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Table of Contents

Recovery continues – monetary policy under conflicting pressures	3
<hr/>	
Economy growing in the shadow of the virus	7
<hr/>	
Supply-side disruptions slow growth also in Finland	31
<hr/>	
Assessment of public finances 2021: Time for fiscal policy to refocus on the future	37
<hr/>	
Long-term sustainability of the public finances	50
<hr/>	
Finland's new long-term forecast suggests GDP growth will be more subdued	55
<hr/>	
Supply bottlenecks are having wide-spread impacts on the economy	69
<hr/>	
Forecast tables for 2021–2024 (December 2021)	85
<hr/>	

EDITORIAL

Recovery continues – monetary policy under conflicting pressures

22 Dec 2021 – Bank of Finland Bulletin 5/2021 – Finnish economy

Economic recovery in the euro area and Finland is continuing, although the most rapid phase of growth is beginning to fade. Finland has come through the COVID-19 pandemic better than initially feared, thanks largely to the focus on behaving responsibly towards each other. Bringing the pandemic under control remains central, both in terms of people's health and for the economy. Nevertheless, the pandemic will continue to strongly influence our lives, and we will still need to exercise responsibility in the future.



Vaccine coverage in Finland is still insufficiently high, lagging behind e.g. Spain and Portugal, and it needs to be raised further. Broader use of the COVID certificates would also help to suppress the pandemic. As well as health, preventing infections will also safeguard economic recovery.

In the early phase of the COVID-19 crisis, the rapid and extensive response of economic policy succeeded in preventing mass unemployment and a wave of bankruptcies in Finland and other advanced economies. Both fiscal policy and monetary policy strongly supported growth and employment.

A different situation applies when the worst phase of the pandemic's economic effects is over. Central banks' monetary policies can begin to be gradually normalised as the economy recovers and the inflation outlook changes.

In the area of fiscal policy, using public funds to support the economy cannot go on for ever.

When the economy stands on firm ground, there is good reason to change direction in order to make provision for an ageing population and future crises.

In Finland such preparation is particularly important, as the proportion of elderly people in the population is growing exceptionally rapidly and our economy is already moving into higher gear. During an upswing, an expansionary fiscal policy becomes less effective in supporting growth and employment. It could instead lead to an increase in public procurement costs and a general rise in costs and prices, in addition to increasing the level of public debt.

The changing state of the economy and the factors pulling it in different directions should now be taken into account in economic policy. The pandemic is not yet over, and the road ahead could be very bumpy. Moreover, the effects of the COVID-19 crisis are still being felt strongly across the economy, and this includes rising inflation.

When the COVID-19 crisis began, there was a substantial slowdown in the pace of inflation, including in the euro area. For a period, average consumer prices actually fell. During the second half of 2021, inflation has gathered pace and has turned out to be faster than previously forecast. In the euro area, faster inflation than in recent years also looks set to continue longer than previously forecast, although many of the factors driving inflation are by their nature transitory.

As consumer and investment demand have grown in various countries since the acute phase of the crisis, inflation has been driven by the production bottlenecks caused by the pandemic. Many raw material prices have risen and the availability of components has weakened. This has been reflected in price rises and difficulties in meeting orders in many sectors of the economy.

Characteristic of recent months has been the rise in energy prices, which has also been felt in Finland. In addition to oil and electricity, the prices of natural gas and coal have also risen. The background to this has been strong global demand for energy, the supply side's slow response and exceptional weather conditions.

The price of energy could stay high for a prolonged period, and the production bottlenecks will not disappear overnight. However, by themselves they will not lead to a prolonged rise in inflation, unless they cause significant second-round effects and a wage-price spiral. Wage inflation in the euro area has so far been moderate. However, in the current exceptional circumstances, inflation forecasts are attended by a large measure of uncertainty.

In the Governing Council of the European Central Bank (ECB) we are constantly assessing the inflation outlook and the factors that affect it. The ECB has a symmetric inflation target of 2% over the medium term.

For several years, until last summer, euro area inflation was below target. The recent turnaround has caused concern over too rapid inflation. If inflation threatens to climb too high, the ECB's monetary policy will work to prevent this by reducing the purchase programmes and refinancing operations as well as by raising policy interest rates. This is how an independent central bank that has been set the primary objective of price stability operates.

Inflation in Finland has risen less than the euro area average. In 2022 as well, Finland's inflation is forecast to continue slower than across the euro area, averaging around 2% when measured by the annual change in the harmonised index of consumer prices (HICP inflation). The main

difference in the recent pick-up in inflation has been in energy prices: although energy prices have also risen in Finland, the rise has been less than the euro area average.

Although the rise in inflation has been relatively moderate in Finland compared with many other countries, it is clear that an individual's everyday experience of inflation may differ from this. For example, they may have noticed a substantial increase in the litre price at the petrol pumps. And the experience of individuals is important in the formation of inflation expectations. These expectations then influence how labour, goods and services are priced in the economy, and in this way influence inflationary pressures.

The COVID-19 crisis has substantially increased Finland's public debt. In 2020, the debt ratio relative to GDP grew by 10 percentage points. It is good news that the debt ratio seems to be contracting somewhat in 2021, with the recovery in output. In the immediate years ahead, however, public debt is forecast to grow again relative to GDP. This is due both to an increase in health and social care costs for an ageing population and developments in regard to other public expenditure items.

When Finland's general government finances are in deficit even in a favourable cyclical phase, corrective measures are called for. Economic research and international experience suggest that fiscal policy rules will support the sustainability of public finances. In Finland there is good reason to return as soon as possible to the sort of central government spending limits that can bring us closer to balanced public finances.

There is also a need to consider strengthening the national system for managing public finances. We could look at the Swedish example, for instance, which includes a system with clear numerical targets for public debt and for balancing the general government finances, and a reporting obligation on the Government regarding achievement of these targets.

As expenditure related to an ageing population continues to grow, it would be beneficial in bringing Finland's public finances onto a sustainable footing to explore in detail where we can cut public expenditure. In this task, decision-makers could be supported by a comprehensive, regularly prepared expenditure review that critically examines each expenditure item.

Such a review would best be prepared centrally under the direction of the Ministry of Finance or an independent expert body. An expenditure review would be most meaningful if linked into the decision-making process and if it has the support of decision-makers and is commissioned by them.

Although measures are needed to consolidate the public finances, strengthening their sustainability will also require continuation of the reforms to enhance the prospects for employment and growth. At the same time, these will also directly support people's economic wellbeing. Demographic changes and the trend in skills and education among the population will be of particular importance in the decades ahead.

According to the Bank of Finland's new long-term assessment, economic growth in Finland will average 1.2% per annum over the next 20 years. The population will decline, and labour productivity growth is estimated to be slower than in previous decades. In Finland, the outlook for productivity is dampened by the prospect that the rise in the average educational level of the population will come to a halt in the decades ahead.

Prospects for economic growth can be supported by investing in education and training, and by improving opportunities for work-based immigration. Strengthening incentives for employment will also be important, as will a broader reform of innovation policy.

Thus, responsible behaviour will still be needed in the Finland of the future. We must achieve a rapid reduction in COVID-19 infections, and in the economic sphere we should concentrate on solving our major longer-term problems.

Helsinki, 16 December 2021

Olli Rehn
Governor of the Bank of Finland

Tags

[COVID-19](#), [COVID-19 pandemic](#), [Finnish economy](#), [inflation](#), [monetary policy](#)

FORECAST FOR THE FINNISH ECONOMY

Economy growing in the shadow of the virus

Today – Bank of Finland Bulletin 5/2021 – Finnish economy

The Finnish economy has made a quick recovery from the steep downturn caused by the COVID-19 crisis. Although the outlook remains overshadowed by the pandemic, Finland's economy is forecast to grow by 3.5% in 2021 and by 2.6% in 2022. Supply bottlenecks and high raw material prices are, however, blunting growth in the economy and fuelling inflation. Growth will slow to 1.3% by 2024, reflecting the muted longer-term growth potential of Finland's ageing economy. Economic growth may be weaker than forecast if global supply-side disruptions persist or the pandemic worsens.



Finland's economy is recovering from the slump caused by the pandemic, driven especially by domestic demand. Private consumption is growing, albeit growth is being dulled by the pandemic and inflation that eats into consumer purchasing power. Investment growth will also pick up significantly in the forecast years. Public demand will support economic growth in 2021, after which its significance will diminish as COVID-related measures are wound down.

Global disruptions in supply chains and the availability of electronic components are slowing the recovery of exports, but, as the disruptions ease and growth continues in the export markets, exports will recover rapidly. The rapidly deteriorating virus situation in both Finland and elsewhere in Europe increases the uncertainty of households and businesses and is overshadowing the recovery from the economic crisis brought on by the pandemic.

Inflation has increased in 2021. Prices have been pushed up by the strong recovery in demand and the concurrent supply chain bottlenecks. There has also been a broadly based and strong increase

in energy prices. The high crude oil price has fed through to consumers at the petrol pumps, and the rise in wholesale electricity prices has to a certain extent been passed on to consumer prices.

Underlying inflation has also increased markedly, especially due to growth in services prices. The impact of supply bottlenecks has been reflected in the prices of consumer goods during the autumn of 2021. Global disruptions in the availability of raw materials and components and in shipping coupled with rising prices of raw materials and many intermediate goods have also significantly increased the costs of export firms.

Inflation will nevertheless slow during 2022, as energy prices are expected to fall and supply bottlenecks to ease. The inflation outlook is still surrounded by significant risks. There have been strong fluctuations in crude oil prices late in the year as news on the new virus variant has increased uncertainty on the market, and it is possible that the supply disruptions will persist.

Cyclical conditions remain strong, but the structures of the economy limit growth potential. The rapid improvement in employment will level off as the economy passes peak growth. On the back of favourable cyclical developments, the unemployment rate will drop below the rate of structural unemployment. Labour availability issues and other production bottlenecks will limit output growth during the forecast period. However, the long-term growth potential of the economy will strengthen once we rebound from the most severe phase of the crisis, driven by a recovery in investment and the easing of supply chain disruptions.

The legacy of the COVID crisis will include an expanded debt burden on Finland's public finances. The general government deficit in relation to GDP will improve from its height during the pandemic to slightly below 3% in 2021. Due to permanent expenditure increases, the structural deficit will remain above the pre-pandemic mark even at the end of the forecast period. At the end of 2021, Finnish public debt will be EUR 25 billion higher and the debt-to-GDP ratio will be more than 7 percentage points higher than before the crisis. During the forecast years, debt will grow due to general government deficits and defence procurement expenditure.

Forecast risks are predominantly on the downside. In the short term, the greatest cause for uncertainty is the deteriorating virus situation, and the threat of new virus variants will sustain uncertainty over the longer term as well, until the pandemic finally wanes everywhere in the world. Uncertainty is also caused by global supply disruptions. It is difficult to predict the duration of the supply problems or all their effects, especially in a situation where recurrent infection waves keep slowing down the global recovery from the pandemic.

On the other hand, the economy might perform better than expected. In a favourable situation, households may begin to spend the savings accumulated during the pandemic at a faster rate than anticipated. On the back of those savings, private consumption may grow faster and over a longer period than forecast. Investments could also produce a positive surprise, as they are prone to strong fluctuations. If the economic recovery from the recession caused by the virus crisis continues, investments may increase more than anticipated.

Table 1.

Key forecast outcomes						
Percentage change on the previous year						
	2019	2020	2021^f	2022^f	2023^f	2024^f
GDP	1.3	-2.9	3.5	2.6	1.5	1.3
Private consumption	0.7	-4.7	2.9	3.3	1.7	1.2
Public consumption	2.0	0.5	2.8	-0.3	-0.1	1.0
Fixed investment	-0.9	-0.7	1.2	4.7	2.1	1.7
Private fixed investment	-1.6	-3.4	2.8	4.6	2.6	1.7
Public fixed investment	2.3	11.0	-5.0	5.0	0.3	1.9
Exports	6.7	-6.8	4.0	5.5	4.5	3.6
Imports	2.2	-6.5	3.5	5.3	4.2	3.5
Effect of demand components on growth						
Domestic demand	0.4	-2.5	2.5	2.7	1.4	1.3
Net exports	1.7	-0.1	0.2	0.1	0.2	0.0
Changes in inventories and statistical error	-0.8	-0.2	0.9	-0.1	0.0	0.0
Savings rate, households, %	0.6	4.8	1.9	1.0	0.2	0.0
Current account, %, in proportion to GDP	-0.3	0.8	1.5	0.0	0.1	0.1

	2019	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
Labour market						
Number of hours worked	1.3	-3.0	1.5	2.1	0.7	0.4
Number of employed	1.1	-2.0	2.3	1.3	0.7	0.4
Unemployment rate, %	6.7	7.8	7.7	7.1	6.6	6.6
Unit labour costs	1.1	1.7	3.3	1.8	1.5	1.4
Labour compensation per employee	1.3	0.8	4.6	3.2	2.4	2.3
Productivity	0.2	-0.9	1.2	1.4	0.9	0.9
GDP, price index	1.5	1.3	2.3	2.7	1.7	1.9
Private consumption, price index	1.0	0.5	2.0	2.2	1.6	1.9
Harmonised index of consumer prices	1.1	0.4	2.1	2.0	1.6	1.8
Excl. Energy	1.0	0.8	1.3	1.7	1.7	1.8
Energy	3.0	-5.0	9.7	4.0	-0.1	1.3
Sources: Statistics Finland and Bank of Finland.						

Operating environment: forecast assumptions and financial conditions

The outlook for growth in the global economy and the euro area has remained strong, even though supply bottlenecks and the prolonged COVID pandemic are slowing actual growth. Supply disruptions will hold back growth until the global supply-demand imbalance fades, for example through the easing of the pandemic or new investments. With that said, the pandemic will continue to impact the economy until the virus has been brought under control all over the world. Despite these setbacks and the high level of uncertainty, the overall sentiment in the global economy is positive. The forecast is based on data available on 30 November 2021.

Production bottlenecks and the COVID pandemic overshadow the outlook for the global economy

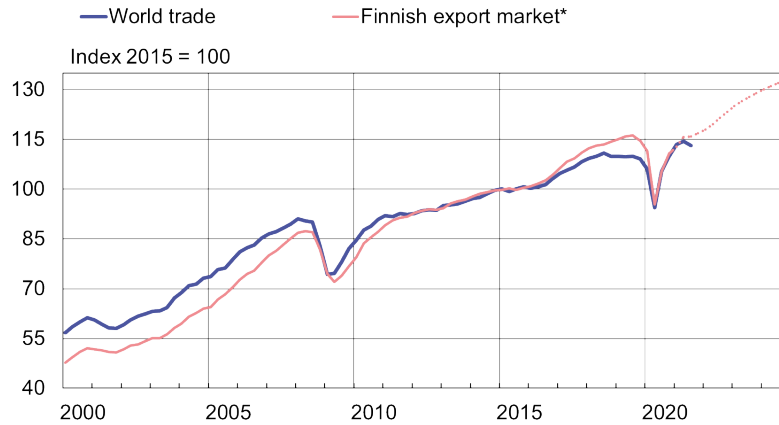
The global economy and world trade have rapidly recovered from the deep recession caused by the COVID pandemic (Chart 1). Supply problems and rising raw material prices combined with a strong increase in demand for goods have led to [disruptions in global supply chains](#). These disturbances have been reflected in world trade, where growth came to a halt in the third quarter of 2021.

The slowdown in world trade will also be reflected as temporary muted demand growth in

Finland's export markets. The COVID pandemic has added significantly to the supply disruptions, both by causing problems in supply chains and by shifting the focus of demand from services to goods.

Chart 1.

Supply-side bottlenecks will temporarily slow growth in Finland's export demand



Sources: CPB, Eurosystem and the Bank of Finland.

*Imports in the countries Finland exports to, weighted by their share of Finland's exports. The dashed line represents the underlying forecast assumptions on growth in the export markets.

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The forecast assumes that supply disruptions will begin to gradually ease in the second quarter of 2022 and dissipate entirely by the beginning of 2023. Global economic growth and world trade is consequently predicted to pick up, which will also strengthen the growth prospects for Finland's exports and for the Finnish economy as a whole. The duration and intensity of the supply disruptions, however, is highly dependent on the duration of the pandemic.

In 2024, global growth will stabilise close to the long-term average of around 3.5%. The increase in raw material prices, supply problems and increasing consumer demand will markedly raise prices worldwide in 2021 (Table 2). However, the strong rise in prices will be only temporary.

The COVID pandemic continues to impact economic growth. The pandemic situation has deteriorated towards the end of the year, especially in Europe, disrupting activities in, for example, some service sectors where close contacts are unavoidable. The deteriorating pandemic situation may also weaken economic growth by increasing supply-side disruptions, for example if the operation of factories or ports needs to be restricted and demand remains focused on goods. However, the adoption of new approaches and increasing vaccine coverage have reduced the impact of the pandemic on the economy.

According to the assumptions underlying the forecast, the pandemic situation will gradually ease over the course of 2022. However, there is still considerable uncertainty regarding the development of the pandemic and the spread of new virus variants. The future development of the global economy still hinges on the virus situation and how countries around the world manage to contain it.

The euro area economy continues to recover. Growth remains strong, even though supply bottlenecks and the deteriorating pandemic situation will somewhat slow growth in the near

term.^[1] Due to the structure of its economy, supply-side disruptions have a particularly strong impact on Germany, one of Finland's major trading partners.

Economic growth in the euro area is particularly driven by private consumption. The dissipation of supply constraints and the easing of the pandemic are expected to support growth in 2022.

Inflation in the euro area is projected to remain high next year, but to moderate to just under 2% in 2023. Underlying inflation, i.e. inflation excluding energy and food prices, is forecast to remain consistently at slightly below 2% over the forecast years. Price pressures are projected to be mainly temporary. Inflation is currently fuelled by a strong rise in energy prices, but also by supply-side constraints and the recovery in consumption of services.

Accommodative financial conditions continue to support growth

In December 2021, the Governing Council of the ECB decided that the progress on economic recovery and towards its medium-term inflation target permits a step-by-step reduction in the pace of asset purchases.^[2] Interest rates remain low. The interest rate on the main refinancing operations and the interest rates on the marginal lending facility and the deposit facility will remain unchanged at 0.00%, 0.25% and -0.50% respectively. As a whole, monetary policy will remain accommodative, in order for inflation to stabilise at the 2% inflation target over the medium term.

Financial conditions in Finland have remained accommodative and supportive of growth. The average interest rates for both new corporate loans and new housing loans remain moderate (Chart 2). The financial markets expect short-term interest rates in the euro area to remain low (Table 2). Continued low funding costs will support household consumption and business investments also through the forecast years.

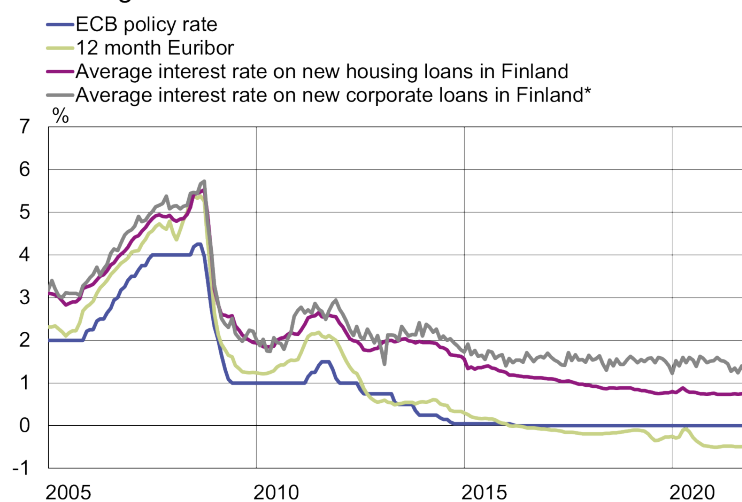
According to the [Bank Lending Survey \(BLS\)](#), credit standards on corporate loans and consumer credit have not changed significantly in 2021, but on average, the credit standards on mortgage lending have eased. According to the Business Tendency Survey by the Confederation of Finnish Industries (EK), financial difficulties have not become a particularly significant obstacle to output or sales over the last few quarters.

Chart 2.

1. More detailed information on the euro area forecast is available at <https://www.ecb.europa.eu/pub/projections/html/index.en.html>.

2. More detailed information on the ECB's monetary policy decisions is available on the [ECB website](#).

Average interest rates on new loans have remained moderate



*Excl. overdrafts and credit card debt.

Sources: European Central Bank, Reuters and Bank of Finland.

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Table 2.

Forecast assumptions					
	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
Volume change year-on-year, %					
Euro area GDP	-6.5	5.1	4.2	2.9	1.6
World GDP	-2.8	5.9	4.4	3.8	3.4
World trade*	-8.3	10.2	4.5	4.9	3.7
Finland's export markets, % change**					
Oil price, USD/barrel	41.5	71.8	77.5	72.3	69.4
Export prices of Finland's competitors, euro, % change	-3.9	8.8	5.5	0.7	1.0
3 month Euribor, %	-0.4	-0.5	-0.5	-0.2	0.0
Finland's nominal effective exchange rate***	108.7	109.3	107.8	107.8	107.8
USD value of one euro	1.14	1.18	1.13	1.13	1.13

*Calculated as the weighted average of imports.

**The growth in Finland's export markets is the import growth in the countries Finland exports to, weighted by their average share of Finland's exports.

***Broad nominal effective exchange rate, 2015 = 100. The index rises as the exchange rate appreciates.

Sources: Eurosystem and Bank of Finland.

Demand and the public finances

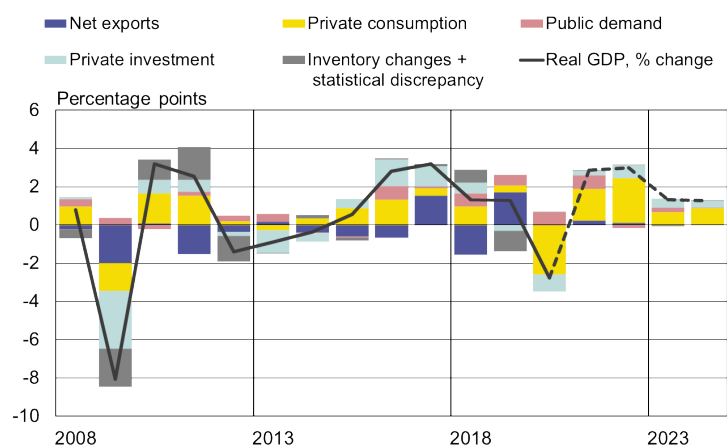
Broadly based economic growth will continue in the forecast years as the pandemic eases. Growth is dependent on domestic demand, in particular (Chart 3). Growth in total demand will hinge on private consumption and investments over the whole forecast period up to 2024. Public demand will support economic growth in 2021, after which its significance will diminish as COVID-related measures are wound down. Global disruptions in the availability of raw materials and components and in [shipping will slow down the recovery of exports and total growth](#) in 2021 and 2022. Despite this, exports will grow rapidly in the forecast period as world trade continues to recover. At the same time, imports will grow at almost the same rate as exports.

However, the recovery in demand is still fragile. The rapidly deteriorating infection situation in

both Finland and elsewhere in Europe increases the uncertainty of households and businesses and will in the short term overshadow recovery from the crisis triggered by the pandemic. Prolonged supply disruptions would hamper export growth, in particular, thus slowing overall economic growth.

Chart 3.

Economic growth dependent mainly on domestic demand



The GDP growth contribution of each demand component has been calculated on the basis of its volume growth and its value share in the previous year. The figures for 2021–2024 are forecasts.

Sources: Statistics Finland and Bank of Finland.

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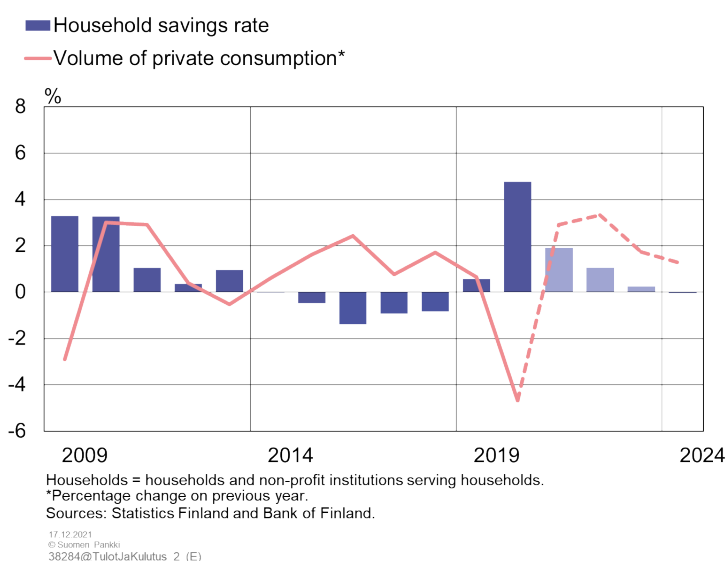
Recovery in private consumption dependent on virus

Over the forecast period, household consumption will recover from the shock caused by the initial phase of the COVID crisis. Private consumption will grow by nearly 3% in 2021, and growth will continue to pick up in 2022. However, the recovery is uneven and the pandemic continues to hamper the consumption of many services, particularly in culture, leisure and tourism. Rising inflation and supply chain disruptions are also limiting consumption growth. From 2023 onwards, private consumption growth will stabilise with the normalisation of demand (Chart 4).

