Economic Policy Council Report
2021

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Economic Policy Council

VATT Institute for Economic Research

Arkadiankatu 7, 00100 Helsinki, Finland

Helsinki, January 2022

Preface

The Economic Policy Council was established in January 2014 to provide independent evaluation of economic policies in Finland. According to the government decree (61/2014) the council should evaluate:

1. the appropriateness of economic policy goals;
2. whether the goals have been achieved and whether the means to achieve the policy goals have been appropriate;
3. the quality of the forecasting and assessment methods used in policy planning;
4. coordination of different aspects of economic policy and how they relate to other social policies;
5. the success of economic policy, especially with respect to economic growth and stability, employment and the long-term sustainability of public finances;
6. the appropriateness of economic policy institutions.

The Council is appointed by the government based on a proposal by economics departments of Finnish universities and the Academy of Finland. Current Council started its work in April 2019, when the Council also adopted a rotating scheme, with two of its members changing every two years. At the same time the term of each member was reduced to four years. The Council members participate in the work of the Council in addition to their regular duties.

In the eight report of the Economic Policy Council we evaluate the government's fiscal policy and its employment-promoting policies. As in the previous reports, in addition to fiscal policy, the Council concentrates on fiscal sustainability, employment policy, economic growth and growth policy.

The Council does not make its own macroeconomic or fiscal projections but relies mainly on forecasts made by the Ministry of Finance. The most recent

information used in this report is the Ministry of Finance Winter 2021 Economic Survey and the December release of the Statistics Finland Labour Force Survey.

The Economic Policy Council has resources to commission research projects to support its work. These reports are published as attachments to the Council report, but the authors of the reports are responsible for their content. Any opinions expressed in them may or may not be in agreement with the Council's views.

Five background reports have been published in connection with this Council report. Hannu Piekkola of University of Vaasa examines broad intangibles as the major determinants of productivity. Matti Pohjola of Aalto University discusses productivity, structural change and economic growth. Päivi Puonti of ETLA discusses the relationship between the public debt and economic growth. Otso Hao and Henri Keränen from the secretariat analyse hysteresis effects of demand and supply shocks. Sara Alhola and Henri Keränen from the secretariat examine the effects of changes in relative unit labour costs on relative export performance.

The Economic Policy Council, together with the Productivity Board and the Research Division on Business Subsidies, commissioned a study from the OECD on competitiveness and productivity dynamics in the Finnish private sector. We thank the organisations for their cooperation.

Several experts have attended Council meetings or contributed to parts of the report. We thank Matti Pohjola, Päivi Puonti and Hannu Piekkola for discussions, Vesa Vihriälä, Pekka Lindroos of Ministry of Employment and Economic Affairs and Mika Maliranta of Labore for sharing their views and insights, Markku Stenborg, Ilari Ahola, Veliarvo Tamminen and Niina Suutarinen for patiently responding to several detailed questions by the Council. Together with Productivity Board and Research Division on Business Subsidies the council commissioned analysis on competition in the Finnish private sector from the OECD. We thank all these organizations for co-operation. Otso Hao and Sara Alhola have been competent research assistants for the Council. We are also thankful to Anna-Maija Juuso, Ville Pernaa, Anni Kekäläinen, Marjo Nyberg, Riikka Könönen and Markku Kivioja of VATT for their help in administration and communication.

Helsinki, 26 January 2022

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1. Summary

Year 2021 has been challenging for the Finnish economy, and it has delivered many surprises. With rapid fluctuation in infection rates and great uncertainty as to new virus mutations, this has also made for large challenges for economic policy. It began with delays in vaccine supply, but once the economic recovery started, the speed of it was a positive surprise. Just after social distancing rules were relaxed, the new omicron variant led to a sudden deterioration in the number of infections. On the whole, the Finnish economy was recovering from the crisis in 2021 and was operating below capacity.

According to economic forecasts made at the end of 2021 – largely before the full onset of the new wave of infections – the Finnish and European economies will return to the trend predicted in 2019. However, the lost welfare from lower economic activity in 2020-2021 will not be compensated. The growth prospects for the coming years involve downside risks that are greater than in normal times. This should also be taken into account in economic policy decisions.

Although the growth outlook is promising, the Covid-19 crisis has left scars on the economy and society: the level of public debt has risen, the number of long-term unemployed persons has increased, problems with physical and mental health have accumulated, and problems in education may eventually lead to lower skills.

Employment also picked up rapidly in 2021, following a speedy recovery from the Covid crisis. While it is difficult to attribute the positive development to actual policy measures, it is likely that the support for the economy during the crisis contributed to maintaining employment. Employment has returned to the pre-crisis level, but the unemployment rate has not declined correspondingly. There are hiring difficulties and supply chain shortages in many sectors. In some industries, notably in services, operations are still affected by Covid-related restrictions.

Employment policy

The government has made further decisions aimed at increasing the employment rate further. The main new measure, introduced in 2021, is related to transferring employment services to municipalities, which is expected to bring more than 6,000 new jobs. However, the details of many of the measures are as yet unknown, making it difficult to give a precise estimate of the number of new jobs that may be created.

In 2021, there was unclear communication related to estimates of the employment effects of certain policy measures. This was due to the presence of multiple estimates given by different ministries. Relevant ministries should further clarify their communication related to the assessment of the employment impacts of government policies. One should also remember that the employment effects of some reforms cannot be reliably estimated.

The employment rate can be further increased by measures targeted at increasing the labour force and bringing down the unemployment rate. These two channels most likely require different policy measures.

There may be multiple reasons for targeting increased employment, such as combatting social exclusion or improving overall welfare. Sometimes there are trade-offs between different societal goals – e.g. between protecting the income level of the unemployed or shortening the average length of unemployment spells. Striking the right balance between these goals depends on societal preferences. If the objective is to strengthen public finances, the costs of attaining a higher employment rate deserve special attention when evaluating employment policy measures.

The number of unemployed persons has fluctuated markedly in the past decade, with a downward trend in structural unemployment. The Economic Policy Council is concerned that despite recent policy efforts the equilibrium unemployment rate is expected to remain high. A high level of unemployment burdens the economy with associated social costs. New policy measures are still needed to bring down structural unemployment.

Fiscal policy stance

Although economic recovery was faster than expected, the lax fiscal policy stance in 2021 was nonetheless appropriate. The economy has been recovering from a fairly deep crisis and has performed below its long-term potential.

The downside risks in the global economy are still substantial due to the ongoing Covid-19 pandemic and new mutations. In its 2020 report, the EPC emphasised the need for appropriate fiscal space, which is needed to provide support during crises. Developments in 2021 have further underscored the importance of having adequate fiscal space.

The economic prospects for 2022 appear relatively promising, however. The output gap is expected to close and the unemployment rate to be close to its equilibrium level. While the fiscal policy stance for 2022 is less expansionary than it was in 2020-21, it will still increase aggregate demand. Under normal circumstances the fiscal policy stance could be regarded as too loose. The risk of lower than expected growth, however, can justify a relatively supportive fiscal stance together with the need to mitigate the accumulated scars. It would still be useful if the government clearly communicated the reasons for its rather loose fiscal policy.

Current forecasts depict a large fiscal deficit in the years after the current government term, worsening the sustainability of public finances. In order to mitigate the negative fiscal consequences, any new measures deemed necessary to support firms, households and the economy should be well targeted. As before the recent crisis, Finland's general government is running a structural deficit, but public debt levels have now increased. A gradual consolidation of public finances should therefore be started. The adjustment does not have to be immediate, but it should pick up in speed from what the government is planning.

The government decision to raise the spending ceiling during its term erodes the credibility of this mechanism – which has performed well earlier – in acting as a fiscal anchor and spending restraint. Instead, the government could also have sought to make fiscal space for new spending needs by cutting some other government expenditure. The crisis has also increased the importance of credibility in fiscal policy, because of e.g. the need to keep borrowing costs at bay. This would contribute to limiting the costs of fiscal stimulus in future crises, too.

The deficit in the local government sector is expected to continue. This fact, together with transition costs related to the healthcare regions, will need to be attended to in coming years. Changing economic conditions – chiefly the need to finance the green transition – also require investments by the public sector. One consequence of this is that other expenditure should be scrutinised to make fiscal space for climate action.

Fiscal sustainability

The Finnish economy still faces a significant sustainability gap due to increasing age-related costs. Solving this problem requires measures that bite in the long run, but the credibility of these measures will be increased if decisions are made early enough.

In the medium term, the debt-to-GDP ratio will continue to increase, without corrective action. An annual consolidation in the order of 0.2-0.4 per cent of GDP would be needed to stabilise the debt in the medium run.

While downside macro risks justify a cautious approach to fiscal consolidation in the short run, they also imply that the sustainability issues will become more prevalent. The extent of contingent liabilities, already high in Finland relative to other countries in the pre-crisis period, has continued to grow. The accumulation of these liabilities adds to the long-run fiscal risks.

Mitigation and adaptation to climate change will become costly, while a well-managed green transition could reduce these costs. Incorrect policy choices may cause further costs for both the public sector and the private sector. It would also be appropriate to discuss the risks posed by global warming in central government risk reports.

Pressures for spending on the green transition and age-related expenditure will require a reconsideration of the current composition of public expenditure between investments and consumption. Savings could be sought from subsidies or tax exemptions that are not conducive to combatting climate change.

These developments underscore the need for a credible medium-term plan to remedy the fiscal deficit. The EPC has previously suggested that this could be done through parliamentary negotiations to produce decisions that would serve as an anchor not only for the current but also for future governments.

Economic growth

Productivity growth has slowed in many developed economies, and the decline has been particularly pronounced in Finland. Coupled with a decline in hours worked per employed person, per capita GDP is still below the level reached in 2008.

Slow productivity growth is linked to a somewhat disappointing investment level. In Finland a relatively large share of investments is allocated to buildings and structures, whereas investments in ICT, including software, are behind the OECD average. In terms of data-intensive services, Finland still trails behind comparable countries in structural change, especially Sweden. Any action is justified that supports the emergence, adoption and spread of new ideas and contributes to the transition of productive resources from declining to growing industries.

These developments are well recognised in the Finnish policy discussion. One possible reason behind the disappointing growth performance may be linked to the cuts in education and R&D subsidies in Finland in the 2010s, which are likely to have had a negative impact on research and development activities.

An analysis of inter-country firm-level data highlights that the Finnish private sector is characterised by higher levels of industry concentration relative to benchmark countries. This higher concentration is associated with lower productivity dispersion and lower allocative efficiency of resources, hinting at a potential for significant productivity growth by supporting a reallocation of resources in the economy. Further analyses are needed to identify which frictions are preventing the reallocation of resources.

Finland already has in place many policies which are conducive to growth. For example, the share of STEM[1] studies in higher education is high. In its 2017 report, the EPC noted that Finland was lagging behind some other developed economies in the extent of university-level education. Recent measures offering tertiary education to a larger share of the population are therefore appropriate. Adequate financing of basic research should be a key component of the R&D policy package.

[1] STEM is a term used to group together the academic disciplines of science, technology, engineering, and mathematics.

One key bottleneck is the availability of foreign specialists, and simplifying and it is recommended that work permit processes are streamlined. The existence of the limited special tax regime for these workers is also justified by the evidence regarding taxation and migration.

The Finnish R&D support system is an outlier among our peers because of the very limited use of R&D tax credits. In this respect, the goal, set by the Parliamentary Working Group on Research, Development and Innovation, that Finland should also introduce a more sizeable R&D tax credit is justified. Direct subsidies and tax credits have both relative strengths and weaknesses. Given how acute the productivity slowdown in the economy is, there is a need to support R&D more forcefully. This policy move could boost innovations – even if they are more incremental in nature – which are difficult to reach via the often complex R&D subsidy process.

2. Recent economic developments

The world economy started to recover from the pandemic in 2021 in an asynchronous manner, leading to supply-side disruptions. The strong recovery in demand, boosted by fiscal and monetary stimulus, and problems in production, have led to cost pressures and higher inflation.

The latest data indicates that demand in Finland has recovered quickly. Also, the Finnish labour market has returned to near-equilibrium and there are even minor signs of labour shortages in some occupations.

Despite the number of Covid-19 infections still increasing in Europe, the euro area and the Finnish economy are expected to return to the path forecast in 2019. Strong fiscal stimulus in advanced economies will continue in the years ahead and this is likely to enhance growth in economies that are less affected by the pandemic. However, prolonged supply-chain problems and increased uncertainty in the economy may inflict a heavy toll, which in turn raises the risk of financial turmoil in fragile countries and companies.

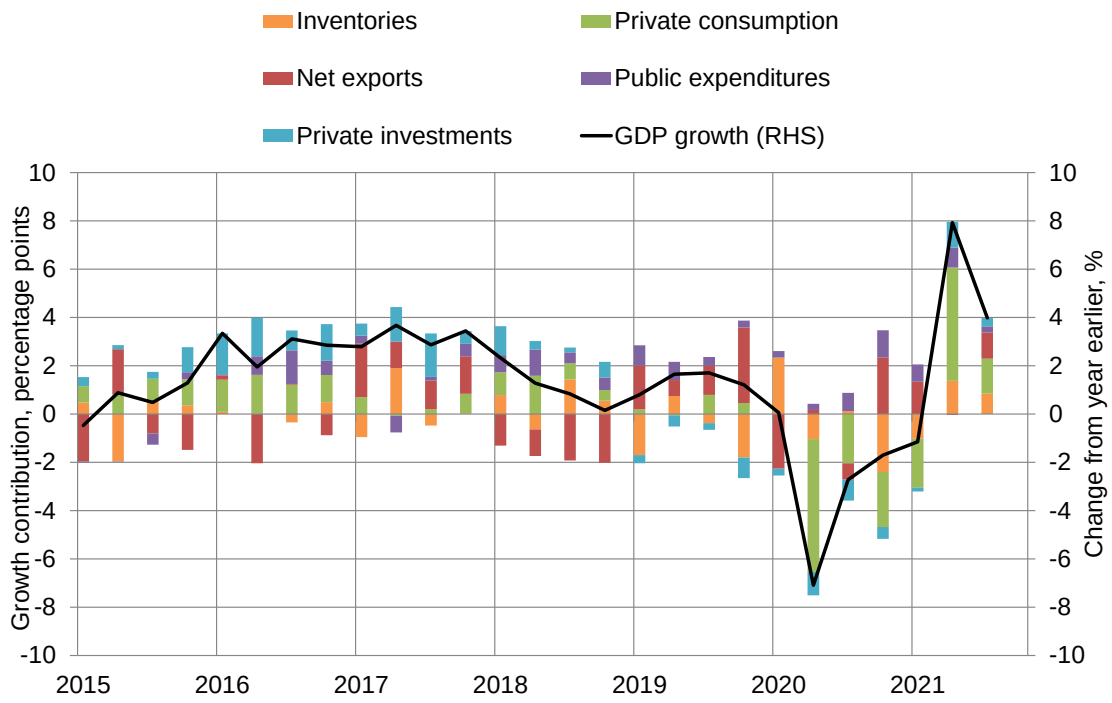
This chapter discusses recent economic developments and their implications for an appropriate fiscal policy stance.

