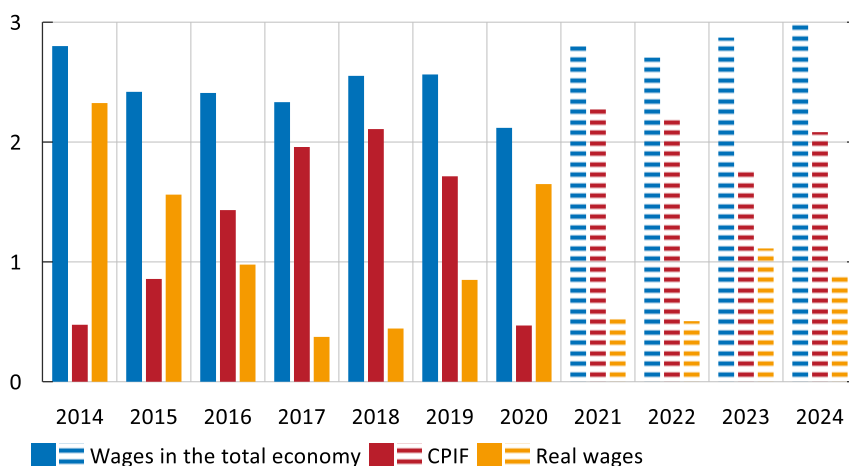
Wage growth has risen up to August this year according to the Mediation Office short-term wage statistics and is expected to be 2.8 per cent in 2021 on average. This is an increase compared with last year when wages rose by an average of 2.1 per cent and also somewhat higher than in 2019, when they rose by 2.6 per cent. The increase compared with last year is due to higher agreed wages. The wage agreements, which were negotiated at the end of 2020, resulted in centrally agreed wages increasing by an average of about 2 per cent annually until the end of the first quarter of 2023. However, the distribution differs between the years and wage growth in the agreements is somewhat higher this year than it will be in 2022. The social partners also agreed on increased allocations to pensions corresponding to an increase in labour costs of a further couple of tenths of a percentage point a year. Total wage growth is not just determined by centrally agreed wages but also by local pay reviews. The size of these is affected by the supply of various skills and the level of demand on the la-

bour market. According to the Riksbank’s Business Survey in September, labour demand has risen substantially as have job-seekers’ wage demands. More companies than normal therefore expect rising rates of wage drift in the period ahead.

When the agreements for 2023 and onwards are to be negotiated, the economic situation is expected to be better, unemployment lower and inflation higher than when the current agreements were signed. As economic activity abroad is also improving, wages abroad are expected to increase at a faster pace. This is expected to contribute to faster wage growth in the years ahead. After having amounted to almost 2 per cent in 2020, it is expected to amount to around 3 per cent in the coming years, according to the National Mediation Office’s short-term wage statistics (see Figure 45). The forecasts mean that real wages, that is wage increases minus inflation, will nevertheless rise moderately and more slowly than the average over the last 20 years of about 1.5 per cent.

Figure 45. Wages, the CPIF and real wages

Annual percentage change



Note. Real wages are calculated as the difference between wage growth and the rate of increase in the CPIF, which is to say the blue bar minus the red bar. Unbroken bars refer to outcomes, broken bars to the Riksbank’s forecast. The outcome for wages in 2020 is preliminary.

Sources: National Mediation Office, Statistics Sweden and the Riksbank.

Krona expected to remain at today’s level in the coming years

The Swedish krona appreciated in October but has since weakened. Since the summer, variations in the krona exchange rate correspond well with movements in equity prices. The real exchange rate is assessed to be somewhat weaker than the level that can be expected based on, for example, Swedish productivity in relation to the rest of the world. This year the krona has been comparatively stable. In trade-weighted terms, the krona is expected to remain at more or less its current level for the coming three years (see Figure 46).

Figure 46. Nominal exchange rate, KIX

Index, 18 November 1992 = 100



Note. The KIX (krona index) is a weighted average of the currencies in 32 countries that are important for Sweden's international trade. A higher value indicates a weaker exchange rate. Outcomes are daily rates and forecasts refer to quarterly averages. Solid line represents outcomes, broken line represents the Riksbank's forecast.

Source: The Riksbank.

Higher energy prices contributing to above-target CPIF inflation over the next six months

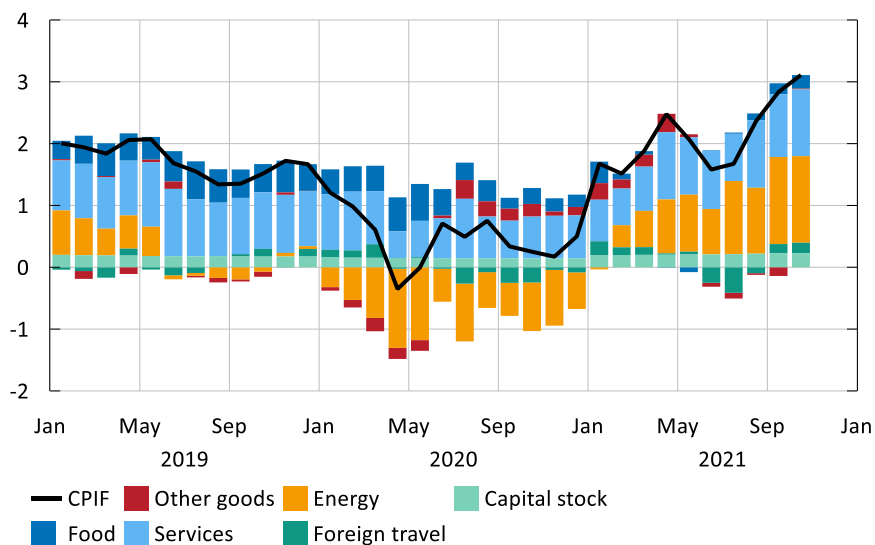
Inflation was low in 2020 and averaged 0.5 per cent, measured in terms of the CPIF. CPIF Inflation has risen in 2021 and in October was 3.1 per cent. Rapidly rising demand, combined with a supply backlog, has contributed to more rapidly increasing prices both in Sweden and abroad. Prices have risen in several parts of the economy, but the single most important explanation for the increase in CPIF inflation is the rising energy prices. Figure 47 shows the contribution of the various sub-groups to the rate of increase in the CPIF. The gradually higher positive contribution from energy prices is very clear this year and was 1.4 percentage points in October. Adjusted for energy prices, inflation has also risen, but not as much; in October, CPIF inflation excluding energy was 1.8 per cent.

CPIF inflation is expected to remain around 3 per cent in the coming months before falling back substantially next year. It is primarily energy prices that are contributing to this development. The fact that energy prices are expected to remain at a high level, but not continue to rise, means that they will help to sustain CPIF inflation from the middle of next year. At that time, the year's energy price increases will no longer affect the annual percentage change in the CPIF and inflation will fall back.¹⁸

¹⁸ For a more detailed description of how the inflation rate is affected by price level, see the fact box "Link between price level and inflation rate" in Chapter 3, *Monetary Policy Report*, September 2021, Sveriges Riksbank.

Figure 47. Contributions to CPIF inflation

Percentage points and annual percentage change



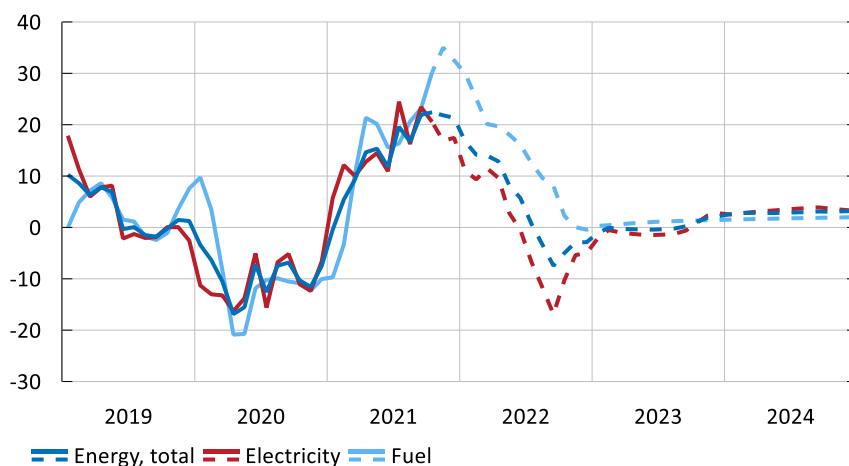
Note. The bars illustrate each price group’s contribution to the rate of increase in the CPIF over the past twelve months. The contributions can be interpreted as the annual rate of increase in each group multiplied by the group’s weight in the CPIF. In 2021, the weights are as follows, in per cent: food (18.5), other goods (27.8), services (42.8), energy (7.1), foreign travel (0.5) and owner-occupied housing (contribution from the capital stock index) (3.4).

Sources: Statistics Sweden and the Riksbank.

The higher energy prices are due to both rising electricity and fuel prices (see Figure 48). Electricity prices rose to record levels at the end of September and in October and November have fallen back somewhat, but are still significantly higher than a year ago. Many of the factors that have driven up electricity prices in Europe have also affected Swedish electricity prices, especially in southern Sweden. But there are also factors that are more specific to Sweden. For example, unusually low rainfall in the spring and summer led to low water reservoir levels for the season, which has reduced hydropower capacity. The rapidly rising fuel prices in the last month depend largely on the increase in oil prices in the global market (See Figure 28). Read more about recent energy price developments in the article “Higher inflation – temporary or persistent?”.

Figure 48. Energy prices in the CPIF

Annual percentage change



Note. Broken line represents the Riksbank's forecast.