Consumer confidence has deteriorated sharply during the autumn, as the infection situation has deteriorated rapidly both in Finland and elsewhere in Europe. The rapid deterioration of the virus situation this winter will hold back private consumption growth in the coming months as consumers grow more cautious after the optimism in summer and early autumn.

Chart 4.

Household savings rate remains positive



Employment will continue to improve over the forecast period, supporting households' earnings development and consumption opportunities. Nominal earnings are expected to grow by close to 2.5% per annum throughout the forecast period, and wages will develop favourably due to growing employment and rising earnings.

However, household purchasing power will suffer from the increased inflation, especially in 2021, which is why the recovery of private consumption will not peak until 2022. Real disposable income is expected to increase at an average rate of 1% per annum over the forecast period, bolstering consumption growth.

During the pandemic, consumers have changed their consumption behaviour significantly and saved more than usual. The household savings rate will remain positive in the immediate years ahead and will only fall to zero at the end of the forecast period (Chart 4).

Increased savings and low interest rates give households more economic leeway. Households will not spend all their accumulated savings on consumption over the forecast years, but instead continue to invest a significant part of their savings in financial assets and housing.

Households have accumulated large amounts of cash deposits and other investment assets during the COVID crisis. Both increased savings and increased asset values have boosted household wealth. The net financial assets of the household sector (including non-profit institutions serving households), i.e. the difference between financial assets and liabilities, increased in the second quarter of 2021, reaching an all-time high of EUR 209 billion.

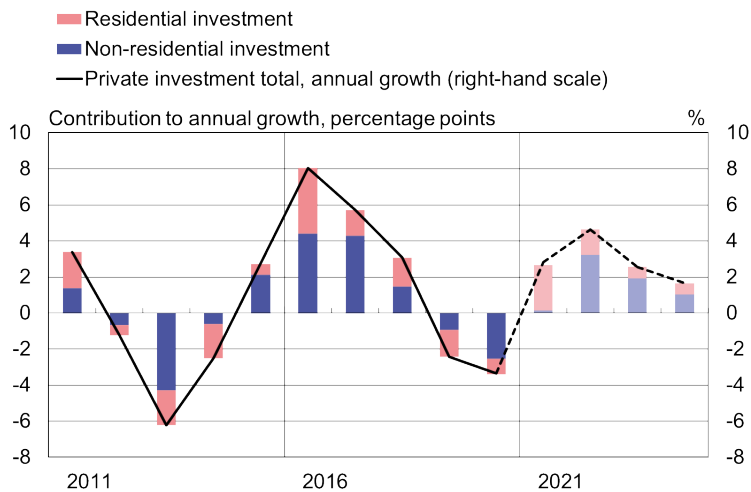
Growth in private investment will pick up

Private investment will resume growth in 2021 as housing construction picks up and will grow by almost 3% in 2021. The pick-up in non-residential investment will boost private investment growth to over 4% in 2022. Growth in private investment will level off towards the end of the

forecast period (Chart 5). In the longer term, investment growth will be held back by the unavailability of skilled labour and poor profit expectations.

Chart 5.

Pick-up in non-residential investment boosts total investment



Sources: Statistics Finland and Bank of Finland.

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Housing construction will grow rapidly in 2021. The number of building permits granted and new construction projects have increased since summer 2020, and growth continued through 2021. The increase in permits and new projects will be reflected in the amount of new-build construction completed, especially in 2021 and 2022. Construction investment growth is supported by strong developments on the housing market, low interest rates and rising housing prices in growth centres. Growth in residential investment will level off towards the end of the forecast period.

The capital-intensive manufacturing sector has coped with the pandemic better than feared. Over the past year, business confidence in the economy has clearly strengthened across all main sectors. The recovery in fixed investment is bolstered by a strong increase in order books, high capacity utilisation rates, favourable financing conditions and growing exports. However, the increased uncertainty may also affect investment.

The profitability of the corporate sector as a whole has remained good throughout the pandemic, even though there are large industry-specific differences. The profit share of the corporate sector, i.e. the ratio of operating surplus over value added, has remained at around 30%. The good corporate profitability will strengthen investment opportunities as the pandemic eases.

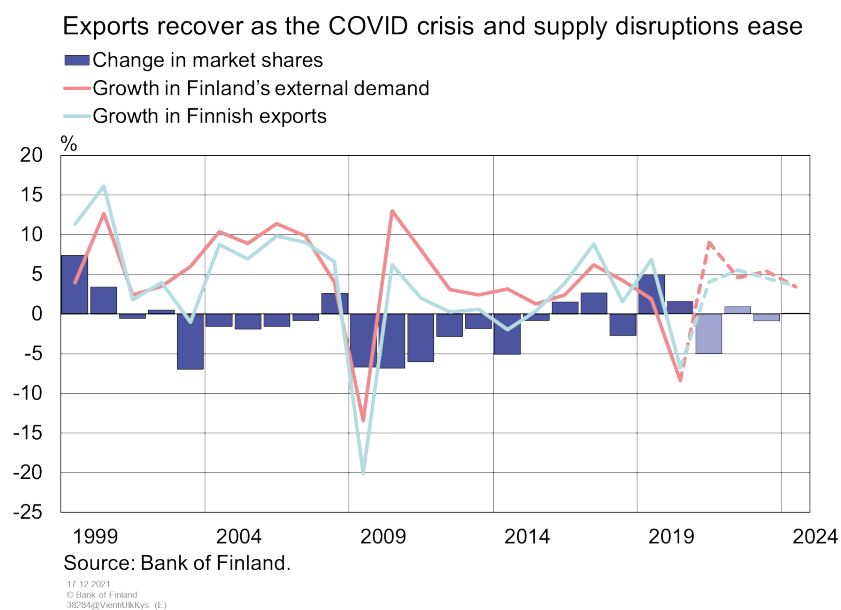
The corporate loan stock has remained almost unchanged since summer 2020, when the growth rate of new corporate loan drawdowns slowed. In contrast, the stock of corporate deposits has grown strongly during the pandemic. Corporate sector indebtedness did, in fact, decline in 2020. According to the Bank Lending Survey, credit standards on corporate loans have eased and demand for corporate loans has increased in 2021. Accommodative financing conditions and access to finance will support investment growth in the forecast period.

Supply disruptions slow export growth

Brisk international demand will boost Finland's export growth in the years ahead. However, the recovery of foreign trade from the pandemic has been hampered by [global supply disruptions](#) and [uncertainty regarding the development of the pandemic](#). Disrupted supply chains and logistics have particularly impacted foreign goods trade.

At the same time, supply disruptions coupled with rapidly increasing international demand have raised the prices of raw materials and many products as well as shipping costs. As a result, production costs in the export sector have increased substantially.

Chart 6.



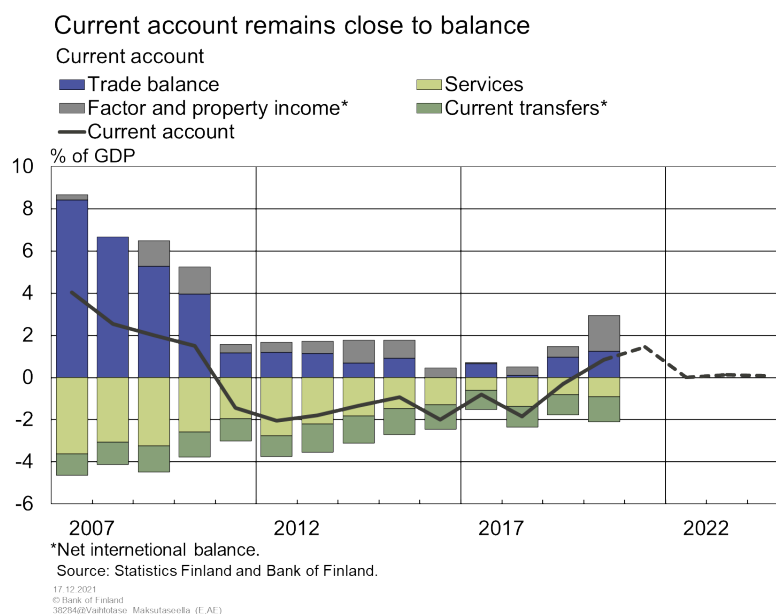
Despite supply disruptions, Finnish exports are making a rapid recovery from the economic crisis brought about by the pandemic. Export growth will pick up to 4% and exports will surpass pre-pandemic volumes in 2021, mainly driven by the recovery of goods exports. However, in 2021, export growth will clearly lag behind growth in the main export markets, as export growth got off to a slow start at the beginning of the year (Chart 6).

The good growth trend in exports will continue in 2022–2024. The recovery of services exports and the gradual easing of supply disruptions will boost export growth to over 5% in 2022. However, a gradual normalisation in international demand will slow export growth from 2023 onwards, to slightly over 3% in 2024.

Over the forecast period, imports will grow at almost the same rate as exports, leaving net exports weak. Imported inputs play a significant role in the production of exported goods and services. Import growth will be sustained by both positive export growth and strong domestic demand. Brisk investment and rapid growth in private consumption will increase imports and weaken net exports.

The current account entered surplus in 2020 after a long period of deficit. The surplus has continued to grow throughout 2021 but will begin to decrease in 2022 (Chart 7). Contributors to the surplus include several [temporary factors](#), such as a sharp decline in the value of imports from Russia during the COVID crisis and exceptional dividend flows. Nevertheless, the current account will remain roughly in balance with GDP over the forecast period.

Chart 7.

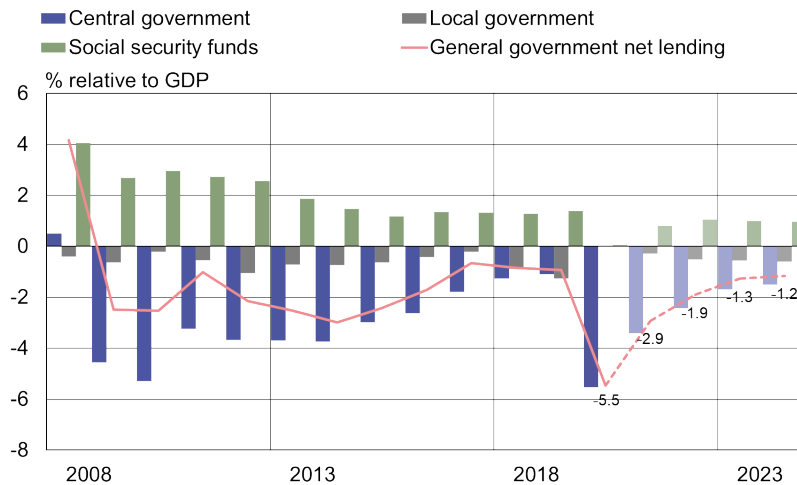


The COVID-19 crisis will leave a mark on the public finances

The COVID-19 crisis caused a strong increase in the general government deficit in 2020. In 2021, the general government deficit relative to GDP will contract to slightly below 3% and then gradually to just over 1% by 2024 (Chart 8). In the forecast period, good cyclical conditions will reduce the deficit by significantly strengthening general government revenue and moderating expenditure growth as the pandemic eases.

Chart 8.

General government deficit contracts after crisis year 2020



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Growth in employment, earnings and private consumption and improved results for businesses will increase tax revenues for central government and the municipalities. At the same time, employers' social security contributions will rise after the temporary reduction in 2020, unemployment expenditure will decrease and property income will increase. This will bring social security funds back to a surplus of around 1% of GDP from 2021 onwards.

Expenditure allocated to pandemic relief and stimulus measures will remain substantial in 2021. These costs are mainly borne by central government. Even after the COVID crisis eases, public expenditure will grow due to permanent expenditure increases and future-oriented investments in 2021–2022 set out in the Government Programme. Measures in the Sustainable Growth Programme for Finland will also increase public expenditure, but they are entirely funded from the EU's Recovery and Resilience Facility (RRF).

Due to pandemic-related measures, real public expenditure will increase by almost 3% in 2021. In the years ahead, clearing of the healthcare backlog and rising age-related expenditure will sustain the level of public expenditure.

Corporate subsidies and income transfers will remain exceptionally high in 2021 due to COVID subsidies. The volume of public investments will increase in 2022 with Government-initiated projects and investments relating to the establishment of 'wellbeing services counties'. The sharp rise in capital goods prices will increase investment expenditure in 2021 and 2022.

Income transfers from central to local government will gradually decrease after being exceptionally high in 2020. In the forecast, the wellbeing services counties that begin operating in 2023 are included in local government, the deficit of which will stabilise at just over 0.5% of GDP by 2024.

The pandemic has left a major mark, particularly on general government debt. At the end of 2021, the general government debt-to-GDP ratio will be around 67%, which is more than 7 percentage points higher than before the COVID crisis. Total debt has increased by almost EUR 25 billion from before the pandemic. However, the debt ratio will decrease slightly compared with 2020

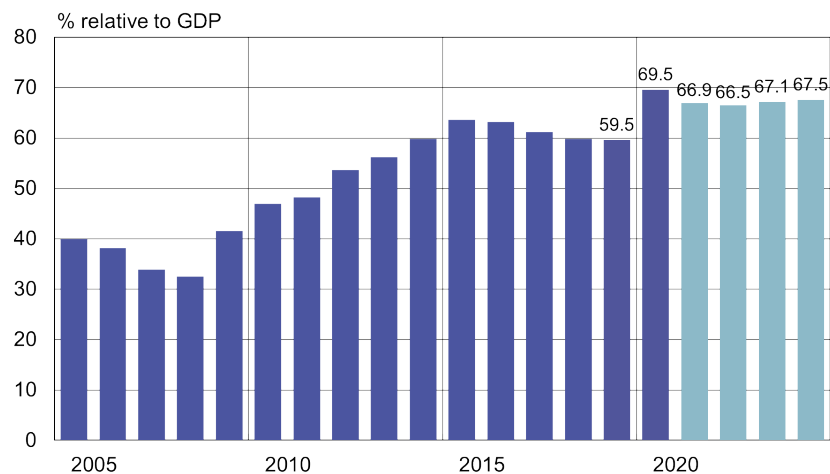
(Chart 9).

In 2021, the need for borrowing is decreased by the central government debt drawn down in 2020 in preparation for costs that ultimately were lower than expected. In 2022, the debt ratio will continue to decline slightly owing to positive economic growth. In 2023–2024, the debt ratio will resume growth as Finland passes peak economic growth. In general in the forecast years, debt will grow due to general government deficits and defence procurement expenditure.

Although the general government debt ratio will remain fairly stable in the forecast years, in the longer term the debt ratio will face [considerable upward pressure](#). This will be mainly due to the persisting structural deficit in the public finances and the growing expenditure pressures generated by an ageing population.

Chart 9.

General government debt ratio to remain higher than pre-pandemic



Sources: Statistics Finland and Bank of Finland (forecasts).

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Supply and cyclical conditions

Cyclical conditions will remain strong, but growth in potential output will remain modest, due to structural factors in the economy.^[3] The brisk growth in employment will level off as the fastest pace of economic growth moderates. Labour supply problems and other production bottlenecks will constrain production during the forecast period. However, the COVID-19 crisis will dampen the economy's growth potential only temporarily. Potential growth will recover from its dip during the crisis, reflecting the recovery of investment and the easing of supply chain disruptions.

Pace of employment growth has peaked

The labour market has recovered rapidly as demand returns to pre-pandemic levels, but the most rapid phase of employment growth is now over. The employment rate will increase by some 2 percentage points from the level of 2020 during the forecast period, i.e. to 73.6%. The number of

3. Potential output is the volume of GDP when all the inputs in the economy are in normal use.

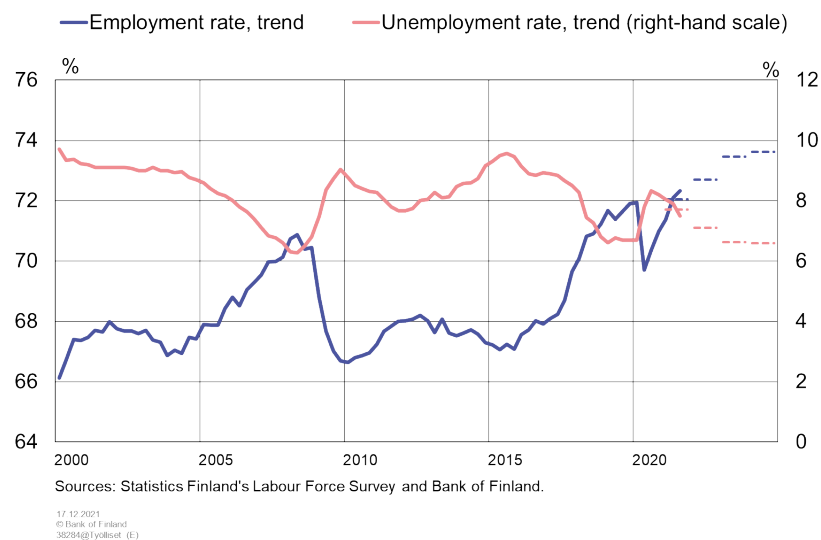
employed will increase, and at the end of the forecast period there will be some 117,000 more persons employed than in 2020. In 2021, the unemployment rate will be only slightly below the level of the previous year, i.e. 7.7%, but it will decline to 7.1% in 2022 and will continue through 2023–2024 at 6.6%.

Employment picked up strongly during the spring and summer, driven by the rapid economic recovery. Unemployment has decreased, albeit significantly less than the improvements in employment, due to the increase in labour force participation. Furloughs have decreased, but they are still higher than before the pandemic.

The positive trend in employment is overshadowed by the fact that a larger than normal share of employment growth is due to the increase in the number of part-time jobs and fixed-term contracts. The protracted pandemic has meant continued uncertainty on the labour market and has increased caution in the filling of permanent full-time job vacancies.

Chart 10.

Employment growth will slow



The fastest phase of labour market recovery is, however, now over. The indicators point to continued growth in employment, albeit at a more moderate pace. The number of job vacancies is still increasing, but employment growth is constrained by labour market mismatches. Companies are reporting in surveys a lack of suitable labour and difficulties in filling vacancies.

As mismatch increases, the higher number of vacancies does not result in a significant decline in unemployment. This is reflected also in the Beveridge curve, where, during a boom, an increase in job vacancies is typically accompanied with a decline in unemployment. The curve has steepened, and one of the reasons for this is the weakening of labour market matching (Chart 11).

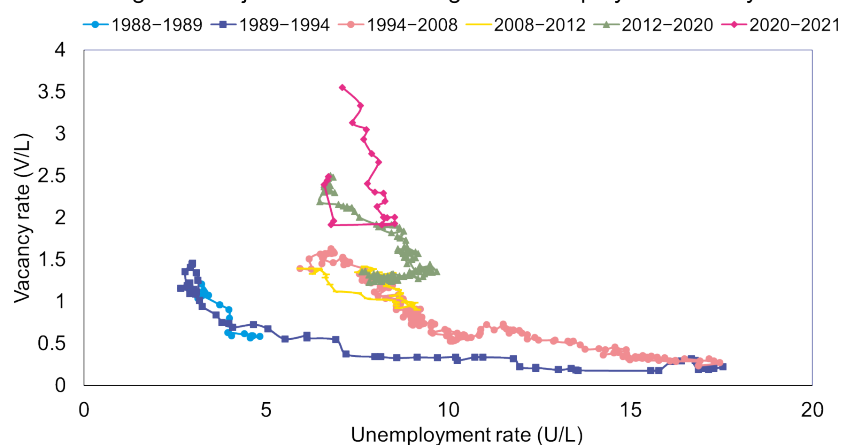
Mismatch differs between industries and professions. For example, in industries involving a lot of human contacts, the supply of labour may be partly constrained by the reduced attractiveness of these industries. On the other hand, in certain industries that have been hit by COVID-19, there is still room for increased demand if labour supply does not become a critical obstacle.

Due to the rapid recovery of the economy and employment, some of the mismatches may, however, turn out to be temporary, as frictions in the filling of jobs may level off as the fastest pace of growth in labour demand moderates.

Growth in long-term unemployment has levelled off in recent months, but the number of long-term unemployed is still 30,000 higher than before the pandemic. Protracted spells of unemployment make it more difficult to find a job. The working-age population will continue to decline this year and in the years immediately ahead. Due to these factors, growth in employment will slow towards the end of the forecast period, as those furloughed and the unemployed persons more easily employed will have found a job. On the back of favourable cyclical developments, the unemployment rate will fall below the level of structural unemployment during the forecast period.

Chart 11.

Beveridge curve: job vacancies rising and unemployment slowly declining



The Beveridge curve describes the cyclical situation on the labour market and labour market efficiency in matching job seekers to job vacancies. Shifts in the Beveridge curve are interpreted typically as reflecting cyclical fluctuations (low unemployment and a high number of vacancies during a boom; high unemployment and a shortage of vacancies during a recession). A shift in the Beveridge curve is interpreted typically as reflecting changes in labour market efficiency.

Sources: Ministry of Economic Affairs and Employment, Statistics Finland.

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The economy is entering a boom

The Finnish economy has recovered rapidly from the deep recession caused by the COVID-19 crisis. The rate of recovery does, however, differ considerably between industries. The favourable economic conditions are supported by the global economic recovery. Cyclical conditions will improve both in the euro area and in Finland during the forecast period.

In 2022, Finland's output gap will turn positive (Chart 12).^[4] Reflecting improvements in the cyclical situation and the increase in supply disruptions, the domestic production chain will experience bottlenecks and labour supply problems during the forecast period. [Developments in the economic cycle are subject to uncertainty](#) that relate to, in particular, the duration of global supply disruptions and the situation with the pandemic.

Global supply disruptions and the rise in raw material and transport prices will inevitably also

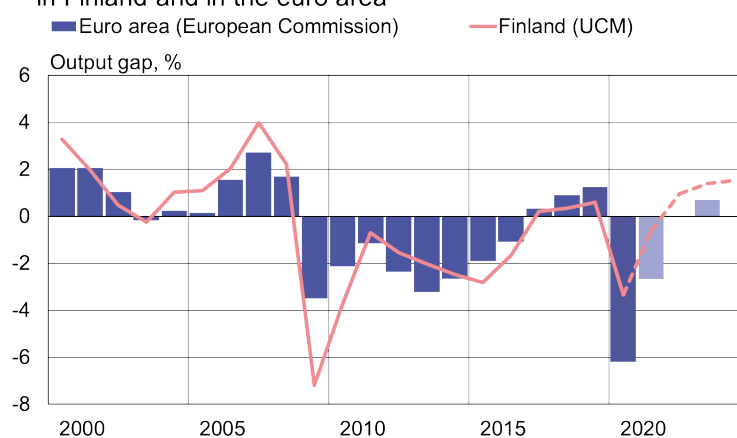
4. The difference between GDP and potential output is referred to as the output gap, and it is usually expressed as a percentage of potential output. A positive output gap cannot be maintained without upward pressure on wages and prices.

affect the Finnish economy. Global supply bottlenecks in the production of semiconductor components and raw materials as well as in sea transport have resulted in the closure of plants globally and delayed deliveries. Transport costs and raw material prices have risen since the end of 2020.

In Finland too, manufacturing companies in particular are reporting that supply bottlenecks, for example a shortage of materials, as well as logistical problems are affecting production.^[5] Supply disruptions are described in more detail in the [article](#), published in connection with the forecast. The effect of supply bottlenecks on economic growth in Finland is assessed also in the [alternative scenario](#), which shows that, without the supply disruptions, economic growth would be half a percentage point higher in 2021.

Chart 12.

Strong recovery from the pandemic will turn the output gap positive in Finland and in the euro area



Finland's output gap assessed with the aid of an Unobserved Components Model (UCM).
Sources: European Commission and calculations by the Bank of Finland.

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The COVID-19 crisis is expected to slow the economy's potential rate of growth only temporarily (Chart 13). Potential growth will recover from its dip during the crisis, reflecting the recovery of investment and the easing of disruptions in the supply chains. GDP growth is estimated to be close to its long-term potential rate at the end of the forecast period. In the medium term, the level of potential output is not expected to remain significantly lower than forecast before the pandemic. The COVID-19 crisis will thus not leave significant permanent scars on the economy.

Growth in the capital stock was slow during the early phase of the pandemic, due to the weakness of investment, which will erode potential output. The capital-intensive manufacturing sector has, however, coped with the crisis better than feared, and the pick-up in capital investment will bolster the capital stock and output potential.

The increase in long-term unemployment and the high level of structural unemployment caused by the pandemic will reduce the importance of labour as a source of potential output during the

5. According to business surveys, the amplification of supply bottlenecks in 2021 has, however, affected industrial and export companies extensively: of Finland's goods exports, some 36% are accounted for by industries in which at least half of the companies reported in October 2021 that capacity and materials shortages were disrupting production.