2.1. Domestic GDP growth and its components

The Finnish economy started to recover from the Covid-19 crisis already in the second half of 2020. According to the quarterly national account statistics, the decline and the recovery were mostly caused by changes in private consumption, see Figure 2.1.1. The downturn of 2020 mostly affected private consumption, which decreased by over 10% in 2020Q2. During the crisis, household income remained largely unaffected thanks to automatic increases

in social security expenditure and direct support measures by the government. The differences between the effects of demand and supply-side shocks on Finnish GDP growth in the short and long run are discussed in Box 2.1.

Figure 2.1.1. The downturn in 2020 and recovery in 2021 were driven by private demand.



Sources: Statistics Finland and EPC.

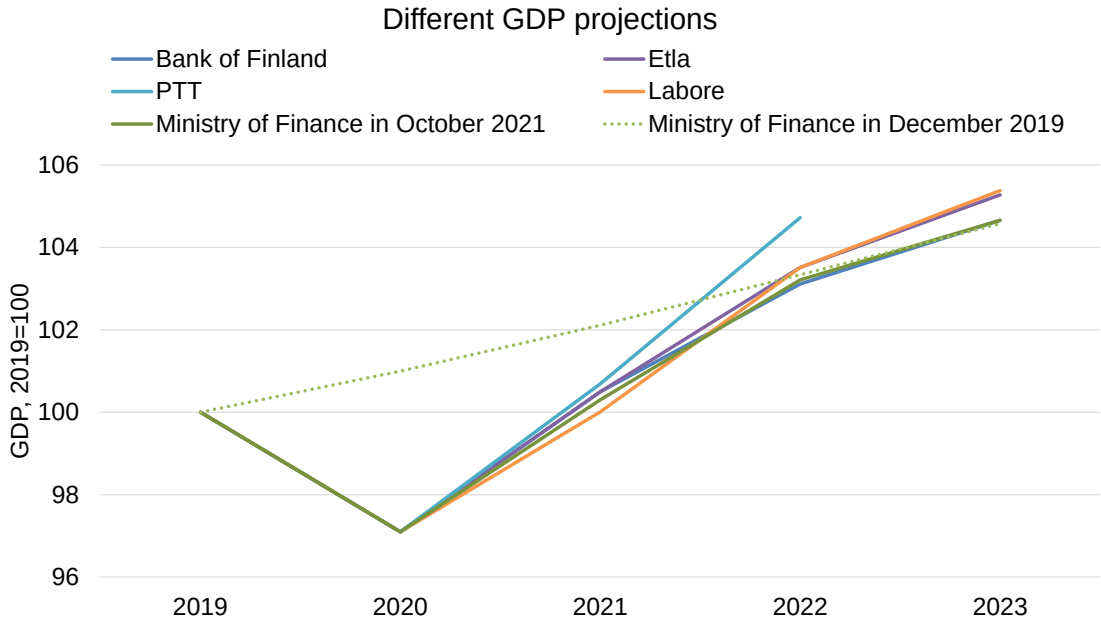
Table 2.1.1 presents a summary of growth forecasts by various national and international organisations. While there is broad consensus among forecasters that the recovery has been strong in 2021, there are still unusually large differences between forecasters on the strength of the recovery in 2022. The growth forecast by the Ministry of Finance, which forms the basis of the government's fiscal forecasts for future years is the most prudent. While the Finnish economy has mostly recovered from the economic shock caused by Covid19, possible disturbances in global supply chains in the aftermath of the crisis and possible new waves of Covid infections considerably increase the uncertainty of the global outlook.

Table 2.1.1. Forecasts of real GDP growth rates (per cent).

	2021	2022	2023	2024	2025	2026
Ministry of Finance (20 Dec 2021)	3.4	3.0	1.5	1.4	1.2	1.2
Bank of Finland (17 Dec 2021)	3.5	2.6	1.5	1.3		
OECD (Dec 2021)	3.5	2.9	1.5			
European Commission (11 Nov 2021)	3.4	2.8	2.0			
IMF (12 Oct 2021)	3.0	3.0	1.5	1.3	1.3	1.3
ETLA (20 Sept 2021)	3.5	3.0	1.7			
Labore (16 Sept 2021)	3.0	3.5	1.8			
PTT (14 Sept 2021)	3.7	4.0				

The growth forecasts in the above table are translated into levels in figure 2.1.2. The consensus view among Finnish forecasters is for GDP to reach levels forecast in December 2019 in 2022. This means that even if there is full recovery to the previous growth path in 2022, the output loss of 2020 and 2021 will remain permanent.

Figure. 2.1.2. In 2022 GDP is expected to reach the level forecast in 2019.

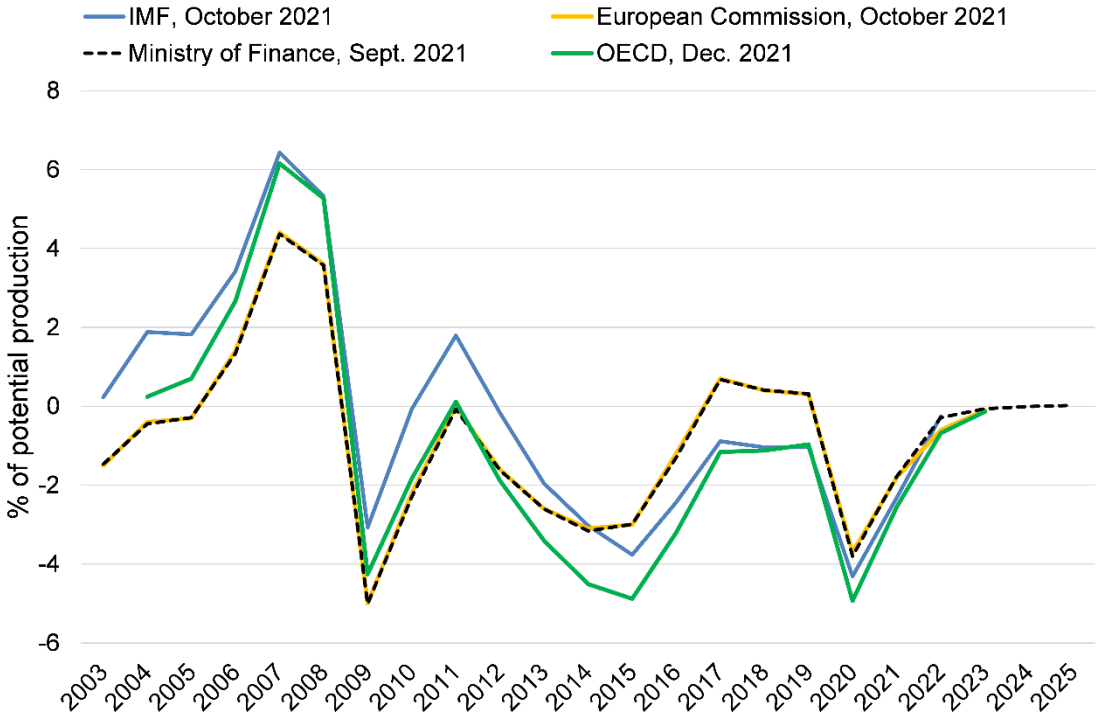


Sources: Latest forecasts by the Bank of Finland, Etla, Pellervo Economic Research (PTT), Labore and the Ministry of Finance.

Potential production can be defined as the level of production that can be sustained over the long run without unnecessary pressures on the factors of production. Domestic production can be below its potential when, for example, domestic demand is at an unnecessarily low level due to temporary changes in households' behaviour.

In normal times, assessment of potential output and the output gap involves a great deal of uncertainty arising from a lack of real-time data, methodological issues in defining the trend (potential) and cycles (output gap), possible revisions to current data, and from the forecasts that the estimates are based on. The recent crisis makes this estimation even more difficult. According to the latest estimates, gross domestic product was 4% below its potential level in 2020, see Figure 2.1.3 for output gap estimates by various institutions.

Figure 2.1.3. Output gap estimated by various institutions.



Sources: IMF, European Commission, Ministry of Finance.

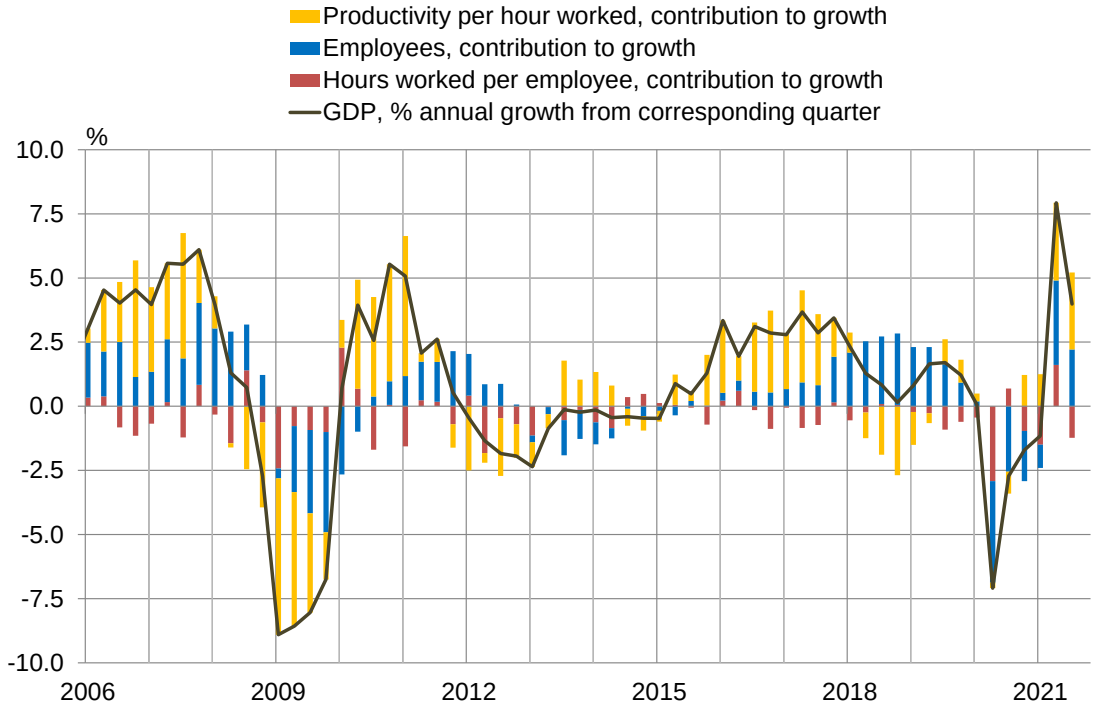
From the production function perspective, growth in potential output is driven by changes in the growth of the labour force, production capital and productivity. The Finnish economy has already returned close to the high employment rates experienced in 2017-2019. Although this news is positive, the slowly decreasing working-age population will make it harder to increase the labour force in future, leaving economic growth to be driven by capital accumulation and overall productivity, which will keep Finnish GDP increasing at

less than 1.5% on average in the medium term. In the longer term, economic growth will be hampered by structural changes in employment towards less productive industries, i.e. towards the health and social care sector.

2.2. Labour market

Changes in aggregate production are connected to the labour market via changes in the number people of employed, their labour input and changes in productivity, see Figure 2.2.1. The pre-Covid19 years were associated with growing employment and decreasing labour productivity, with the strongest increase in employment in 2018 in the hospitality sector. The number of persons employed decreased strongly in 2020 but recovered to the previous level already in 2021. However, hours worked per employee also declined rapidly in the second quarter of 2020 and have not yet fully recovered. According to current data, productivity per hour worked has increased after the crisis.

Figure 2.2.1. Labour productivity started to increase in the second half of 2020 and employment has recovered in 2021.

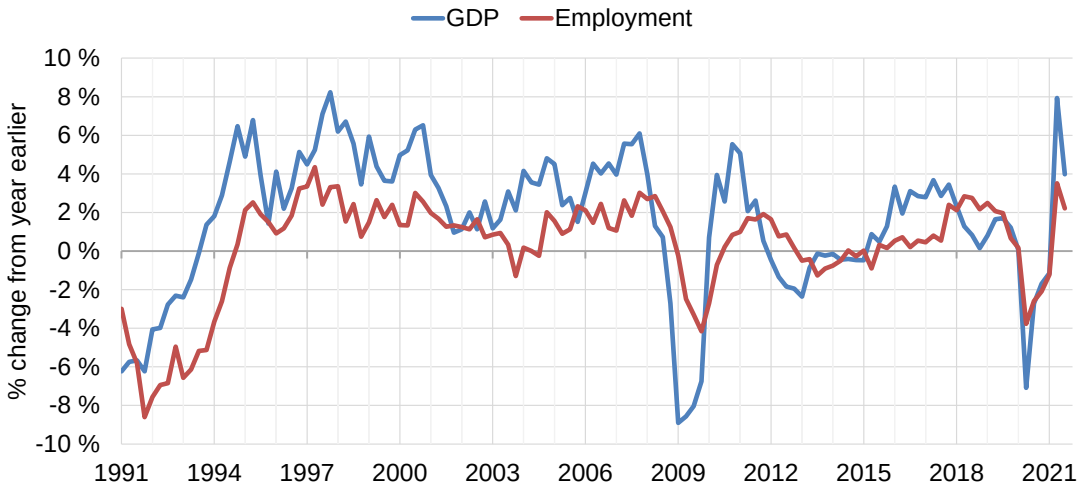


Sources: Statistics Finland and EPC. Data range: 2006Q1-2021Q3.

According to the Labour Force Survey (LFS), the number of employed persons aged 15-74 reached an all-time high in 2021Q2. Compared to 2019Q2, the la-

bour force, i.e. people employed and people actively searching for employment, had increased by 70,000 persons. The number of employed persons had increased by 32,000 persons. According to the quarterly national accounts, the number of hours worked per employed person has decreased and in the first half of 2021 was almost 2% lower than in the same period in 2019. During the Covid-19 crisis employment has recovered remarkably fast. Whereas in previous business cycles employment has responded to output changes with a delay of two to six quarters, in the current crisis the employment response has been immediate, see Figure 2.2.2.