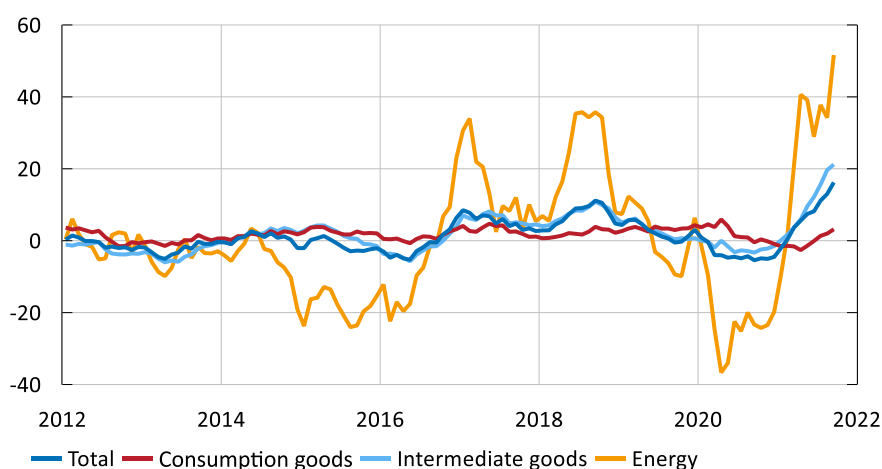
Sources: Statistics Sweden and the Riksbank.

The CPIF excluding energy close to two per cent

It is not just energy prices that have increased in the wake of the rapidly rising demand. Freight prices rose sharply over the summer as a result of disruptions in global trade. At the same time, commodity prices are higher than a year ago, even if they have fallen slightly following the rapid rise in the spring. This has led to rapidly rising prices in the producer channel. Prices of energy and inputs in particular have increased at a historically rapid pace but also the rate of increase in prices of consumer goods has also risen somewhat (see Figure 49).

Figure 49. Prices in the producer channel

Annual percentage change



Note. Refers to Sweden's domestic supply price index (ITPI), which is a composite of the domestic market price index (prices of goods produced and sold in Sweden) and the import price index.

Source: Statistics Sweden.

Price developments in the producer channel normally affect prices in the consumer channel with a time lag and with a relatively limited effect. So far, no major effects on goods prices are visible in the CPIF. The rapid recovery in the demand for certain services has at the same time generated upward pressure on these prices in the consumer channel, for example, hotel prices have risen rapidly since July. During the year, the increasingly positive contribution from service prices has been offset by a lower contribution on average from other goods (see Figure 47). Some of the price increases in the producer channel are expected to be transferred to consumers and lead to higher price growth in the coming months (see the article "Higher inflation – temporary or persistent?"). That certain price increase will be higher going forward is also indicated by tendency survey data. According to the Economic Tendency Survey, an increasing number of companies are now planning price rises. This applies both to the business sector as a whole and within the retail trade. The CPIF excluding energy is expected to rise over the next six months and amount to just over 2 per cent at the beginning of 2022 (see Figure 6 in Chapter 1).

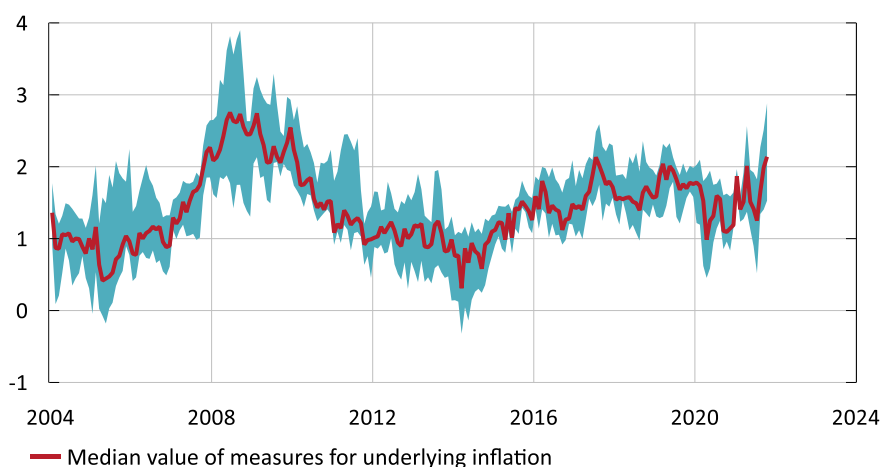
In the middle of next year, the rate of increase in the CPIF excluding energy is expected to fall. Demand is expected to remain high, but rise at a slower pace, which will allow supply to catch up. The bottlenecks in, for example, the transport sector and currently fast-growing service industries are expected to ease and the rate of price increases will then fall. Overall, therefore, the monthly rate of price increases is expected to slow down over the next six months and the annual rate of increase in the CPIF excluding energy will fall back down to slightly below 2 per cent in late 2022.

Like many other central banks, the Riksbank calculates and publishes various different measures of underlying inflation, which are an indicator of slightly longer-run inflation. According to these measures, underlying inflation has increased in recent

months and the median of the different measures amounted to 2.1 per cent in October (see Figure 50). The measures that have proved best in surveys (UND24 and CPIFPC) differ and are at 2.4 and 1.5 per cent respectively.¹⁹ Since spring 2020, the measures of underlying inflation have been less stable, which is illustrated in Figure 50 by the median value of the measures having been more volatile than previously. This is probably to do with changed weights and different measurement problems during the pandemic and the fact that rising energy prices affect some of the measures but not others.²⁰

Figure 50. Different measures of underlying inflation

Annual percentage change



Note. The field shows the highest and lowest outcome among 7 different measures of underlying inflation: CPIF excluding energy, UND24, Trim85, CPIF excluding energy and perishables, persistence-weighted inflation (CPIFPV), factors from principal component analysis (CPIFPC) and weighted median inflation (Trim1).

Sources: Statistics Sweden and the Riksbank.

Inflation more persistently close to target in 2024

From the end of 2022 onwards, inflation will rise not only in step with wages growing more rapidly and inflation abroad increasing, but also because of high demand. In the period ahead, the krona exchange rate is assumed to remain relatively unchanged and is therefore expected not to affect inflation to any great extent (see Figure 46).

Over the last two years, there have been large fluctuations in the CPIF. Inflation was lower than 2 per cent during the pandemic and is expected to now be higher during the recovery (see Figure 51). The rising inflation has contributed to higher inflation expectations which are expected to contribute to slightly faster wage growth during the forecast period than during the years prior to the pandemic. Despite the fluctuations,

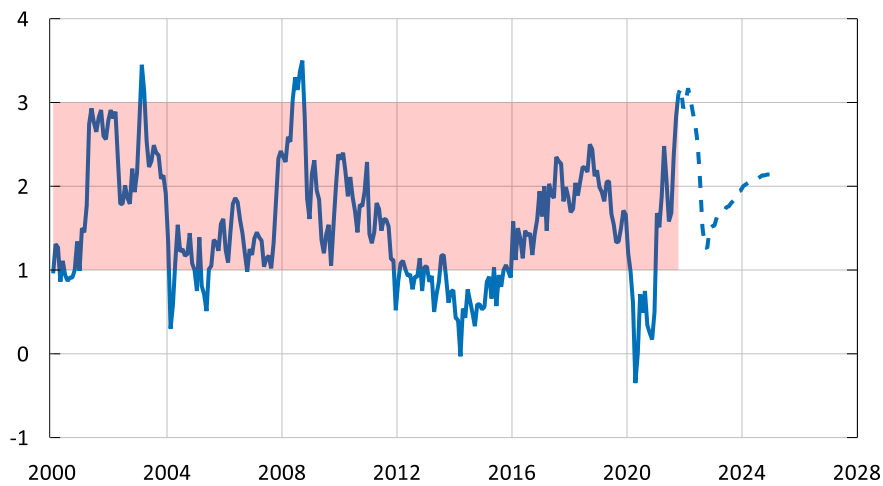
¹⁹ For a more detailed description of how this works, see J. Johansson, M. Löf, O. Sigrist and O. Tysklind, "Measures of core inflation in Sweden", *Economic Commentaries* No. 11, 2018, Sveriges Riksbank.

²⁰ For more information on the impact and expected impact of changed consumption patterns during the pandemic, see J. Johansson, M. Löf and O. Tysklind, "Changed consumption during the pandemic affects inflation", *Economic Commentaries*, No. 14, 2020, Sveriges Riksbank.

average inflation will be close to the inflation target of 2 per cent in 2021–2024 (see Table 2 in the forecast tables). Towards the end of the forecasting period, inflation is estimated to be more persistently close to the target of 2 per cent.

Figure 51. The CPIF and variation band

Annual percentage change



Note. The pink area shows the Riksbank's variation band and covers about three-quarters of the outcomes since January 1995. The variation band is a means of showing whether the deviation from the inflation target is unusually large. Solid line represents outcomes, broken line represents the Riksbank's forecast.

Sources: Statistics Sweden and the Riksbank.

ARTICLE – Higher inflation – temporary or persistent?

Inflation has recently increased rapidly around the world. This is mainly due to higher prices for energy, commodities and electronic components and substantially increased transport costs. Some service prices has also risen in sectors affected by the pandemic, where demand has now rapidly picked up. The Riksbank's analysis indicates that the upturn in inflation is mainly transitory and that it will decrease in 2022 once the contributions from energy prices fall back, supply problems are resolved and demand normalises. But there are risks of inflation expectations being more noticeably affected and of inflation as a result becoming more persistently high. This is particularly true in countries where inflation has risen substantially, such as in the United States, while the risk is deemed lower in the euro area and Sweden, where the upturn in inflation is not as great. How inflation ultimately develops also depends on how monetary policy is adapted.