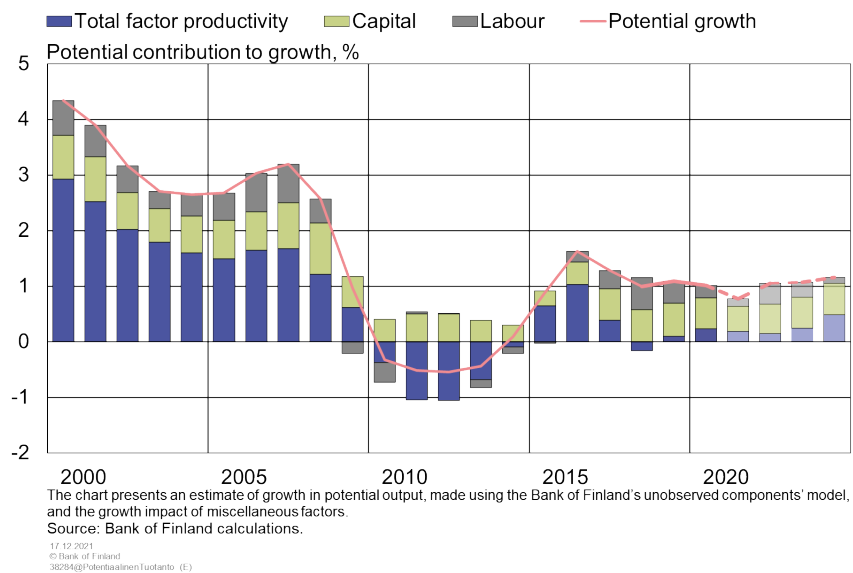
forecast period. Labour supply will be constrained also by the decrease in the working age population (15–74-year-olds). On the other hand, as a result of positive developments in the participation rate, labour input will continue to support growth in potential output.

Growth in total factor productivity will remain subdued temporarily, due to disruptions in supply chains and lags in the reallocation of resources. In addition to the immediate shortage of components and other materials, the pandemic may force businesses to look for new sub-contractors and employees to move from withering companies to successful ones.

The effects may become more pronounced if the prolonged supply disruptions were to, for example, permanently weaken the division of labour in the global economy. On the other hand, the pandemic may have accelerated the digitalisation process, which may in turn strengthen the conditions for economic growth. The structural rigidities and frictions in the economy will play an important role in how effectively economic resources are reallocated and how quickly potential output improves.

Chart 13.

The crisis will slow growth in potential output only temporarily



Prices, wages and costs

Inflation has picked up in 2021. Demand has recovered robustly, while at the same time supply chain bottlenecks have emerged, which has pushed up inflation also in Finland. Energy prices, too, have been increasing at a strong pace. Inflation will, however, slow, reflecting the expected downward trend in energy prices in spring 2022 and the easing of supply bottlenecks in the second half of 2022. Growth in nominal earnings will be 2.4% in 2021, and the pace of growth is expected to remain unchanged in the subsequent years of the forecast period. Compensation per employee will increase by 4.6% in 2021, but the rate of increase will slow, to some 2.3% in 2024. Finland's cost-competitiveness improved relative to the euro area in 2020, but some of the achieved advantage will be lost in 2021–2024.

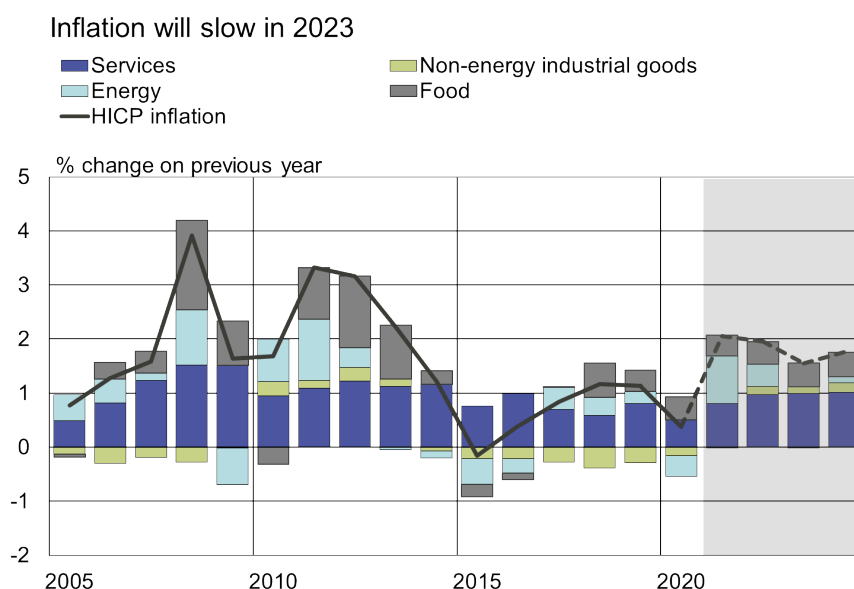
Supply bottlenecks and energy prices will determine the near-term trend in inflation

Consumer prices are expected to rise by 2.1% in 2021 (Chart 14). The annual rate of change in consumer prices, as measured by the harmonised index of consumer prices (HICP inflation) was only 1.0% in January, but it picked up to 3.5% in November. The higher rate reflects, in particular, the broad-based rise in energy prices. The elevated price of crude oil has fed through to fuel prices, and the rise in the wholesale price of electricity has been transferred partly to consumer prices.

Underlying inflation, too, has picked up notably, reflecting the stronger pace of increase in services prices compared with a year earlier. Developments in the prices of services sub-components have been divergent and, for example, the rise in real housing rents has slowed to below 1%. The effects of supply bottlenecks have spilled over to the prices of consumer goods, which started to rise in Finland in autumn 2021. Inflation in Finland has, however, been slower than in the euro area, reflecting in particular the slower rate of increase in the prices of energy and consumer goods compared with the euro area average.

The outlook for inflation is still subject to significant risks. For example, crude oil prices have fluctuated strongly in recent weeks, as news of the new COVID-19 variant have increased uncertainty on the markets. A new wave of COVID-19 infections may impact inflation in a number of ways. On one hand, a deterioration in the epidemic situation may dampen inflationary pressures if demand both in Finland and globally fades significantly. On the other hand, it may also amplify supply bottlenecks, the intensity and duration of which have a significant impact on inflation developments.

Chart 14.



Sources: Eurostat and Bank of Finland forecast.

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Inflation will remain high still in the first half of 2022 ^[6], but it will slow towards the end of the year. As a result, the average rate of inflation will be 2.0%. Crude oil and electricity prices are

expected to start declining and, towards the end of the year, energy prices will already be making a negative contribution to inflation. The forecast assumes that supply bottlenecks will ease in the second half of 2022, which will slow the upward trend in the prices of consumer goods. Meanwhile, services inflation is expected to accelerate, in response to stronger demand and rising wages.

In 2023, inflation will slow to 1.6%. This is due particularly to the decline in energy prices. Underlying inflation will, however, continue to make a sustained positive contribution to headline inflation, as in previous years, as the economy will grow at a higher rate than potential growth. The rise in prices will also be sustained by the ongoing stable growth in earnings and the strengthening of inflation expectations. Inflation is expected to rise slightly, to 1.8% in 2024.

Inflation will slow growth in real earnings

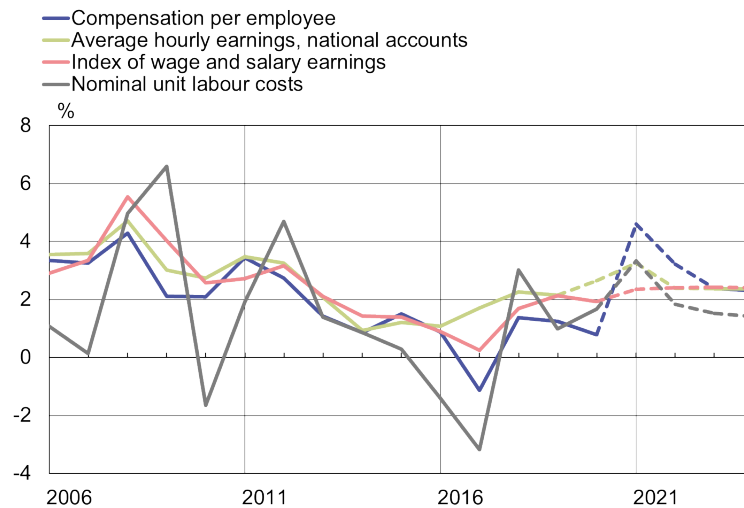
The round of negotiations for collective labour agreements for the immediate years ahead began in autumn 2021; in the agreements concluded thus far, the negotiated pay rises are some 1.9%. Nominal earnings are expected to grow by 2.4% in 2021, and the pace is expected to remain unchanged in 2022–2024 (Chart 15).

Preparation of the forecast used an assumption based on a long-term observed correlation, which suggests that the pace of growth in real wages in 2020–2024 will be broadly the same as growth in productivity. Growth in real earnings will slow notably in 2021, reflecting the pick-up in inflation, but real earnings will nevertheless grow during the forecast period. The price of labour, measured in terms of compensation per employee, will rise by over 4.6% in 2021, following the slow growth of the previous year. The fluctuation is due to mainly pandemic-related factors, for example the ending of the temporary reductions in private sector employer pension contributions. The rate of increase in the price of labour will slow during the forecast period, to stand at 2.3% in 2024.

Chart 15.

6. The European Central Bank's tool for monitoring inflation is the harmonised index of consumer prices (HICP). Inflation as measured by a broader indicator, i.e. the national consumer price index (CPI), is projected to be 2.4% in 2022. The differences in the rate of increase in the indices is explained mainly by changes in the costs of owner-occupied housing, which have risen at a stronger pace than overall prices.

Upward trend in price of labour will level off in forecast period



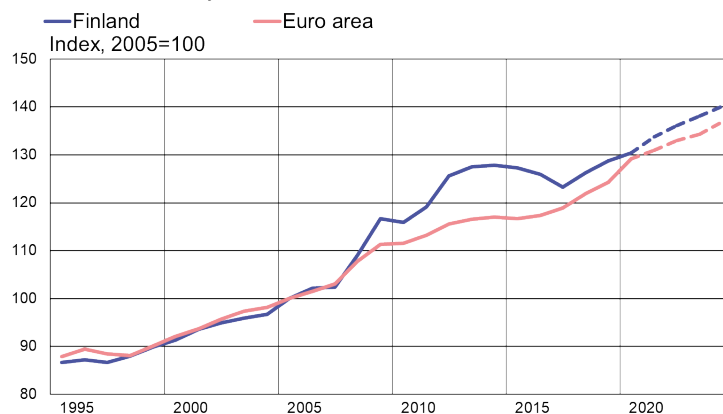
Sources: Statistics Finland and Bank of Finland.

Nominal unit labour costs will increase by 3.3% in 2021. The higher price of labour will accelerate the increase in unit labour costs, which, on the other hand, will be dampened by improvements in labour productivity. However, the slowing upward trend in the price of labour will also dampen the rise in unit labour costs as of 2022. At the end of the forecast period in 2024, unit labour costs will grow by 1.4%. Forecasts for unit labour costs, adjusted for the terms of trade, for the economy as a whole indicate a slight weakening of Finland's cost-competitiveness relative to the euro area in the forecast period 2021–2024 (Chart 16). Forecasts for the price of labour are, however, subject to high uncertainty, because during the pandemic, most countries have introduced support measures that affect the measurement of the price of labour.

Chart 16.

Growth in unit labour costs adjusted for terms of trade only slightly higher than euro area average

Terms-of-trade adjusted nominal unit labour costs



Sources: Statistics Finland, Eurostat, plus Bank of Finland and ECB December 2021 forecasts.

Risk assessment: COVID-19 and production

bottlenecks threaten economic growth

The risks to the forecast are on the downside. In the short term, the highest level of uncertainty is caused by the renewed deterioration of the pandemic. The steep rise in COVID-19 infections may maintain or increase people's caution and lead to a tightening of containment measures during the winter. This would slow recovery, particularly in those service industries where recovery is most incomplete. In the long term, uncertainty will be sustained by the threat of new virus variants until the pandemic is reigned in globally.

Global supply problems related to the availability of raw materials and logistics have constrained production also in Finland. In addition, the upward trend in the prices of energy, intermediate goods and industrial goods has pushed up inflation. It is difficult to foresee the actual duration and all the impacts of the supply problems, particularly in a situation in which recurring waves of infections are slowing global recovery from the pandemic.

Inflation developments are subject to considerable uncertainty during the forecast period, but the risks to the outlook for inflation are more balanced than the other risks to the forecast, particularly the risks related to external price pressures. The increase in uncertainty caused by the deterioration in the pandemic situation as well as growing supply have pushed down e.g. crude oil prices, and the trend in raw material prices may also be more subdued than expected during the forecast period. At the same time, the prices of emissions allowances have risen strongly, and therefore developments in energy prices are still also subject to upside risks. Supply bottlenecks, too, are still subject to heightened uncertainty, and they may drive inflation more and for longer than projected.

Of the domestic cost factors, uncertainty about the future pace of inflation comes from the potential inflationary effects of future pay agreements, as wage increases may turn out to be larger than projected. Too large pay increases relative to municipalities' ability to pay would also weaken the public sector balance more than expected, and if pay negotiations were to drag on, the possibility of industrial action would also increase.

Residential construction activity is projected to remain record brisk still next year, reflecting demand for new-build construction, in particular. However, residential construction typically reacts rapidly to fluctuations in demand, and a sharp decline in economic growth due, for example, to a sudden worsening of the pandemic could weaken residential construction activity significantly, particularly in the case of rented housing.

Household debt levels continue to rise, which is explained particularly by the stronger demand for housing loans. In addition to dwellings for owner-occupied purposes, households have increasingly also acquired dwellings for investment purposes, often largely by debt-financing. The largest mortgages are typically taken out by wealthy households who also have assets for covering their debt. In addition to conventional mortgages, housing transactions are increasingly financed by housing company loans, and there is no detailed information on the resilience of those households that have taken out these loans.

The forecast also includes upside risks to the economic outlook. According to the forecast, the household savings rate is expected to decrease gradually, but it is not projected to turn negative. In a favourable scenario, however, households may begin to spend the savings they have accrued during the pandemic more than expected, and, as a result, private consumption may grow at a

stronger pace and for a longer period than projected.

Investment growth is projected to pick up, but it is expected to fade at the end of the forecast period, due mainly to structural factors. However, investment typically fluctuates strongly and is difficult to forecast. If the economy continues to recover from the COVID crisis, investment could continue to grow for longer than forecast.

Tags

[COVID-19 pandemic](#), [forecast](#), [economic forecast](#), [economic outlook](#), [cyclical situation](#)

ALTERNATIVE SCENARIO

Supply-side disruptions slow growth also in Finland

Today – Bank of Finland Bulletin 5/2021 – Finnish economy



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Supply-side bottlenecks have weakened the momentum of global growth. Finnish manufacturing companies are also suffering from shipping disruptions and input shortages. Under a scenario prepared by the Bank of Finland, supply disruptions reduce GDP growth in Finland by around 0.5 percentage points in 2021.



Supply chain problems coupled with the rapid rise in demand for consumer goods have led to global supply disruptions. Many of the reasons for supply-side bottlenecks are related to the COVID-19 pandemic, such as the concentration of consumption demand on goods during the crisis and disturbances caused by coronavirus outbreaks in factories and ports. In addition, rising raw material and energy prices have increased production costs.^[1] Bottlenecks in supply weaken the momentum of global growth, and, if the pandemic continues, there is also a risk of prolonged supply disruptions.

1. See [‘Supply bottlenecks are having wide-spread impacts on the economy’](#) for a more detailed analysis of the causes of the supply bottlenecks.

Supply problems have affected the production of semiconductors, in particular. The shortage of electronic components had a particularly strong impact on the automobile industry, where the need for components is high. This is why supply disruptions have had a relatively strong impact on, for example, the German economy. [The ECB estimates that](#) bottlenecks in supply have weakened annual growth in German goods exports by almost 3 percentage points per month. In the euro area as a whole, bottlenecks are estimated to hold back goods export growth by just under 2 percentage points.

[The OECD, in turn, estimates](#) that supply disruptions in the automobile industry alone may have weakened GDP growth in Germany by around 1.5 percentage points in 2021, whereas in France the impact has been very small. Differences in countries' production structures have a significant impact on the gravity of the supply disruptions affecting economic growth. As a small open economy, Finland is vulnerable to a deterioration in the global economy – and especially a deterioration in the economy of its trading partners, such as Germany.

In this alternative scenario, we use the Aino 2.0 model to assess the impact of supply-side bottlenecks on developments in the Finnish economy. While supply disruptions are estimated to have an impact also on the Finnish economy, the production structure and the focus of exports on intermediate and capital goods, in particular, mitigate the negative effects of supply bottlenecks on the economy.

In Finland, too, shipping disruptions and input shortages limit output the most in the automobile industry, followed by the production of electrical equipment. These industries account for a very moderate share of Finland's gross value added, only 1.3%, and for 12.4% of Finland's goods exports.^[2] Supply disruptions can therefore be expected to have a lesser impact on the Finnish economy than, for example, the German economy, for which the automobile industry is of clearly greater significance.

Finnish economy also affected by supply disruptions

The model utilises decreased exports and increasing inflation to describe the impact of supply-side bottlenecks on the economy. Disruptions in international shipping and reduced availability of components disrupt export sector output and foreign goods trade. At the same time, increasing production costs in the open sector pass on to end product prices and push up consumer prices in Finland, too. The scenario assumes that supply disruptions slow annual growth in goods exports by 1.5 percentage points in 2021, which is in line with the decrease of exports estimated by the ECB^[3] for the euro area. At the same time, supply bottlenecks are assumed to increase inflation by 0.4 percentage points in 2021.

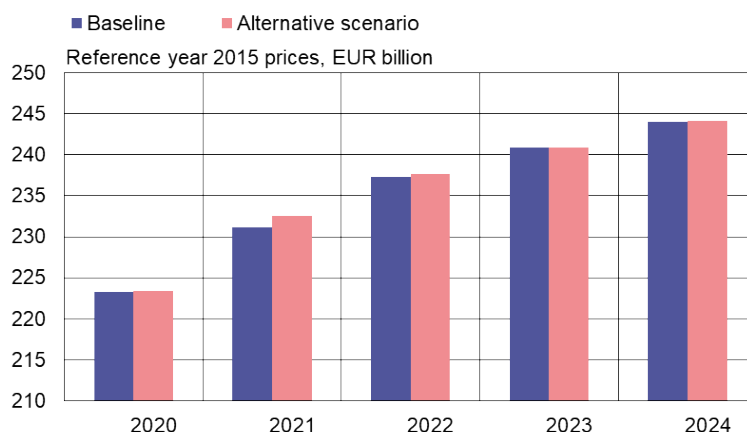
These supply disruptions have a fairly limited impact on the economy and GDP in Finland. Without the impact of supply disruptions on exports, Finland's GDP growth would be around 0.5 percentage points higher in 2021 than in the Bank of Finland December 2021 forecast (Table 1). In euro terms, this is equivalent to approximately EUR 1.3 billion in lost output in 2021.

2. See 'Supply bottlenecks are having wide-spread impacts on the economy' for a broader analysis of the relationship between supply bottlenecks and the structure of Finnish manufacturing and industry-specific confidence indicators.

3. [The impact of supply bottlenecks on trade, ECB Economic Bulletin, Issue 6/2021.](#)

Chart 17.

GDP will recover from supply disruptions by 2023



Source: Bank of Finland calculations.

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By 2024, the economy is expected to have fully recovered from the supply disruptions, and at the end of the forecast period, GDP is unaffected by them (Chart 1). However, the economic losses during 2020–2024 amount to around EUR 1.8 billion.

Supply disruptions also cause a decrease in imports and cause delays, for example due to bottlenecks in shipping capacity and component shortages. However, growth in imports slows less than in exports, by 0.7 percentage points in 2021, due to the domestic value added of exports. The slowed growth of imports and exports means a dampening of growth in domestic output.

The rising prices erode the purchasing power of consumers, thus slowing growth in private consumption. Growth in private consumption is also held back by issues relating to end product availability. This contributes to weakened economic growth. Without supply disruptions, the annual growth rate of private consumption would be 0.5 percentage points higher in 2021.

On the other hand, supply bottlenecks are only marginally reflected in domestic investment, as the good future outlook for businesses and strong growth in demand in the global economy sustains investment demand. The impact on investment remains limited also because the supply disruptions are assessed to be a temporary phenomenon.

As the temporary supply disruptions are rooted in international circumstances and demand growth is strong, the labour market is not expected to react much. This is consistent with actual developments on the labour market. Employment is growing well, and many sectors are suffering labour shortages, even though supply disruptions are causing frictions in output. Growth in export markets is also expected to remain unchanged from the forecast baseline.

It should be noted that the assumptions in this scenario are associated with a great deal of uncertainty. A resurgence of the COVID-19 pandemic would prolong and possibly exacerbate supply bottlenecks, for example by maintaining the imbalance between supply and the demand for goods and by closing down ports or factories, for example in Asia. Prolonged supply disruptions would also be reflected in Finland's foreign trade and consequently in output.

The price developments of raw materials, shipping costs and intermediate goods needed for production also affect the production costs of businesses, which may be reflected as a faster-than-anticipated slowdown in output growth. There is also uncertainty as to what extent the decrease in imports could be substituted by domestic output. Realistically it is safe to assume that it will not be easy to substitute high technology products through domestic production.

Table 1.

Impact of supply disruptions on the Finnish economy							
Supply and demand in 2019–2024*		2019	2020	2021	2022	2023	2024
% change on previous year, difference in percentage points							
GDP	Bank of Finland forecast	1.3	-2.9	3.5	2.6	1.5	1.3
	Alternative scenario	1.3	-2.8	4.1	2.2	1.4	1.3
	Difference	0.0	0.1	0.5	-0.4	-0.2	0.0
Imports	Bank of Finland forecast	2.3	-6.5	3.5	5.3	4.2	3.5
	Alternative scenario	2.3	-6.5	4.1	4.9	3.9	3.5
	Difference	0.0	0.1	0.7	-0.4	-0.3	0.0
Exports	Bank of Finland forecast	6.8	-6.8	4.0	5.5	4.5	3.6
	Alternative scenario	6.8	-6.5	5.6	4.4	4.0	3.6
	Difference	0.0	0.2	1.6	-1.1	-0.5	0.0
Private consumption	Bank of Finland forecast	0.7	-4.7	2.9	3.3	1.7	1.2
	Alternative scenario	0.7	-4.6	3.4	3.0	1.5	1.2
	Difference	0.0	0.0	0.5	-0.3	-0.2	0.0
Private investment	Bank of Finland forecast	-2.4	-3.4	2.8	4.6	2.6	1.7
	Alternative scenario	-2.4	-3.3	3.1	4.4	2.4	1.6
	Difference	0.0	0.0	0.3	-0.2	-0.1	0.0
HICP inflation	Bank of Finland forecast	1.1	0.4	2.1	2.0	1.6	1.8
	Alternative scenario	1.1	0.2	1.7	2.1	1.6	1.8
	Difference	0.0	-0.2	-0.4	0.2	0.0	0.0

* Demand components (reference year 2015) in EUR million and harmonised consumer price index (HICP, 2015 = 100).

Sources: Statistics Finland and Bank of Finland.

Tags

COVID-19 pandemic, supply, supply disruption, economic outlook, economic growth

Time for fiscal policy to refocus on the future

Today – Bank of Finland Bulletin 5/2021 – Finnish economy

Managing the consequences of the COVID-19 pandemic still requires a lot of work, but in many sectors of Finland's economy the engines are already firing on all cylinders. The elevated structural deficit in the country's public finances will need to be remedied in the wake of the pandemic, when the longer term expenditure pressures related to an ageing population start to swell steadily, turning into today's issues and problems. At the same time, future challenges such as climate change mitigation call for political action, and this will also affect the fiscal balance and the level of debt. In fiscal policy there must be a return towards more balanced budgets, but new spending on matters that are always deemed indispensable makes this difficult.



Improved economy will strengthen the general government budget balance

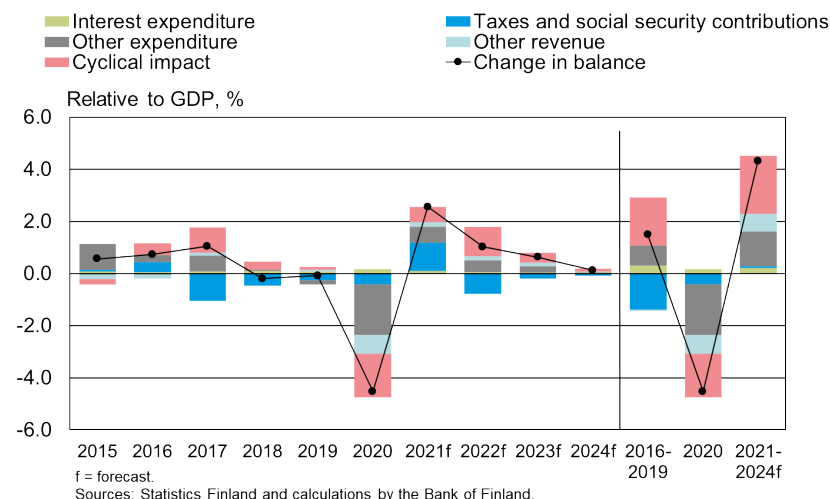
Although the impact of the COVID-19 pandemic on the economy has been less marked in Finland than in many other countries, the effects have fallen unevenly among households and between different industries and sectors. The sudden standstill in the economy had a negative impact on the public finances. Public expenditure was expanded by the costs of managing the health crisis and by the fiscal support given, which sought to ameliorate the economic effects of the crisis. The Finnish economy is recovering rapidly: growth has been brisk this year and is set to continue higher than normal in 2022. However, there is still uncertainty over the course the pandemic will take, and this uncertainty will affect the economy for some time yet.