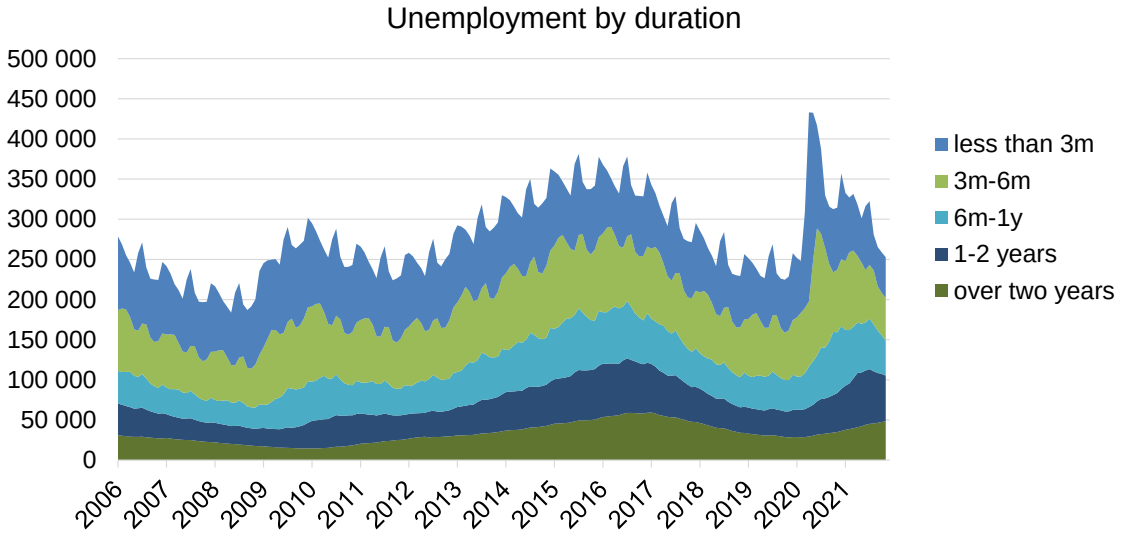
Figure 2.2.2. Annual changes in employment have previously followed changes in GDP with a lag of 2 to 6 quarters.



Sources: Statistics Finland. Data range: 1991Q1-2021Q3.

In April 2020 the number of registered unemployed peaked at over 433,000 persons, including over 160,000 laid-off workers. The recovery in employment is partly down to non-unemployed people entering the workforce, meaning longer unemployment spells for part of the unemployed population. The number of people unemployed for more than 6 months has not decreased in 2021 and is now close to the level seen in 2016, see Figure 2.2.3. The number of registered unemployed persons had decreased to 253,000 by November 2021. In its labour market forecast, the Ministry of Employment and Economic Affairs predicts that long-term unemployment will stay high in 2022 and 2023, at 99,000 and 80,000 persons respectively.

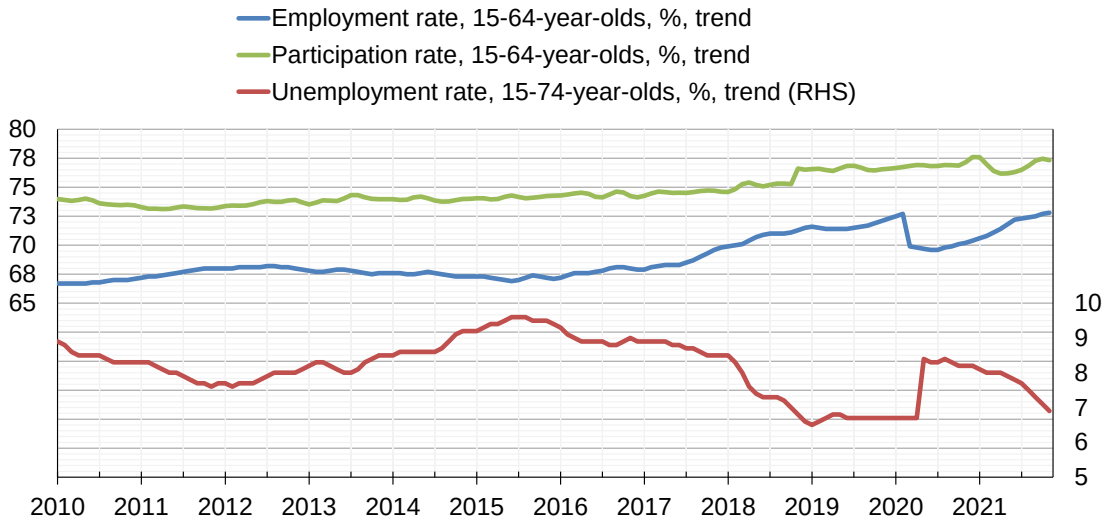
Figure 2.2.3. Unemployment has started to decrease, but long-term unemployment is still high.



Source: Ministry of Employment and Economic Affairs.
Data range: January 2006 – November 2021.

According to the Labour Force Survey (LFS), the trend employment rate of 15-64-year-olds reached its highest value of 72.8% in November 2021 and the trend unemployment rate was 6.9%, which is only 0.4 percentage points higher than its lowest level in the beginning of 2019, see Figure 2.2.4.

Figure 2.2.4. Labour market has recovered and participation rate has increased compared to 2019.

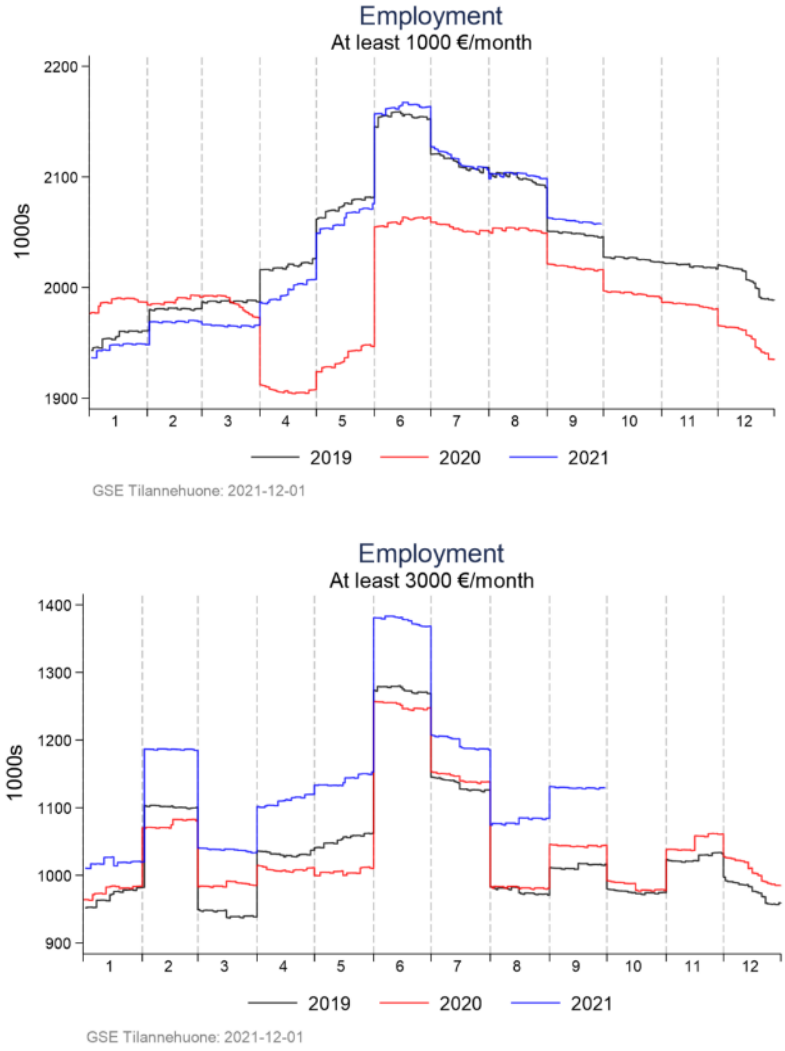


Sources: Statistics Finland, Labour Force Survey. Seasonal adjustment of participation rate by EPC. Data range: January 2010 – November 2021.

According to data from the national income register, provided by the HGSE situation room, the daily number of people with monthly earnings over EUR

1000 has reached the levels of 2019, see Figure 2.2.5. The same data shows an increase of almost 100,000 in the number of people with monthly earnings over EUR 3000 between 2019 and 2021, indicating a large decrease in the number of people earning EUR 1000-3000 a month.

Figure 2.2.5. Number of employed persons with monthly earnings of EUR 1000 or above and EUR 3000 or above.

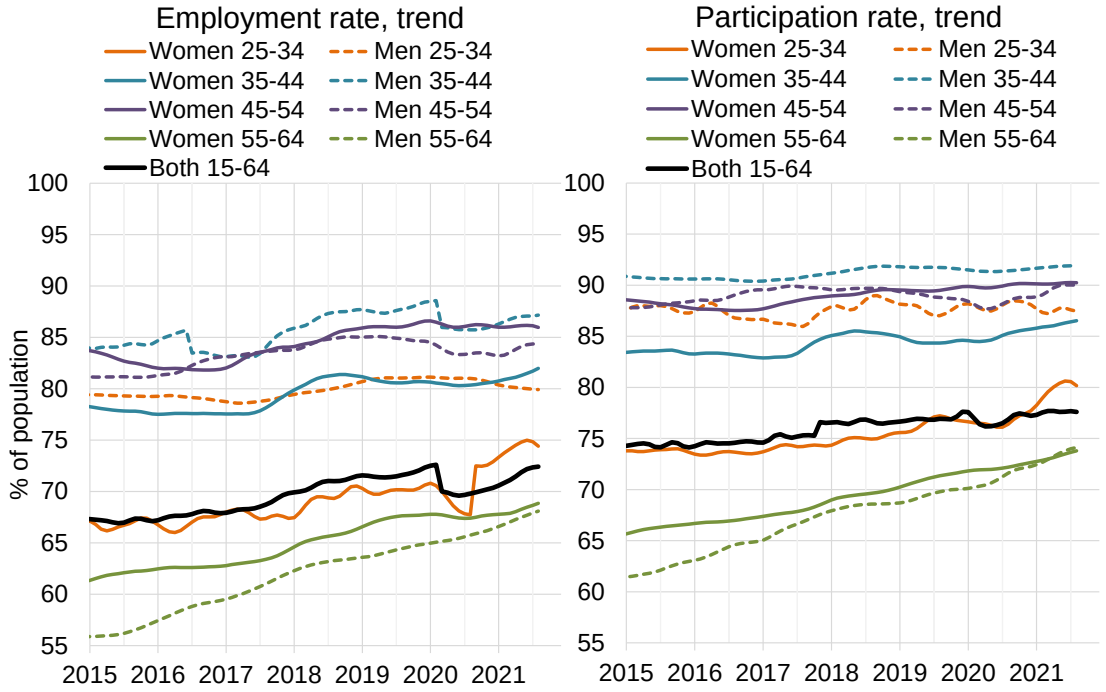


Source: Helsinki GSE Situation Room, www.helsinkigse.fi.

The worst employment effect of the Covid-19 pandemic was experienced among women aged 25-34 and men aged 45-54, but according to the latest Labour Force Survey the recovery among women has been remarkable, see Figure 2.2.6. A closer look reveals that in 2021 part-time employment has increased to an all-time high among women. The recovery in the employment rate is also helped by the increasing employment rate of the oldest age group, but the employment situation of men aged over 45 has remained worse than

in 2017-2019. However, the participation rate has recovered in all age groups, indicating that the long-time labour market effects of the recent downturn may end up being minor. Both the employment and participation rates of women aged 23-44 are notably lower than those of men in these age groups.

Figure 2.2.6. Employment has recovered and the unemployed have not exited the labour force.



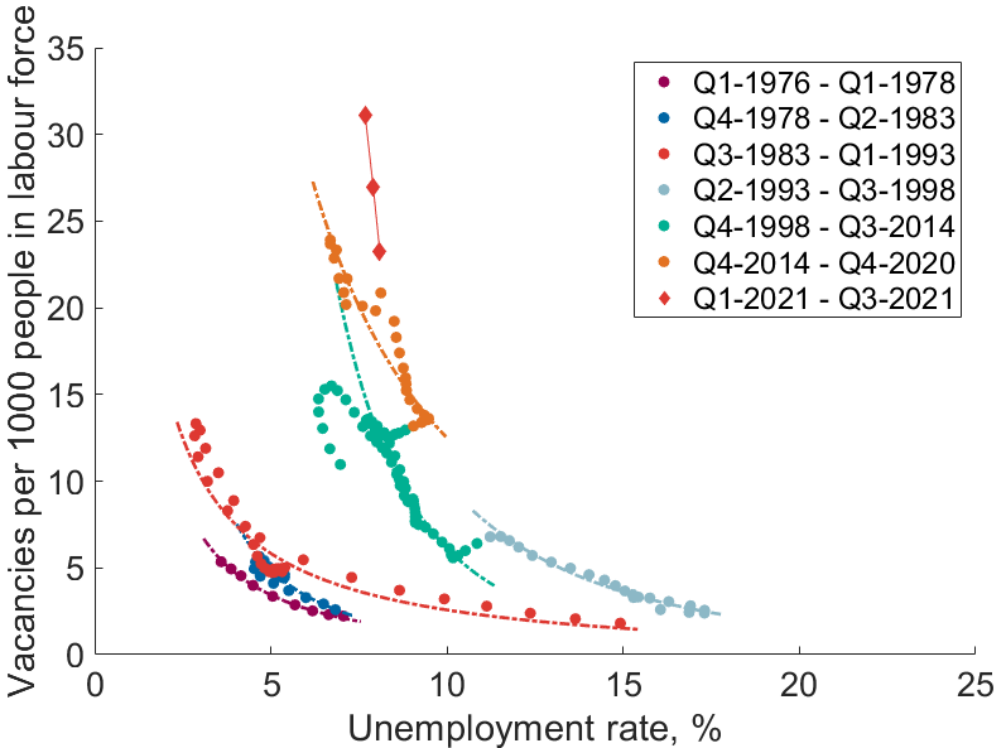
Sources: Statistics Finland, Seasonal adjustment by EPC.
Data range: January 2015 – November 2021

The recent changes in economic activity have also affected the number of job vacancies. Figure 2.2.7 depicts the evolution of the vacancy rate and the unemployment rate around an estimated Beveridge curve. The Beveridge curve plots the relationship between the vacancy rate and the unemployment rate over time, where both rates are defined relative to the size of the labour force. From a theoretical perspective, movements along the curve result from fluctuations over the business cycle, while shifts in the curve itself can be interpreted as changes in matching efficiency.[2] This decrease in matching

[2] If the number of vacancies and jobseekers increases simultaneously, one interpretation is that the economy has become worse at matching the two. The Beveridge curve may shift for reasons related to economic conditions or for reasons related to changes in policies. A reduction in unemployment benefits, for example, would most likely incentivise the unemployed to intensify their job-searching and reduce unemployment for a given number of vacancies. In this framework such a policy reform would improve matching.

efficiency increases the unemployment rate at any given stage of the business cycle. The vacancy rate is affected both by changes in the number of vacancies and the number of people in the labour force. In 2021 the labour force has increased, but the number of open vacancies has increased even faster. Although the number of vacancies may be somewhat exaggerated due to possible double-counting of job opportunities reported in multiple areas. The strong increase in vacancies in 2021 tells that the economy is experiencing an upswing, but the more muted employment reaction indicates problems in the labour market matching process.