Inflation has risen rapidly abroad and in Sweden

The inflation rate has risen rapidly in several countries. Many of the causes are common, although the effects vary in magnitude between countries. This article firstly describes the most important causes of the recent rise in inflation. Next, it studies the development of inflation in the United States, the euro area, the United Kingdom and Sweden separately in order to highlight similarities and differences.

Energy prices have increased rapidly, not least in Europe, which has contributed to a *direct effect* on inflation, as prices of fuel and electricity are included in the normal measures of inflation. But there are also delayed effects of higher energy prices, which are difficult to quantify. An example of a so-called *indirect effect* is when higher fuel costs lead to more expensive transport and thus to higher prices for the products being transported. Another type of indirect effect arises if, for example, commodity prices of timber increase substantially and gradually affect the consumer price of furniture. It is normal for indirect effects to arise as a result of price rises on inputs, but the pass-through into consumer prices may vary over time and between countries.

Another type of delayed effect is normally referred to as a *second-round effect*. Such effects arise when higher inflation affects expectations of future price developments and the behaviours of companies and households. Higher inflation expectations can lead to companies raising their prices more quickly than what they otherwise would have done and to wage earners demanding higher wages. This in turn can force companies to compensate by increasing prices further.

Why has inflation risen?

Higher energy prices

Since the beginning of the year, the oil price has increased by almost USD 30, or about 60 per cent, to just over USD 80 a barrel (See Figure 28 in Chapter 3). This development has affected fuel prices in both the United States and Europe, but to a varying degree in different countries depending on, for example, how fuel is taxed. In the United States, the price of gasoline has risen by more than 50 per cent, or by USD 1.2/gallon since the beginning of 2021. In Sweden, the price has risen by more than 25 per cent, or almost SEK 4 per litre during the same period. The rise in oil prices is due both to increased demand and most recently to production limitations.²¹ According to forward pricing, the oil price is expected to fall back somewhat from the beginning of 2022.

At the same time, deliveries of natural gas from Russia have been unusually low. As the total volume of stored gas has fallen in Europe, the price has risen rapidly. Since around a fifth of the EU's electricity production is based on natural gas, electricity prices have also been substantially affected in Europe. This has also led to more coal now being used in electricity production instead. As a result, coal has also increased in price and as the burning of coal creates more carbon emissions than the burning of natural gas, the price of emission allowances has also risen.

In October, the market prices for electricity had risen by almost 300 per cent in Germany and France, measured in annual percentage change, but prices in the consumer channel have increased significantly less.²² According to forward pricing, electricity prices in Europe are expected to be high for some time to come and then fall back after the winter.

A particular reason for the development in Swedish electricity prices is the lower-than-usual rainfall during the spring and summer. This created a deficit in water reservoirs and as a result lower hydropower capacity.²³ Another explanation is the rapidly rising electricity prices in Europe, to which Sweden exports some of its power production. This, in turn, has pushed up prices further in Sweden. This is particularly true of the electricity price in southern Sweden, as there are limitations in the transfer of electricity from northern Sweden, where most of Sweden's power is produced. However, as it has been very windy in southern parts of the country (and in Denmark and northern Germany) in recent months, the production deficit in southern Sweden has decreased and prices have tended to fall.

Over the last two months, electricity prices in Sweden have fallen back but are still relatively high, at least in the south of the country. Forward pricing also indicates that

²¹ At the latest meeting, OPEC+ decided not to increase production to meet the rising demand.

²² Electricity prices according to the HICP rose by around 2.5 per cent in both Germany and France in October. The time lag is due to many consumers having fixed electricity price agreements.

²³ Another cause is that the Ringhals nuclear power plant had a longer-than-planned inspection stoppage, which has also reduced capacity in the core grid.

prices will remain high over the winter and then fall back slightly. However, the development of the electricity price in Europe and Sweden is difficult to predict with any great precision, as it depends to a considerable extent on weather and wind. Price developments since the summer, however, show that energy supply in Europe is very sensitive to unexpected events and that even minor disruptions can cause very substantial price variations.

The Riksbank's assessment is that the positive contribution from energy prices to inflation will remain high during the winter and then diminish relatively quickly during spring and summer 2022 (see Figure 4 in Chapter 1). Although there are some minor differences, this applies not only in Sweden but in the euro area and United States.

Transport bottlenecks, higher commodity prices and shortage of inputs

The pandemic has led to sharp fluctuations in economic activity across the world. First, demand fell dramatically during the spring of 2020. The subsequent recovery has been very rapid. In the United States and Europe, major fiscal and monetary policy measures have been implemented to support households and companies, which has contributed to the rapid improvement. There has also been a shift, where household demand for goods increased rapidly in conjunction with the pandemic, when the scope for consuming services was limited.

At the beginning of the pandemic, many shipping companies deregistered their vessels to reduce costs as freight orders fell. When demand then recovered and production also picked up, supply has found it difficult to keep up while freight traffic has been disrupted by several incidents during the spring and summer of 2021.²⁴ Sea freight costs have therefore risen dramatically since summer 2020. The situation is still problematic and logistic problems are considerable despite some apparent improvement of late. According to the World Container Index, which reflects the average container price for a number of common shipping routes, the price level has fallen somewhat in October, but prices remain unusually high.²⁵

Both the rapid fluctuations in demand and various production stoppages have also led to other disruptions in global supply chains in the form of shortages of commodities and inputs.²⁶ A particular example is the current shortage of semi-conductors, which are an important component in many industries, including automotive and home electronics.

Some commodities have also increased in price since spring 2020. Price growth in metals, commodities used in the manufacturing sector and food increased rapidly when the economic situation became brighter. Prices were at their highest in the spring and have fallen back since then, but they remain high.

²⁴In March, the container vessel Ever Given got stuck in the Suez Canal, which caused long queues of sea traffic. In addition, several large container ports in China have closed down due to COVID-19 outbreaks at various periods.

²⁵ World Container Index (WCI) according to Dewry was in October just over 280 per cent higher than the same week in 2020.

²⁶ Examples of such commodities include steel, timber, plastic and some textiles.

Unusually large variation in consumer prices for services

The pandemic has also contributed to unusually large variation in service prices. When restrictions on socialising were introduced in 2020, they held back price development in services such as hotels and restaurants. When restrictions were then eased, demand increased rapidly for these types of services, at the same time as several companies have had difficulties rehiring or recruiting new staff who had switched sectors or retrained during the pandemic. Overall, service prices have recently increased unusually rapidly.

In addition to energy prices and knock-on effects of the rapid changes in demand, measurement problems, changed consumption patterns and tax measures have, to a certain extent, contributed to increased volatility in the development of inflation during the pandemic. But these effects will not be discussed in more detail here.

Many common elements, but differences between countries at the same time

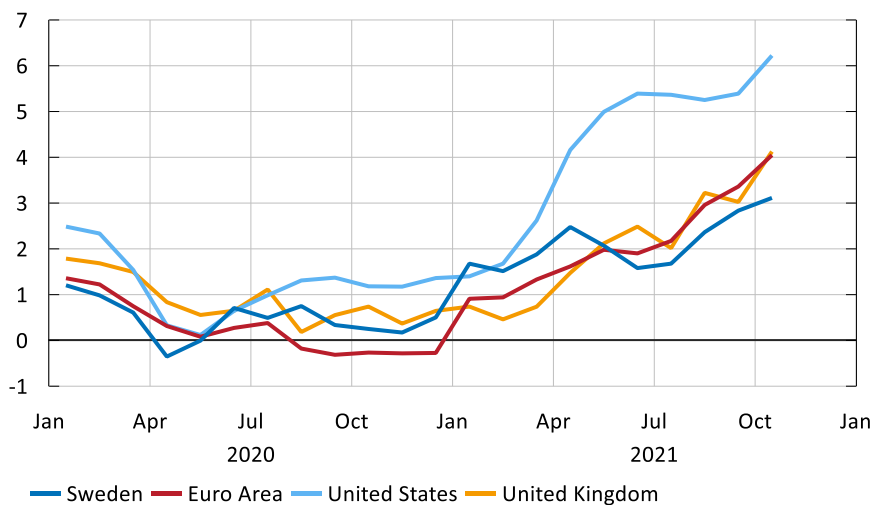
Inflation in the United States is at its highest since 1990

In the United States, CPI inflation has risen particularly rapidly during the year and amounted to 6.2 per cent in October (see Figure 52).²⁷ The direct effects of higher energy prices are significant in the United States, where the rate of increase in fuel prices was almost 50 per cent in October. More recently, higher prices of cars, and particularly of used cars, have contributed to the higher inflation. These prices increased rapidly during the spring and at the beginning of summer 2021, after having fallen somewhat in 2020. A shortage of semi-conductors also seems to have hampered production and contributed to the price upturn in this sector. Most recently, higher prices of food and housing costs have also contributed to higher inflation; CPI inflation adjusted for food and energy prices, referred to as core inflation, amounted to 4.6 per cent in October.

²⁷ Inflation according to the price index PCE-deflator (Personal Consumption Expenditure) has also risen, but is on a somewhat lower level, 4.4 per cent.

Figure 52. Inflation in Sweden and abroad

Annual percentage change



Note. CPI inflation for the United States and the United Kingdom, HICP inflation for the euro area and CPIF inflation for Sweden.

Sources: Macrobond and Statistics Sweden.

The Federal Reserve considers much of the inflation upturn to be transitory. The effects of various bottlenecks have indeed been greater and more prolonged than expected, which has led to successive upward adjustments to this year's inflation forecasts. However, even if these effects are prominent at the moment, the Federal Reserve expects them to diminish. When they do so, inflation is expected to fall back.²⁸

The indirect effects of higher energy and producer prices are also noticeable in the United States. An example is that higher costs for fuel and chemical fertiliser in agriculture have led to smaller margins and as a result upward pressure on food prices. Another example is that rising costs for the operation and heating of property seem to have pushed up rents.²⁹

As regards prices of goods, services and food in the United States, the rate of increase is highest for goods prices, but food prices and service prices have also risen (see Figures 53–55). Compared with the euro area, the United Kingdom and Sweden, the rate of price increase in goods stands out, although food prices have clearly risen most rapidly in the United States. There therefore seems to be some signs of indirect effects in the United States, especially when the price increase seems to be relatively broad.