In the general government sector, action was taken particularly by central government concerning the impact of the acute downturn. The central government deficit grew to 5.5% of GDP in 2020. Exceptionally, there was an improvement in the budgetary balance of local government, as local COVID-19 measures were given strong financial support by central government. By contrast, the budgetary position of the social security funds weakened significantly, though it remains in balance, as unemployment expenditure climbed considerably and the economy and employment were supported through temporary relief concerning employment pension contributions. The general government deficit in relation to GDP will shrink by more than 4 percentage points in the forecast period 2021–2024, but at the end of the period it will be at a level of 1.2%.

The contraction in the general government deficit will to a significant extent be attributable to a vigorous recovery in the economy. The cyclical contribution to the contraction in the nominal deficit will be just short of 2.5 percentage points (Chart 1). The positive cyclical impact will be at its greatest in 2021 and 2022. Economic growth in 2023 will slow to a point near the estimated long-term potential growth rate. The deficit will also decline as the expenditure required for pandemic-related measures decreases. The expenditure impact of the permanent spending increases made during the parliamentary term will still be felt at the end of the forecast period.

Chart 18.

Factors contributing to changes in the general government budget balance

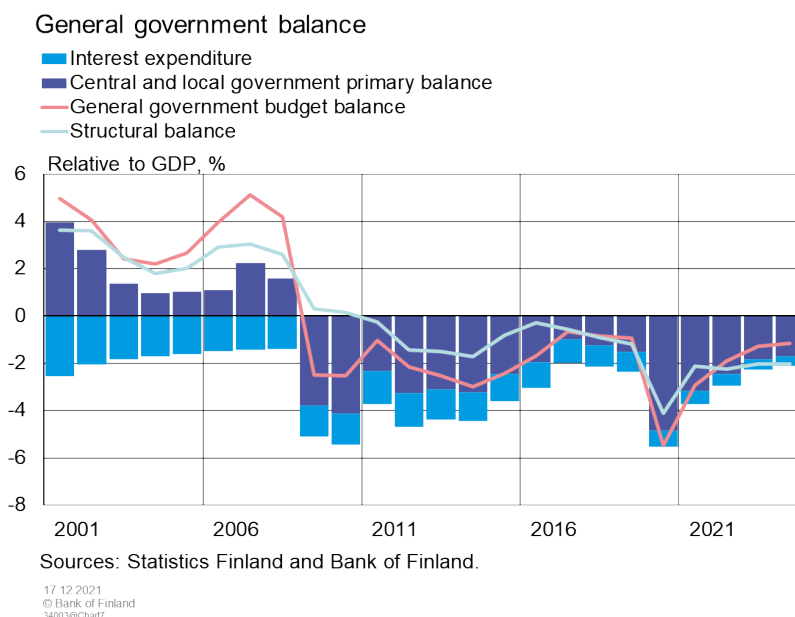


Structural balance weaker than before the pandemic

The structural balance is the nominal budget balance of general government net of the cyclical component and temporary factors. It depicts the balance in the public finances under normal, balanced cyclical conditions. The structural balance is calculated using an approximation of potential output, the estimation of which involves uncertainty, particularly in the context of marked fluctuations in the economy. The structural deficit in the public finances in 2023–2024 is now expected to be about 2% of GDP (Chart 2), which is weaker than its pre-pandemic level. The 2019 structural deficit was an estimated 1.2% of GDP. This weakening of the structural deficit is attributable in part to the permanent expenditure increases of approximately EUR 1.4 billion

associated with the Government Programme.

Chart 19.



The financing of the permanent expenditure increases is based on tax changes, spending reallocations and employment-promoting measures, though the impact of these on the public finances is still uncertain. In 2020–2021, tax increases concerning, for instance, energy and environmental taxes and alcohol and tobacco duties amounted to almost EUR 400 million, but at the same time taxes on low and middle incomes were reduced. In addition, tax changes proposed for 2022 will reduce tax revenues by about EUR 300 million in net terms. Employment is expected to increase in the forecast period, with the number of people in employment in 2024 being about 66,000 more than in 2019.

Alongside the permanent expenditure increases, the Government is allocating a total of around EUR 2 billion in 2020–2022 to its future-oriented investments. This expenditure is intended to be financed mainly through property income. Some of the future-oriented investments are such that there is a risk of them turning into permanent additional expenditure.

The European Union's Next Generation EU recovery instrument was introduced in summer 2021, and most of its financial support is to be channelled via the Recovery and Resilience Facility (RRF). Finland's allocation from the RRF is provisionally estimated to be about EUR 2.1 billion, to be used over the period 2021–2026. The receipt of RRF support is conditional upon having a plan for structural reform of the economy and related investments for this. Finland's plan^[1] was approved by the European Commission and the Council of the European Union in autumn 2021, and the advance payment to Finland will amount to 13% of the full amount. The corresponding expenditure is budgeted in the Government's 2021 supplementary budget proposals. The remaining portion of the support will be paid during 2022–2026 in step with actual progress on the reforms and investments.

1. Sustainable Growth Programme for Finland – Recovery and Resilience Plan. Publications of the Finnish Government 2021:69.

Fiscal policy will continue to support growth in 2022

Fiscal stance portrays the impact of fiscal policy decisions on the economy. The stance is often examined using indicators of the general government balance, especially the cyclically adjusted balance (excludes the impact of the business cycle) or structural primary balance (cyclical budget balance net of interest payments that also takes temporary factors into account), or by looking at changes in these. Cyclically adjusted indicators eliminate from the nominal budget balance the impact of the change in tax revenues and social security expenditure (i.e. automatic fiscal stabilisers) associated with the business cycle. Another approach to pinpointing the fiscal stance is to estimate the effect on the general government balance of decisions concerning expenditure, taxes and payments.^[2]

Whereas the European Central Bank (ECB) and the European Commission have normally used the change in the cyclically adjusted indicator or in the structural primary balance to illustrate the fiscal stance, the IMF, for its part, has used the level of the structural primary balance itself.^[3] This was noted by the European Fiscal Board (EFB) in its annual report on the euro area's fiscal stance^[4] in summer 2021. The EFB then started using the term 'fiscal stance' when referring to the *level* of the structural primary budget balance, and the term 'fiscal impulse' when referring to the *change* in the structural primary budget balance. During the COVID-19 pandemic in particular, with fiscal measures reaching an exceptional level, a more balanced understanding of the fiscal stance is possible by examining the position using different approaches.

It is also now appropriate to take into account the support being obtained via the EU's recovery package, which will enable public investments to be made and, for example, investment support to be given to bring forward private sector investments. As these expenditures are financed completely through the EU package, they do not affect the general government balance at this stage. Thus, in this respect the indicators referred to above do not capture the growth impact achieved with the recovery package. These expenditures will fluctuate in the range 0.1% – 0.3% of GDP in the years 2021–2026.^[5] It should also be noted that when repayment of part of the EU funding begins from 2028 onwards in the form of elevated membership contributions, the concomitant expenditure growth is not to be interpreted as expansionary fiscal policy. For these reasons, the European Commission's assessment of the fiscal stance in this situation is with reference to the change in primary government expenditure (spending net of interest payments), such that expenditure is also net of pandemic-related direct and indirect expenditure (e.g. health security spending).^[6]

2. See e.g. Ahola, I., Pääkkönen, J. and Tamminen, V.: Assessing the discretionary fiscal effort – presenting alternative indicators. Publications of the Ministry of Finance 40/2017 (published in Finnish).

3. See the IMF's concluding statement on the Finnish economy (Finland: Staff Concluding Statement of the 2021 Article IV Mission) 19 November 2021: https://www.suomenpankki.fi/globalassets/fi/media-ja-julkaisut/tiedotteet/documents/concluding_statement.pdf.

4. European Fiscal Board: Assessment of the fiscal stance appropriate for the euro area in 2022, 16 June 2021. Box 1. https://ec.europa.eu/info/sites/default/files/2021_06_16_efb_assessment_of_euro_area_fiscal_stance_en.pdf.

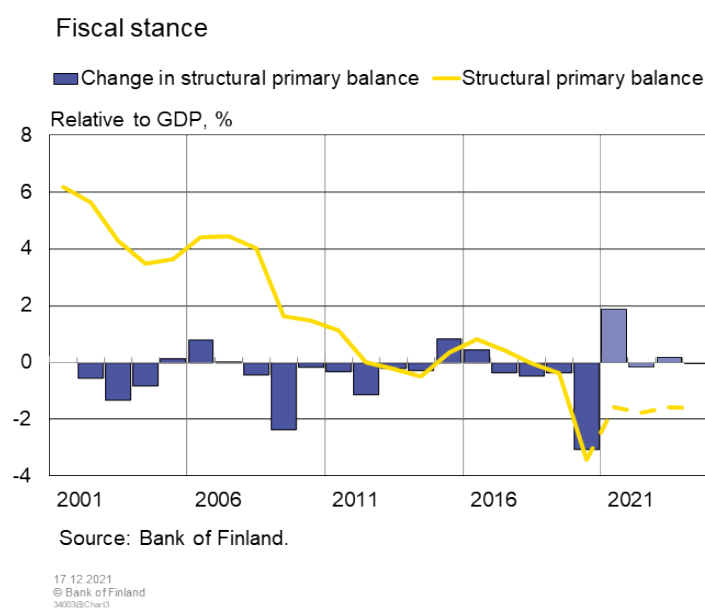
5. Finland's 2022 Draft Budgetary Plan. Publications of the Ministry of Finance 2021:62.

6. Commission Staff Working Document. Statistical Annex providing background data relevant for the assessment of the 2022 Draft Budgetary Plans. SWD(2021) 915 final.

In Finland, both the nominal and the structural budget balance weakened sharply in 2020, when public funds were used to support health security measures and businesses and households. This was well justified and continues to be so to the extent that the pandemic is still affecting various sectors. The general government deficit shrank significantly when, in 2021, the COVID-19 restrictions were lifted and the temporary measures to ease tax and payment arrangements were discontinued. If the fiscal stance is assessed by looking at the change in the structural primary balance, then fiscal policy appears to have tightened in 2021 (Chart 3). By contrast, the Commission's expenditure indicator points to a further easing of fiscal policy in 2021. In the subsequent forecast years 2022–2024, fiscal policy will be fairly neutral if measured in terms of the change in the structural balance or using the Commission's expenditure indicator. It is worth noting, however, that the level of the structural primary balance will still be noticeably weaker during the forecast years than in the pre-pandemic year of 2019.^[7] Fiscal policy will therefore still be supporting GDP growth in 2022–2024.

There is good reason now to take into consideration in the fiscal stance the fact that Finland's economy has been recovering rapidly from the standstill caused by the pandemic crisis, and that the upturn will be affected by growth constraints. When all production inputs are fully utilised in the economy, expansionary fiscal policy will lead to higher prices and is therefore less effective than in the downturn and trough of the cycle. If growth in the economy continues to be robust without pandemic-related setbacks, then a tighter than planned fiscal policy would underpin the balancing of the public finances in the medium term and create a buffer to cope with future challenges.

Chart 20.



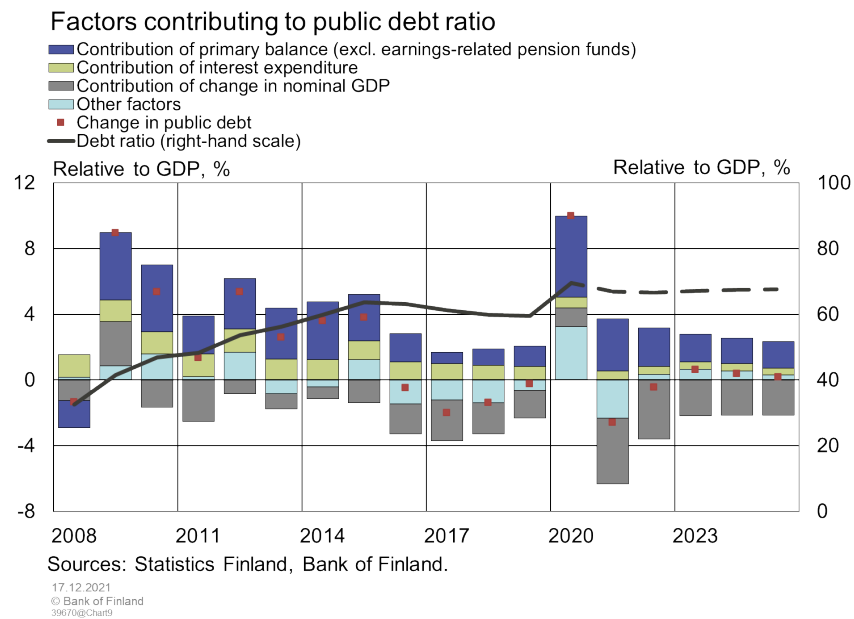
General government debt climbs

Finland's general government debt (consolidated Excessive Deficit Procedure (EDP) debt) grew

7. This assessment is based on the methodology used within the European System of Central Banks, which differs from that used by the European Commission.

by more than EUR 21 billion in 2020. Further debt in 2021 was considerably less than this, as it has been possible to make use of the Government's strong cash position and because planned expenditure has not taken place at the scale or to the timetable envisaged. The rise in the general government debt ratio will nevertheless continue during the forecast period due to the central and local government deficits, and will again exceed 67% in 2024 (Chart 4). Although GDP growth will help to curb the debt ratio, it will not be sufficient to reverse the upward trend in the ratio. Interest expenditure on general government debt continues to account for an ever smaller share of public spending, and so with interest expenditure being low, a smaller adjustment in the primary balance would be needed for the debt ratio to be turned around.

Chart 21.



Risks surrounding long-term debt sustainability

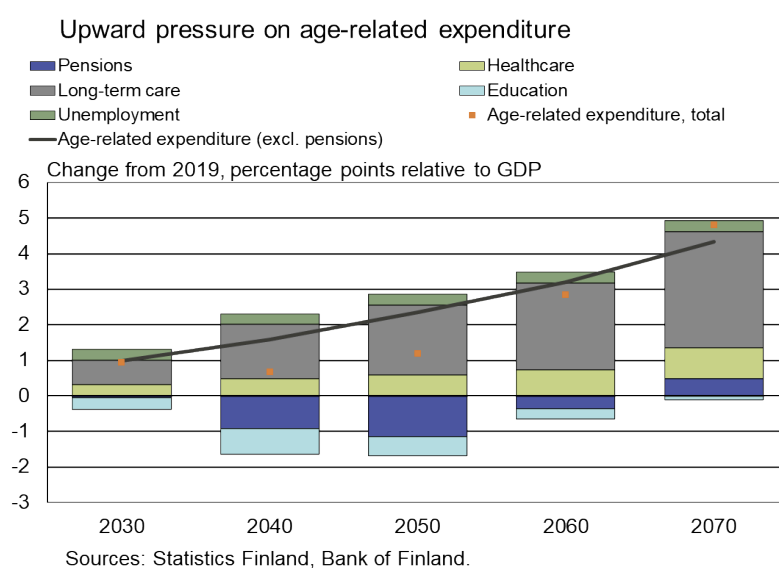
Long-term debt sustainability is measured by the S2 sustainability gap indicator, which condenses into a single figure the extent to which the general government budgetary position should be permanently adjusted so that public debt does not grow uncontrollably in the future. The sustainability gap estimate is not a forecast but a technical quantification of the pressure on the public finances. This involves estimating the path taken by Finland's public finances from 2025 onwards, using the assumption that the revenue and expenditure policies remain unchanged even if there is a rising level of public debt. The calculation also uses an approximation of long-term growth and makes assumptions about interest rates, among other things. An estimate of demographic changes is also made, based on the 2021 population projection produced by Statistics Finland. Demographic changes will affect the calculation's estimated expenditure on healthcare, long-term care, and education and training.

Using the S2 indicator, the Bank of Finland currently estimates that the sustainability gap will be about 3½% of GDP, or approximately EUR 10 billion, in 2025. This estimate has decreased from that calculated in December 2020 (about 5½% of GDP). The decrease is attributable to an improved short-term forecast for general government finances and an update to some of the background data and assumptions. These changes are described in a separate article (see [Long-](#)

term sustainability of the public finances).

Although the sustainability gap has decreased, the sustainability challenge remains substantial. A structural adjustment to the fiscal balance at such a scale will be challenging, especially when the growth in age-related expenditure is already at hand and general government finances are structurally in deficit to begin with (Chart 5). The rise in pension expenditure has already been particularly steep in the years of slow economic growth following the global financial crisis. In addition, the increasing need for healthcare and long-term care services, and the effects of this, are already visible to an extent. The treatment backlog due to the COVID-19 pandemic will also have to be dealt with in the years ahead. In the long term, sustainable fiscal policy would include striving to bring public finances closer to balance in spite of the pressure to increase spending. More balanced public finances would keep the debt ratio under control and would also allow the creation of necessary fiscal space for use in future economic downturns.

Chart 22.



17.12.2021
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34003@Chart6

General government debt over the medium term

Finland's general government debt is subject in the long term to significant upward pressure due to age-related expenditure and because the budgetary position is in deficit to start with. Since long-term calculations involve considerable uncertainty, it can also be worthwhile to examine the debt ratio over shorter intervals of 10–15 years under various assumptions. Many international organisations, such as the IMF, the European Commission and the ECB, draw up debt sustainability analyses on a regular basis, and these include assessments of the debt ratio in the near future under different scenarios.^[8]

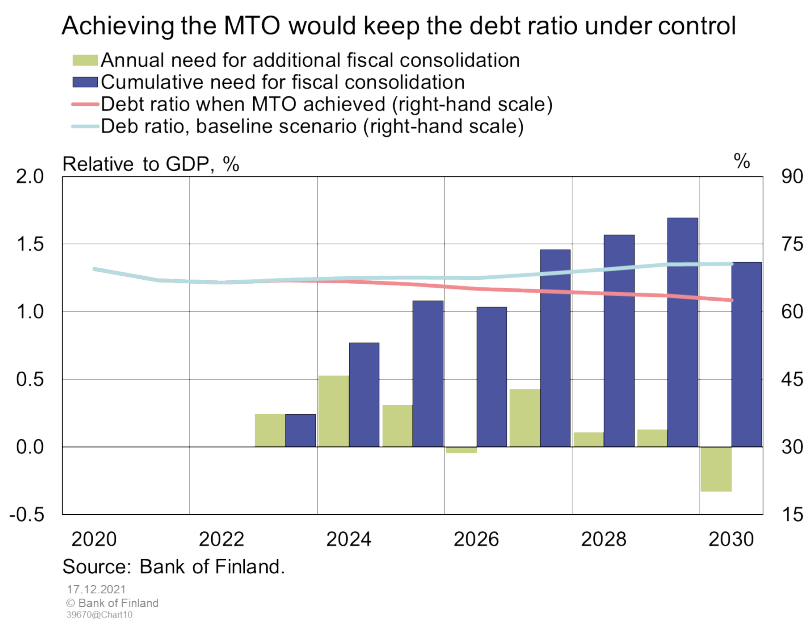
The debt path resulting from the sustainability calculations is based on a scenario in which fiscal policy does not change and age-related expenditure increases in accordance with the

8. See e.g. European Commission: Debt Sustainability Monitor 2020. European Economy Institutional Paper 143, February 2021.

demographics. This indicates that the debt ratio would exceed 75% by 2035.

The debt ratio can also be examined in a scenario where the medium-term objective (MTO) for public finances is achieved in the manner called for in the current Stability and Growth Pact (SGP) in steps of 0.5 percentage points during 2023–2026, and subsequently the fiscal balance is kept at this level. The calculation demonstrates that achievement of the MTO would lead to a debt path that is clearly more favourable than the baseline forecast: the current MTO level would, in the long term, keep the debt ratio at an average of just over 60%. After the pandemic, the setting of fiscal objectives should aim at getting close to fiscal balance and at implementing measures for achieving the MTO.

Chart 23.



Fiscal policy objectives eased

In 2019, the Finnish Government set the MTO at -0.5% of GDP. In practice, this is also the minimum level to which Finland is committed in the Fiscal Compact. The European Commission's calculations show that since 2010 the structural balance reached its best level in 2015, at -0.7%. Due to the uncertainty associated with making current estimates of the structural balance, the interpretation under the preventive arm of the EU's Stability and Growth Pact (SGP) is that the MTO is considered to have been reached when the deviation from it is less than 0.5 percentage points.

The SGP's General Escape Clause, activated because of the COVID-19 pandemic, provides an opportunity still in 2022 to deviate away from the adjustment path rooted in the SGP's requirements and towards the MTO. According to a communication from the Commission,^[9] the grounds for such an exceptional procedure will no longer apply in 2023, when the pre-pandemic level of total output will have been reached in the Member States. In Finland, the pre-pandemic

9. Commission communication, 2 June 2021: Economic policy coordination in 2021: overcoming COVID-19, supporting the recovery and modernising our economy. COM(2021) 500 final.

output level was already reached in early 2021. The objectives currently set for Finland's general government finances include the following: in 2022 the Finnish economy will be within the 3% limit imposed for the nominal deficit, and in 2023 the structural balance will be reduced by 0.5 percentage points in line with the requirements of the preventive arm of the SGP.

Multiannual objectives for general government finances as required by the Budgetary Frameworks Directive were included in Finland's General Government Fiscal Plan and also in its Stability Programme submitted to the EU. In the parliamentary term's first General Government Fiscal Plan, the Government aimed for balanced public finances in 2023. Exceptionally, in spring 2020 no objectives were set, because of the great uncertainty associated with the prevailing pandemic. In spring 2021, the previous targets were no longer realistic, which is why the new multiannual objectives are significantly less ambitious than previously (Table 1). The objectives are very close to the Ministry of Finance's spring 2021 forecast for the public finances.

Table 1. Fiscal objectives, % relative to gross domestic product (GDP)

Government's fiscal objectives for 2023			
% of GDP	Autumn 2019	Spring 2021	Forecast (BoF)
General government nominal budget balance	0,0	-2,1	-1,3
- structural budget balance	-0,5	-1,8	-2,0
General government expenditure	50,7	53,1	52,9
General government gross debt	58,1	73,9	67,1

The 2023 objectives for the nominal budget balance of general government by sector were also eased. These are currently as follows: the central government deficit will equal approximately 2.25% of GDP; the local government deficit will equal approximately 0.5% of GDP; the budgetary position of the wellbeing services counties will be close to balance; the earnings-related pension funds' surplus will equal approximately 1% of GDP; and the budgetary position of the other social security funds will be close to balance.

Under the spring 2021 General Government Fiscal Plan, the Government is committed to reviewing the measures in its Government Programme if their implementation would jeopardize attainment of the fiscal objectives. Based on the Bank of Finland's public finances forecast, the nominal objectives are otherwise quite achievable, but the structural budgetary position is not improving sufficiently quickly. Since the multiannual objectives are in certain respects less ambitious than what might be expected on the basis of the latest forecasts, it would be justifiable in the spring 2022 General Government Fiscal Plan to tighten the objectives for the end of the parliamentary term. The fiscal policy assumptions in the public finances forecasts are rooted in the Government Programme and in decisions already taken. Through active fiscal policy

measures, the post-pandemic recovery in the public finances could take place more quickly than is currently expected.

The Government's aim is to turn around the upward trend in the general government debt-to-GDP ratio by the mid-2020s. Even though it currently seems very likely that this debt target can be achieved, the debt ratio nevertheless threatens to start climbing again in the latter half of the decade, which would place long-term debt sustainability at risk.

The Government has drawn up a sustainability roadmap in which the key packages of measures for strengthening the sustainability of the public finances consist of: boosting employment and reducing unemployment; improving the conditions for economic growth; strengthening the productivity and cost-effectiveness of public administration; and implementing the reform of healthcare and social welfare. The Government intends to prepare decisions on these packages of measures in advance of the spring 2022 government spending limits discussion. According to the Bank of Finland's new long-term assessment, economic growth in Finland will average 1.2% per annum over the period 2021–2040, after which it will slow.^[10] If the current demographic and educational trends continue, the amount of human capital in Finland will begin to decline in the 2040s. GDP growth would then dwindle and the debt ratio would be at risk of reaching an unsustainable level. The extent of human capital can be boosted by investing in education and training, creating more incentives for getting trained and finding work, raising the birth rate, and increasing employment-based immigration.

The Government is aiming to raise the employment rate to 75% by the end of the decade. It has already taken decisions on measures designed to increase the number of people in employment by more than 70,000. These measures include the transfer of employment and economic development services (TE services) to the municipalities, the extension of compulsory education, the discontinuation of the unemployment pathway to retirement, the adoption of a Nordic labour market model, a reduction in the client fees for early childhood education and care, the introduction of local government pilots on employment, the reform of the pay subsidy scheme, and measures to promote employment among people with partial work ability. Through the employment measures taken during the parliamentary term, the Government aims to achieve an overall positive net fiscal impact of more than EUR 0.5 billion by the end of the decade. There is considerable uncertainty associated with this assessment, however. The employment promotion measures are vitally important for the future of Finland's economy, but in so far as the measures are based on an increase in public spending, they are also associated with risks from the point of view of the public finances.

Regarding structural reforms, the long-awaited reform of health and social services is now to be implemented. The costs of establishing the wellbeing services counties and associated systems will burden the public finances in the early phase of the reform. In addition, in certain respects not all the costs are yet known. Cost savings targeted by the reform are not expected until the 2030s. Savings are possible if the best practices are adopted efficiently and if the new counties have sufficient incentives to make their activities more cost-effective.