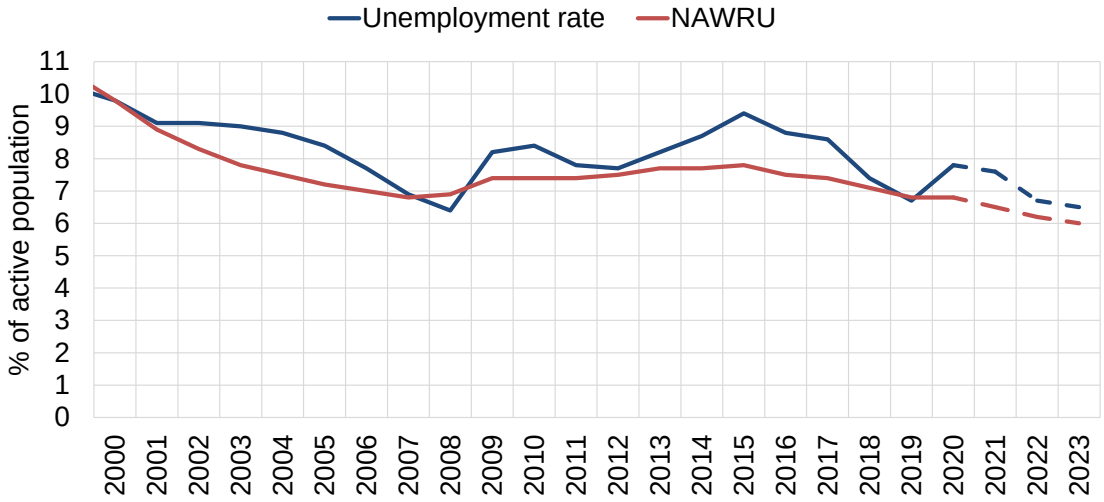
Figure 2.2.7. The labour market is experiencing strong demand for employment.



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

Figure 2.2.8 presents the actual and forecast unemployment rate by the Ministry of Finance and the structural unemployment rate, the Non-Accelerating Wage Rate of Unemployment (NAWRU), as estimated by the European Commission. According to the Commission's estimates strong movements in the unemployment rate during the recession of 2020 and the recovery in 2021 did not affect the structural unemployment rate. The structural unemployment rate has been on a continuous decline since 2015, reaching 6.5% in 2021 and is forecast to decline further in the medium run.

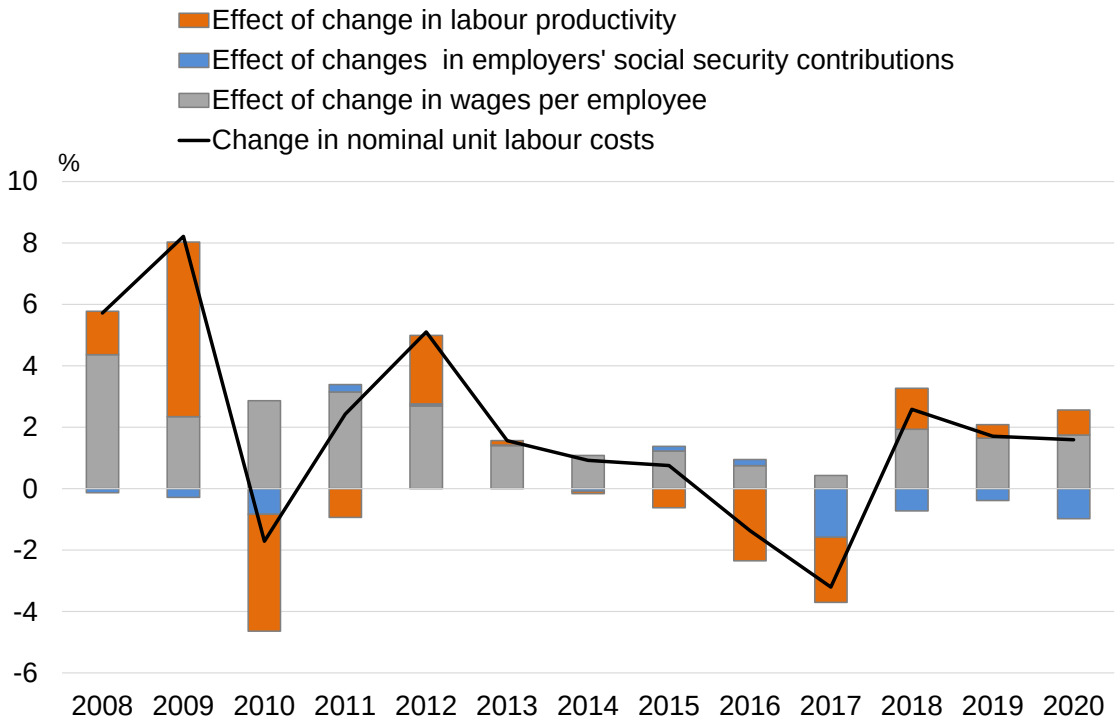
Figure 2.2.8. Unemployment has increased from 2019, but structural changes are uncertain.



Sources: Statistics Finland (data), Ministry of Finance (Winter 2021 Forecast) and European Commission (NAWRU, Autumn 2021 Forecast).

Figure 2.2.9 decomposes the changes in nominal unit labour costs in Finland into changes in labour productivity, changes in wages per employee and changes in employers' social security contributions. The economic upturn increased productivity in 2015-2017. Half of the decrease in nominal unit labour costs in 2017 was due to decreases in employers' social security contributions associated with the competitiveness pact, with the other half being increases in labour productivity not compensated by wage increases. As agreed in the competitiveness pact, employers' social security contributions decreased further in 2018 and 2019, but this decrease was offset in 2018 by a decrease in labour productivity. In 2018 and thereafter, wages per employee have been increasing. In 2020 labour productivity decreased due to difficulties related to Covid-19. As a support measure, the government temporarily reduced employers' social security contributions by 2.6% between May and December 2020. Despite the positive development in productivity in 2021, unit labour costs are expected to increase further due to increases in both wages and employers' social security contributions.

Figure 2.2.9. Drivers of growth in nominal unit labour costs in Finland.



Sources: Statistics Finland and EPC.

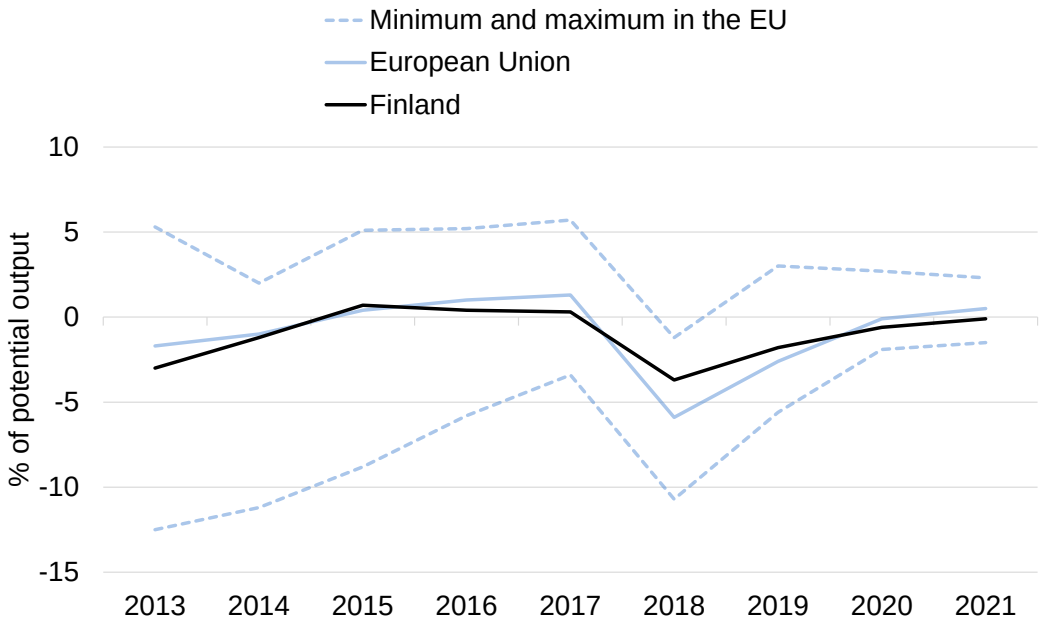
2.3. Recent developments in European and world economies

Although similar in timing and severity, the Covid-19 pandemic has affected European countries somewhat differently. Densely populated countries with a larger share of value added from service industries suffered most. The output gaps estimated by European Commission indicate that the negative effects on the Finnish economy have been smaller compared to many European countries, including some other northern European countries, see Figure 2.3.1. However, the Commission forecast in November 2021 indicates that the European economy will be close to its potential in 2022, mostly due to the favourable outlook for central European countries.

In Europe, potential output growth is mainly driven by increases in productivity and capital, while increases in labour input have remained rather small. In Sweden and Denmark, potential output growth has been supported by increases in the labour force. In Finland and in eastern EU countries, including the Baltics, labour input is expected to decline. In other countries with decreasing labour input potential output growth is supported by above-average

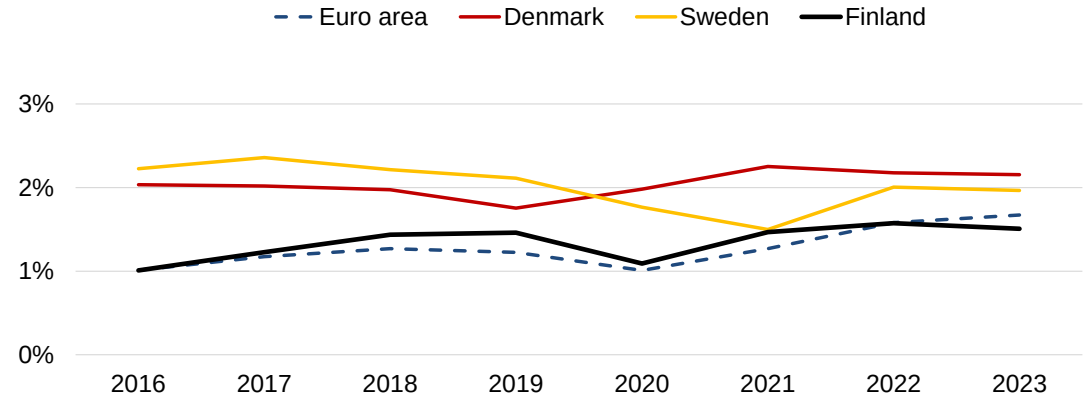
growth in total factor productivity, while in Finland TFP growth is expected to remain at the average level.

Figure 2.3.1. Output gaps in selected countries.



Source: AMECO databased, based on European Commission Autumn 2021 Forecast.

Figure 2.3.2. Annual rates of potential output growth in selected countries.



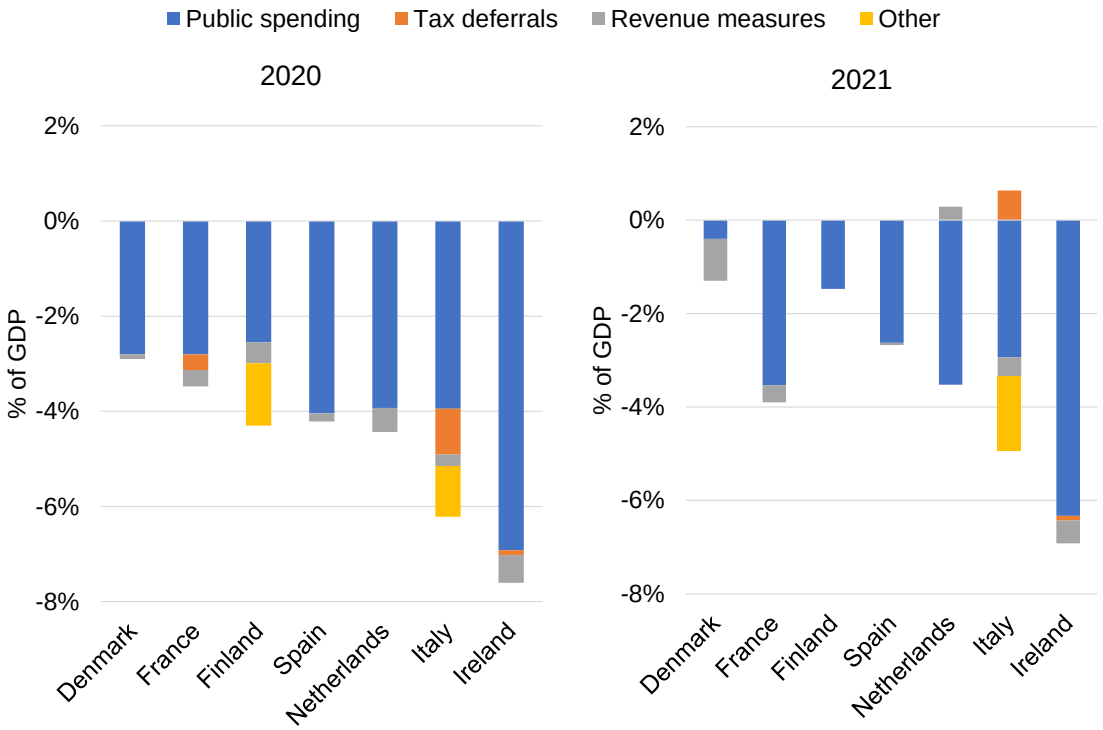
Source: AMECO databased, based on European Commission Autumn 2021 Forecast.

According to a survey by the EU Independent Fiscal Institutions Network, the average fiscal impact of policy responses to Covid-19 in EU countries was 5% of GDP in 2020 and is forecast to be 4% of GDP in 2021.[3] In 2020, the fiscal impact of the Finnish policy response as a share of GDP was close to its peers,

[3] See the EU Independent Fiscal Institutions Network (2021). Fiscal measures announced or taken by governments are also monitored by the IMF, see https://www.imf.org/en/Topics/imf-and-covid19/Fiscal-Policies-Database-in-Response-to-COVID-19.

see Figure 2.3.3. Covid-19-related policy measures have mostly been spending measures, while tax deferrals and other measures affecting the revenue side of public finances have played a smaller role. European countries have also used guarantees and loans to support the economy. While these measures do not affect fiscal balances directly, they increase future risks. Some countries have announced substantial guarantees. For example, Hungary has guaranteed total loans equivalent to about 30% of GDP and Portugal has announced liquidity measures of approximately 23% of GDP. In Czechia, Spain, and France the total amount of guarantees announced is more than 10% of GDP. In Finland loans and guarantees total 6% of GDP.

Figure 2.3.3. Fiscal impact of policy responses to Covid-19 in selected European countries, excluding guarantees and loans.



Sources: EU IFIs database.

*Note: In Finland Other includes transfers from central government to local government, while in Italy several various measures.