²⁸ See for example a speech by J. Powell (2021), August 2021, Federal Reserve. [Monetary Policy in the Time of COVID](#).

²⁹ Over the years, the Riksbank has made various estimates of how large the indirect effects of higher energy prices can be on inflation in Sweden. Such estimates often assume that the energy price will be permanently higher. One study indicates that the indirect effects of a higher oil price are relatively limited in the United States and the euro area, see C. Conflitti and M. Luciani (2017). "Oil price pass-through into core inflation," *FEDS Notes*, August 2017.

As price growth has increased quite considerably in a short time, inflation expectations and wage expectations can be affected more than usual. Resource utilisation in the labour market is therefore a key issue. Labour demand continues to rise and unemployment is falling in the United States. There are also some indications of increased wage pressures.

Inflation has also risen rapidly in the euro area and in United Kingdom

In the euro area, HICP inflation was 4.0 per cent in October, but the differences are considerable between the Member States. Some examples of countries with comparatively low inflation are Portugal (1.8 per cent), Greece (2.8 per cent) and Finland (2.8 per cent) while Lithuania (8.2 per cent), Estonia (6.8 per cent) and Germany (4.6 per cent) have significantly higher inflation. Much of the total price increase since the turn of the year in the euro area is explained by higher housing and transport costs. In addition, there are some specific, positive contributions to the inflation rate that arise when unexpectedly low prices in 2020 have become more normal this year, referred to as base effects.³⁰

The rise in housing costs can primarily be explained by higher gas and electricity prices. As the pass-through of higher energy prices into the consumer channel is partly delayed, they are expected to contribute to higher inflation for a while longer, despite spot prices for natural gas and electricity having now fallen back somewhat. Higher petrol and diesel prices explain much of the upturn in transport costs, which are also affected by price increases in air tickets and cars to a certain extent. The European Central Bank, ECB, considers many of the factors currently fuelling inflation, such as higher energy prices, to be temporary and will gradually fall away in 2022.³¹

Inflation has also risen in the United Kingdom after having been low for much of 2020. In October, CPI inflation was 4.1 per cent. Some of the upturn is due to last year's VAT reductions on services and subsidies of restaurant meals no longer dampening the inflation rate.³² As in the euro area and the United States, energy prices are also contributing to higher inflation, albeit to a somewhat limited extent. The Bank of England (BoE) states that energy prices and bottlenecks, which have caused high global freight costs and shortages of certain goods, have affected consumer prices. The BoE also points out that the reopening of the economy has led to higher prices for certain consumer services. In its latest forecast, the Bank of England assesses that the inflation upturn may persist until the second half of 2022 and then subside as cost pressures ease.³³

³⁰ Examples of base effects that have affected the inflation rate in the euro area in the second half of 2021 include the resetting of the VAT reduction in Germany that was introduced in 2020, and delayed summer sales last year.

³¹ See, among others, transcript from the press conference on 28 October 2021, ECB. [Monetary Policy Statement](#).

³² See open letter from Governor A. Bailey to the UK Government, September 2021, Bank of England, [Letter from the Governor](#) and speech by S. Tenreyro, October 2021, Bank of England, [International trade, global supply chains and monetary policy](#).

³³ See *Monetary Policy Report*, November 2021, Bank of England.

Inflation adjusted for energy prices and prices of unprocessed food is 3.4 per cent in the United Kingdom, while the HICP excluding energy and unprocessed food in the euro area was 2.1 per cent in October. The difference between headline inflation and underlying inflation is thereby relatively small in the United Kingdom.

Prices of both goods and services are rising more rapidly in the United Kingdom than in the euro area while the converse is true for food prices (see Figure 53–55). In the euro area, the rate of increase in goods prices has been very volatile over the past year, which is probably due to diverse pandemic-related measurement problems and weighting adjustments.

Overall, the indirect effects in the United Kingdom and euro area are not as significant as they are in the United States, but there are still signs of spillover effects, particularly in the United Kingdom.

The upturn in the recorded inflation rate in the euro area and the United Kingdom is also reflected, as in the United States, in higher inflation expectations according to surveys. Long-term market-based inflation expectations have also increased. Resource utilisation in the labour market has also strengthened in the euro area and in the United Kingdom, but it is difficult to find any clear tendencies towards increased wage pressures so far.³⁴

Inflation has also increased in Sweden

According to the Riksbank's latest Business Survey, costs have risen in almost all industries. This development can be explained by rising prices of, for instance, energy, commodities, steel, metals, timber and electronic components, as well as sharply rising transport, storage and logistics costs over the year. Capacity problems and high fuel prices increase the costs for Swedish transport companies. The trade sector and companies selling services to households also see rising costs.³⁵

CPI inflation has risen gradually in the past year and the Riksbank's assessment is that it will be 3 per cent on average for the next six months. An important cause of the inflation upturn in Sweden is, just as in other countries, higher energy prices. The contribution from energy prices has gradually increased during the year and was 1.4 percentage points in October (see Figure 47 in Chapter 3).

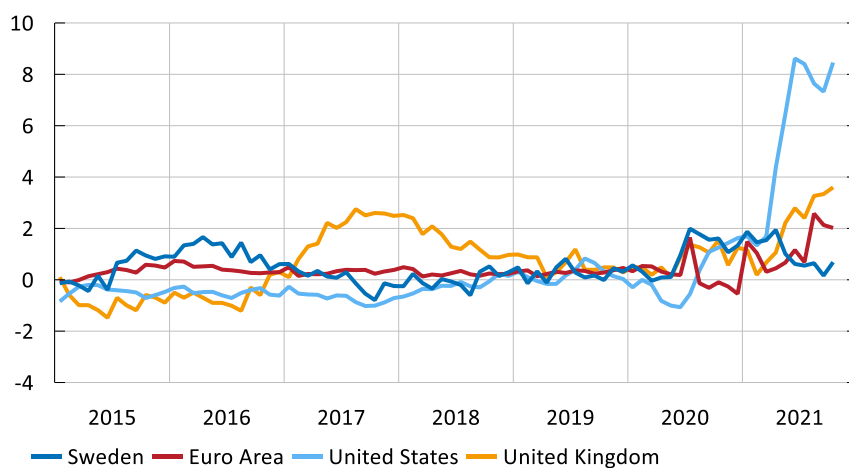
³⁴ Wage demands in Germany, for example, are so far lower than they were before the pandemic. German wage agreement negotiations will mainly take place in autumn 2022, which means that it will take time before there are any clear signals about wage development.

³⁵ See "As soon as you find one component, you realise you're missing another", *The Riksbank's Business Survey*, September 2021, Sveriges Riksbank.

This year, the annual average of CPIF inflation excluding energy is expected to be two tenths lower than in 2019 and only one tenth higher than in 2020. An increasing contribution from service prices has been counteracted by a gradually lower contribution from prices for food and other goods during the year (See Figure 47 in Chapter 3).³⁶

Goods prices have increased significantly more slowly in Sweden than in the United States, the euro area and the United Kingdom (see Figures 53). The profile of the annual percentage change in Swedish service prices is characterised by changed weights for foreign travel and has been very volatile during the pandemic (see Figure 55). Food prices have developed approximately in the same way in Sweden, in the euro area and the United Kingdom, but significantly more strongly in the United States (See Figure 54).

Figure 53. Goods prices excluding energy and food in different countries and regions
Annual percentage change



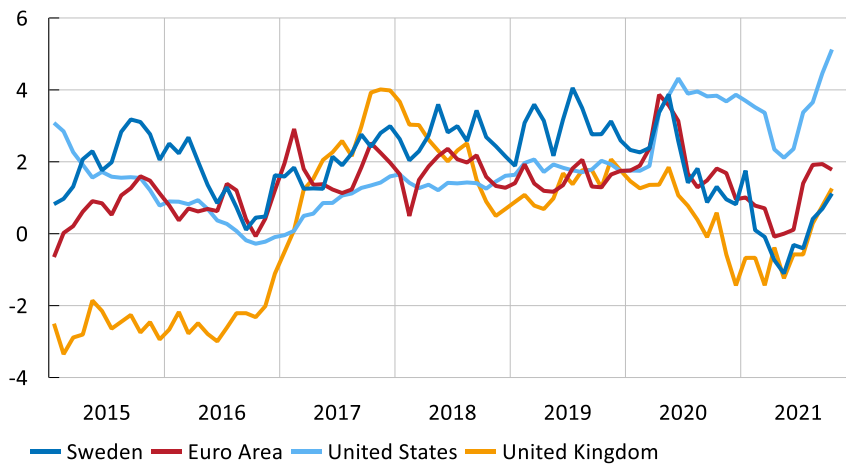
Note. Inflation measured as the HICP for Sweden and the euro area and the CPI for the United States and the United Kingdom.

Source: Macrobond.

³⁶ However, developments in the CPIF excluding energy, and other measures of inflation, have been even more difficult to interpret for a time due to pandemic-related factors, such as weighting changes and measurement problems. Changed consumption patterns affect not only weight calculations in Sweden but also inflation calculations globally. What Statistics Sweden will do with the weights in 2022 has not yet been decided, but the choice of method will affect the monthly profile of inflation outcomes, especially next year. An announcement is expected in December. For more information on the impact and expected impact of changed consumption patterns during the pandemic, see J. Johansson, M. Löf and O. Tysklind, "Changed consumption during the pandemic affects inflation", *Economic Commentaries*, No. 14, 2020, Sveriges Riksbank.