If the structural reforms being prepared are not enough to strengthen the public finances as intended, the Government is committed to introducing new measures or also pursuing measures

10. See Bank of Finland Bulletin, Kokkinen, A., Mäki-Fränki, P. and Obstbaum, M. [Finland's new long-term forecast suggests GDP growth will be more subdued](#).

that will have a more immediate impact on public revenues and expenditure. However, with the objectives now having been reset, and because the horizon for these extends beyond the current parliamentary term to the midpoint of the decade or later, it remains unclear what the circumstances would have to be for it to be considered necessary to pursue, for instance, measures affecting public revenues and expenditure. Fiscal balance objectives will next be set in spring 2022.

Fiscal policy rules at a turning point

Consideration of the need for reform of the EU's common fiscal rules was begun in 2019 in connection with the European Commission's regular review of the legislation. The general view was that the regulatory package has become excessively complex, that commitment to and compliance with the rules has weakened, and that the rules could lead to pro-cyclical fiscal policy and the ineffective use of public funds in regard to facilitating economic growth. The public consultation begun by the Commission was discontinued in spring 2020 because of the COVID-19 pandemic, but was resumed in autumn 2021. With the aid of this consultation and the discussions within the Council of the EU and its committees, the Commission aims to achieve a consensus that it could then use to propose changes to the fiscal rules during 2022.^[11]

The Government, in its Report on EU Policy, has taken the view that a simplification of the regulatory framework should be examined but without re-opening the Treaties. Finland emphasises each Member State's responsibility for economic policy and for creating headroom in better times to allow them room to manoeuvre in less favourable periods. Finland also emphasises that the regulatory framework must enable fiscal policy to be conducted proportionately to the cyclical conditions. More detailed views on the rules reform will be formulated before the close of the consultation period at the turn of the year and also after the Commission presents any proposals for legislative amendments.

At the same time as the EU's fiscal rules framework is renewed, it would also be useful in Finland to examine the national fiscal guidance framework. The spending limits procedure for central government finances has evolved over the past two decades and can be considered the most important tool for guiding fiscal policy. The spending limits procedure is not based on legislation, however, but on established practices. The procedure is therefore flexible, but it is also vulnerable to changes that could weaken its effectiveness. In 2020, the decision was taken that the costs of health security for pandemic-related treatment and care would not be included within the spending limits framework. An 'exceptional situation mechanism' was added to the spending limits rule during the current parliamentary term, and this mechanism was activated in 2021–2022 because of the COVID-19 pandemic. The mechanism made it possible to increase the spending limits by EUR 500 million in both years. In its spring 2021 mid-term policy review session, the Government decided to further increase the parliamentary term spending limits for 2022 and 2023. The spending limits were raised by EUR 900 million for 2022 and EUR 500 million for 2023, as the Government considered that the spending limits' room for manoeuvre did not allow

11. The Eurosystem reply to the 19 October 2021 Communication from the European Commission was published on 1 December 2021: https://www.ecb.europa.eu/pub/pdf/other/eurosystem_reply_commission_eu_economy_after_covid_implications_economic_governance211202~d2ecec68dc.en.pdf.

unforeseen spending changes to be incorporated or implementation of all the reforms it deemed necessary. Within the 2023 spending limits, it is also intended that expenditure items totalling EUR 370 million will be financed by making certain spending reallocations.

The spending limits procedure did not limit the response to the pandemic or the scale of that response. In part, the necessary spending was treated as expenditure outside the spending limits, and there was also a new provision for emergency situations. This proved necessary immediately, although it was manifestly insufficient. In the future there should be a return to the established spending limits procedure, and there should also be reduced scope for raising the spending limits in the middle of a parliamentary term. The procedure should not be relaxed in any way, as it helps build trust in Finland's ability to formulate durable fiscal policy. Justified expenditure increases that extend over two or more parliamentary terms are possible even under the current system, as was the case with the recent major procurement projects for the Defence Forces. Spending limits must be adjusted in line with the level of structural revenue, so that the balance target that has been set can be achieved under normal economic conditions. A stable spending limits framework set in this way will best function counter-cyclically, curbing expenditure growth during periods of faster cyclical revenue growth, and in a downturn will maintain the expenditure level despite a revenue decrease.

In fiscal guidance, reinforcement could be given to the process of attaining the multiannual objectives and the structural balance target if the Government, when falling short of the objectives, were to have a clearer duty to explain the reasons for this and to set out how it will return to a path towards the objectives. Current legislation gives the Government fairly wide scope for considering the need to embark on measures to correct fiscal stability or issue a report to Parliament if Finland is to fall significantly short of the structural balance target. Only when the Council of the EU decides that Finland has not taken effective action is the Government obliged to provide a statement to Parliament on the deviation and necessary measures for correcting the situation. The threshold for providing such a statement to Parliament could be lowered significantly and could be based on an assessment by an independent fiscal institution.

Finland's public finances face long-familiar challenges but also various new ones requiring resources in the near term. These include ensuring the conditions for economic growth, meeting the service needs of an ageing population and mitigating climate change. The fiscal balance must be maintained in such a way that excessive growth in public debt does not restrict the choices of future generations. Structural reforms are necessary, but management of the public finances cannot rely on these alone. A more effective and diverse set of tools should be considered for managing the public finances and controlling expenditure.

In Sweden, the fiscal framework incorporates a range of tools and benchmarks. By law, the expenditure ceiling for central government finances must be established three years in advance. Alongside this, Sweden has set a debt anchor at 35% of GDP. If this is exceeded by more than 5 percentage points, the Swedish government has to provide a report to the country's parliament. The debt objective is supported by a target for the general government nominal balance, which since 2018 has been 1/3% of GDP averaged over the business cycle. Local government is subject to a budget balance requirement. As a country outside the euro area, Sweden has set a structural balance MTO of -1%.

Fiscal challenges arise from the need to maintain a stable revenue base and to control expenditure as pressures increase from different directions. A spending review looking at public expenditure

items could identify and weigh up items where savings can be made and would allow space to be created for more important expenditure.^[12] In Finland, spending reviews have been conducted before, though they have largely focused on the most important targets of public spending.^[13] By further developing spending reviews and linking them to the process of drawing up spending limits at the start of a parliamentary term, the necessary fiscal space can be found and the use of public funds made more effective.

Elevated risks to public finances during pandemic

General government debt has grown rapidly during the pandemic, by around 10 percentage points relative to GDP. Although the debt-to-GDP ratio is still lower than the average for EU countries, the greater level of debt is associated with higher risk. Interest expenditure on Finland's central government debt has continued to fall. Whereas in 2000 the yield on 10-year government bonds was still more than 5% and the Government paid total interest amounting to 3.2% of GDP on an amount of debt smaller than at present, in 2021 the yield on the Government's new debt is at zero and total interest expenditure is only 0.5% of GDP. Despite this, Finland must be prepared for a rise in interest rates. When public spending is facing pressure from age-related and other necessary expenditure, a rise in interest expenditure would significantly hamper the achievement of balanced finances. The effect on the public finances of climate change and measures required to mitigate it is still uncertain, but in the short term this impact will probably be negative.

There is still great uncertainty about the path the pandemic will take, which means fiscal measures should be scaled to allow fiscal space in the event of developments taking a less favourable course than anticipated. The fiscal stance should now take into account the Finnish economy's rapid shift from crisis to upturn. A faster return to balanced public finances would represent successful counter-cyclical policy and would serve to prepare the public finances for the longer term challenges lying ahead. The fiscal framework should be developed in such a way that medium-term objectives would be set according to the scale of long-term challenges, and monitoring of and accountability for the attainment of objectives would be strengthened. The ecological sustainability gap creates significant additional pressure on management of the public finances and increases the challenge of balancing revenues and expenditure in the longer term.

Tags

[fiscal policy](#), [public debt](#), [fiscal sustainability](#), [public finances](#)

12. See e.g. European Commission: Quality of public finances: Spending reviews as a key tool to enhance public investment in the Euro Area. Technical note to the Eurogroup. 29 August 2019.

13. <https://vm.fi/menokartoitus>.

Long-term sustainability of the public finances

Today – Bank of Finland Bulletin 5/2021 – Finnish economy



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Long-term debt sustainability is measured by the ‘S2’ indicator, which summarises in a single figure the extent to which the general government finances should be permanently adjusted for public debt not to increase in an uncontrollable manner in the future. The Bank of Finland’s updated estimate of the sustainability gap is 3½% relative to GDP.



The sustainability gap estimate is not based on a fiscal forecast, but on a calculation of the pressures the ageing-related costs will place on the public finances. The calculation assesses fiscal developments from 2025 onwards based on the assumption that there will be no changes to income and expenditure policies even if public debt increases sharply. Thus, it does not reflect the most likely developments over the long term, but only illustrates the mechanical impact of various economic factors on fiscal indicators.

The sustainability calculation contains a number of assumptions about future developments. It builds on the long-term economic growth assessment and assumptions on, for example, the level of interest rates. The calculation also assesses the change in age demographics on the basis of Statistics Finland’s population projection. Demographic change affects the evolution of age-related healthcare, long-term care and education expenditure assessed in the calculation.

Sustainability gap smaller than previously assessed

The fiscal sustainability gap is approximately 3½% relative to the level of GDP for 2025. The change compared with the estimate a year earlier (5½%) is due to changes in assumptions and updates to background data. Changes in the sustainability gap estimate are also affected by the current short- and medium-term macroeconomic forecast. The most significant change compared with the year-earlier estimate reflects the expected development of the combined central and local government primary balance^[1] from 2026 to 2070. During this projection period, future primary balances are affected by age-related expenditure, the sustainability of the pension system and the property income received by central and local government.

The long-term imbalance between revenue and expenditure implied by the sustainability gap can be corrected by fiscal adjustment measures which would affect the initial structural primary balance of central and local government for the calculation's base year 2025. As a result of the Bank of Finland's new economic forecast, the base-year structural primary deficit is slightly lower than assessed a year earlier, which also reduces the value of the sustainability gap indicator.

Interest and revenue assumptions play an important role in the calculation

The changes to the sustainability calculation's interest rate assumptions have had a significant impact on the sustainability gap estimate. The assumption on the interest rate on public debt used in the calculation has been updated to reflect the assumptions for the 2021 report of the European Commission's Ageing Working Group (AWG).^[2] Thus, the implicit interest rate on public debt (calculated as interest expenditure relative to the stock of debt) will increase from 2026 to 0.9% in 2030. Thereafter, the interest rate on public debt will rise steadily, to a nominal level of 4% by 2050.^[3] Starting from 2050 the interest rate will remain unchanged. In previous calculations, the nominal interest rate on public debt increased to 5% by 2040.

In Finland, general government also includes private earnings-related pension institutions, because of their statutory duties. Earnings-related pension contributions are comparable to tax-like payments, but the pension assets accumulated cannot, in practice, be used to cover central and local government debt. For this reason, the Bank of Finland's sustainability calculation separates the earnings-related pension funds into their own entity, which is assumed to administer the pension scheme sustainably so that pension contributions are collected only to the extent necessary for the payment of pensions without decreasing the fund capital relative to GDP. Since earnings-related pension contributions are part of the total tax rate, which is assumed to remain constant in the calculation, changes in pension contributions have an inverse effect on the ability of the State and municipalities to collect tax revenue.

Thus, the value of pension fund assets in relation to GDP remains the same in 2025 and 2070, meaning that the fund capital is not permanently accumulated or depleted in the calculation. This

1. The primary balance refers to the general government budget balance net of interest payments on public debt. The structural primary balance is adjusted for cyclical effects and one-off factors.

2. The 2021 Ageing Report. Underlying Assumptions & Projection Methodologies. Institutional Paper 142, European Commission, November 2020.

3. Inflation is assumed at 2% from 2028 onwards.

assumption differs from the long-term projections of the Finnish Centre for Pensions, in which earnings-related pension contributions and fund assets will grow in proportion to the wage bill.

The return on assets held by the earnings-related pension funds plays a major role in determining future pension payments. The return assumption has also been revised downward, as the risk-free interest rate is estimated to be lower than before and the assessment of the long-term growth outlook of Finland has deteriorated. The return on pension assets is assumed to increase in the long term to 3.0% in real terms, from 1.7% in the base year of the calculation. The previous assumption was 3.5%. The returns are broken down into annual property income, i.e. interest, dividends and other investment income receivable, as well as changes in the value of financial assets. The value of assets varies annually according to changes in the value of asset items such as listed shares, but only property income affects the annual budget balance under the non-financial national accounts. Financial assets are assumed to be divided half into shares and half into bonds and other asset items such as real estate.

Long-term forecasts for age-related expenditure and economic growth have changed

Age-related expenditure (excluding pensions) is assessed in the sustainability calculation on the basis of age group-specific education, healthcare and long-term care spending, based on the assumption that the population structure develops in line with Statistics Finland's population projection. The calculation now introduces the Finnish Institute for Health and Welfare's data on age group-specific healthcare and long-term care expenditure for 2017. Growth in healthcare expenditure is also affected by the rise in the standard of living (GDP per capita) following growth in earnings and improvement in treatments. Demand for services is estimated to increase at a slightly faster pace than the level of income. As assumed by the AWG, income elasticity is set at 1.1, from which it will gradually converge to 1 by 2070. Changes in the need for long-term care are assessed to follow changes in the demographic structure, and expenditure is also affected by the increase in wages and salaries of care personnel.

The sustainability calculation is based on Statistics Finland's 2021 population projection, in which the birth rate assumption was revised up from the previous population projection. Therefore, the population will begin to shrink 10 years later, in 2040, and the contraction will occur more slowly than in the 2019 projection. The latest population projection assumes that life expectancy will continue to increase as previously observed. However, the Bank of Finland's calculation makes no assumptions on the impact of the extension of life expectancy on healthcare and long-term care expenditure. It is possible that a longer life expectancy will mean a greater number of healthy old-age years, although on the other hand the largest care costs are associated with care during the final stage of life.

Growth in pension expenditure in the calculation is based on the Finnish Centre for Pensions' long-term projections of 2019 for the number of pension recipients and the pension replacement ratio. The replacement ratio is the ratio of pension to earnings, i.e. at the level of the national economy, the ratio of pension expenditure to the wage bill.

Overall, age-related expenditure (incl. unemployment spending) relative to GDP will grow by 4.8 percentage points in 2019–2070 (Table 1). Healthcare and long-term care expenditure will increase by about 1 percentage point relative to GDP already by 2030, and growth will remain

strong until 2040. Pension expenditure will continue to grow until 2030, but the pace of growth will slow down notably in the 2040s.

Table 1.

Age-related expenditure in 2019–2070, % relative to GDP								
	2019	2020	2030	2040	2070	Change 2019–2030	Change 2030–2040	Change 2019–2070
Pensions	13.3	14.0	13.3	12.4	13.8	–0.1	–0.9	0.5
Health care	6.8	6.8	7.1	7.3	7.7	0.3	0.2	0.9
Long-term care	2.0	2.2	2.7	3.5	5.3	0.7	0.8	3.3
Education	5.6	5.8	5.3	4.9	5.5	–0.4	–0.4	–0.1
Unemployment	1.7	2.0	2.0	2.0	2.0	0.1	0.0	0.3
Total age-related expenditure	29.5	30.8	30.4	30.2	34.3	0.6	–0.3	4.8
Age-related expenditure excl. pensions	16.2	16.9	17.2	17.8	20.5	0.8	0.6	4.3

GDP growth is assessed in the calculation based on the Bank of Finland’s new long-term forecast^[4]. The most significant difference in the new forecast compared with its predecessors is the increased emphasis on human capital as a source of economic growth. The model measures investment in the accumulation of human capital by cumulated consumption expenditure on education, which forms the stock of human capital. The sustainability calculation builds on the baseline scenario of the long-term forecast, according to which Finland’s human capital stock will grow until the end of the 2030s and will thereafter remain unchanged until 2070.

The difference to the growth assumption underlying the previous sustainability calculation is that, starting from the 2040s, the average annual growth rate of the economy will decelerate to just 0.5%. This change will also significantly slow the expected growth in healthcare and long-term care expenditure, the costs of which are expected to depend on the development of earnings and GDP. In the light of the new long-term forecast, the upward pressures on pension expenditure are also slightly lower, as slower productivity growth will lead to smaller average pensions through a slower rise in earnings.

The need for education services included in age-related expenditure will decrease with the shrinking of the youngest age groups. However, as the young age groups are larger than in the previous population projection, education spending will contract less than according to the

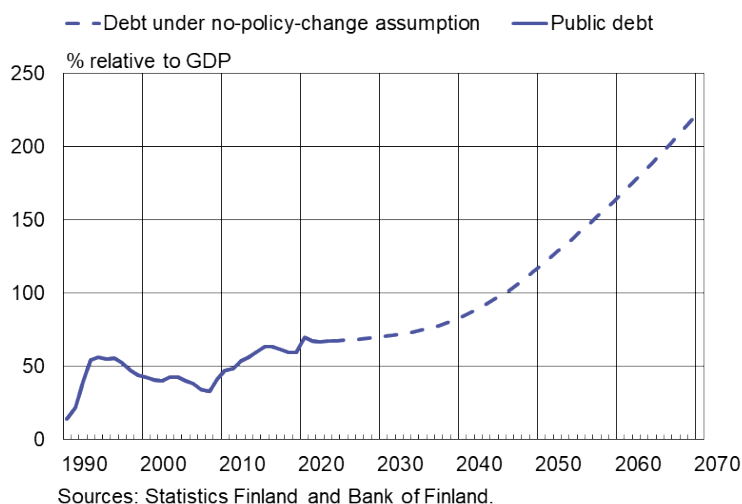
4. See article: [Finland’s new long-term forecast suggests GDP growth will be more subdued](#) by Arto Kokkinen, Petri Mäki-Fränki and Meri Obstbaum.

previous sustainability calculation. In addition, the baseline scenario of the long-term forecast assumes that, starting from the 2040s, additional spending will push up the volume of education expenditure per student towards the level of the early 1990s, on account of which education expenditure relative to GDP will resume an upward trend. Unemployment is estimated to stabilise in the calculation to 8% in structural terms from 2030 onwards.

Even though the sustainability gap indicator is lower than previously assessed, the sustainability challenges remain substantial. If fiscal policy is not adjusted to the changing situation, there is a risk that public debt will grow in an uncontrollable manner (Chart 1). Basically, the problem relates to the existing structural deficit, which should be reduced to a more sustainable level. After that, we should respond to the upward pressures on age-related expenditure. Pension expenditure has grown at a particularly brisk pace already in the years of slow economic growth following the financial crisis, and growth in the need for healthcare and long-term care services and the related implications are already partially visible. The health care backlog caused by the COVID-19 pandemic must also be cleared in the forthcoming years.

Chart 24.

Upward pressure on public debt remains substantial



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Tags

[public finances](#), [long-term projection](#), [sustainability gap](#), [population ageing](#)

Finland's new long-term forecast suggests GDP growth will be more subdued

Today – Bank of Finland Bulletin 5/2021 – Finnish economy

An ageing population and weak productivity trend are depressing Finland's economic growth prospects. The Bank of Finland's new long-term forecast suggests growth will be around 1.2% per annum in the period 2021–2040, and will slow thereafter. If current trends in population growth and education continue, there is a danger that human capital will start to decline in the 2040s. The trend in human capital can still be influenced through investment in education and more robust incentives for acquiring skills, participating in the labour force and increasing the birth rate. Furthermore, increased immigration of skilled workers would help boost human capital more quickly than policies that relate to the indigenous workforce alone.



This article was written by Petri Mäki-Fränki, Arto Kokkinen (NAOF) and Meri Obstbaum; it is based on a [BoF Economics Review article](#) published on 16 December 2021.

Decline in working-age population and low productivity weakening outlook for growth

Decision-making in economic policy relies not only on short-term economic forecasts, but also on forecasts of long-term growth prospects. In projections published by the Bank of Finland in the 2010s, economic growth in Finland was predicted to remain at around 1.5% over the following few decades, which is a considerably slower rate of growth than what had been the norm prior to that decade.^[1] The prospects for growth in Finland in the next few decades presented in this

1. See, for example, Obstbaum, M. – Mäki-Fränki, P. (2018) [Finland's long-term growth prospects moderate](#) – Bank of

article are poorer than what was anticipated on the basis of previous long-term forecasts made by the Bank of Finland.

The outlook for economic growth in Finland is weakened by a decline in the working-age population as the population ages and by the poor trend in labour productivity. Productivity growth will slow particularly due to a lack of fixed capital investment and the poorer prospects for human capital, measuring the volume of human capital in terms of qualifications valued by the volume of expenditure on education services per student. In addition, the demand for age-related health and care services, which display weak productivity growth, continues to increase. These services will in the future account for a larger number of people in the labour force than ever before. Slow productivity and economic growth, in a situation where the need for age-related public services is at the same time growing, will put pressure on the sustainability of the public finances.

This article sets out the Bank of Finland's new long-term forecast for the Finnish economy for the period 2020–2070. The main difference between this new forecast and its predecessors is that it emphasises the importance of human capital as a source of economic growth. In previous studies and forecasts for growth in the Finnish economy, economic growth would typically be explained within the framework of growth accounting with reference to the rate of growth of labour input, the fixed capital stock and total factor productivity. Here, we show that labour productivity growth in Finland in past decades can be explained simply in terms of investment in fixed and human capital. The long-term growth forecast can thus be based on projections for the growth in fixed and human capital in Finland in the period 2020–2070. In this article, investment in human capital accumulation is measured for Finland in terms of the volume of public expenditure on education services per student.

The forecast is a projection where the assumption is that the growth in production factors will continue broadly to reflect earlier trends. Technological progress, which, in growth contribution analysis based on the neoclassical production function, is thought to result in an increase in total factor productivity, is included in fixed capital in the economic statistics as they are currently. Technological progress thus comes about in an empirical application of the forecasting model through renewal of the capital stock. The advantage in such a case is that there is no need to explain production growth by relying on assumptions about the growth rate for total factor productivity.

Bank of Finland's new long-term forecasting framework

The prospects for long-term economic growth in Finland, too, have mostly been assessed in the context of growth accounting, which is based on neoclassical growth theory. According to that, labour productivity cannot be boosted indefinitely merely by increasing the capital stock per employee, because, with the growth in capital, its impact on increased labour productivity declines and, in the end, fades away. The growth contribution analysis with reference to these models shows that the long-term rate of growth of productivity and GDP depend mainly on the

[Finland Bulletin \(bofbulletin.fi\)](#) 6 July 2018.

trend in total factor productivity. Put simply, the growth in total factor productivity may be regarded as something that represents general technological progress, which, in the model, is assumed to arise externally. Increased total factor productivity, therefore, does not depend on, for example, levels of education among the population, innovation policy or comparable factors, which can be influenced by the choices made by consumers and companies and those made in the context of economic policy.

Unlike before, the Bank of Finland's new long-term forecasting model is based on endogenous growth theory. The trend in labour productivity is explained, not by total factor productivity, but by the increase in human capital in the economy and in the fixed capital stock, which is also influenced by technological progress in capital goods, as suggested by the statistics. Fixed capital now also includes investment in research and development (R&D), databases, computer software, R&D outputs that support production and other intellectual property products.

Human capital in the model is interpreted as the knowledge and skills of the working-age population that are the result of education and the gaining of qualifications. It is thus possible to measure human capital growth in terms of the qualifications gained by the working-age population, weighted by the volume of education services used for acquiring those qualifications. The entire human input in economic production is reflected in the number of hours worked by a trained labour force.

Technological progress in the model is explained by the regeneration of fixed capital. Although the new forecasting model does not contain a separate account of technological progress, it is important to realise that this is included in the technological advancement of fixed capital products in the updated system of national accounts 2008, which was implemented in the macroeconomic data of the EU countries in 2014.^[2] New production technologies emerge and spread from company to company as existing means of production are replaced by new generation solutions that are more productive than before. Technological progress in an economy therefore actually depends on intangible ideas resulting in the technological advancement of capital products and the volume of capital stock. Technological progress also requires human capital. The innovation and efficient adoption of new technologies is not possible without the knowledge and skills of a professional labour force, constantly updated as they need to be.

A distinct advantage of the new forecasting model, compared with previous models, is that it is possible to explain the growth in labour productivity solely in terms of investment in human and fixed capital. Unlike in conventional models based on neoclassical growth theory, economic growth no longer needs to be explained with reliance on externally determined factors – such as total factor productivity – which are independent of the choices made in the context of economic policy.

As with the Bank of Finland's earlier long-term forecasts, in the new framework for growth, the economy is divided into three parts: public production, manufacturing and private non-manufacturing activities. This division makes it possible to consider the differences in productivity growth in private and public production and among the different industrial classes. In this way it is also possible to examine how the ageing population is impacting the labour supply and labour productivity in private and public production. Finally, production levels calculated for

2. Research and development were defined and recorded in the system of national accounts prior to 2014 in the category intermediate goods and services, which may have also affected the way in which R&D was treated in growth theory models.

sections of the economy are compiled to give a picture of production for the economy as a whole.