In 2020 the EU countries agreed the Recovery and Resilience Facility (RRF) package. The total size of the RRF is €673 billion, with about half allocated in grants and the other half in loans. The funds are allocated to EU member countries on the basis of a range of different criteria, such as the severity of the economic recession, real GDP, population share, and unemployment. The RRF is financed through debt issued by the EU, meaning that it has no direct impact on measured national debts and deficits. However, the package includes loans

to some EU member countries. These loans will show up in the debt of the corresponding country. According to the European Commission, over the next two years recovery and resilience plans are expected to have a total economic impact of 1.2% of 2019 EU real GDP. The RRF affects the EU economy mainly through investments. The European Commission (2021) expects that the RRF will also have indirect supply-side effects that will enhance potential output growth. In most countries resilience and recovery plans span over six years but are heavily front-loaded, with the largest share of the expenditures taking place in 2021 and 2022. As investment goods account for a large share of Finnish exports, the RRPs of various EU countries may increase Finnish export demand.

Box 2.1. Hysteresis effects of demand and supply shocks

Recently the significance of hysteresis effects in the age of Covid-19 has emerged as a topic in the Finnish economic policy debate. Tervala (2020) considers the long-run effects of different policy choices in response to the pandemic and accounts for hysteresis effects in different scenarios. Lainà (2021), on the other hand, argues that the stimulus policies undertaken during the pandemic will have large permanent effects on Finnish output and employment in the long run.

In this debate, and in macroeconomics more generally, the term hysteresis is most often associated with the permanent effects of demand shocks. According to the traditional view of business cycles, long-run growth in output is determined by supply factors such as technology and labour supply, while demand shocks have transitory effects only. In other words, the trend and the cycle are viewed as separate. This view has been challenged, for example by Cerra and Saxena (2017), while the possible mechanisms behind demand-side hysteresis include endogenous growth, for example (Anzoategui et al., 2019).

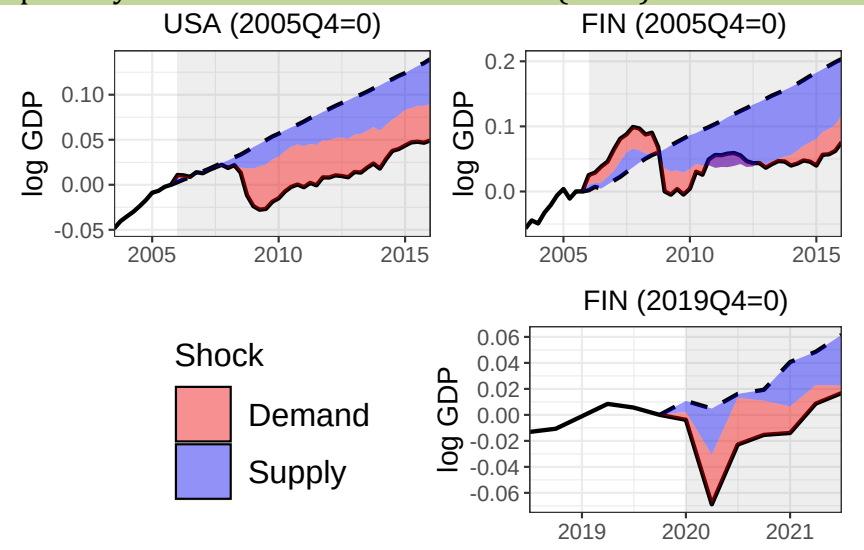
The possible presence of hysteresis has implications for the practice of macroeconomic policy. Arguably, the welfare gains from counter-cyclical policy are greater if there are scarring effects to the long-run level of GDP from current lack of demand. In the case of hysteresis, counter-cyclical policy that supports current demand may thus not only dampen the current cycle but also support living standards permanently if it counters the permanent effects of hysteresis.

Furlanetto et al. (2021) provide an empirical approach to studying the presence of hysteresis with a model that explains growth in output by demand and supply shocks with potentially permanent effects. Their main finding using US data is that demand shocks are also a major driver of output in the long run. Hao and Keränen (2022) extend this analysis to Finland and some other European economies. In contrast to the US result, they are unable to find statistically significant demand-side hysteresis when applying the same methodology to Finnish data. In some European countries, however, demand-side hysteresis seems to be present.

Figure B.2.1 plots the cumulative contributions of demand and supply shocks to GDP per capita implied by the model in Hao and Keränen (2022).

In the upper-left corner the path of US (log) GDP is given by the solid line. The dashed line depicts the model counterfactual where the contributions from all shocks since 2005Q4 have been subtracted from the actual path of GDP. Between these two lines, the cumulative contributions of demand (red) and supply (blue) shocks are highlighted. The model suggests that the financial crisis of 2008 has left US GDP on a permanently lower path. Much of this deviation is driven by demand shocks and in particular the demand shocks that occurred in 2008Q3-2009Q1 have left a permanent effect on GDP of roughly 5%.

Figure B2.1. Cumulative contributions of demand and supply shocks to GDP per capita implied by the model in Hao and Keränen (2022).



The upper-right corner of Figure B.2.1 presents the same exercise using the model and data for Finland. Supply shocks are found to be the major driver of Finnish GDP since 2005Q4, and GDP appears to be permanently lower due to negative supply shocks. While demand shocks appear to have limited permanent effects, they still drive GDP in the short run. In the lower-right corner, the model for Finland is used out-of-sample to explain developments in Finnish GDP during the Covid-19 pandemic. The model implies that both demand and supply factors have played a role in the current crisis. Initially demand has contributed more to the fall in GDP but more recently supply factors seem to be a larger contributor. However, these results should be taken with caution as the economic situation has been very unusual compared to the past and the most recent data is also subject to revision. Hysteresis is discussed in more detail in the background report by Hao and Keränen (2022)

2.4. Conclusions

The Finnish economy has recovered quickly from the crisis; however, it is not yet clear what the true long-run effects will be. Negative longer run impacts may materialize via the so-called "scarring" effects arising from prolonged unemployment, especially among the youth, possible negative consequences on physical and mental health, as well as deficits in learning outcomes.

Employment has returned to the pre-crisis level, but unemployment rate has not declined in a corresponding manner. Nonetheless, in 2021 the economy has been operating below full capacity on average.

The economy is likely to return to the trend that was predicted in 2019. However, the welfare losses of 2020-2021 are not expected to be compensated by a higher than forecast growth in the years following the crisis. This also means that a greater debt level represents one additional negative legacy of the crisis.

The growth prospects for the coming years involve downside risks that are greater than in normal times. This should also be taken into account in economic policy decisions.

3. Employment policy

The government set its main goal for employment policy in its government programme, which targets an employment rate of 75% by 2023. This objective has also been translated into policy decisions designed to increase employment by 60,000 persons. The reasoning for the employment target is long-run economic sustainability, and growth in employment is given as one of the main sources of revenue growth over the government term.

The employment rate reached 73% in 2019, but the Covid-19 crisis halted the positive trend. In response to the worsened employment situation, in autumn 2020 the government updated its policy goal to an increase of 80,000 persons.

In this section we assess the government's employment policy, its targets and the effects of government policies on labour supply.

3.1. Employment policy targets

In the beginning of the parliamentary term, the current coalition government set a target for the employment rate of 75%, also expressed as an increase in employment by 60,000 persons. These targets were intended to be attained by 2023. The main motivation for higher employment is the need to enhance public finances in the medium and long run. In 2020 the economic outlook was revised downwards, making the attainment of short run employment targets more difficult, and in response the government revised the employment target to 80,000 persons. The intention is to reach the new target during the 2020s.

In the beginning of 2021, Statistics Finland revised the methodology behind the Labour Force Survey and as a result the employment rate statistics were revised downwards by ½ to 1 percentage point. Having multiple employment

targets with revised metrics has made assessing the attainability of the objectives rather tricky. Alongside the employment target, the government aims to balance public finances, reduce inequality, narrow income gaps and put Finland on a path towards achieving carbon neutrality by 2035. The multitude of policy targets raises concerns that policy decisions to reach one target may negatively affect attainment of the others.

While the government has restated its economic and employment targets, the overall setting of policy goals remains somewhat unclear. In current government documents, e.g. in the General Government Fiscal Plan, the aim is to reach the 75% employment target by the middle of the current decade. This is because the original targets were made under the assumption that economic conditions would remain normal. While economic conditions are forecast to return normal by 2022-2023, it is not straight forward to find and implement policy measures that would increase the employment rate to 75% permanently and sustainably. The current setup, with both medium- and long-run objectives, creates incentives to implement both short-run measures and structural measures.

Focusing solely on assessing whether the employment targets, or which of them, can be reached or not distracts the analysis from the actual reasons for these targets. There can be a multitude of reasons for setting a high employment target, such as work implying higher income, thus better enabling citizens to meet their needs, and employment is also said to increase social cohesion. The amount of labour needed and available in the economy is based on individual choices. While making the labour market work better improves people's welfare, the government's need to increase employment is motivated mainly on the grounds of improving the sustainability of Finland's public finances and the welfare state. As employment policy decisions are driven by all these considerations, their effects on public finances, households' disposable income, inequality and income distribution vary. The current structural unemployment rate in Finland is high by Nordic comparison, and policies to bring it down will most likely deliver welfare benefits. From a public finance perspective, the fiscal benefit of increasing employment does not depend solely on the number of people employed, but also on the increases in value added that employed people generate, i.e. it is important to assess the increases in hours worked and also the productivity of each hour worked.

By the end of 2021 the government had implemented various employment policy measures and has stated that it is preparing further measures. Although an ex-ante evaluation of the employment effects of any government measure is difficult, the Ministry of Finance was able to produce indicative estimates of the effects. These measures are discussed in more detail below. As the government programme acknowledges, the effect of increased employment on public finances and thereby on fiscal sustainability may vary depending on the quality of the jobs and the policies implemented to achieve them.

The employment effects of various policies have been assessed by the Ministry of Finance, Ministry of Education and Culture, Ministry of Social Affairs and Health and the Ministry of Employment and Economic Affairs. While in some cases such an assessment can be based on past reforms or on simulations of economic models, estimation of the effects of minor policy reforms is difficult and often based on scenarios and calculations of so-called potential effects. In some cases, different ministries have ended up with different expectations of the employment outcome. Having different estimates for the same package of measures can lead to inefficiencies and make policy preparation difficult.

3.2. Employment policies

The Ministry of Finance has estimated that the government's employment-boosting decisions prior to the government's mid-term negotiations in spring 2021, could achieve an increase in employment of 31,000-33,000 persons and strengthen public finances by EUR 300 million by 2029. However, the partial repeal of the previous government's so-called activation model may have undermined employment by 2,000-5,000 persons, see Economic Policy Council (2021) for discussion. Employment is also affected by other policy decisions, e.g. changes in taxation and in social security[4].

In spring 2021, in the context of negotiations on spending limits for 2022-2025, the government agreed on measures to target an increase in employment of 40,000-44,500 persons. However, according to the Ministry of Finance's preliminary estimates, the measures could achieve 11,000 additional

[4] The Economic Policy Council estimates that tax changes and changes in social security implemented by the government have reduced employment by 2,900 to 8,600 persons.

jobs and strengthen public finances by EUR 150 million over the long term. The assessments by the Ministry of Finance and other ministries are discussed below.

The government has implemented some employment measures and several measures are being prepared or proposed to parliament. The list of measures implemented is short: partial abolition of the activation model, reform of adult education allowance, raising the minimum age for entitlement to additional daily unemployment security, reduction in early childhood education payments, Nordic labour services model, extension of compulsory education. Measures proposed to parliament or already past the preparation stage: increasing employment of over-55-year-olds, simplification of the wage subsidy system and a linear model for partial disability pensions. These measures are discussed in more detail in Appendix 1.

The government also has multiple employment reforms in the planning stage. Government documents indicate that these measures include: a specific mission company to employ partially disabled persons, an ongoing project to increase the employment of the partially disabled by increasing the social criteria in municipalities' public procurement, prevention of disability pensions and sickness absenteeism, transfer of employment services to municipalities by 2024, packages improving the integration of immigrants and increasing work-related immigration, and reform of lifelong learning. The employment and fiscal effects of these measures are difficult to assess. From a fiscal point of view, some of these employment measures require increases in public expenditure. Even if these measures do not strengthen public finances, they may contribute to other goals, such as social welfare and issues related to justice or even human rights. Such measures are worth taking even if public finances are not strengthened. But it would be clearer if such measures were not talked about in the context of employment measures that improve the budget balance.

In order to make a realistic assessment of the overall impact, both the direct and indirect effects of employment measures should be taken into account. The EPC has previously stressed that any assessment of the employment impact of government actions should be comprehensive; employment growth due to government measures should be permanent or at least very long-lasting; the quality of employment growth should be discussed from the point of view of the fiscal benefit; when calculating the employment effects of multiple actions, so-called cross-effects should be taken into account and the impact of

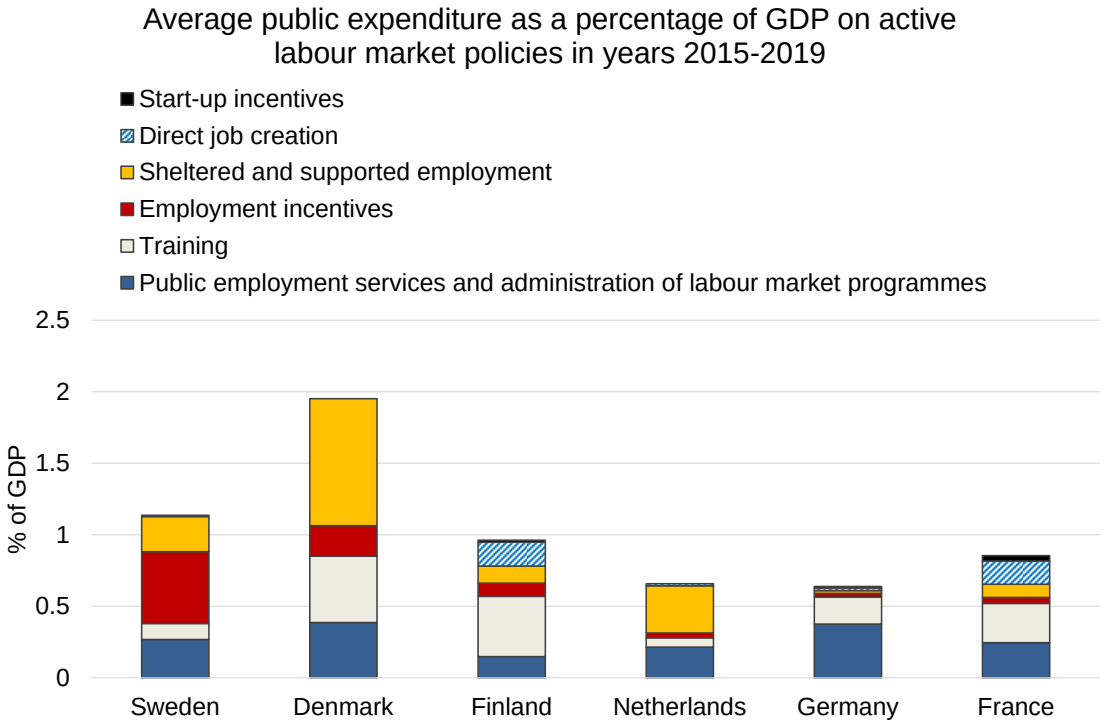
policy actions on other activities should be discussed and considered wherever possible. In addition, the EPC has drawn attention to the potential negative employment effects of some previous policy changes.