Figure 54. Food prices in various countries and regions

Annual percentage change



Note. Inflation measured as the HICP for Sweden and the euro area and the CPI for the United States and the United Kingdom.

Source: Macrobond.

It is thus still difficult to see any clear, indirect effects in Sweden when slightly broader aggregates are studied, but there are examples of goods and service prices that have been affected over the past year. Table 1 summarises the price development of a few selected goods that may have recently been affected by higher commodity prices, higher freight costs and other supply disruptions. Table 1 also presents the price development of a few services that may have been affected during the pandemic. The price development so far this year is compared with the average price development in the period 2015–2019. There are some signs that the prices for a number of products are now rising slightly faster than usual. As far as goods are concerned, the price development of bicycles, some white goods and cars stands out. On the services side, the prices of sports events and cinema tickets are rising slightly faster just now. But there are also prices that are rising more slowly among these selected goods and services.³⁷

Although the prices for certain products are rising more rapidly than usual, it is difficult to see any clear trends in consumer prices so far. But as prices in the producer channel have risen relatively rapidly, they are expected to affect prices in the consumer channel with a certain time lag. According to the Economic Tendency Survey, the share of companies wanting to increase their prices has recently risen quite considerably, especially in the retail trade, where the share of companies planning price increases has recently risen rapidly since the beginning of 2021 and is now at a record-high level. Different indicators therefore point to more consumer prices being raised in the near term.

³⁷ The total weight in the CPI basket of the goods and services presented in the table is 7.1 and 4.1 per cent respectively.

Table 1. Price development of a few selected goods and services

Annual percentage change

Goods (7.1%):	15–19	20–21	21	Services (4.1%):	15–19	20–21	21
Furniture	0.7	1.4	1.1	Sports tickets	0.6	1.2	2.4
Cars	0.9	2.7	3.0	Cinema tickets	2.9	1.5	4.3
Bicycles	0.2	6.6	9.4	Theatre tickets	2.6	1.4	0.6
TV sets	-7.1	-7.4	-8.7	Amusement park tickets	2.8	3.4	3.9
Dishwashers	-0.7	3.6	1.6	Hotel rooms (weekend)	3.5	-5.5	3.3
Refrigerators	-0.9	0.1	-4.3	Lunch (daily menu) (1)	2.5	2.8	1.3
Washing machines	-1.6	2.0	2.8	Lunch (daily menu) (2)	2.7	1.9	1.9
				À la carte	2.1	2.5	2.2
				Dinner	3.0	0.1	0.4

Note: The column with the heading 15-19 refers to average annual percentage change between 2015 and 2019. The column with the heading 20-21 indicates annual percentage change for 2020 and 2021, while the heading 21 indicates the average annual percentage change from January 2021 up to the end of September 2021. (1) refers to a slightly simpler lunch while (2) indicates lunch at a restaurant. Figures in brackets on the first row refer to aggregate weight in the CPIF for goods and services respectively presented in the column. According to the Riksbank's classification, the total weight in the CPIF is 28 per cent for goods and 43 per cent for services.

Sources: Statistics Sweden and own calculations.

As in many other countries, the situation in the labour market has improved in Sweden and inflation expectations on various horizons have risen gradually since summer 2020. Expectations will probably continue to rise for a while as inflation remains higher for a number of months. The covariation between actual inflation and inflation expectations is clear. If CPIF inflation rises, inflation expectations also tend to rise after one or two months. A simple correlation analysis also shows that inflation expectations covary significantly with the price growth of various energy components.³⁸

It is therefore reasonable to assume that both inflation expectations and companies' pricing will be more affected if the cost increases become more persistent. But, in such a situation, it is also reasonable to assume that monetary policy will be adjusted and the effects reduced.

Will inflation in Sweden be temporarily or persistently higher?

The sudden changes in demand have caused problems for commodity producers, subcontractors and transport companies in adjusting production quickly enough and disruptions have occurred in global supply chains in several regions. Lockdowns in many economies have also exacerbated these problems. Among other effects, they have led to shifts in demand from services to goods. Difficulties in meeting the rapidly rising

³⁸ See for example L. Kilian and X. Zhou (2020), "Oil Prices, Gasoline Prices and Inflation Expectations: A New Model and New Facts", *Working Paper* No. 2025, Federal Reserve Bank of Dallas. In Swedish data, it also appears to be the case that changes in the energy price affect inflation expectations. In other words, if the energy price rises, inflation expectations are affected with a certain time lag. This is probably because fluctuations in energy prices have such a significant impact on inflation.

demand have led to sharp upturns in commodity prices, transport prices and gradually also companies' producer prices.

The effect on consumer prices of these disruptions has been significant in the United States, but so far limited in the euro area and Sweden.

In Sweden, it is still difficult to see any clear tendencies towards indirect effects. Prices of certain goods and services have risen, but the upturn is not broad. Goods prices excluding energy and food (the Riksbank's definition) are still falling measured in annual percentage change. At the same time, energy prices have risen rapidly, which has contributed to a more direct effect on inflation. Inflation expectations on longer horizons have not moved more than expected, however. Concern over a persistent upturn in Sweden inflation should not therefore be exaggerated.

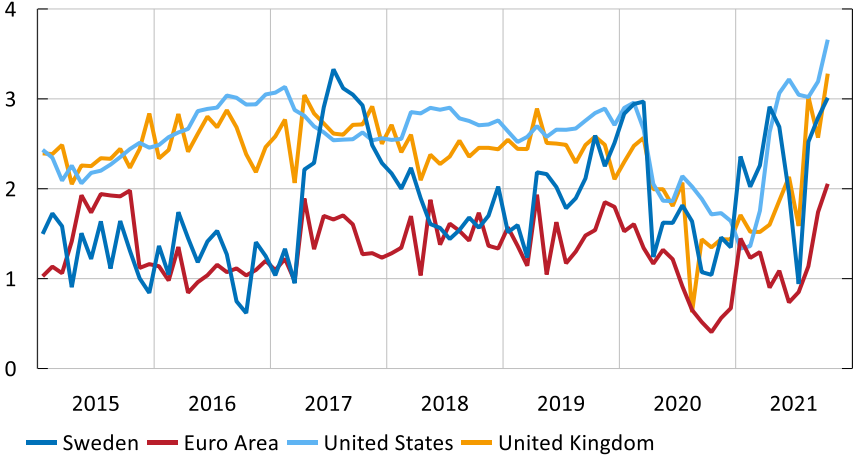
How inflation develops in the slightly longer term depends on how the inflation expectations of companies and households are affected and how monetary policy is adjusted. The Riksbank's analysis shows that there is good reason to believe that the upturn in inflation is transitory. As long as energy prices do not increase further from their currently high levels, their positive contribution to the inflation rate will diminish at approximately the same pace as it has risen this year.³⁹

However, some of the price and cost increases that are due to supply disruptions are expected to affect the consumer channel and contribute to higher price growth in certain goods over the next year. At the same time, the demand for hotel and restaurant services has risen rapidly and contributed to an upward pressure on service prices as well. However, supply problems and the sudden fluctuations in demand are expected to diminish gradually in 2022. Monthly price growth is expected to be somewhat higher than normal going forward and the annual percentage change in the CPIF excluding energy will rise. The rate of increase will fall somewhat in the second half of 2022. In 2023 and 2024, inflation will then rise gradually towards 2 per cent.

³⁹ See the fact box "Link between price level and inflation rate" in *Monetary Policy Report*, July 2020, Sveriges Riksbank.

Figure 55. Service prices in various countries and regions

Annual percentage change



Note: Measured as the HICP for Sweden and the euro area and the CPI for the United States and the United Kingdom.

Source: Macrobond.

ARTICLE – Are low global real interest rates set to continue?

There has been a trend decline in real interest rates over the past 30 years, all over the world. As financial assets can be moved freely between many different countries and currency areas, real required rates of return that apply in Sweden must be adapted to approximately the same level as in the rest of the world. The global trend towards lower real interest rates therefore has a crucial effect on a large number of economic decisions taken in Sweden, including the Riksbank's monetary policy decisions. This article discusses some of the drivers behind the global trend, its economic consequences and the conclusions that can be drawn about developments going forward based on current research.

A few factors indicate that real interest rates will remain low for the foreseeable future. One such factor is that the world's population continues to age and that this is reducing the profitability of corporate investments, something which in turn is keeping real interest rates low. But uncertainty surrounding developments going forward is considerable and future political decisions may have a major effect. This applies not least to fiscal policy decisions in the world's largest economies and to measures aimed at combating climate change.

Global downward trend in interest rates

Over the last 30 years, there has been a trend decline in the expected real return on different types of financial assets. This trend is global and the largest decline has occurred in various types of loan contracts, such as government bonds, mortgages and promissory notes issued by companies. But several measures show that there has also been a clear decline in the expected real return on equities and in the average real return on the entire portfolio of assets held by households.⁴⁰ The real return that a lender can expect on a risk-free loan is called the loan's real interest rate. The real interest rate is approximately equal to the interest rate on the loan minus the expected inflation rate during the loan's maturity period.