Human capital growth an explanatory factor for economic growth in Finland

The role of human capital as a factor in economic growth has been stressed in studies of economic growth conducted since the 1980s. It has been suggested that human capital acts directly as a factor of production, boosts the efficiency of labour input, or enables technological progress and its adoption. In earlier empirical growth studies, it is the level of education of the working-age population, measured by the number of years spent in education on average, that has frequently been the variable used for the volume of human capital. Although the notion of a link between education levels and human capital is justified in terms of economic theory, the connection in empirical studies between levels of education and economic growth measured in this way has been found to be uncertain.

In this article, the trend in the quality of human capital is examined, not only with reference to how long on average people have been studying, but also in terms of the accumulation of education services used to gain qualifications. As is implied, this is measured cumulatively based on the volume of education expenditure incurred for each qualification. The cumulative education expenditure volume for the education services used to gain the qualifications has been compiled using the method of calculation based on national accounts data developed by Kokkinen (2012).^{[3] [4]} In the calculations, the volume of expenditure on education services was allocated to student categories based on educational level (in Finland: compulsory basic education (comprehensive school), upper secondary education and higher education). The allocation was carried out with reference to the number of students at each educational level and the average education expenditure volume per student, which were calculated based on historical data. Finally, the cumulative volume of education expenditure used in basic education was added to the volume of expenditure on post-comprehensive school qualifications.^[5] The volume of human capital in the Finnish economy compiled in this way does much to explain economic growth in the country in conjunction with fixed capital in the period 1934–2019.

Chart 1 shows the residuals for models where GDP per hours worked is explained, either solely by fixed capital per hours worked, or alternatively, by fixed and human capital per hours worked. That part of production growth that is not explained by the growth in these production factors

3. Investment in human capital is in this case compiled and accrued to human capital stock using the similar compilation strategy and perpetual inventory method (PIM) as with fixed capital in the same national accounts framework.

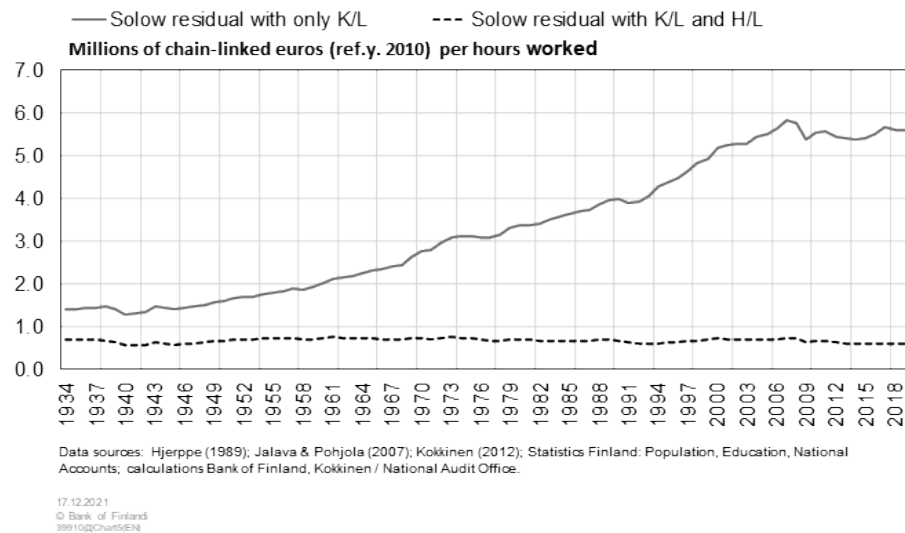
4. The estimate of growth in human capital for the period 1934–2000 is based on the Kokkinen (2012) study. The data for these years were combined with those for the period 2000–2019, which are based on a similar method of calculation, and on more detailed statistics on education. For the period 2000–2019, the new figures for education were available from Statistics Finland. These provided the annual figures for students and qualifications gained by educational level for each cohort of students aged 16 and over. The annual education expenditure volumes for the period 2000–2019 could then be allocated separately for each cohort. The data on education expenditure volumes were based on national accounts figures.

5. The periods of study, especially for graduating at the level of tertiary education, are long, and knowledge and skills are acquired only gradually. The years needed to gain qualifications are taken into account here in such a way that the volume of education expenditure accumulating during the years of study increases the human capital stock of the economy only at the point when students have gained their highest qualification, stopped studying and entered the labour market.

may be interpreted as the rate of total factor productivity growth. It is to be noted that, in the second model, total factor productivity as an explanatory factor for labour productivity growth is substantially less significant.

Chart 25.

The build-up of human capital is a strong explanatory factor for economic growth in Finland



Human capital in danger of declining in Finland

The human capital stock may be measured in terms of qualifications valued by the volume of expenditure on education services, but it can also be represented as the product of labour input in the economy and the average volume of human capital tied up in this labour input. To create a forecast for this representation of the human capital stock, separate projections were made of the labour input growth rate and the volume of education expenditure used in 2020–2070 for the post-comprehensive school qualifications gained by people of working age.^[6]

Predictions of the size of cohorts amongst those aged between 16 and 74 for the period 2020–2070 were obtained from the population forecast made by Statistics Finland in 2021. The estimates for the annual number of students in any cohort at each qualification level were based on the assumption that in each age group the share of students starting a course to gain a qualification and those continuing one would remain the same as in the previous three to five years. On the basis of numbers of students, it was possible to predict the numbers of qualifications gained, always supposing that the share of students gaining a qualification would remain the same as in the recent past. Finally, qualifications were given a value by multiplying the number of qualifications at each educational level by the average education expenditure volume per qualification. In the no-policy-change (low growth) scenario, the assumption was that the average education expenditure volume per student would remain the same at each educational level throughout the forecast period as in 2019.

In the model, labour input is measured in terms of hours worked. The trend in number of hours

6. It was the same method as used to estimate the growth rate for human capital with statistical data in the period 2000–2019.

worked in the years covered in the forecast depends on the increase in the number of people of working age (15–74), the labour force participation rate, the unemployment rate and the number of hours worked per employee. The working-age population of Finland will fall sharply as the population ages. The population forecast made by Statistics Finland in 2021 suggests that by 2040 there will be a good 170,000 fewer people of working age in the country than in 2020. By the end of the forecast period, i.e. 2070, the figure will be down by 480,000.

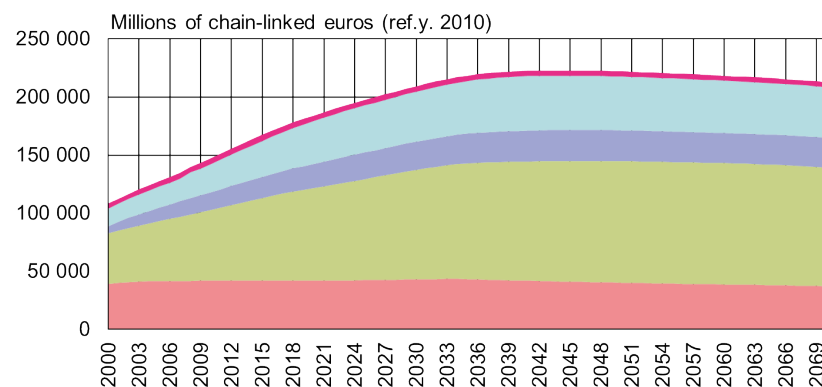
The volume of human capital in Finland has been increasing since the end of the 19th century. The trend has benefited in particular from the continuous improvement in the average educational level of the working-age population, since the new generations entering the labour market have been better educated than those retiring. Furthermore, the number of people of working age in whom knowledge and skills are embodied was increasing until around the start of the 2020s. Although the number of those of working age (16–74) began to fall in 2021, the improved average standard of education among the population will drive the growth in human capital for the foreseeable future.

The improvement in levels of education is, however, at risk of coming to an end in the decades to come. The new age cohorts entering the labour market are still on average better educated than those retiring, but the average level of education of the youngest groups has begun to fall. The best educated cohorts are currently to be found among those born at the turn of the 1980s. At the same time, there are fewer people with university degrees, while the number of those with vocational qualifications has risen. Chart 2 depicts the trend in human capital in a situation where the decline in the working-age population continues as reflected in the latest population forecast and the educational level of the young age groups does not start to increase at the same time as the young age groups continue to become smaller in size. Human capital in this scenario still grows during the 2030s but starts to decline towards the 2050s, and that fall continues until the end of the forecast period by an average rate of 0.2–0.3% annually.

Chart 26.

Volume of human capital is in danger of declining in the 2040s

- Post graduate level (Doctorate)
- Higher tertiary (Master, Uni and Polytechnic)
- Polytechnic, lower tertiary
- Vocational (and lowest higher qualifications)
- Upper secondary



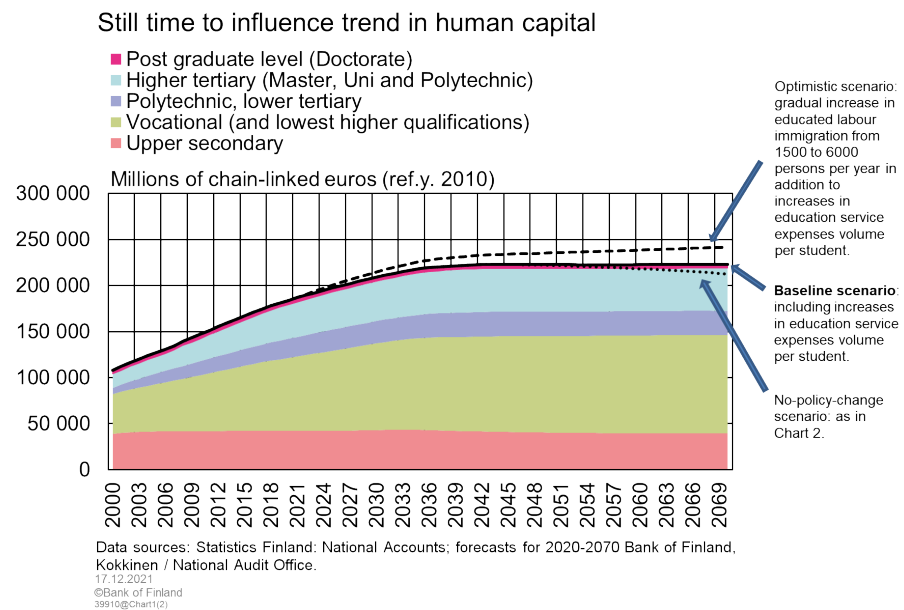
Data sources: Kokkinen (2012); Statistics Finland: Population, Education, National Accounts; calculations and forecasts for 2020–2070: Bank of Finland, Kokkinen / National Audit Office.

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The projection for human capital growth depicted above is based on the assumption that there is no attempt actively to curb the decline in human capital by means of economic policy measures.

In addition to the no-policy-change scenario, the long-term growth forecast examines two alternative, more optimistic scenarios, where an attempt is made to stop this decline. In the baseline scenario for the forecast (the middle curve), the education expenditure volumes per student are increased in the 2050s and 2060s to correspond to their level at the turn of the 1990s. In this scenario, the growth in the volume of human capital would slow significantly towards the 2040s and stop completely in the 2050s. In the third, optimistic scenario, employment-related immigration is gradually increased so that in the period 2050–2070 there would be 6,000 more immigrants per annum than now.^[7] If these more optimistic assumptions are made, human capital would grow until the end of the forecast period, although the pace of growth would slow considerably in the 2040s.

Chart 27.



Slow growth in fixed capital

The long-term trend in the fixed capital stock is closely linked to the growth in human capital, since the adoption of new means of production and technologies and their spread mean that the labour force needs to be able to learn new skills.^[8] The relevance of learning skills is heightened as more and more investment is made in R&D rather than machinery and equipment. The ability of the labour force to innovate in R&D and embrace new technology is still to a significant extent reliant on traditional forms of education that lead to the gaining of qualifications.

The normal assumption made in theoretical growth models is that fixed and human capital should in the long-term increase at the same rate. From an historical perspective, however, economic growth in Finland does not fully support this conclusion. Both the fixed and the human capital stock grew in Finland at roughly the same rate from the 1930s until the start of the 1990s.

7. These migrants are assumed to be as well educated as Finns who gained their qualifications in 2019. It is to be supposed that the children of migrants will join the labour force when they have gained a qualification.

8. Fixed and human capital in the forecast model can be substituted for each other, but the research literature on endogenous growth suggests that human capital is vital for the adoption of innovations and new technology.

Following the recession in the 1990s, however, the growth rate for fixed investment slowed dramatically, and since then the growth rate of the capital stock as a whole has been more dependent on the increase in human capital. The current growth forecast for the economy examines three different scenarios for how the trend in the volume of fixed capital compares with that for human capital over the period covered in the forecast, i.e. 2020–2070.

For the purposes of the growth forecast, human and fixed capital volumes in the scenarios and labour inputs had to be divided again and allocated among the three parts of the economy. The growth rate for human capital was assumed to be the same in each of these three. The assumption may be regarded as legitimate, as there is no discernible difference of any substance in Finland in the average educational level of the labour force in private as opposed to public production. The trend in volumes of fixed capital is predicted to progress in line with that for human capital in any of the three parts of the economy. In the no-policy-change scenario, the ratio of fixed capital to human capital (the K/H ratio) is consistent with the last year for which we have statistics. In the more positive baseline scenario it is assumed that this relationship will return to the level identified previously. In the highest growth scenario, fixed capital is assumed to grow in the forecast period at the same pace as the average for 1976–2019.

In the model, labour input is allocated in such a way that the need for labour in public production is determined exogenously on the basis of demand for public and publicly funded social welfare and health care services and the productivity trend in public service production. With an ageing population, demand for these services is expected to increase substantially, especially over the next two decades. Because labour productivity growth in public services has tended to be slow in the past and the rate of productivity growth is not expected to improve quickly, the need for labour in age-related services will be closely tied to the rate at which age-related expenditure increases, and will grow by around 0.4–0.5% per annum in the period 2020–2070. The rest of the labour input is in private production, i.e. manufacturing and private non-manufacturing, and is distributed between these in proportion to the respective numbers employed.

Three scenarios for economic growth in Finland

The growth prospects for Finland for the next few decades are still weaker than they seemed from the previous long-term forecasts made by the Bank of Finland. The forecast in 2018 was that the Finnish economy would grow by an average of 1.5% per annum in the period 2026–2040. The three new forecast scenarios for the country's economic growth over the period 2020–2070 are based on three separate assumptions with respect to the trends in human and fixed capital in the future (Chart 4, Table 1).

The assumption made in the baseline scenario is that it is possible to predict a slowdown in economic growth and respond to it by means of economic policy measures. Efforts are made to slow the deterioration of human capital with an increase in education expenditure volume per student from the present level to the levels seen at the turn of the 1990s.^[9] It is also possible to increase investment in fixed capital compared with recent years, returning the K/H ratio to the

9. Education expenditure volume per student is assumed to remain at the same level as now in the period 2020–2040 (7,000 per annum in reference year 2010 chain-linked euros), but in the period 2040–2060 would rise to 8,200 in chain-linked euros (reference year 2010).

level seen at the turn of the 1990s, after which it gradually declined.

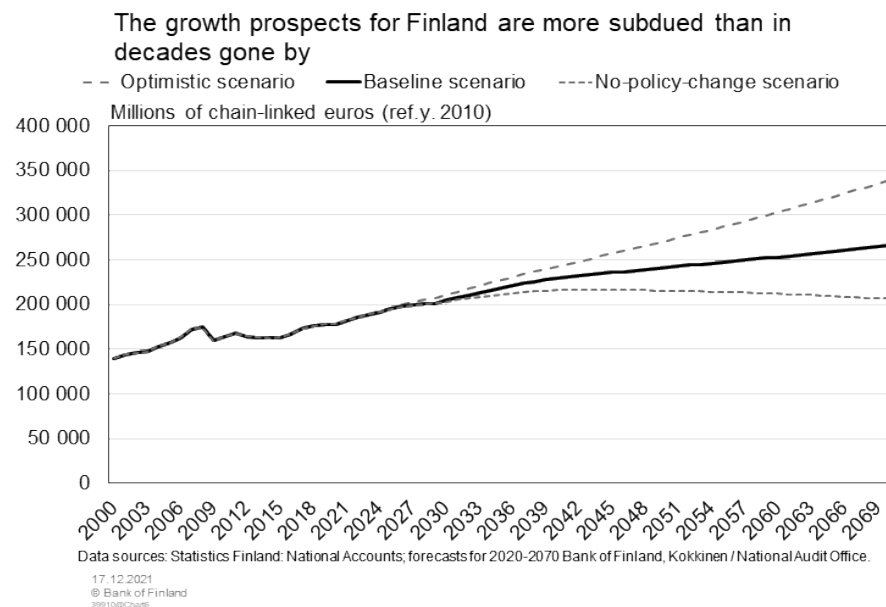
Economic growth according to the baseline scenario is rather slower in the near future than the Bank of Finland predicted in its previous long-term forecast. In the 2020s and 2030s, GDP grows by an average of 1.2% per annum. From the 2040s, however, economic growth slows to 0.5% per annum, as productivity growth from the 2050s is driven only by the growth in fixed capital.

A measure of the trend in the standard of living that is even more significant than GDP is the growth in GDP per capita. In Finland, that has historically increased at the same rate as labour productivity. In the results presented in Table 1, economic growth per capita is thus also estimated on the basis of GDP per hours worked. In the 2020s, it increases by a few tenths of a percentage point more slowly than GDP, as the volume of labour input continues to rise owing to improved participation on the labour market. As the volume of labour input starts to diminish towards the 2030s, economic growth becomes more dependent on productivity than ever, with economic growth estimated per person being driven faster than the growth in GDP.

The pessimistic no-policy-change scenario is based on the supposition that the growth in (human and fixed) capital does not in any way benefit from economic policy measures. With regard to investment in fixed capital, the assumption is that the relationship between the volume of fixed capital and human capital remains much the same as it is now. It is thought that both human and fixed capital will in such a case decline by between 0.2% and 0.3% on average in the 2050s.

According to this gloomy scenario, GDP would still grow at a rate of 1.2% in the 2020s, though by the 2030s the growth rate would dip to 0.6%. Eventually, there would be negative economic growth, with the human capital stock starting to shrink and the GDP growth rate standing at -0.2% to -0.3% per annum on average in the 2050s and 2060s.

Chart 28.



In the optimistic scenario, as with the baseline scenario, the assumption is that education expenditure volume per student is increased. In addition, the rate of growth of human capital is supported by an increase in work-related immigration from the 2030s compared with the current

figure of around 1,500 persons per annum. Immigration is assumed to increase gradually, reaching a figure of 6,000 persons per annum in the period 2050–2070.

The assumption is also made that fixed capital grows steadily from the 2030s at the same annual rate of 2% as was seen on average during the period 1976–2019. The volume of fixed capital in relation to human capital in this case eventually becomes larger than in the baseline scenario.

The faster rate of growth of both fixed and human capital would speed up productivity growth compared with the baseline scenario, with GDP in the 2020s and 2030s increasing at a rate of around 1.5% per annum, i.e. about as fast as in the Bank of Finland's previous long-term forecast. Economic growth towards the 2040s would nevertheless wane in this scenario, too, falling to an annual rate of 1%.

Table 1.

Three scenarios for economic growth in Finland in the period 2010–2070, growth rate of variables (%)

No-policy-change, low growth scenario	Y/L resid	K/L	L	H/L	Y/L	Y resid	H	K	Y
2010–2019	-0.6%	0.8%	0.4%	2.0%	0.8%	-0.6%	2.3%	1.2%	1.1%
2020–2029	-0.1%	1.2%	0.1%	1.2%	1.1%	-0.1%	1.3%	1.3%	1.2%
2030–2039	0.0%	0.7%	-0.1%	0.7%	0.7%	0.0%	0.6%	0.6%	0.6%
2040–2049	0.0%	0.3%	-0.3%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%
2050–2059	0.0%	0.4%	-0.5%	0.4%	0.4%	0.0%	-0.2%	-0.2%	-0.2%
2060–2070	0.0%	0.3%	-0.5%	0.3%	0.3%	0.0%	-0.3%	-0.3%	-0.3%
Baseline, middle growth scenario	Y/L resid	K/L	L	H/L	Y/L	Y resid	H	K	Y
2010–2019	-0.6%	0.8%	0.4%	2.0%	0.8%	-0.6%	2.3%	1.2%	1.1%
2020–2029	-0.1%	1.2%	0.1%	1.2%	1.1%	-0.1%	1.3%	1.3%	1.2%
2030–2039	0.0%	1.8%	-0.1%	0.7%	1.3%	0.0%	0.6%	1.7%	1.2%
2040–2049	0.0%	1.3%	-0.3%	0.4%	0.8%	0.0%	0.1%	0.9%	0.5%
2050–2059	0.0%	1.4%	-0.5%	0.5%	1.0%	0.0%	0.0%	0.9%	0.5%
2060–2070	0.0 %	1.4%	-0.5%	0.5%	1.0%	0.0%	0.0%	0.9%	0.5%
Optimistic, high growth scenario	Y/L resid	K/L	L	H/L	Y/L	Y resid	H	K	Y
2010–2019	-0.6%	0.8%	0.4%	2.0%	0.8%	-0.6%	2.3%	1.2%	1.1%
2020–2029	-0.1%	1.5%	0.1%	1.4%	1.4%	-0.1%	1.6%	1.6%	1.5%
2030–2039	0.0%	2.0%	0.0%	0.8%	1.4%	0.0%	0.8%	2.0%	1.4%
2040–2049	0.0%	2.2%	-0.2%	0.4%	1.4%	0.0%	0.2%	2.0%	1.1%
2050–2059	0.0%	2.3%	-0.3%	0.4%	1.4%	0.0%	0.1%	2.0%	1.1%
2060–2070	0.0%	2.3%	-0.3%	0.4%	1.4%	0.0%	0.1%	2.0%	1.1%
Y = gross domestic product; L = labour; K = capital; H = human capital									
Y/L resid = model residual when Y/L is explained by K/L and H/L									

Three scenarios for economic growth in Finland in the period 2010–2070, growth rate of variables (%)

Y resid = model residual when Y is explained by K and H.

Growth in private production relies on productivity growth

The growing demand for age-related services owing to an ageing population was taken into account by dividing the economy in the forecasting model into public production, manufacturing and private non-manufacturing. Employment in public production will depend directly on demand, and the rest of the labour input will be distributed within private production. The three parts of the economy will grow at virtually the same rate throughout the forecast period, but a very evident difference in the composition of growth will emerge between them, particularly after the 2030s. Labour input in public production, which is determined on the basis of the demand for public services, will still increase even after the 2030s, with the demand for social welfare and health care services continuing to rise. The labour input not in public service production will be distributed among private production, and after labour input declines, growth in private production will have to rely on productivity growth alone.

Conclusions and discussion

Although the COVID crisis does not appear to be leaving permanent scars on the Finnish economy, the long-term growth prospects remain subdued. With the ageing population, the size of the labour force will eventually decline, and there are no signs of any acceleration in labour productivity growth either. According to the baseline scenario in the forecast, economic growth in the next couple of decades will remain at 1.2% and weaken from the 2040s onwards.

In the Bank of Finland's new long-term forecasting framework, economic growth will depend on the rate of growth of both fixed and human capital. As the educational level of those of working age has continuously improved, economic growth in Finland has been kept going mainly by the accrual of human capital. The importance of human capital was especially evident following the years of recession in the 1990s, when investment in fixed capital was limited. However, the volume of human capital in Finland is in danger of declining in the 2040s if the current downward trends in population growth and education are not reversed: the young age cohorts entering the labour market are constantly growing smaller, in addition to which those born at the start of the 1980s are, at least so far, the best educated age group ever in Finland.

It is possible to slow the deterioration of human capital with additional investment in education and more robust incentives for acquiring skills, participating in the labour force and increasing the birth rate. Furthermore, it is possible to increase immigration of skilled workers, which would be more readily reflected in the volume of human capital than merely relying on policy measures that relate to the indigenous workforce alone.

Labour productivity growth depends not only on the trend in human capital but also on

investment in fixed capital. Innovation spreads in business mainly through the deployment of new and better machinery, equipment and software and the adoption of ideas for products conceived in R&D. Technological development therefore also in practice relies on both investment in fixed capital and in R&D. The forecasting model used here does not include a detailed description of fixed capital accumulation, and the trend in the fixed capital stock in relation to human capital is based on simplified assumptions. The accumulation of fixed capital is therefore surrounded by the same uncertainty as that pertaining to the assumptions concerning the rate of growth for total factor productivity in neoclassical growth models. The main conclusion about the significance of fixed capital for productivity growth remains, however. Nevertheless, in a small open economy such as Finland's, it is not possible to invent and develop everything at home: in the future too, most new technology will be imported from abroad. That is why investment in fixed capital from abroad, including the outcomes of R&D, cannot be ignored.

The impact on annual economic growth of the economic policy measures examined in the forecast would not be great, but even a small acceleration in economic growth will over the decades result in a major improvement in living standards. An increase in the working-age population would also help reduce the dependency ratio, which is threatening the sustainability of the public finances.