Most of the measures still under preparation can be considered active labour market policies. Spending on active labour market policies varies between countries. Studies including Havik et al. (2014) and Gäddnäs (2019) suggest that higher expenditure on active labour market policies per unemployed person is associated with lower structural unemployment. Asplund et al. (2018) point out that while active labour market policy measures improve the employment of those involved in them over the reference group, part of the positive effect comes from the measures negatively affecting employment in the reference group. Card et al. (2018) summarize estimates from over 200 recent studies of active labour market programmes (ALMP) and conclude that: the average impacts of ALMP are close to zero in the short run, but become more positive 2–3 years after completion of the programme; the time profile of the impacts varies by the type of programme, with larger average gains for programmes that emphasize human capital accumulation; there is systematic heterogeneity across participant groups, with larger impacts for females and participants who enter from long-term unemployment; active labour market programmes are more likely to show positive impacts in a recession. A recent meta-analysis by Puig-Barrachina et al. (2020) reveals that active labour market policies also lead to improved health among their target group.

According to OECD statistics, Finland has been spending a smaller share of GDP on active labour market policies compared to Denmark but slightly more than some central European countries. Figure 3.2.1 shows that Finland's Nordic peers spend considerably more on sheltered and supported employment and employment incentives, while Finland and France target direct job creation.[5] As active labour market policies are costly to implement, a cost-benefit analysis should also be performed of proposed policies, at least at a basic level.

[5] Direct job creation includes temporary work and, in some cases, regular job offers to unemployed persons in the public sector or in non-profit organisations.

Figure 3.2.1. Finland's expenditure on active labour market policies has been relatively small in recent years.



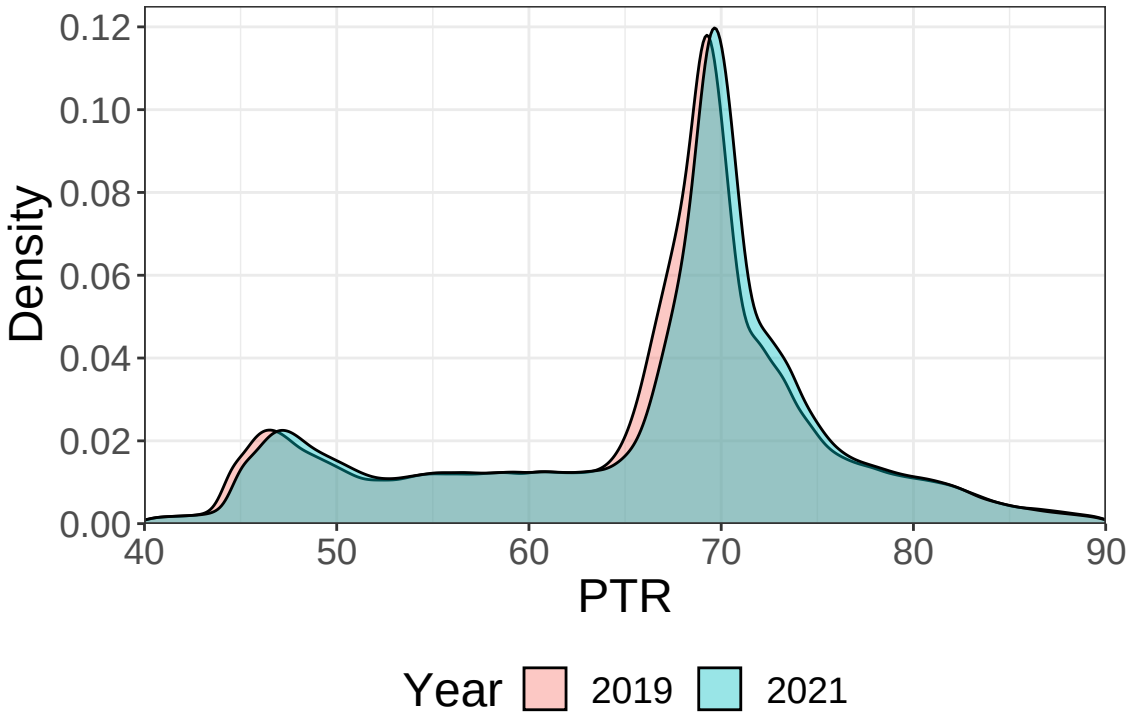
Source: OECD, Public expenditure and participant stocks on LMP.

Alasalmi et al. (2020) discuss the problems of active labour market policy. They find that active labour market policy can mainly affect who is employed, rather than the employment rate and conclude that public sector pay support is more of a passive labour market policy instrument as it is also used to meet the work requirement for unemployment security. Employment policy training will improve the employment of participants in the longer term. However, it has a significant lock-in effect: during the training itself, the employment situation is worse. Thus the range of active labour market policies should vary by cycle. The research group also notes that more research is needed on multiprofessional services and the cost-effectiveness of active labour market policies. Existing cost-benefit analyses are not very encouraging in terms of the cost-effectiveness of active labour market policies.

The EPC's previous report included calculations by Ollonqvist et al. (2021) on changes to work incentives as a result of reforms to personal taxes and social security between 2019-2020. The EPC has updated these calculations to include policy changes in 2021. These calculations are made using the SISU microsimulation model and the same methodology outlined in Ollonqvist et al. (2021).

Policy reforms can alter incentives at both the extensive and intensive margins. The extensive margin refers to the choice of workers to participate at all (at a given predicted wage), while the intensive margin refers to the choice of how much to work. Changes in incentives at the extensive margin can be measured by participation tax rates (PTR). These measure the effective tax rate caused by the increased taxes and reduced benefits that an unemployed person faces in taking a job at her predicted wage. Higher PTR means lower incentives to work. Figure 3.2.2. plots the simulated distribution of PTR based on legislation in 2019 and 2021. As the distribution has shifted rightwards from 2019, the incentives have decreased. At the intensive margin, incentives are measured by effective marginal tax rates (EMTR), which express the effective tax rate on an extra 100 euros earned taking into account both the increase in taxes paid and benefits lost. The simulated distributions of EMTR are plotted in Figure 3.2.3. The EMTR distribution has also shifted rightwards, decreasing the incentives to work.

Figure 3.2.2. Distribution of participation tax rates

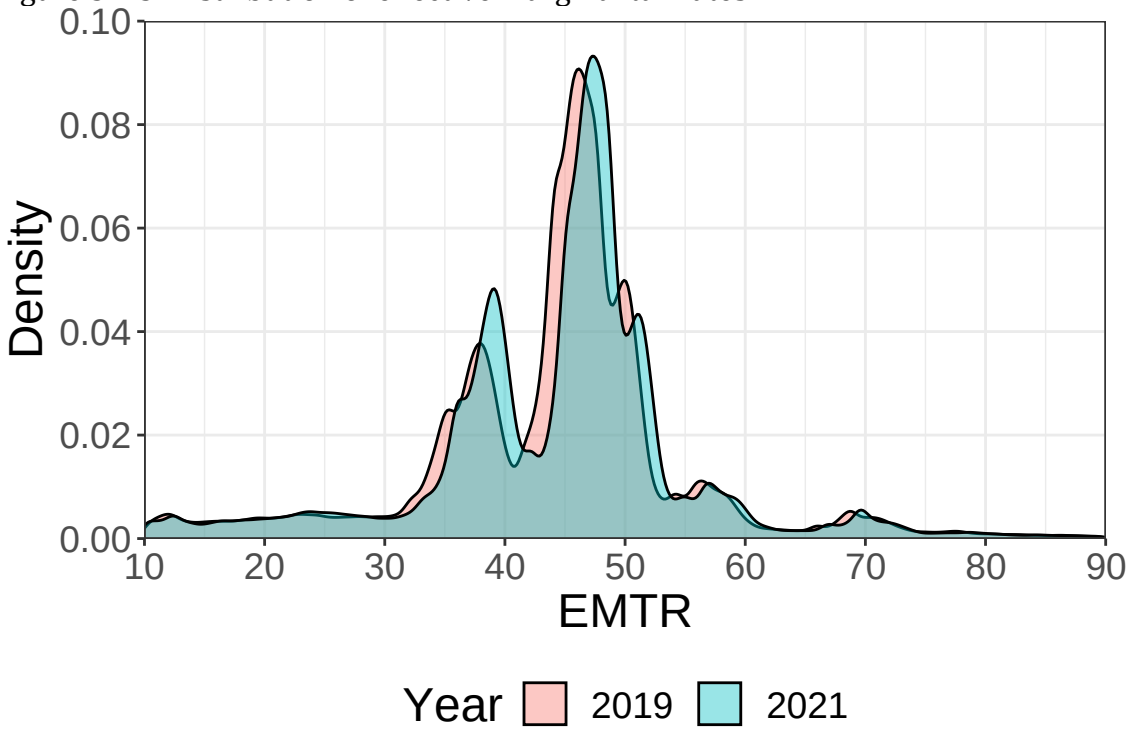


Sources: SISU microsimulation model, EPC calculations.

Given these changes in the incentives to work through tax and transfer policy, we can calculate an estimate of the employment effects by following Ollonqvist et al. (2021) and combining the change in incentives with an elasticity implied by empirical literature. Using an elasticity of 0.2 (0.1-0.3) at

both margins, the government's tax and transfer policy is estimated to lower employment by 5,800 persons (2,900-8,600). This estimate does not take into account the increased incentives to work caused by a reform in 2021 that lowered childcare payments as these effects are given separately in Table 3.2.1. as a positive employment effect of 2,500-3,600. Overall, most of the decrease in incentives to work originates from tax and benefit changes between 2019 and 2020 that were studied by Ollonqvist et al. (2021). No major permanent reforms to taxes and social security benefits have been made during the pandemic.

Figure 3.2.3. Distribution of effective marginal tax rates



Sources: SISU microsimulation model, EPC calculations.

The employment effects of various policies discussed above are summarised in table 3.2.1. As can be seen, the estimates are not precise, and it would be difficult to aggregate them into one estimate or even an interval. However, one may conclude that the overall effect of government policies on employment will be positive. Although there are assessments of each employment policy measure, calculation of their aggregate effect is not straightforward as there are possible cross-effects that might decrease the aggregate effect.

Table 3.2.1. Estimates of the employment effects of government decisions and proposals.

	Positive effect on employment	Negative effect on employment
Adult education allowance reform	200	
Raising the minimum age for entitlement to additional daily unemployment security	6,500 - 7,000	
Nordic labour services model	9,500	
Reduction in early childhood education payments	2,500 - 3,600	
Extension of compulsory education	10,000	
Linear model for partial-disability pensions	200	
Partial abolition of the activation model*		5,000 - 12,000 (2,050 - 4,920)
Transfer of employment services to municipalities**	6,600	
Simplification of wage subsidy system**	500 - 1,000	
Increasing employment of over55-year-olds**	9,100	
Specific mission company to employ partially disabled**	1,000	
Expansion of the work capacity programme and wage subsidies**	600	
Increase the employment of the partially disabled by public procurement in municipalities***	2,000	
Prevention of disability pensions and sickness absenteeism***	2,500	
Successful integration of immigrants***	2,000	
Increasing work-related immigration***	15,000	
Lifelong learning reform***	10,000	
Changes in taxation and social security relative to legislation in 2019****		2,900 – 8,600

Sources: Based on calculations by the Ministry of Finance and the EPC.

* Numbers in parenthesis take into account an approximation of the displacement effect. Approximation by the EPC, see EPC (2021) for further discussion.

** Measures under preparation. Other measures have been implemented.

*** Effect is based on scenarios and calculations by different ministries.

**** Calculations by the EPC following the methodology of Ollonqvist et al. (2021).

If the government aims to achieve its target of increasing employment by 60,000 persons by the end of its term, or by 80,000 persons by the end of the decade, it possibly also needs to consider other policy measures that affect the employment decisions of households and individuals. Such measures include changes in income taxation, social security and other transfers.

A working group, chaired by Professor Jäntti (see Busk et. al. (2021)), also recommends increasing employment services resources and proposes enhancing job search support and, for example, using new technological solutions. According to the group, active labour market policy could also be used to support the participation of partially disabled people in the labour market. Support is particularly needed in recruitment and in assessing the need for work capacity support. The use of partial sickness allowance should also be promoted and employment of persons on partial disability pensions facilitated.

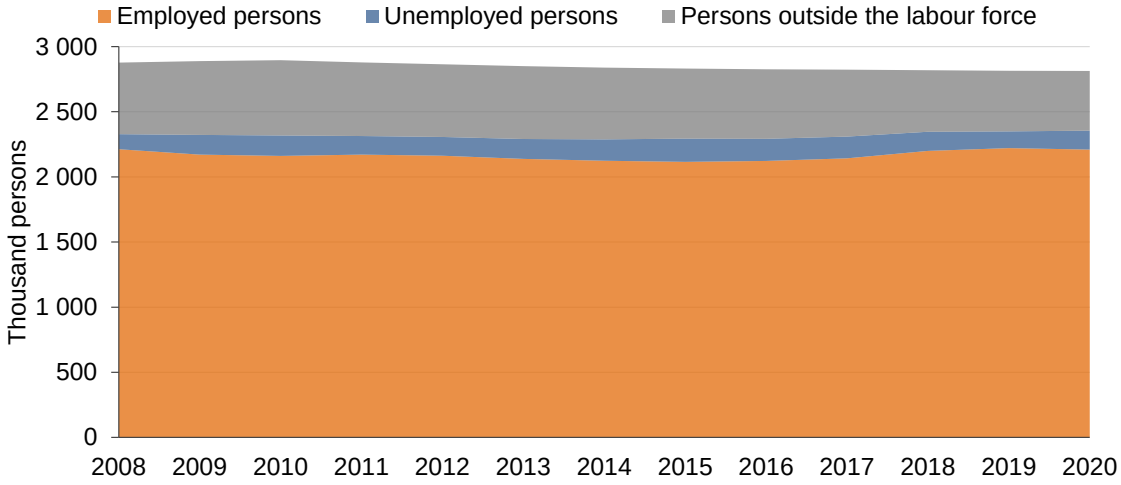
According to the MoF's calculations, measures agreed previously and in the medium term could in aggregate produce an increase in employment of just 40,000 persons and an improvement in public finances of EUR 450 million. In addition, the government has announced that during its term it will take decisions on employment measures that will strengthen public finances by EUR 110 million.