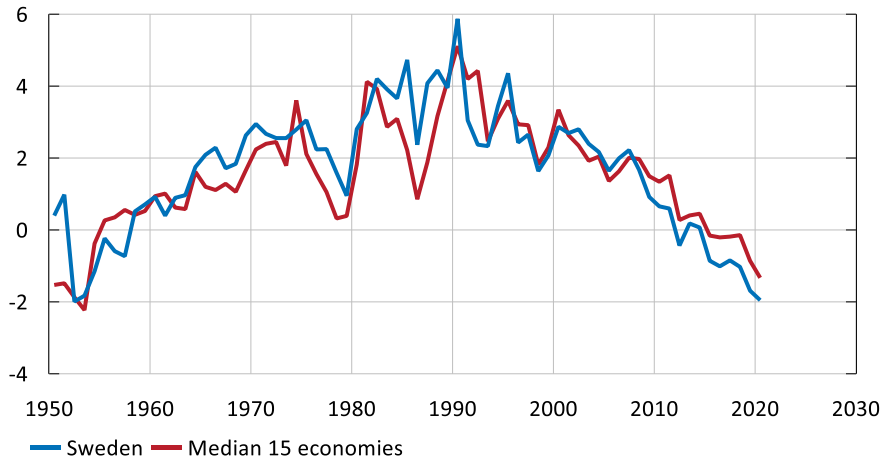
This article focuses on the global trend towards lower expected return which is common to different types of assets, and the concepts of real interest rate and real return are used synonymously. But it is worth pointing out that this is a simplification, and

⁴⁰ See sections A and D6 in L. Rachel and T.D. Smith (2015), "Secular drivers of the global real interest rate", *Staff Working Paper* no. 571, Bank of England; F. Duarte and C. Rosa (2015), "Equity risk premium: A review of models", *Economic Policy Review* 21(2), Federal Reserve Bank of New York and Ö Jordà, K. Knoll, D. Kuvshinov and A. M. Taylor (2019), "The rate of return on everything, 1870–2015", *Quarterly Journal of Economics* 134(3).

that there are often major differences in the return on assets with different risk profiles.

Figure 56. Real interest rates on government bonds, 1950–2020

Per cent



Note. Nominal interest rate on government bonds with a long maturity minus expected, average inflation according to the GDP deflator. Long maturity means 10 years in most cases. For each country and year in the sample, expected inflation is estimated using two different methods: a forecast from a simple autoregressive model, AR(1), and an average of inflation over the past 5 years. The average of the two measures is used to calculate the real interest rate.

Sources: Jordà et al. (2019), national statistic sources, the World Bank and the Riksbank.

Figure 56 illustrates the downward trend with the median of the real interest rates on government bonds with a long maturity in a group of 15 advanced economies. The same figure also shows developments during the period 1950–1990, when the trend was instead an upward one. Longer historical time series show that the development in the second half of the twentieth century is not unique; upward and downward trends have also followed one another during earlier periods.⁴¹

Financial capital can be moved between different countries and currency areas both quickly and at a low cost. The expected real return on assets invested in Sweden must therefore be approximately the same as the return that investors can expect if they instead invest in foreign assets with a similar risk profile. The real interest rate on safe loans in Swedish kronor can, for example, not persistently deviate much from the real

⁴¹ See reference to Jordà et al. (2019) in footnote 39. The authors calculate measures of real interest rates that go back to the beginning of the 1870s for some countries. Even longer historical time series are presented in P. Schmelzing (2020), "Eight centuries of global real interest rates, R-G, and the 'supersecular' decline, 1311–2018", *Staff Working Paper* no. 845, Bank of England.

interest rate on equivalent loans in euro and US dollars, something that is also illustrated in Figure 56.⁴² Trend changes in the real interest rate abroad therefore give rise to similar trends in Sweden.⁴³

Far-reaching economic consequences

When real interest rates fall, it becomes cheaper for households to borrow for consumption and housing purchases, and it is then natural for indebtedness and asset prices to increase. Lower required rates of return also mean that it becomes cheaper to make various types of investment, both for the public sector and private companies, and that borrowing costs fall for indebted sovereign states. At the same time, falling real interest rates are an unwelcome development for those looking to save. This applies, for example, to many wage earners saving for their pension, and also to a large extent institutions and life insurance companies that have pledged pay-outs to future pensioners.

The Riksbank's monetary policy decisions are also affected directly and significantly by the global trend towards lower real interest rates. In the long term, the level of the repo rate is mainly determined by the level of the inflation target and by the real interest rate on safe, short-term loans that applies abroad. As there is a lower bound for how low the repo rate can be cut, persistently low real interest rates increase the probability that the Riksbank will find it difficult to use the repo rate to stimulate resource utilisation and inflation in a future recession.

Several different driving-forces behind low rates

The trend has far-reaching consequences for households, companies and economic policy. It is therefore interesting to understand the factors that drive down real interest rates to get an idea of likely developments going forward. Most researchers agree that several different structural changes have contributed to this development, and that these structural changes have effect regardless of the monetary policy conducted by various central banks around the world. Examples of such changes include the age and life expectancy of the population, the long-term growth prospects for productivity and the fact that China has been increasingly integrated into the global economy while savings there have been strikingly high.⁴⁴

⁴² If the conditions for non-arbitrage are met, differences in the real interest rate between two different assets, issued in different currencies but with the same maturity, can be attributed to expected changes in the real exchange rate and to differences in risk premium. For there to be significant and persistent differences in real interest rates between countries, expectations of trend changes in the real exchange rate and/or significant differences in risk premium are therefore required. See the discussion in King and Low (2014), "Measuring the 'world' real interest rate", *Working Paper* No 19887, National Bureau of Economic Research.

⁴³ The decades after the Second World War were characterised by rather strict regulation of the international, private movement of capital. During this period, it was therefore often difficult to make arbitrage between assets issued in different currencies. However, Bertil Ohlin has shown that the price of production factors in different countries also tends to even out via trade in goods. See B. Ohlin (1933), "Interregional and international trade", Harvard University Press: Cambridge.

⁴⁴ Other examples are falling relative prices of investment goods, lower public investment, higher premiums on safe assets and wider differences in income between households. For non-technical discussions of the

Although most researchers agree that the trend has more than one driving-force, they do not agree on which driving-forces have been the most important. One example is the long-term growth prospects for productivity. According to several studies, lowered growth prospects for productivity can explain much of the trend decline in real interest rates. In recent years, however, several other studies have been published questioning this relationship on empirical grounds. In the current situation, the extent to which more pessimistic growth expectations can help explain the trend is therefore an open question.⁴⁵

One driving-force that has been discussed intensively in recent years is the ageing of the population and its effects on savings and real interest rates. The background is the comparatively rapid increase in the average age of the global population. This is due to, among other factors, reduced fertility and the fact that, in many countries, unusually large cohorts of children were born during the decades following the Second World War. A consequence is that many countries, in recent decades, have had unusually large middle-aged population groups, the majority of whom tend to save the most. Several calculations also show that the age composition of the population has helped to push up the saving ratio and push down interest rates. Many economists have also pointed to the fact that these large groups are now approaching pensionable age, and have therefore drawn the conclusion that saving ratios going forward will fall and real interest rates will rise.

Another structural change, that is also considered to have contributed to lower real interest rates, is increased inequality in the distribution of household income. It is a well-documented fact that high-income earners save on average a larger share of their income than low- and middle-income earners. In many advanced economies, income inequality has shown a rising trend for a long time.⁴⁶ This trend has meant that a larger share of total household income now goes to high-income earners, something that should therefore contribute to higher savings among households.

Household savings and their effect on the real interest rate

It is worth noting that both of these driving-forces – the ageing of the population and increased inequality – are considered to have had an effect through the same channel, that is to say higher savings. The idea is that there is a long-term, structural equilibrium on a global level in which total savings are equal to total investment. If savings increase for structural reasons, for example, because income distribution has become

various driving-forces, see C. Bean, C. Broda, T. Ito and R. Kroszner (2015), “Low for long? Causes and consequences of persistently low interest rates”, *Geneva reports on the world economy* No. 17, and L. Rachel and T. D. Smith (2017), “Are low real interest rates here to stay?”, *International Journal of Central Banking* 13(3). An example of an alternative view on the driving-forces behind the real interest rate trend can be found in C. Borio, P. Disyatat and P. Rungcharoenkitkul (2019), “What anchors for the natural rate of interest?”, *Working Paper* No. 777, Bank for International Settlements.

⁴⁵ For discussion of and references to studies about the link between low-frequency correlation between real interest rates and growth, see E. Gagnon, B. K. Johannsen and D. López-Salido (2021), “Understanding the new normal: the role of demographics”, *IMF Economic Review* 69(2), and Lundvall (2020), “What is driving the global trend towards lower real interest rates?”, *Economic Review* no. 1, Sveriges Riksbank.

⁴⁶ T. Piketty and E. Saez (2006), “The evolution of top incomes: A historical and international perspective”, *American Economic Review* 96(2).

more unequal or because the population has aged, the equilibrium real interest rate must fall. The reason for this is that companies' incentive to invest needs to increase, so that balance is restored between total savings and total investment. Gradually, structural increases in savings would therefore also lead to a trend decline in the equilibrium real interest rate. This would in turn mean that central banks, if they stick to their inflation targets, must gradually lower the long-term or normal level of their policy rates.⁴⁷

The explanation that increased savings have driven down the real interest rate may surprise some people as the ratio between total household loans and household income has been growing for a long time, in both Sweden and several other countries. But there is no conflict here as it is natural for debt to rise when savings increase. In each country at any given time, there are millions of households with very different economic conditions and in different stages of life. The point is that the idea of higher savings is about the average propensity to save for all households. A higher average propensity to save leads to a shift in the global equilibrium, so that the real interest rate falls and savings and investment rise as a share of GDP. But the lower real interest rate also means that it is cheaper to borrow. Some households will therefore choose to borrow more than they otherwise would have done and this helps to drive up the ratio between borrowing and income.