Tags

[economic growth](#), [labour productivity](#), [investment](#), [human capital](#), [long-term projection](#)

Supply bottlenecks are having wide-spread impacts on the economy

Today – Bank of Finland Bulletin 5/2021 – Finnish economy

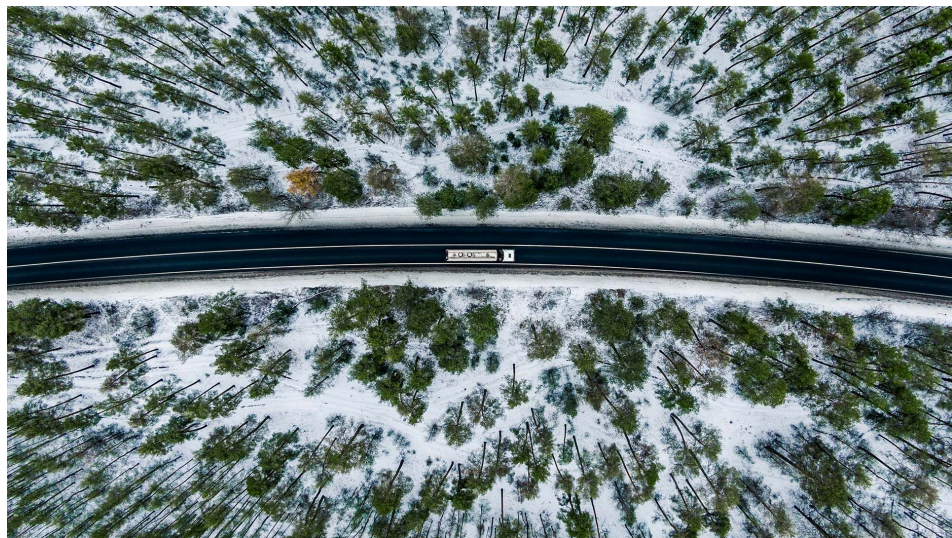


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The supply-chain disruptions constraining world economic growth and the rise in raw material and shipping costs are inevitably affecting the Finnish economy. Finnish industrial output has recovered to pre-pandemic levels, even though manufacturers report supply bottlenecks, including materials shortages and logistics disruptions, widely limiting production in Finland. Supply bottlenecks are especially casting a shadow over Finnish industrial output and export growth.

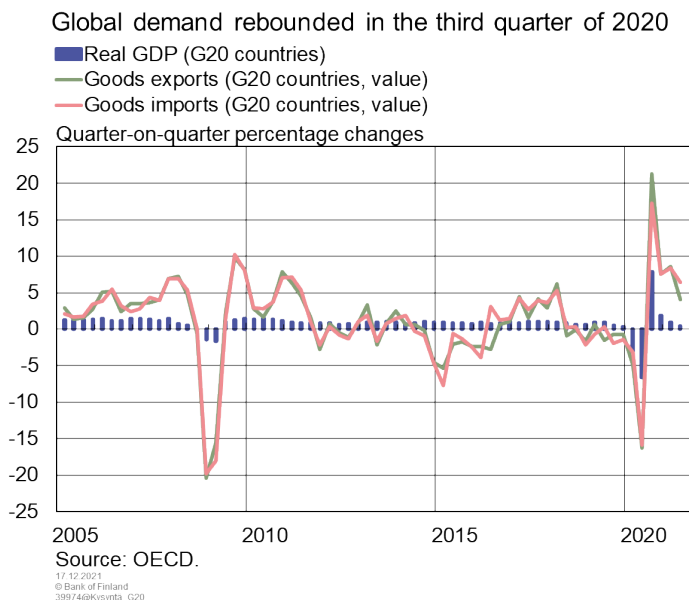


In the spring of 2020 firms responded to the global collapse in demand caused by the COVID-19 pandemic by reducing production, which resulted in a lull in world trade (Chart 1). When consumption picked up in autumn 2020, consumer spending shifted more towards goods on account of concerns surrounding the virus and restriction measures which were largely concentrated around the service industry. The surge in demand for consumer goods together with the slow ramping up of production has led to a global imbalance in supply and demand. Global supply bottlenecks in the production of semiconductors^[1] and raw materials, shipping disruptions,

1. Semiconductor materials include silicon, germanium, gallium arsenide, lead sulphide and indium phosphide. These materials are turned into semiconductor devices, such as integrated circuits (microchips), transistors, diodes, LEDs and solar cells. In this article 'semiconductor' refers to semiconductor devices.

and rising energy prices have closed factories, lengthened delivery times and pushed up freight and raw material costs since late 2020. Supply-chain disruptions have also slowed manufacturing output and export growth in the euro area.

Chart 29.



Finland's production structure has contributed to our industrial output withstanding the pandemic relatively well in 2020. However, business surveys suggest that Finnish manufacturers and exporters have been widely affected by tightening supply bottlenecks in 2021: about 36% of Finnish goods exports come from industries where at least half of manufacturers reported production running up against equipment and materials shortages in October 2021.

Supply bottlenecks are likely to have contributed to why manufacturing output, despite having recovered to pre-pandemic levels, has not kept up with growth in order books, which is being bolstered by strong global demand. While [Finnish exports are recovering swiftly](#) from their pandemic slump, supply-chain disruptions are creating headwinds to foreign trade growth. They are also raising consumer prices, which will moderate private consumption growth. The impact of the supply bottlenecks on Finnish economic growth is also estimated in the forecast's [alternative scenario](#), according to which growth would be some 0.5 percentage points higher in the absence of the bottlenecks in 2021.

Vulnerability of supply chains revealed by the pandemic

The container shipping industry had already fallen into disarray before global demand picked up in the third quarter of 2020. Disruptions began in the world's largest container ports in early 2020 and were caused both by a lack of handling capacity due to the pandemic and by the lull in manufacturing due to the Chinese New Year.^[2] As a result of these disruptions, a significant number of the world's empty shipping containers were dispatched to the wrong ports, where they

remained stranded.

Aggravating the situation were capacity reductions at large shipyards in 2020 and a smaller number of new shipping containers being manufactured in response to the contraction in world trade. In addition, the blockage of the Suez Canal in March–April 2021, port congestions, labour shortages and pandemic-related restrictions have all disrupted container shipping.

The semiconductor shortage, in turn, began with the car industry's global collapse in demand in the second quarter of 2020 while semiconductor demand surged in the electronics industry due to remote work and school and increased time spent at home. As the car industry's demand recovered faster than expected at the end of 2020, the demand for semiconductors was so great that it exceeded global supply.

Semiconductor manufacturers had also scaled back planned investments in 2019 due to oversupply issues and export controls imposed by the United States on China in 2018–2019 which restricted the sale of semiconductor software and manufacturing equipment.^[3] Semiconductor delivery times have grown longer than ever in 2021. The longest delivery times at the end of October 2021 were for microcontrollers used in the car industry (38 weeks) and power management components^[4] (25 weeks), while their normal delivery times range from 9 to 12 weeks.^[5]

In addition to the rapidly increased demand for semiconductors themselves, there is also a shortage of magnesium and silicon discs, two semiconductor raw materials. As construction activity and consumption have recovered worldwide, the demand for commodities such as crude oil, metals and lumber has exceeded their supply. Supply-chain disruptions and factories being closed or understaffed due to COVID-19 outbreaks have restricted growth in the supply of commodities. In addition, sharp rises in energy prices in 2021 have also affected the global supply and manufacture of commodities.

According to a report^[6] by the Bank for International Settlements, Taiwan and South-Korea's semiconductor exports clearly exceed 2019 levels in spite of the supply bottlenecks. This is indicative of the grown demand for semiconductors. Although global chip manufacturers have announced plans to ramp up production and build new factories, capacity increases are not expected to raise output until 2023.^[7]

2. Ojala, L., Paimander, A. ja Kairinen I. (2021) Konttikuljetusten ajankohtais selvitys, Logscale Oy.

3. Asian Development Bank, 2021, Asian Development Outlook, Box 1.1.2: Developing Asia's electronics and automobile exporters at risk from the shortage of semiconductor chips.

4. Power-management components let electronic devices, including photocopiers, computers, computer processors and computer graphics cards and peripherals, as such monitors and printers, to switch off or enter a low-power mode when idle.

5. Wall Street Journal, 2021, Global Chip Shortage 'Is Far From Over' as Wait Times Get Longer.

6. Bank for International Settlements, 2021, [Bottlenecks: causes and macroeconomic implications \(bis.org\)](#), BIS Bulletin No 48.

7. European Commission, 2021, Supply side bottlenecks, Economic Forecast, Autumn 2021, Thematic Special Topics.



Asia plays a key role in global supply chains

Taiwan and South-Korea respectively control 63% and 18% of the global semiconductor manufacturing market.^[8] Malaysia and Vietnam, in turn, are specialised in the packaging and testing of semiconductors. COVID-19 outbreaks are still closing factories and packaging facilities in Malaysia, even though the majority of its population is fully vaccinated. Inoculation rates are much lower in Taiwan and Vietnam. In addition, droughts, earthquakes and fires have also disrupted semiconductor manufacturing in Asia. One such event occurred in the spring of 2021, when Taiwan experienced its worst drought in 56 years. The manufacturing process for semiconductors requires vast amounts of water, but because of the drought, the use of water was heavily restricted in Taiwan. Bottlenecks in supply are thus being driven by a variety of factors.

Furthermore, China's strict COVID-19 policies in particular have caused delays in Chinese ports. Most container ships calling in China must quarantine for at least a week before they are allowed to berth and unload their freight.^[9] In August 2021 a terminal at Ningbo-Zhoushan, one of China's busiest ports, was closed for two weeks after a single worker was diagnosed with COVID-19.

Shortages of raw materials are also being driven by a number of factors. For example, China's Shaanxi province is one of the world's largest producers of magnesium. However, China has restricted its use of electricity due to a rise in world energy prices and coal shortages, among other reasons.^[10] It follows that electricity restrictions in China are also reducing the production of magnesium.

Supply bottlenecks reinforce one another

Underlying the supply bottlenecks is a shift in demand towards manufactured goods. Increasing the supply of manufactured goods is difficult in the short term because of the capital intensity required in manufacturing. Manufactured goods are also dependent on inputs produced elsewhere in industry, as a result of which supply-chain disruptions in one industry are easily reflected in others. The semiconductor shortage in the car industry has an impact on the availability of commodities: mining companies in Indonesia need lorries to meet the higher demand for coal and minerals, but the delivery time on lorries is longer due to the semiconductor shortage. The semiconductor shortage in the car and electronics industries has slowly spread to other industries.

A second factor driving supply-chain disruptions are changes in the behaviour of the supply chain

8. Asian Development Bank, 2021, Asian Development Outlook, Box 1.1.2: Developing Asia's electronics and automobile exporters at risk from the shortage of semiconductor chips.

9. Wall Street Journal, 2021, Global Supply-Chain Problems Escalate, Threatening Economic Recovery.

10. China's electricity problems are assessed in more detail in BOFIT's weekly report: https://www.bofit.fi/en/monitoring/weekly/2021/vw202140_1/.

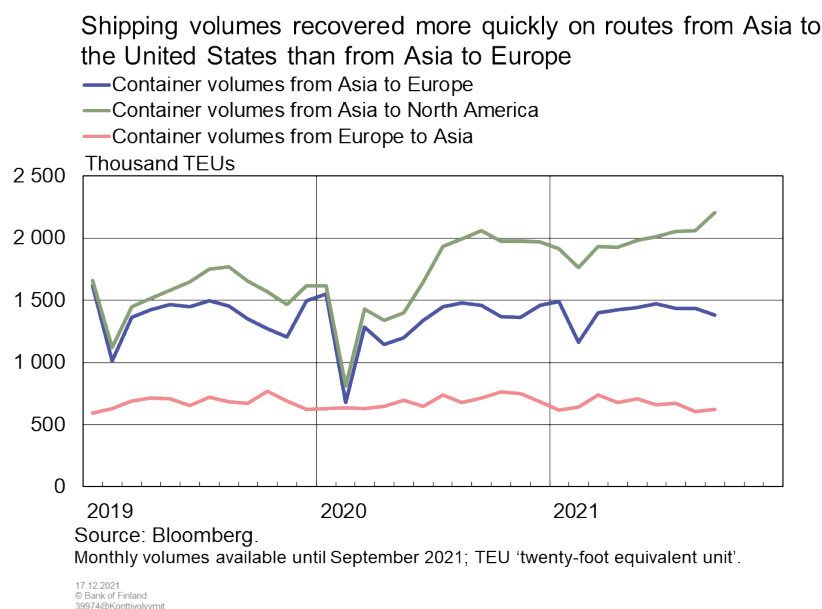
participants. Companies that use commodities and semiconductors in their production are preparing against materials shortages by increasing their stockpiles of commodities and semiconductors. This increases the incentive to build up buffers, which in turn aggravates the situation. The semiconductor shortage in particular is exacerbated by China's inventory policy, which involves stockpiling microchips and metals.^[11] The complexity of supply chains has also made disruptions slow and difficult to fix.

Shipping volumes are higher than before the pandemic

Soaring demand has also raised global container shipping volumes higher than before the pandemic. The rapid recovery of demand in the United States raised shipping rates on routes from Asia to the United States (Chart 3) and resulted in capacity being redirected here at the expense of other routes (Chart 2).^[12] Container shipping volumes from Asia to the United States have consequently recovered faster than from Asia to Europe.

Container shipping volumes from Asia to Europe also returned to pre-pandemic levels but began to decline again in June 2021. Shipping volumes and container rates on routes from Europe to Asia, by contrast, have barely changed during the pandemic. The normal circulation of shipping containers is reflected in volumes between Asia and Europe, where more fully-loaded containers are shipped from Asia to Europe and more empty containers, in turn, from Europe to Asia.

Chart 30.

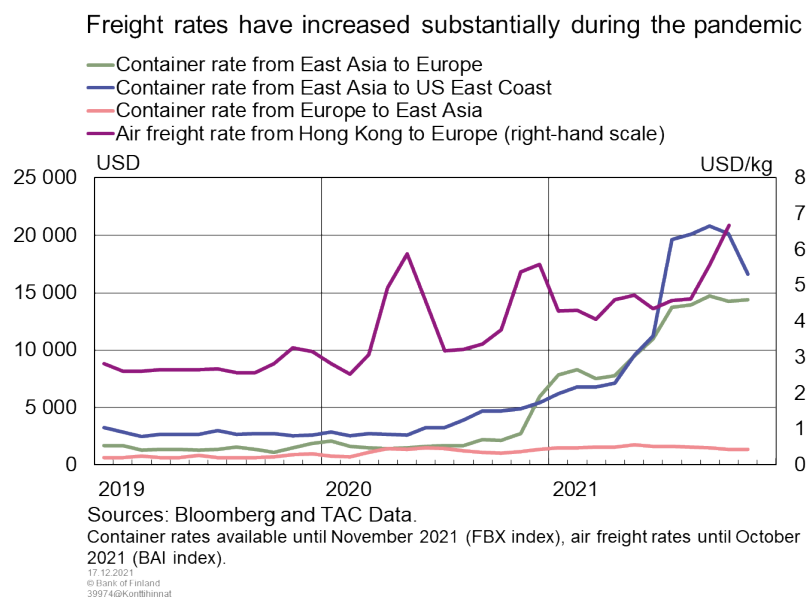


11. Frohm, E., Gunnella, V., Mancini, M. and Schuler, T. (2021) The impact of supply bottlenecks on trade, ECB Economic Bulletin, Issue 6/2021.

12. Frohm, E., Gunnella, V., Mancini, M. and Schuler, T. (2021) The impact of supply bottlenecks on trade, ECB Economic Bulletin, Issue 6/2021.

The shortage of the shipping containers available at the right place at the right time has raised shipping rates and made international shipping schedules exceptionally unreliable (Chart 3). As international travel has also come to a virtual halt, the cost of air freight has also increased, pushing up container-shipping rates even further.^[13] Although the disruptions in shipping already began in early 2020, container-shipping rates only began to rise at the end of the same year, when previously negotiated fixed-price contracts expired. As of October 2021, container-shipping rates from Asia to Europe and the United States have started to fall.

Chart 31.



Due to the bottlenecks in shipping, 22% of port calls in northern Europe were missed during the second quarter of 2021. 47% of vessels en route from East Asia to northern Europe berthed within 24 hours of schedule. The imbalances in container shipping are projected to persist far into 2022, and even into 2023.^[14]

13. Attinasi, M. G., Bobasu, A. and Gerinovic, R. (2021) What is driving the recent surge in shipping costs? ECB Economic Bulletin, Issue 3/2021.

14. Ojala, L., Paimander, A. ja Kairinen I. (2021) Konttikuljetusten ajankohtaisselvitys, Logscale Oy.



Container crunch also reflected in Finland

Finland is not exempt from the supply-chain disruptions caused by the pandemic. 92% of the volume of Finnish goods exports and 78% of goods imports were delivered by sea in 2019. Between 2019 and 2021 the share of Finnish exports delivered by land has increased by 1 percentage point. The share of Finnish imports delivered by sea has declined by about 3 percentage points during the pandemic, while the shares of imports delivered by rail and land have increased by about 2 percentage points and 1 percentage point, respectively.

The majority (62%) of Finnish goods exports are bound for Europe, where maritime shipping bottlenecks have remained mild. Similarly, Finland receives 62% of its goods imports from Europe. Asia accounts for 14% of Finland's goods exports and slightly below 14% of its goods imports.

Feeder shipping^[15] and container handling in ports have functioned smoothly in Finland throughout the pandemic, and delays have been due to scheduling issues in ocean shipping. The number of port calls in Finland (excluding passenger ships) was 11% smaller in the first half of 2021 compared with the second half of 2019.^[16]

The volume of inward freight (in tonnes) passing through Finnish ports in January–September 2021 was about 12% smaller compared with the same period in 2019. By contrast, outward freight has remained reasonably steady throughout the pandemic, albeit being about 6% smaller on average in January–September 2021 compared with two years earlier.

The effects of the global container shortage are also reflected in Finland. Finland's inward container traffic (TEUs, excluding transshipments) was about 18% smaller in September 2021 compared with September 2019, while outward traffic was about 15% smaller during the same period. Container freight accounts for about 15% of the total value of Finland's foreign trade. Containers are primarily moved in and out of Finland via sea transport.

Finland's forest and metal industries especially require the empty shipping containers that are brought into Finland for loading. In 2020, for example, 40% of all shipping containers brought into Finland were empty. However, Finland finds itself in an unfavourable position when it comes to the availability of empty shipping containers, as there is plenty of demand in other countries and Finland is situated at the far-end of the feeder network together with Estonia and Russia.

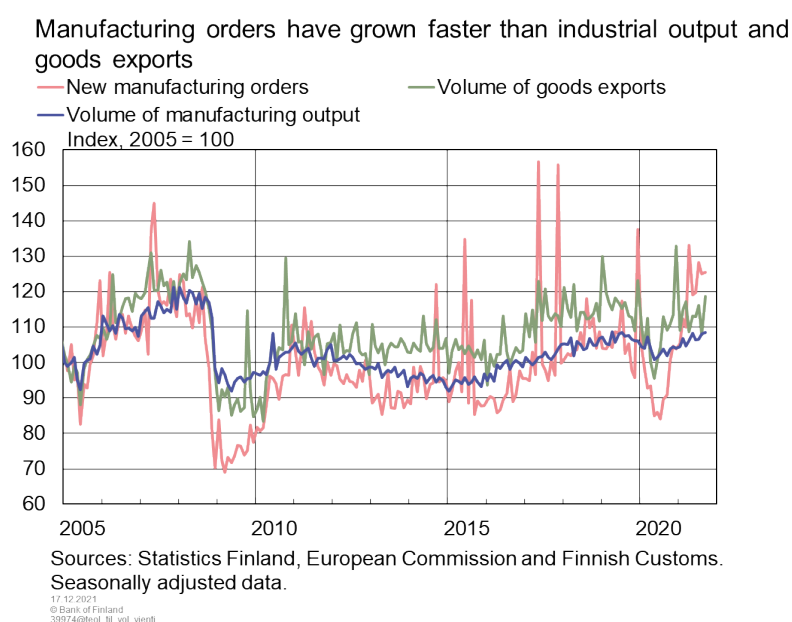
Feeder shipping means that vessels calling in Finland transport containers and freight from the Baltic Sea to Europe's major container ports. Vessels en route to Finland pick up empty containers along the way for use in Finland.

Finnish manufacturing output has not recovered at the same pace as new orders

Finnish manufacturing output had recovered to pre-pandemic levels in September 2021, but not substantially higher (Chart 4). Finnish goods exports recovered from the pandemic swiftly, but their growth has since slowed. New manufacturing orders, in turn, have risen sharply in 2021, reflecting the higher level of demand.

Manufacturing output growth has not kept pace with new orders. Finland's production capacity has not declined during the pandemic, so it has potentially been possible to ramp up production as demand has increased. The capacity utilisation rate in manufacturing was 86% in November 2021, clearly above its pre-pandemic levels. The utilisation rate bottomed out during the pandemic in August 2020, reaching only 54%.

Chart 32.



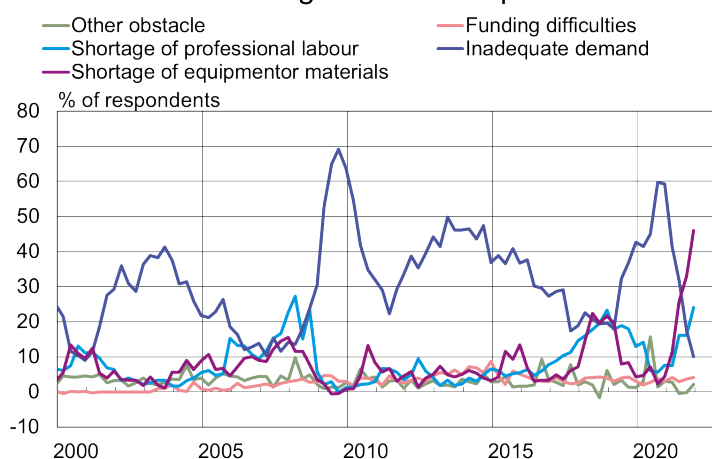
According to the European Commission's Business survey, equipment and materials shortages are the largest limiting factor for manufacturing output in Finland. 46% of Finnish manufacturers that responded to the survey reported having experienced shortages in October 2021 (Chart 5). The corresponding figure for the euro area as a whole was 53%. The impact of the materials shortage has increased substantially in 2021. The Business survey would suggest that a materials shortage has never constrained manufacturing output so extensively in Finland before (recording started in 1995). In other industries, shortages of equipment or materials are less severe. In the construction industry 24% of respondents reported production being limited by shortages, and in services this figure was 1.3%.

Chart 33.

15. Feeder shipping means that vessels calling in Finland transport containers and freight from the Baltic Sea to Europe's major container ports. Vessels en route to Finland pick up empty containers along the way for use in Finland.

16. UnctadSTAT, number of port calls, semi-annual.

Factors constraining industrial output



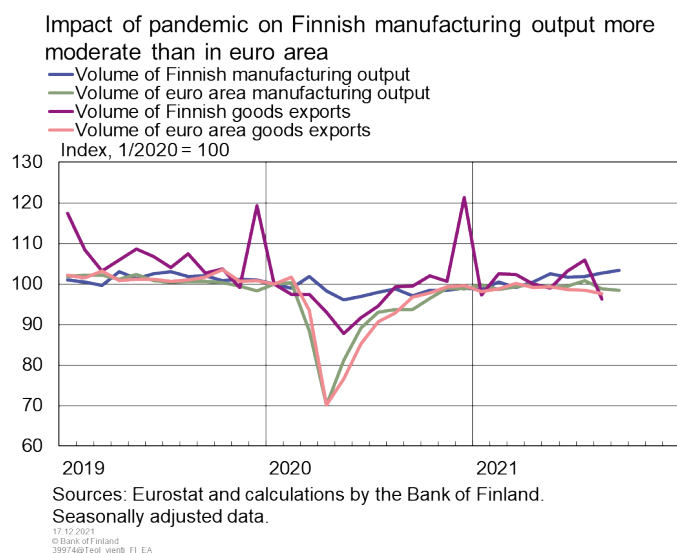
The second largest limiting factor for production in manufacturing is a lack of skilled labour, which likely reflects higher levels of demand. By contrast, insufficient demand, which has typically been the largest constraint on manufacturing output, is reported as having been a limiting factor by only 10% of survey respondents in October 2021. This is the smallest figure in over 20 years. Overall, the current challenges in the Finnish manufacturing industry are clearly concentrated around supply, not demand.



Finland's production structure has cushioned the impact of the pandemic

The pandemic has had diverse impacts on different industries and thus diverse impacts on different countries. The impact of the pandemic on Finland's manufacturing output and exports has so far been noticeably milder than for the euro area on average (Chart 6).^[17] According to a report^[18] by ETLA Economic Research, 16% of Finnish manufacturing output comes from industries that were worst hit by the pandemic on the level of the EU, such as the manufacture of motor vehicles and the textile industry; and 34% of Finnish manufacturing output comes from industries that were the least affected by the pandemic, including the pharmaceutical industry and the manufacture of computer, electronic and optical products. Finland's production structure has thus contributed to Finnish manufacturing output withstanding the pandemic relatively well so far.

Chart 6.



What stands out looking at Finnish goods exports is that the pandemic only had a minor impact on exports of machinery and equipment. This may be due to the long order and delivery times on capital goods and the fact that Finnish order books were relatively full as the pandemic began. Machinery and equipment accounts for 13.4% of Finnish goods exports and is Finland's third-largest export industry.