The government's employment measures are not set to strengthen public finances in line with its stated objectives. Combining the measures decided during the government term and the target of EUR 110 million for the remainder of the term announced in the mid-term negotiations, public finances would be strengthened by a total of around EUR 560 million through employment decisions, compared with the target of EUR 1-2 billion stated in the government's sustainability road map.

Finland's labour market is experiencing high structural unemployment and long-term unemployment has increased over the past year. These problems, together with problems in labour force matching, should be solved through employment policies.

In the Labour Force Survey (LFS), people who are not working are divided into two groups: those actively seeking employment, and those who are not seeking employment. In 2020 78% of 25-64-year-olds were employed on average, roughly 5% were unemployed and 16% were outside the labour force, see Figure 3.2.4.

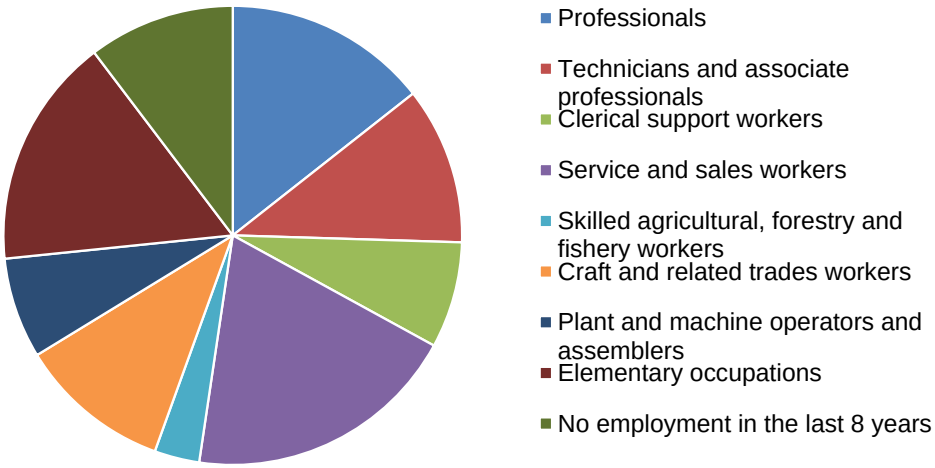
Figure 3.2.4. 24–64-year-old population by labour market status.



Source: Eurostat.

According to Eurostat's detailed annual LFS data, the largest occupational group of unemployed persons are those who have previously worked as service and sales workers or in elementary occupations[6], each group representing almost 20% of the unemployed total. In 2020, 10% of the unemployed did not have an occupational background, see Figure 3.2.5.

Figure 3.2.5. Previous occupations of the unemployed in 2020.



Source: Eurostat.

The number of 25-64-year-old people outside the labour force, i.e. not employed or actively seeking employment, was 457,000 in 2020. Of the inactive population, 20% have only primary or lower secondary education, 50% have

[6] According to International Standard Classification of Occupations, elementary occupations consists of cleaners and helpers, agricultural, forestry and fishery labourers, labourers in mining, construction, manufacturing and transport, food preparation assistants, street and related sales and service workers, refuse workers and other elementary workers.

secondary education and almost 30% have tertiary education. According to annual LFS data, among 25-64-years-olds, the biggest reason not to actively search for employment is illness or disability or being on retirement.. Also, persons caring for adults with disabilities or children and with other family or personal reasons comprise 12% of the population outside the labour force and the share of persons in education or training is 15%. Approximately 20% of those aged 25-64-years and outside the labour force are laid off, believe that there are no jobs available or have other reasons not to apply for a job.

3.3. Council views

Employment has picked up rapidly in 2021, following a speedy recovery from the corona crisis. While it is difficult to attribute the positive development to actual policy measures, it is likely that the support for the economy during the crisis has contributed to maintaining employment at a high level.

The government has continued to make decisions aimed at increasing the employment rate further. The main new measure, introduced in 2021, is related to transferring employment services to municipalities, which is expected to bring more than 6,000 new jobs. However, the details of many of the measures are yet to be known, and that is why it is difficult to give a precise estimate of the number of new jobs created.

There has been some unclear communication by the government, because of multiple estimates of employment effects of different policy measures by different ministries. It would be helpful to publish coordinated estimates in future.

The employment rate can be further increased by measures targeted at increasing the share of the labour force and bringing down the unemployment rate. These two channels most likely require different policy measures.

Increasing employment is a goal which may be motivated by multiple reasons, such as combatting social exclusion and improving overall welfare. Sometimes there are trade-offs between different societal goals – e.g. between protecting the income level of the unemployed and shortening the average length of the unemployment spells. Striking the right balance between these goals depends on societal preferences.

If the objective is to strengthen public finances, the costs of attaining a higher employment rate deserve special attention when evaluating employment policy measures.

The EPC is concerned about the fact that the equilibrium unemployment rate is expected to remain at a high level, and about the associated social costs, and urges the government to consider new measures in the area.

4. Fiscal policy

In its programme, the government set the main targets of its economic policy to be reached by 2023: an employment rate of 75% and general government finances in balance. It was also stated that policy decisions would aim at decreasing inequality, narrowing income gaps, and putting Finland on a path towards achieving carbon neutrality by 2035. These targets were conditioned on a normal economic environment, in Finland and elsewhere.

The Covid-19 crisis changed both the economic and the fiscal outlook drastically. After the deficit-financed fiscal support measures and decreases in revenue in 2020 and 2021, the economic recovery has already begun to improve public finances. The crisis period made it difficult for the government to find the appropriate growth and consolidation measures required to meet the medium-term fiscal objectives set in 2019.

During the coronavirus crisis the government revoked the central government expenditure ceiling framework for 2020 to be able to increase spending in order to support public health and the economy. Instead of returning to the previous spending limits decided in 2019, the government changed its fiscal policy line to a gradual decrease in central government spending. To this end, central government expenditure for 2022-2023 was increased. The government is still committed to stabilising the growing debt-to-GDP ratio, but has revised its fiscal objectives to make them easier to reach with policies already announced.

In this chapter we will discuss the fiscal policy decisions taken for 2021 and beyond. The sustainability of public finances is discussed in chapter 5.

4.1. Discretionary fiscal measures and fiscal policy stance

In its programme, the government announced its plan to permanently increase central government expenditure by EUR 1.4 billion by 2023, compared to a scenario of no policy change, and launched a future-oriented investment programme of temporary spending of up to EUR 3 billion in 2020-2022. The permanent spending increases were front-loaded and a large part of these started already in 2020. In 2020 the government also made a number of new spending decisions, both one-off and permanent. These new decisions will gradually increase permanent spending over the parliamentary term, reaching EUR 230 million by 2023. Temporary stimulus packages and other one-off measures increased central government spending by EUR 3.8 billion in 2020.

In its mid-term policy review in spring 2021, the government decided to increase the central government spending limits for 2022 and 2023. The spending limits were increased by EUR 900 million for 2022 and by EUR 500 million for 2023. In connection with the third supplementary budget for 2021, the reserve set aside for one-off expenditure prompted by the coronavirus situation was also increased to EUR 1.85 billion. Expenditure is also higher in 2022 to the tune of EUR 600 million due to the cost of Finland's Recovery and Resilience Plan, which is financed by revenue from the EU's Recovery and Resilience Facility. Appropriations related to the future-oriented investment package for 2020-2022 are partly being used to finance the economic stimulus package agreed in 2020. Expenditure on future oriented investments will be EUR 466 million in 2022. Additionally, just over EUR 80 million of investments from the national housing fund will also be allocated in 2022.

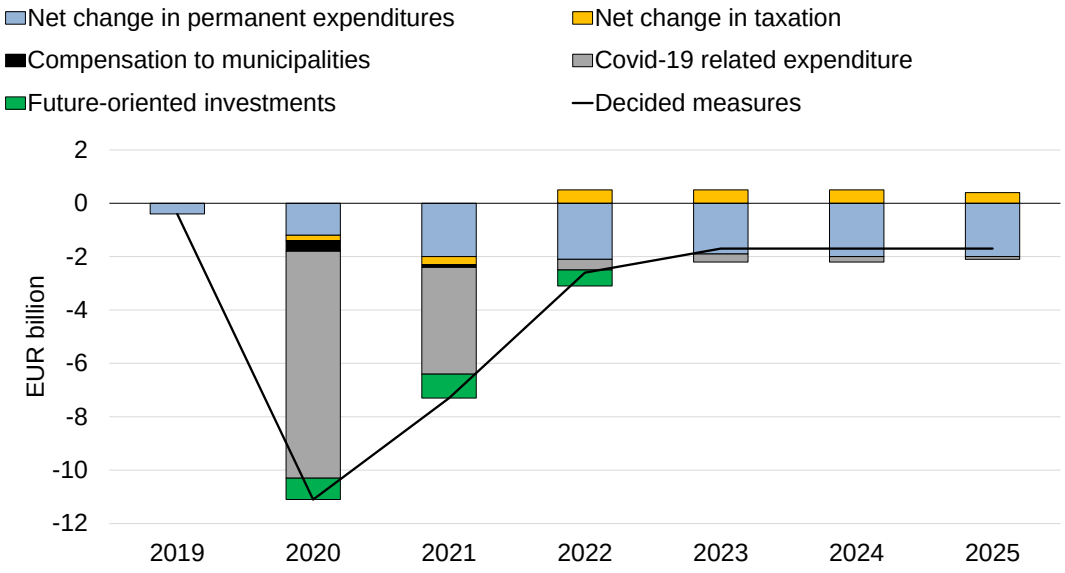
The government has announced that increases in permanent expenditure will be financed for example by raising taxes and by higher tax revenues from an increase in employment. The future-oriented investments will also be financed by selling central government financial assets. These asset sales are expected to take place in 2021 and 2022.

The government announced in October 2019 that tax revenue will increase gradually towards the end of the government term. The government has introduced tax changes and decisions that will increase taxation by up to EUR

1200 million in 2023, with a net permanent increase in tax revenue of almost EUR 500 million in 2023.[7]

Figure 4.1.1 illustrates the impact of the discretionary measures on the central government budget. The net changes in expenditure in the figure are divided into permanent and temporary spending, following the convention used in the government programme. Spending increases related to the Covid-19 crisis, including expenditure directly related to the pandemic and expenditure related to the recovery package, are separated from other temporary spending increases. The net tax increases exclude adjustments to the income tax schedule due to inflation and wage growth.[8][9]

Figure 4.1.1. The effect of discretionary measures on the central government budget balance (EUR billion), as compared to a path with no policy changes.



Sources: General Government Fiscal Plans for 2020-2023, 2021-2024 and 2022-2025, Government bills, budget review 2022; calculations by the Economic Policy Council. *Note: Figure does not include expenditure associated with the wellbeing service counties from 2023 onwards.

[7] Half of the permanent increases in tax revenue come from tobacco and alcohol taxes. Increasing taxation on these goods is likely to reduce consumption of them, thus the increase in tax revenue cannot be regarded as permanent unlike some other forms of taxation.

[8] All the numbers presented refer to static estimates. They represent the direct effects of tax changes on revenue in the absence of any behavioural effects. For example, they do not account for possible changes in the labour supply induced by changes in income taxes.

[9] The temporary changes in employers' pension contribution rates are not taken into account in Figure 4.1.1. as they do not affect the central government budget balance.

The solid line in Figure 4.1.1 shows the net effect of the discretionary measures on the central government budget balance in comparison to a situation with no policy changes, i.e. the situation described in the technical General Government Fiscal Plan of April 2019. Discretionary measures worsened the budget balance in 2020 by EUR 11.1 billion and by EUR 7.3 billion in 2021. The grey bar in Figure 4.1.1. includes measures both directly and indirectly related to Covid-19. The gradual ending of the temporary stimulus package will improve the budget balance in 2021 and 2022. Compared to the no policy change path, this bottom-up perspective shows that the new fiscal policy decisions will be expansionary throughout 2020-2025.[10]

The yellow bars in Figure 4.1.1 show the static net effect on central government revenue of the discretionary tax policy measures decided by the new government since 2019. The comparison is again with a situation with no changes. In terms of the size of their effect, the three largest tax decisions are the increase in fuel tax, excise tax on tobacco and the continuation of the temporarily higher income tax rate levied on high-income individuals. In 2023, these tax decisions will increase revenue by almost EUR 1200 million, while lower taxes on electricity and a temporary increase in the depreciation allowances for new investments in 2020-2023 and temporary decreases in the lottery tax and in other items will reduce revenue by approximately EUR 700 million.

According to the winter forecast of the Ministry of Finance, total central government expenditure will be approximately EUR 69.3 billion in 2022, which is EUR 0.5 billion less than in 2021 but EUR 7.6 billion more than in 2019. The respective revenues will increase to EUR 62.8 billion, which is EUR 3.7 billion higher than in 2019. In 2022 the central government deficit is forecast to be EUR 6.5 billion.

Local government expenditure started to increase in 2018, while revenues were expected to remain broadly constant. In 2020, local government finances were in balance due to increased transfers from central government. Although transfers are expected to remain at around EUR 18 billion in 2021 and 2022, the annual deficit of local government is expected to remain above EUR 1 billion. The reasons for the high deficit are increasing age-related spending, while government decisions to strengthen education and social and

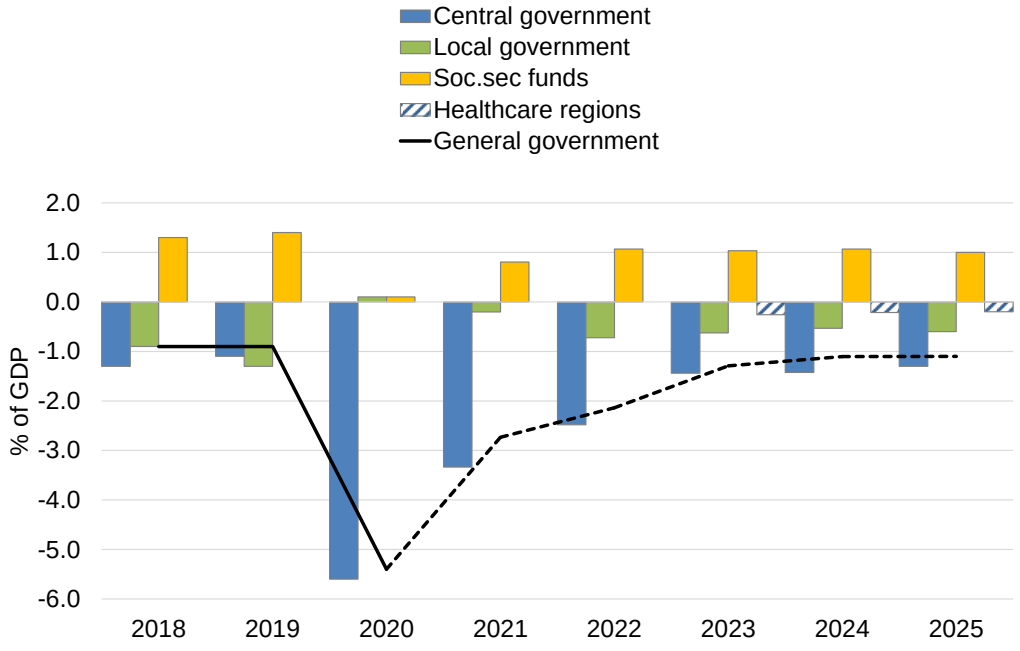
[10] This comparison describes the effect of policy changes on economic growth relative to a no policy change path. The change in the fiscal stance can also be measured with reference to the implied annual changes in net lending or the structural balance, see Figure 4.1.3.

healthcare services will also add to the tasks and obligations of municipalities. Increases in transfers will be made to compensate these additional costs. In 2023, local government expenditure and revenue are forecast to decrease by EUR 24 billion, as the provision of health and social care and rescue services are transferred to the regional level.