One of the weaknesses of the hypothesis that increased inequality drive up savings concerns in particular the effect on the average propensity to save. In studies on savings in the United States, savings among high-income earners are shown to have increased as a larger share of total household income goes to this group. But during the same period, saving ratios among low- and middle-income earners have fallen, and this decline has been substantial enough to push down the average saving ratio for all households.⁴⁸ Analysis of data from several countries also suggests a negative correlation between average savings in the household sector and the level of inequality in income distribution.⁴⁹

Demographic factors affect both savings and investment

What about the hypothesis that an ageing population has helped to press down interest rates? Of the explanations for lower interest rates investigated in different research studies, this is one of them with the strongest empirical support.⁵⁰ But several

⁴⁷ The equilibrium real interest rate can be defined as the level of the real interest rate on short-term loans that, in the long term, is consistent with normal resource utilisation, so that unemployment is at its long-term sustainable level, and with on-target inflation. See M. T. Kiley (2020), "What can the data tell us about the equilibrium real interest rate?", *International Journal of Central Banking* 16(3).

⁴⁸ See A. Mian, L. Straub and A. Sufi (2021), "What explains the decline in r^* ? Rising income inequality versus demographic shifts", and F. Guvenen (2021), "Commentary: What explains the decline in r^* ? Rising income inequality versus demographic shifts", both presented at the 2021 Jackson Hole Economic Symposium, arranged by the Federal Reserve Bank of Kansas City.

⁴⁹ F. Alvarez-Cuadrado and M El-Attar Vilalta (2018), "Income inequality and saving", *Oxford Bulletin of Economics and Statistics* 80(6).

⁵⁰ C. A. Favero, A. E. Gozluklu and H. Yang (2016), "Demographics and the behaviour of interest rates", *IMF Economic Review* 64(4), K. G. Lunsford and K. D. West (2019), "Some evidence on secular drivers of US safe

studies also show that the mechanism is not quite as simple as is sometimes claimed; namely that ageing has driven up the saving ratio. Demographic changes affect both households' propensity to save and companies' incentive to invest.⁵¹ Both effects must be considered when calculating the effects of ageing on the real interest rate.

A new study by Auclert et al. (2021) investigates the effects of demographic changes on a global level, and the findings confirm that ageing has contributed to the fall in real interest rates.⁵² The authors also show that ageing will probably continue to press down the equilibrium real interest rate, despite an ever-larger share of the population now reaching ages over 60 years when saving tends to decrease. The reason is precisely that ageing affects both saving and companies' incentive to invest. The fall in fertility in many large economies, including the United States, the EU and China, means that the working-age population is now growing more slowly than previously. The return on most investments is closely linked to the availability of labour; the return will be higher, the more labour is available. For a few decades from 1965 onwards, for example, the US labour force grew at a relatively rapid rate, when the large cohorts of children born in the post-war years entered the labour market. At that time, it was profitable for many companies in the United States to invest, not least because there were plenty of people to hire and demand grew rapidly as more and more people started to work. Correspondingly, several of the world's large economies are now in a period of slower labour force growth, when it is therefore less profitable for companies to make major investments. If population forecasts prove to be correct, this development will also continue, and more countries will enter a phase of slower labour force growth.

Global imbalances have helped push down real interest rates

But the findings in the study by Auclert et al. (2021) also show that the phenomenon of an ageing population can hardly explain the past 30-year trend towards lower real interest rates on its own. The demographic changes should quite simply not have had such large effects on total household savings as have been recorded.

A circumstance highlighted in many studies, and that provides a supplementary explanation, is that savings have been significantly higher than investment in certain countries and regions. This is not least true of China, where both savings and investment increased to higher levels after the country joined the World Trade Organization, WTO, in 2001. However, savings increased significantly more than investment, which resulted in a considerable surplus in China's current account (see Figure 57). In China,

real rates", *American Economic Journal: Macroeconomics* 11(4), J. M. Poterba (2001), "Demographic structure and asset returns", *Review of Economics and Statistics* 83(4), and L. Rachel and T. D. Smith (2017), "Are low real interest rates here to stay?", *International Journal of Central Banking* 13(3).

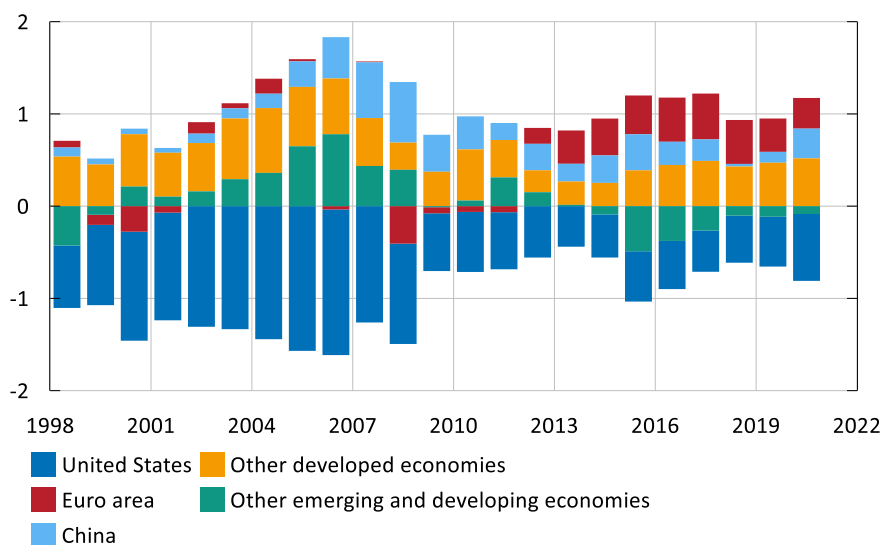
⁵¹ See for example E. Gagnon, B. K. Johansen and D. López-Salido (2021), "Understanding the new normal: the role of demographics", *IMF Economic Review* 69(2) and D. Krueger and A. Ludwig (2007), "On the consequences of demographic change for rates of returns to capital, and the distribution of wealth and welfare", *Journal of Monetary Economics* 54(1).

⁵² A. Auclert, H. Malmberg, F. Mertenet and M. Rognlie (2021), "Demographics, wealth, and global imbalances in the twenty-first century", *Working Paper* No 29161, National Bureau of Economic Research.

savings have been high both in the public sector and among households. Several circumstances have been highlighted to explain the unusually high household saving ratio, including falling effective replacement rates in the pension system, in combination with rapid demographic changes.⁵³ In recent years, however, China's current account surplus has decreased, and the same is true of several petroleum-exporting countries that were negatively affected by the major falls in the oil price in 2014.

Figure 57. Current accounts in various countries and groups of countries

Share of total global GDP, per cent



Note. Current account as a share of total global GDP, expressed in USD at current prices. The classification of countries into the categories Developed, Emerging and Developing economies follows the convention in the IMF World Economic Outlook.

Sources: The IMF and the Riksbank.

During the same period, however, the euro area's current account has strengthened considerably, and the currency area is now a significant net exporter of capital (see Figure 57). This development has partly to do with the European debt crisis in 2011–2012, which resulted in falling investment and rising savings in several southern European countries that had previously had large deficits. Put simply, these countries borrowed large amounts from other countries in the currency areas, mainly Germany, prior to the debt crisis. In conjunction with the debt crisis, deficits shrank dramatically in southern Europe, and several countries started to show a surplus. At the same time, Germany has continued to have total savings that have far exceeded the countries comparatively low investment ratio.⁵⁴

⁵³ See N. Coeurdacier, S. Guibaud and K. Jin (2015), "Credit constraints and growth in a global economy", *American Economic Review* 105(9) and D. T. Yang (2012), "Aggregate savings and external imbalances in China", *Journal of Economic Perspectives* 26(4).

⁵⁴ For a discussion of the causes of Germany's large surplus, see the blog entry by B. Bernanke, April 2015. "[Why are interest rates so low, part 3: The global savings glut](#)".

It can be worth pointing out that the high savings in Asia and Germany has probably helped keep savings down in the United States and in several other advanced economies. There is much to indicate that lower real interest rates, in combination with greater access to credit, partly explain why many households in the United States have reduced their savings, and why indebtedness has instead increased.⁵⁵

Future trend developments affects Sweden

In summary, population ageing and global imbalances have helped to press down real interest rates over the past 30 years. One explanation for the global imbalances is special circumstances in certain countries and regions, not least China and the euro area, that have created large saving surpluses in these regions in particular. How changes in income distribution in various countries have affected developments is more unclear.

The continuing ageing of the global population is one reason to believe that the trend towards lower real interest rates will persist. Another reason is historical data on real required rates of return indicating that most trends persist for quite a long time and do not reverse quickly.

But there is considerable uncertainty, not least regarding developments in China. As the Chinese economy is large and fast-growing, and savings are high to start with, future political decisions may be of major significance. This is true of, for example, the design of social insurance systems. The global equilibrium is also affected by political decisions in other countries and continents. This applies to both the design of fiscal policy in the broad sense and the level of public savings.

Another source of uncertainty is climate change, which can affect real interest rates via several different channels. If no effective climate policy is put in place, the risk of negative economic effects from global warming will increase. Such a development should put further downward pressure on real interest rates.⁵⁶ But the transition to more climate-neutral production is also expected to lead to extensive investment in many countries, something that will affect real interest rates in the opposite direction.

A small, open economy such as Sweden only has a marginal effect on the global trend under discussion here. Conversely, the same trend is of major economic significance for Swedish households and companies, and for the design of economic policy. If the real interest rate remains low, more investment projects, for example, should be considered profitable, compared with if the real interest rate begins to rise again.

Monetary policy decisions are also affected by the global supply of savings and investment. The equilibrium real interest rate on safe, short-term loans is of crucial significance for the normal level of policy rates, both abroad and in Sweden. If the equilibrium interest rate remains low or falls further, it means that, given the current levels of the inflation target, policy rates will remain comparatively low also in the medium

⁵⁵ Compare with the findings in Coeurdacier et al. (2015), see reference in footnote 53.