17. The spikes in Finnish exports in December 2019 and December 2020 are due to deliveries of vessels.

18. In their publication *Value Chains, International Trade and the Vulnerability of Economy* (2021), particularly in section 2.4, authors Ali-Yrkkö, J., Kaitila, V., Kuusi, T., Lehmus, M., Pajarinen, M., and Seppälä, T. analyse the impacts of the COVID-19 pandemic on Finnish and EU manufacturing output and exports.

Materials shortages and logistics disruptions are affecting exports and export companies

In Finland, manufacturing accounted for 20.5% of gross domestic product in 2019 and 16.7% of gross value added ^[19]. The impact of the materials shortage has been unevenly distributed across industries (Chart 7 ^[20]). According to the European Commission's Business survey, materials shortages in 2021 have increasingly constrained production in the chemical industry, and in the manufacture of transport equipment, electrical equipment, machinery and equipment, and fabricated metal products.

The Finnish manufacturing industries most affected by equipment and materials shortages according to the Business survey are the manufacture of motor vehicles, trailers and semi-trailers, with 95.3% of firms reporting issues; and the manufacture of electrical equipment, with 77% of firms reporting issues. These industries account for only a very moderate share of Finnish gross value added, at 1.3%, and 12.4% of Finnish goods exports (Table 1).^[21] The importance of the car industry to the Finnish economy is relatively minor compared with, say, Germany. In addition, a further 5.7% of Finnish gross value added and 23.4% of Finnish goods exports come from other manufacturing industries where at least half of firms reported suffering from equipment or materials shortages in the October 2021 survey. These industries are the manufacture of fabricated metal products, machinery and equipment, chemicals and chemical products, and furniture manufacturers. Together these industries account for 7% of Finnish gross value added and 35.8% of Finnish goods exports.

Chart 35.

19. Gross value added at basic prices is defined as output valued at basic prices less intermediate consumption valued at purchasers' prices. Gross domestic product at market prices, in turn, can be obtained by taking the sum of gross value added and product taxes (minus subsidies) for the economy as a whole.

20. Survey responses are missing for Finnish manufacturers of beverages and tobacco products, coke and refined petroleum product manufacturers, pharmaceutical and pharmaceutical product manufacturers, and manufacturers of computer, electronic and optical products.

21. The output of Finland's Uusikaupunki car plant, for example, is recorded as manufacturing services exports in the national accounts. Manufacturing services encompass processing and assembly done by an enterprise that does not own the goods in question. Ownership of the vehicles manufactured at the Uusikaupunki car plant remains with Germany throughout the production process, even though the cars are manufactured in Finland. Manufacturing services account for about 6% of all Finnish services exports.

Equipment or materials shortages are constraining production in October 2021 (By manufacturing industry, Finland)

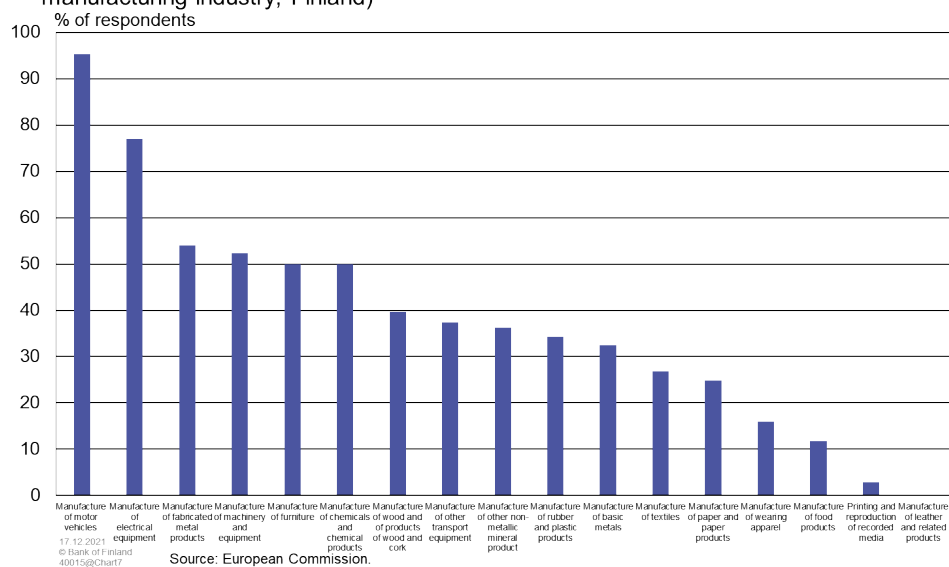


Table 1.

Industrial shares of Finnish gross value added and exports and imports (%) in 2019

	Gross value added	Goods exports	Goods imports
<i>Food industry^a</i>	1.4	2.2	5.8
<i>Textile industry^b</i>	0.2	1.1	3.8
<i>Manufacture of wood and of products of wood and cork</i>	0.6	4.1	1.0
<i>Paper industry and printing^c</i>	1.8	14.9	1.2
<i>Chemical industry^d</i>	3.1	19.2	17.4
<i>Manufacture of other non-metallic mineral products</i>	0.6	0.9	1.3
<i>Manufacture of basic metals</i>	0.7	13.1	5.6
<i>Manufacture of fabricated metal products</i>	1.4	2.1	3.2
<i>Manufacture of computer, electronic and optical products</i>	1.8	5.5	9.0
<i>Manufacture of electrical equipment</i>	0.9	5.9	5.2
<i>Manufacture of machinery and equipment</i>	2.7	13.4	9.0
<i>Manufacture of motor vehicles, trailers and semi-trailers</i>	0.4	6.5	10.1
<i>Manufacture of other transport equipment</i>	0.2	3.5	1.7
<i>Manufacture of furniture</i>	0.2	0.3	0.9

Sources: Finnish Customs and Statistics Finland (basic prices in 2019, exports and imports by CPA).

^a Food industry incl. manufacture of food products, beverages and tobacco products.

^b Textile industry incl. manufacture of textiles, wearing apparel and leather and leather products.

^c Paper industry and printing incl. manufacture of paper, paper and cardboard products, printing and reproduction of recorded media.

^d Chemical industry incl. manufacture of coke and refined petroleum products, chemicals and chemical products, pharmaceuticals and pharmaceutical products, and rubber and plastic products.

As a share of output value, Finland's metal industry (incl. the manufacture of basic metals and fabricated metal products, machinery and equipment, transport equipment and the electronic and electrical industry) relies the most heavily on imported inputs, together with the chemical industry^[22]. These industries are thus highly vulnerable to disruptions in the global supply chain. In addition to the industries suffering directly from materials shortages, it is important to consider the knock-on effects of these industries on other manufacturing industries.

Maritime shipping disruptions are also having effects on Finland. Shipping disruptions have affected all industries where raw materials, intermediate goods or final goods are transported across Finnish borders. According to the Finland Chamber of Commerce's export manager survey conducted in autumn 2021, a slightly higher proportion of Finnish exporters anticipate issues arising from logistics disruptions (84%) rather than semiconductor and materials shortages (82%). Logistics disruptions and materials shortages have clearly intensified over the course of 2021, as in the corresponding survey in the spring 69% of exporters reported suffering from logistics disruptions and 56% from materials shortages.

In 2019 the majority (63%) of Finland's goods exports comprised intermediate goods. Capital goods accounted for 22% of Finnish goods exports and consumer goods 14%. Finnish manufacturers of capital and intermediate goods especially reported suffering from materials shortages in the European Commission's October 2021 Business survey. 59% of Finnish capital goods manufacturers reported production bottlenecks due to equipment or materials shortages, while 47% of intermediate goods manufacturers reported the same.

On the other hand, because Finnish exports are based around intermediate goods, issues relating to delivery times and price rises are not able to compound as they do further up the value chain. In the euro area, smaller countries have been impacted less by supply bottlenecks, as in these countries production is more concentrated around the beginning of the value chain and is less dependent on foreign inputs.

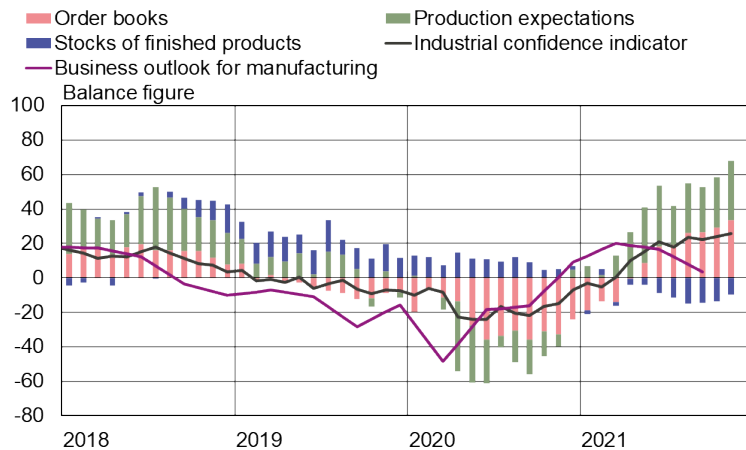
Industrial confidence is strong despite the supply-chain disruptions

Global supply bottlenecks, increased consumer spending on goods, and higher prices are all reflected in the manufacturing industry's confidence indicator in Finland. Manufacturers have seen their order books grow during the autumn; stocks of finished products are sold out; and selling-price expectations are higher than before (Chart 8). Production expectations levelled off during the autumn but remained strong and reached their highest levels since 2006 in November. The industrial confidence indicator is markedly higher than in 2019. The industries with the highest confidence levels surveyed in November 2021 were the manufacture of textiles, electrical equipment, other transport equipment, and rubber and plastic products. The lowest confidence levels were surveyed in printing and reproduction of recorded media and in the manufacture of food products.

Chart 36.

22. Pekkarinen, T. (2017) Tavarosta palveluihin – Suomen teollisuus rakennemuutoksen pyörteissä, Euro & talous.

Business outlook for manufacturing has weakened during the autumn, but order books are robust



Sources: European Commission and Confederation of Finnish Industries (EK). Seasonally adjusted data. Business outlook for manufacturing is a quarterly series.

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Supply bottlenecks are likely to have contributed to production expectations moderating over the autumn and selling-price expectations rising. Manufacturers have reported that materials shortages and logistics disruptions have intensified over the course of 2021, and the business outlook for manufacturing has indeed weakened during the second half of the year. Although manufacturing output has not contracted this year, supply bottlenecks may limit the growth of manufacturing output. In spite of the semiconductor shortage, higher commodity prices and shipping bottlenecks, 63% of Finnish exporters expect exports to increase during the second half of 2021 compared with the first half of the year, according to the Finland Chamber of Commerce's export manager survey. Similarly, 73% of exporters expect exports to grow in 2022.

The imbalances in supply and demand are being sustained by supply bottlenecks as well as unprecedented consumer demand. How balance is restored will depend on a number of factors. These include how the pandemic will evolve and, in particular, how long it will take for the composition of consumption to return to what it was before the pandemic, with more spending on services and less on goods. Other considerations include how quickly semiconductor and commodity investments will be carried out and production capacity expanded, or how the logistics bottlenecks at ports will be resolved. Similarly, it remains to be seen how much longer factories and ports around the world will be intermittently closed by COVID-19 outbreaks.

The supply bottlenecks are currently projected to ease starting in the latter half of 2022, which would strengthen global economic growth. On the other hand, a tightening of the bottlenecks could result in suppressed growth and a longer period of high inflation than currently projected, which, in turn, might engender even stronger impacts on private consumption and wages.

Tags

[supply bottlenecks](#), [exports](#), [Finnish economy](#), [COVID-19 pandemic](#), [manufacturing](#)

Forecast tables for 2021–2024 (December 2021)

17 Dec 2021 – Bank of Finland Bulletin 5/2021 – Finnish economy

The Finnish economy will grow 3.5% in 2021 and 2.6% in 2022.

1. BALANCE OF SUPPLY AND DEMAND, AT REFERENCE YEAR 2015 PRICES

% change on previous year					
	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
GDP at market prices	-2.9	3.5	2.6	1.5	1.3
Imports of goods and services	-6.5	3.5	5.3	4.2	3.5
Exports of goods and services	-6.8	4.0	5.5	4.5	3.6
Private consumption	-4.7	2.9	3.3	1.7	1.2
Public consumption	0.5	2.8	-0.3	-0.1	1.0
Private fixed investment	-3.4	2.8	4.6	2.6	1.7
Public fixed investment	11.0	-5.0	5.0	0.3	1.9

Sources: Bank of Finland and Statistics Finland.

2. CONTRIBUTIONS TO GROWTH¹

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
GDP, % change	-2.9	3.5	2.6	1.5	1.3
Net exports	-0.1	0.2	0.1	0.2	0.0
Domestic demand excl. inventory change	-2.5	2.5	2.7	1.4	1.3
of which Consumption	-2.3	2.2	1.6	0.9	0.8
Investment	-0.2	0.3	1.1	0.5	0.4
Inventory change + statistical discrepancy	-0.2	0.9	-0.1	0.0	0.0

¹ Bank of Finland calculations. Annual growth rates using the previous year's GDP shares at current prices as weights.

Sources: Bank of Finland and Statistics Finland.

3. BALANCE OF SUPPLY AND DEMAND, PRICE DEFLATORS

Index 2015 = 100, and % change on previous year

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
GDP at market prices	105.8	108.3	111.2	113.1	115.2
	1.3	2.4	2.7	1.7	1.9
Imports of goods and services	99.8	108.6	114.0	114.9	116.0
	-5.0	8.8	4.9	0.8	1.0
Exports of goods and services	102.1	110.3	116.1	117.0	118.2
	-4.4	8.0	5.3	0.8	1.0
Private consumption	104.1	106.2	108.4	110.1	112.2
	0.5	2.0	2.2	1.6	1.9
Public consumption	105.9	107.6	110.2	112.6	114.9
	3.1	1.6	2.4	2.2	2.1
Private fixed investment	110.8	112.1	115.4	117.5	119.5
	1.2	1.2	2.9	1.8	1.7
Public fixed investment	107.4	110.0	114.1	115.4	117.4
	0.1	2.4	3.7	1.2	1.7
Terms of trade (goods and services)	102.3	101.6	101.9	101.8	101.9
	0.6	-0.7	0.3	0.0	0.0

Sources: Bank of Finland and Statistics Finland.

4. BALANCE OF SUPPLY AND DEMAND, AT CURRENT PRICES

EUR million and % change on previous year

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
GDP at market prices	236,169	250,319	263,850	272,424	281,119
	-1.6	6.0	5.4	3.2	3.2
Imports of goods and services	84,663	95,294	105,347	110,606	115,644
	-11.1	12.6	10.5	5.0	4.6
Total supply	320,832	345,613	369,198	383,029	396,763
	-4.3	7.7	6.8	3.7	3.6
Exports of goods and services	85,458	95,999	106,602	112,263	117,466
	-10.7	12.3	11.0	5.3	4.6
Consumption	178,368	186,867	195,114	200,863	207,124
	-1.8	4.8	4.4	2.9	3.1
Private	120,708	126,658	133,674	138,105	142,440
	-4.2	4.9	5.5	3.3	3.1
Public	57,660	60,209	61,440	62,758	64,683
	3.6	4.4	2.0	2.1	3.1
Fixed investment	57,128	58,656	63,311	65,734	68,004
	0.2	2.7	7.9	3.8	3.5
Private	45,478	47,320	50,964	53,208	55,021
	-2.2	4.1	7.7	4.4	3.4
Public	11,650	11,335	12,347	12,526	12,982
	11.1	-2.7	8.9	1.5	3.6
Inventory change + statistical discrepancy	-122	4,091	4,170	4,170	4,170
% of previous year's total demand	-0.4	1.3	0.0	0.0	0.0
Total demand	320,832	345,613	369,198	383,029	396,763
	-4.3	7.7	6.8	3.7	3.6
Total domestic demand	235,374	249,613	262,595	270,767	279,297
	-1.8	6.0	5.2	3.1	3.2

Sources: Bank of Finland and Statistics Finland.

5. BALANCE OF SUPPLY AND DEMAND

% in proportion to GDP at current prices

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
GDP at market prices	100.0	100.0	100.0	100.0	100.0
Imports of goods and services	35.8	38.1	39.9	40.6	41.1
Exports of goods and services	36.2	38.4	40.4	41.2	41.8
Consumption	75.5	74.7	73.9	73.7	73.7
Private	51.1	50.6	50.7	50.7	50.7
Public	24.4	24.1	23.3	23.0	23.0
Fixed investment	24.2	23.4	24.0	24.1	24.2
Private	19.3	18.9	19.3	19.5	19.6
Public	4.9	4.5	4.7	4.6	4.6
Inventory change + statistical discrepancy,	-0.1	1.6	1.6	1.5	1.5
Total demand	135.8	138.1	139.9	140.6	141.1
Total domestic demand	99.7	99.7	99.5	99.4	99.4

Sources: Bank of Finland and Statistics Finland.

6. PRICES

Index 2015 = 100, and % change on previous year

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
Harmonised index of consumer prices	104.0	106.1	108.2	109.9	111.8
	0.4	2.1	2.0	1.6	1.8
Consumer price index	103.5	105.8	108.4	110.0	112.0
	0.3	2.2	2.4	1.5	1.8
Private consumption deflator	104.1	106.2	108.4	110.1	112.2
	0.5	2.0	2.2	1.6	1.9
Private investment deflator	110.8	112.1	115.4	117.5	119.5
	1.2	1.2	2.9	1.8	1.7
Exports of goods and services deflator	102.1	110.3	116.1	117.0	118.2
	-4.4	8.0	5.3	0.8	1.0
Imports of goods and services deflator	99.8	108.6	114.0	114.9	116.0
	-5.0	8.8	4.9	0.8	1.0
Value-added deflators					
Value-added, gross at basic prices	105.9	108.8	112.2	114.0	116.2
	1.4	2.7	3.1	1.7	1.9
Private sector	105.7	109.0	112.5	114.3	116.4
	0.6	3.1	3.2	1.5	1.8
Public sector	106.8	107.9	110.6	113.1	115.4
	4.7	1.0	2.5	2.2	2.1

Sources: Bank of Finland and Statistics Finland.

7. WAGES AND PRODUCTIVITY

% change on previous year

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
Whole economy					
Index of wage and salary earnings	1.9	2.4	2.4	2.4	2.4
Compensation per employee	0.8	4.6	3.2	2.4	2.3
Unit labour costs	1.6	3.3	1.8	1.5	1.4
Labour productivity per employed person	-0.9	1.2	1.4	0.9	0.9

Sources: Bank of Finland and Statistics Finland.

8. LABOUR MARKET

1,000 persons and % change on previous year

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
Labour force survey (15–74-year-olds)					
Employed persons	2,483	2,540	2,572	2,589	2,600
	-2.0	2.3	1.3	0.7	0.4
Unemployed persons	208	212	197	184	184
	13.5	1.9	-7.2	-6.3	-0.3
Labour force	2,691	2,751	2,768	2,773	2,783
	-1.0	2.3	0.6	0.2	0.4
Working-age population (15–64-year-olds)	3,421	3,417	3,413	3,412	3,411
	-0.2	-0.1	-0.1	0.0	0.0
Labour force participation rate, %	65.1	66.8	67.4	67.7	68.1
Unemployment rate, %	7.8	7.7	7.1	6.6	6.6
Employment rate (15–64-year-olds), %	70.7	72.0	72.8	73.3	73.6

Sources: Bank of Finland and Statistics Finland.

9. GENERAL GOVERNMENT REVENUE, EXPENDITURE, BALANCE AND DEBT

% TO GDP

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
General government revenue	51.9	52.3	51.7	51.7	51.6
General government expenditure	57.3	55.2	53.6	52.9	52.8
General government primary expenditure	56.7	54.6	53.1	52.5	52.4
General government interest expenditure	0.7	0.6	0.5	0.5	0.4
General government net lending	-5.5	-2.9	-1.9	-1.3	-1.2
Central government	-5.5	-3.4	-2.4	-1.7	-1.5
Local government	0.0	-0.3	-0.5	-0.6	-0.6
Social security funds	0.0	0.8	1.0	1.0	1.0
General government primary balance	-4.8	-2.4	-1.4	-0.8	-0.7
General government structural balance	-4.1	-2.1	-2.3	-2.0	-2.0
General government debt (EDP)	69.5	66.9	66.5	67.1	67.5
Central government debt	52.9	51.3	51.4	52.1	52.5
Tax ratio	42.1	42.6	42.0	41.9	41.9

Current prices, EUR billion

General government net lending	-12.9	-7.3	-5.0	-3.5	-3.3
Central government	-13.1	-8.6	-6.4	-4.6	-4.2
Local government	0.0	-0.7	-1.4	-1.6	-1.7
Social security funds	0.1	2.0	2.8	2.7	2.7
General government debt (EDP)	164.2	167.5	175.5	182.8	189.8

Sources: Bank of Finland and Statistics Finland.

10. BALANCE OF PAYMENTS

EUR billion

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
Exports of goods and services (SNA)	85.5	96.0	106.6	112.3	117.5
Imports of goods and services (SNA)	84.7	95.3	105.3	110.6	115.6
Goods and services account (SNA)	0.8	0.7	1.3	1.7	1.8
% to GDP	0.3	0.3	0.5	0.6	0.6
Investment income and other items, net (+ statistical discrepancy)	4.0	5.7	1.5	1.5	1.5
Current transfers, net	-2.8	-2.7	-2.7	-2.8	-3.1
Current account, net	2.0	36.5	0.0	0.4	0.2
Net lending, % to GDP					
Private sector	6.3	4.4	1.9	1.4	1.2
Public sector	-5.5	-2.9	-1.9	-1.3	-1.2
Current account, % to GDP	0.8	1.5	0.0	0.1	0.1

Sources: Bank of Finland and Statistics Finland.

11. INTEREST RATES

%

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
3-month Euribor ¹	-0.4	-0.5	-0.5	-0.2	0.0
Average interest rate on new loan drawdowns ²	1.5	1.6	1.6	1.7	1.9
Average interest rate on the stock of loans ²	1.3	1.2	1.2	1.3	1.5
Average interest rate on the stock of deposits ³	0.0	0.0	0.0	0.0	0.1
Yield on Finnish 10-year government bonds ¹	-0.2	-0.2	-0.3	-0.2	-0.1

¹Technical assumption derived from market expectations.

²Finnish credit institutions' loans to households and non-financial corporations (excl. overdrafts, credit card credits and repurchase agreements).

³Finnish credit institutions' deposits from households and non-financial corporations.

Sources: Bank of Finland and Statistics Finland.

12. INTERNATIONAL ENVIRONMENT

The Eurosystem staff projections

	2020	2021 ^f	2022 ^f	2023 ^f	2024 ^f
GDP, % change on previous year					
World	-2.8	5.9	4.4	3.8	3.4
USA	-3.4	5.5	4.2	3.0	2.5
Euro area	-6.5	5.1	4.2	2.9	1.6
Japan	-4.7	1.7	2.6	1.3	1.0
Imports, % change on previous year					
World	-8.3	10.2	4.5	4.9	3.7
USA	-8.9	13.3	5.0	5.0	5.3
Euro area	-9.4	7.0	6.1	6.4	2.9
Japan	-7.3	6.0	4.3	5.2	4.4
Index, 2015 = 100, and % change on previous year					
Import volume in Finnish export markets	105.7	115.3	120.6	127.1	131.4
	-8.4	9.0	4.6	5.4	3.4
Export prices (excl. oil) of Finland's trading partners, national currencies	105.4	115.3	119.9	120.8	122.0
	-1.5	9.4	4.0	0.7	1.0
Export prices (excl. oil) of Finland's trading partners, in euro	97.0	105.5	111.3	112.1	113.2
	-3.9	8.8	5.5	0.7	1.0
Industrial raw materials (excl. energy), HWWA index, in US dollars	121.2	173.2	179.1	175.5	172.6
	1.8	42.9	3.4	-2.0	-1.7
Oil price, USD per barrel ¹	64.3	108.4	117.1	109.3	104.8
	-33.9	68.5	8.0	-6.7	-4.1
Finland's nominal competitiveness indicator ²	109.2	109.9	108.3	108.3	108.3
	2.5	0.6	-1.4	0.0	0.0
US dollar value of one euro ¹	1.14	1.18	1.13	1.13	1.13
	2.0	3.6	-4.3	0.0	0.0

¹Technical assumption derived from market expectations.

Sources: Bank of Finland and Statistics Finland.

12. INTERNATIONAL ENVIRONMENT

²Narrow plus euro area, 1999Q1 = 100

Sources: Bank of Finland and Statistics Finland.

13. Current and June 2021 forecast

	2021 ^f	2022 ^f	2023 ^f	2024 ^f
GDP, % change	3.5	2.6	1.5	1.3
June 2021	2.9	3.0	1.3	
Inflation (HICP), %	2.1	2.0	1.6	1.8
June 2021	1.7	1.4	1.6	
Current account, % to GDP	1.5	0.0	0.1	0.1
June 2021	-0.1	-0.1	-0.2	
General government net lending, % to GDP	-2.9	-1.9	-1.3	-1.2
June 2021	-4.4	-2.5	-2.2	
General government debt (EDP), % to GDP	66.9	66.5	67.1	67.5
June 2021	71.4	71.6	72.8	
Unemployment rate, %	7.7	7.1	6.6	6.6
June 2021	7.7	6.9	6.7	
Employment rate, %	72.0	72.8	73.3	73.6
June 2021	71.4	72.2	72.7	

Sources: Bank of Finland and Statistics Finland.

Tags

economic forecast, economic situation, forecast, indicators