⁵⁶ See E. Bylund and M. Jonsson (2020), "How does climate change affect the long-term real interest rate?", *Economic Commentaries* No. 11, Sveriges Riksbank.

to long run. In such a scenario, the probability of central banks being limited in their scope for stimulating resource utilisation and inflation with the help of the interest-rate weapon will increase.

Forecast tables

The forecast in the previous Monetary Policy Report is shown in brackets.

Table 1. Repo rate forecast

Per cent, quarterly averages

	2021Q3	2021Q4	2022Q1	2022Q4	2023Q4	2024Q4
Repo rate	0.00 (0.00)	0.00 (0,00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.19

Source: The Riksbank.

Table 2. Inflation

Annual percentage change, annual average

	2020	2021	2022	2023	2024
CPIF	0.5 (0.5)	2.3 (2.3)	2.2 (2.1)	1.8 (1.8)	2.1
CPIF excl. energy	1.3 (1.3)	1.4 (1.4)	2.0 (1.8)	1.9 (1.8)	2.0
CPI	0.5 (0.5)	2.1 (2.0)	2.3 (2.1)	1.9 (1.8)	2.2
HICP	0.7 (0.7)	2.5 (2.5)	2.1 (2.0)	1.6 (1.6)	2.0

Note. The HICP is an EU-harmonised index for consumer prices.

Sources: Statistics Sweden and the Riksbank.

Table 3. Supply balance

Annual percentage change unless otherwise specified

	2020	2021	2022	2023	2024
Household consumption	-4.7 (-4.7)	4.8 (5.1)	4.8 (4.6)	2.4 (2.6)	2.0
Public consumption	-0.6 (-0.6)	3.3 (3.1)	1.8 (1.9)	0.6 (0.6)	1.1
Gross fixed capital formation	-0.4 (-0.4)	6.3 (5.5)	3.1 (3.9)	2.1 (2.2)	1.5
Stock investments*	-0.7 (-0.7)	0.1 (0.1)	0.2 (0.1)	0.1 (0.0)	-0.1
Exports	-4.6 (-4.6)	5.6 (7.1)	4.1 (4.1)	4.0 (3.4)	3.3
Imports	-5.7 (-5.7)	6.4 (7..6)	4.0 (4.5)	4.0 (3.4)	3.3
GDP	-2.8 (-2.8)	4.7 (4.7)	3.8 (3.6)	2.0 (2.0)	1.5
GDP, calendar-adjusted	-3.0 (-3.0)	4.5 (4.6)	3.8 (3.6)	2.3 (2.2)	1.5
Final domestic demand*	-2.4 (-2.4)	4.6 (4.4)	3.4 (3.5)	1.8 (1.8)	1.5
Net exports*	0.3 (0.3)	-0.1 (0.1)	0.2 (0.0)	0.2 (0.1)	0.1
Current account (NA), percentage of GDP	5.6 (5.6)	5.7 (5.9)	5.7 (5.7)	5.7 (5.7)	5.7

* Contribution to GDP growth, percentage points

Note. The figures show actual growth rates that have not been calendar-adjusted, unless otherwise stated. NA is the National Accounts

Sources: Statistics Sweden and the Riksbank.

Table 4. Production and employment

Annual percentage change

	2020	2021	2022	2023	2024
Population, aged 15–74***	0.4 (0.4)	-0.3 (-0.3)	0.1 (0.2)	0.2 (0.2)	0.3
Potential hours worked	0.8 (0.8)	0.7 (0.7)	0.5 (0.5)	0.4 (0.4)	0.4
Potential GDP	1.8 (1.8)	1.8 (1.8)	1.7 (1.7)	1.7 (1.7)	1.7
GDP, calendar-adjusted	-3.0 (-3.0)	4.5 (4.6)	3.8 (3.6)	2.3 (2.2)	1.5
Hours worked, calendar-adjusted	-3.8 (-3.8)	1.9 (2.4)	3.9 (3.3)	1.2 (1.1)	0.7
Employed persons***	-1.3 (-1.3)	-0.1 (0.1)	1.9 (2.1)	1.1 (0.9)	0.6
Labour force***	0.3 (0.3)	0.5 (0.6)	0.7 (0.7)	0.5 (0.4)	0.4
Unemployment*, ***	8.3 (8.3)	8.9 (8.8)	7.7 (7.6)	7.2 (7.2)	7.1
GDP gap**	-3.6 (-3.6)	-1.1 (-1.0)	1.0 (0.8)	1.6 (1.4)	1.4
Hours gap**	-4.1 (-4.1)	-3.0 (-2.4)	0.3 (0.3)	1.0 (1.0)	1.3

*Per cent of labour force

**Deviation from the Riksbank's assessed potential levels, in per cent

***As a result of a changeover in statistics, the forecast for 2021 in particular is affected by a break in the time series. For further information, see the fact box in the April Monetary Policy Report and the article "The LFS reorganisation and the Riksbank's analysis of the labour market" in the February Monetary Policy Report.

Note. Potential hours worked and potential GDP refer to the long-run sustainable level according to the Riksbank's assessment.

Sources: Statistics Sweden and the Riksbank.

Table 5. Wages and labour costs for the economy as a whole

Annual percentage change, calendar-adjusted data unless otherwise stated

	2020	2021	2022	2023	2024
Hourly wage, NMO	2.1 (2.1)	2.8 (2.8)	2.7 (2.7)	2.9 (2.8)	3.0
Hourly wage, NA	4.9 (4.9)	2.2 (2.2)	2.3 (2.2)	2.9 (2.8)	3.0
Employers' contribution*	-0.8 (-0.8)	0.7 (0.7)	0.0 (0.0)	0.0 (0.0)	0.0
Hourly labour cost, NA	4.0 (4.0)	2.9 (3.0)	2.4 (2.3)	2.9 (2.8)	3.0
Productivity	0.8 (0.8)	2.6 (2.1)	0.0 (0.3)	1.1 (1.1)	0.9
Unit labour cost	3.3 (3.3)	0.8 (1.2)	2.4 (2.0)	1.8 (1.7)	2.1

* Difference in rate of increase between labour cost per hour, NA and hourly wages, NA, percentage points

Note. NMO is the National Mediation Office's short-term wage statistics and NA is the National Accounts. Labour cost per hour is defined as the sum of actual wages, social-security charges and wage taxes (labour cost sum) divided by the number of hours worked by employees. Unit labour cost is defined as labour cost sum divided by GDP in fixed prices.

Sources: National Mediation Office, Statistics Sweden and the Riksbank.

Table 6. International conditions

Annual percentage change unless otherwise specified

GDP	PPP weights	KIX weights	2020	2021	2022	2023	2024
Euro area	0.12	0.48	-6.5 (-6.5)	5.1 (5.3)	4.0 (4.4)	2.0 (1.8)	1.4
United States	0.16	0.08	-3.4 (-3.4)	5.5 (6.1)	3.9 (4.0)	2.4 (2.0)	2.0
Japan	0.04	0.02	-4.7 (-4.7)	1.6 (2.6)	2.4 (2.2)	1.3 (1.8)	0.9
China	0.19	0.09	2.2 (2.0)	7.9 (9.1)	5.4 (5.8)	5.6 (5.6)	5.3
KIX weighted	0.76	1.00	-4.8 (-4.8)	5.2 (5.4)	4.1 (4.3)	2.5 (2.4)	2.1
The World (PPP)	1.00	—	-3.1 (-3.3)	5.8 (6.2)	4.6 (4.6)	3.7 (2.7)	3.4

Note. Calendar-adjusted growth rates. PPP weights refer to purchasing-power adjusted GDP weights in the world for 2021, according to the IMF. KIX weights refer to weights in the Riksbank's krona index (KIX) for 2021. The forecast for GDP in the world is based on the IMF's forecasts for PPP weights. The forecast for KIX-weighted GDP is based on an assumption that the KIX weights will develop in line with the trend during the latest five years.

CPI	2020	2021	2022	2023	2024
Euro area (HICP)	0.3 (0.3)	2.5 (2.2)	2.6 (1.8)	1.6 (1.5)	1.7
United States	1.2 (1.2)	4.7 (4.3)	4.6 (3.1)	2.6 (2.3)	2.4
Japan	0.0 (0.0)	-0.2 (-0.3)	0.6 (0.4)	0.7 (0.4)	0.8
KIX weighted	1.1 (1.1)	2.6 (2.3)	2.7 (2.1)	2.0 (1.9)	2.1

	2020	2021	2022	2023	2024
International policy rate, per cent	-0.3 (-0.3)	-0.3 (-0.3)	-0.2 (-0.3)	-0.1 (-0.2)	0.0
Crude oil price, USD/barrel Brent	43.3 (43.3)	71.7 (68.0)	78.9 (67.5)	72.7 (64.0)	68.9
Swedish export market	-8.2 (-8.2)	8.3 (8.3)	6.6 (6.6)	3.9 (3.8)	3.4

Note. International policy rate is an aggregate of policy rates in the US, the euro area (EONIA), Norway and the United Kingdom.

Sources: Eurostat, IMF, Intercontinental Exchange, national sources, OECD and the Riksbank.

Table 7. Summary of financial forecasts

Per cent unless otherwise stated, annual average

	2020	2021	2022	2023	2024
Repo rate, per cent	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.1
10-year rate, per cent	0.0 (0.0)	0.3 (0.3)	0.6 (0.5)	0.9 (0.8)	1.2
Exchange rate, KIX, 18 Nov 1992 = 100	118.5 (118.5)	114.1 (114.3)	114.2 (114.5)	113.5 (113.8)	113.0
General government net lending*	-2.8 (-2.8)	-1.2 (-1.6)	-0.1 (-0.3)	0.5 (0.2)	0.7

* Per cent of GDP

Sources: Statistics Sweden and the Riksbank.



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