Social security funds and pension funds are both defined as being a part of the Finnish general government. These funds have accumulated a remarkable amount of financial wealth, and the improved economic situation will strengthen their balances further. The pension funds' surplus declined in 2020 due to decreased revenues from pension payments caused by a fall in the wage sum and due to the temporary cut in employers' contribution rates. To compensate for the cut, the contribution rate will be correspondingly increased in 2022. The latest data indicate that in aggregate the social security and pension funds survived 2020 in surplus, and their surplus is forecast to return to a level of 1% of GDP.

The general government net borrowing-to-GDP ratio is forecast to improve gradually as the central government balance improves. In 2021 the general government balance is -2.8%, but it is forecast to improve to -2.1% in 2022 and -1.3% in 2023 (see Figure 4.1.2).

Figure 4.1.2. Net lending/borrowing by government sector

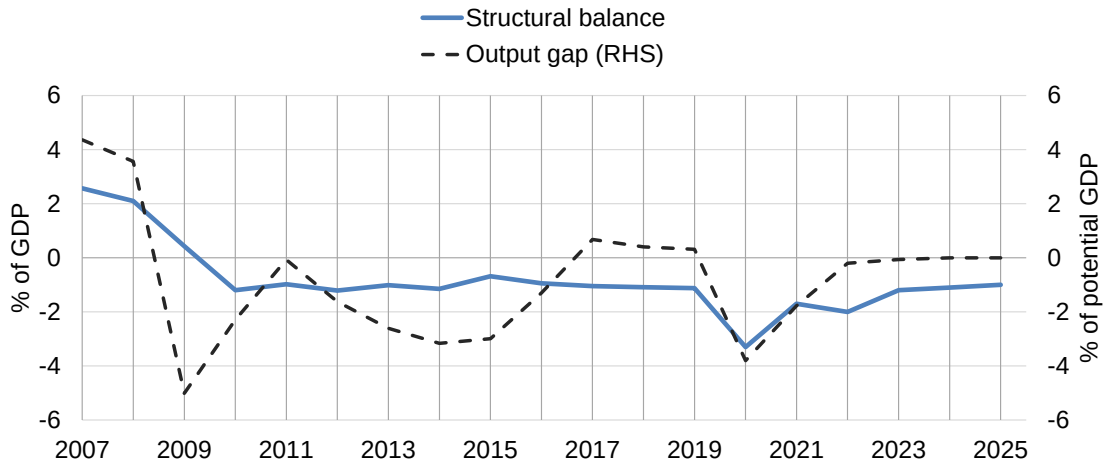


Sources: Statistics Finland and Ministry of Finance Winter 2021 Forecast.

An indication of the effect of decisions on general government net borrowing can be derived by controlling for the business cycle and one-off revenues and expenditures when calculating net borrowing. Changes in the resulting structural balance are often used as an indicator of the fiscal stance: the fiscal policy stance is expansive when the structural balance worsens and contractionary when it improves. The structural balance has been in deficit since 2010, i.e. aggregate demand has been supported by general government debt accumulation.

The blue line in Figure 4.1.3 shows the evolution of the output gap[11] and the general government structural balance based on the winter forecast of the Ministry of Finance. In 2020, support measures and other discretionary measures worsened the structural balance by 2.2 percentage points. The forecasted changes in the structural balance indicate gradual fiscal tightening in 2021 and 2023. Assessment of the structural balance is prone to changes both in statistics and in forecasts.

Figure 4.1.3. General government has been in structural deficit since 2010.



Sources: Ministry of Finance winter 2021 forecast and EPC calculations.

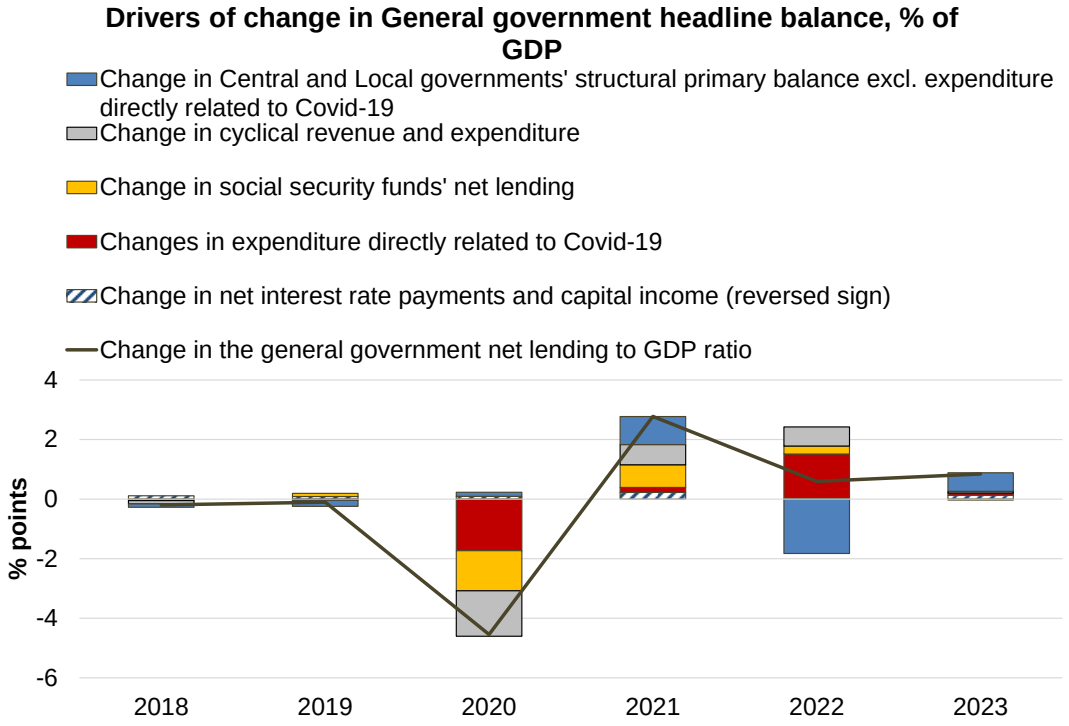
Measuring the fiscal stance by the change in the general government structural balance is not straightforward as there are several factors that need to be taken into account. First, the adjustment that controls for the business cycle is based on an estimate of the output gap that is prone to revisions. Second, based on the historical variation in spending and revenue items the business cycle adjustment aims to differentiate between automatic and discretionary expenditures and changes in revenue due to the business cycle and due to

[11] The output gap measures the deviation of actual GDP from its potential level. A negative output gap indicates that the economy is performing below its potential capacity. See Section 2.2.

changes in taxation, see OECD (2014). In 2020 and 2021, much of the increase in public expenditure was caused by the Covid-19 pandemic, which should be disregarded from changes in discretionary spending.

Figure 4.1.4 decomposes changes in general government net borrowing into changes due to policy measures, cyclical effects, spending related to the Covid-19 epidemic and changes in social security and pension fund balances. The changes in expenditure related to Covid-19, including direct healthcare costs and support measures, play a large role in explaining the changes in the nominal balance in 2020-2022, as this is estimated to cause an increase of 1.7 percentage points in 2020 and abolition of support measures will decrease the net borrowing-to-GDP ratio by 1.5 percentage points in 2022. Improvements in the business cycle in 2021-2023 are forecast to compensate the losses of 2020. Taking this into account, the effects of discretionary policy measures on general government finances, excluding expenditure directly related to the Covid-19 epidemic were slightly positive in 2020 and 2021, indicated by the blue bars in Figure 4.1.4. While Covid-19-related spending decreases in 2022, discretionary measures seem to counterweight some of the effect on the general government balance.

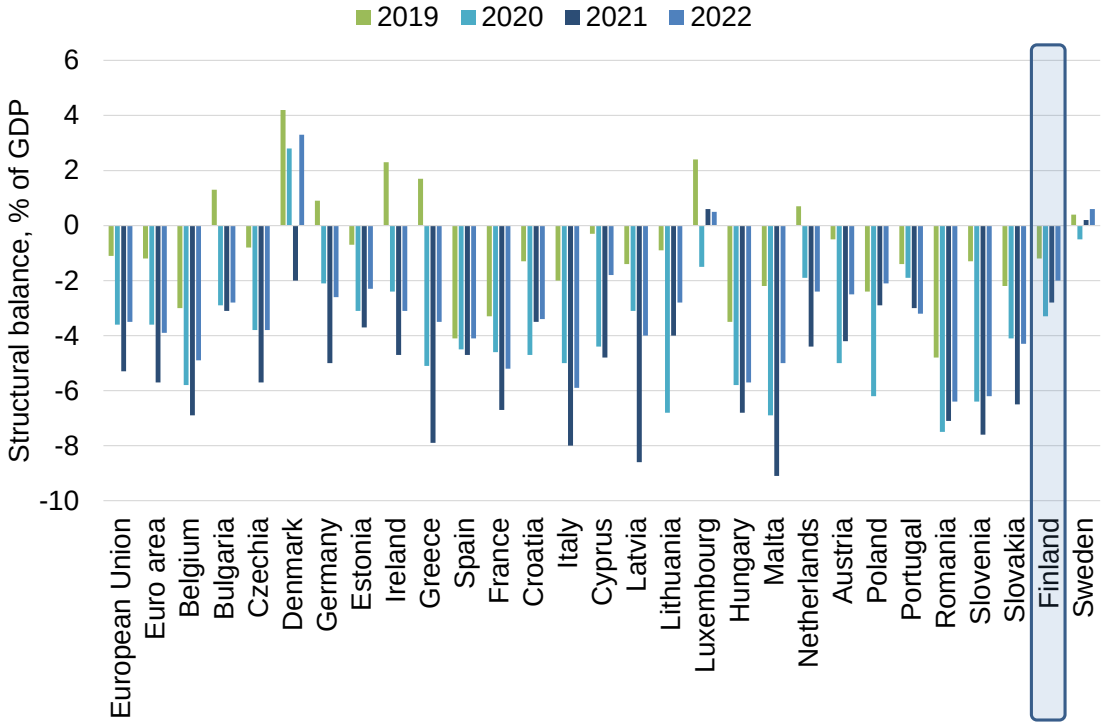
Figure 4.1.4. Decomposition of the change in general government net lending.



Sources: Statistics Finland, Ministry of Finance winter 2021 forecast and EPC calculations.

As the Covid-19 crisis had less impact on the Finnish economy than on most European economies in 2020, the need for a fiscal response was smaller in Finland. On an EU-wide comparison, the discretionary response, measured as the worsening of the structural balance, was smaller than in most EU countries. Also, the Finnish structural balance is forecast to remain one of the smallest in the EU in 2021-2022.

Figure 4.1.5. Structural balances in the European Union.



Source: European Commission, Autumn 2021 Forecast.

4.2. The government's objectives and fiscal rules

The economic policy of the current government aims at increasing wellbeing and prosperity. The key economic policy objectives for the government term are listed as:

- To raise the employment rate to 75% by the end of 2023 and the number of people in employment by a minimum of 60,000.
- To balance Finland's general government finances in 2023, given normal global economic circumstances.

- Government decisions to decrease inequality and narrow income gaps.[12]
- Government decisions to put Finland on a path towards achieving carbon neutrality by 2035.

The government programme appears to suggest that the economic objectives are structural in nature. This makes the aim of balancing the general government finances appear to be a target for the structural balance, albeit relative to the world economy instead of the more usual domestic business cycle conditions. Despite the adverse economic developments in 2020, the government has not withdrawn its economic objectives. Obviously, the global economy was not in a normal state in 2020 and will not be so in 2021, but according to current forecasts most European countries, including Finland, will reach normal growth rates and their previous growth path in 2023.

The government decree on the General Government Fiscal Plan requires the government to set and update annual target paths for the main public finance indicators, e.g. the general government debt-to-GDP and deficit-to-GDP ratios and net-lending targets for all sub-sectors of general government. In 2019, these targets were set according to the government's programme, i.e. so as to lead to balanced general government finances. In 2020 these targets were not set, which is quite understandable. The target path should be in line with a medium-term budgetary objective (MTO) for the structural balance, which the government set at -0.5% of GDP in 2019. In the General Government Fiscal Plan for 2022-2025, published in May 2021, the government set the sub-sectoral targets so as to maintain general government net lending at -1.75% of GDP. The government decree states that in exceptional times these targets can be set such that they do not lead to attainment of the MTO. As the economic situation is about to normalize, these targets should also be revised accordingly.

Under current rules, the required speed of fiscal adjustment towards the MTO depends inter alia on the business cycle and on the debt-to-GDP ratio. While 2020-2021 are considered to be an exceptional period when previously set rules do not apply, ideas should already be formulated regarding the required adjustment towards the MTO. According to the latest forecast, the structural balance will slightly weaken in 2022 and start to strengthen in 2023, but the

[12] The income gap is defined as the gap in income between different income groups, e.g. between the top 20% of income earners and the bottom 20%.

speed of improvement will slow from 2024 onwards, leaving the structural balance to -1% of GDP, i.e. far from its target. In its previous reports, the EPC has commented that the MTO target should be set at a level tighter than -0.5% of GDP to support fiscal sustainability.

While the objectives set in the government programme appear precise, the reference to the normal state of the global economy makes this target hard to define. Recent downswings and upswings in world economy make an assessment of the actual goals difficult, see section 2.3. As stated in the General Government Fiscal Plan for 2022-2025, the government is not aiming at balanced public finances by 2025. Attainment of the fiscal and employment targets is also constrained by the statement that policy aims include decreasing inequality, narrowing income gaps, and putting Finland on a path towards achieving carbon neutrality by 2035.

Finland's fiscal policy rules are adopted from the rules of the Stability and Growth Pact. Roughly speaking, these EU rules aim to ensure that net borrowing is no greater than 3% of GDP and that the debt-to-GDP ratio remains below 60%. The rules are technical in nature and only give guidance once problems begin to escalate – e.g. if the debt-to-GDP ratio exceeds the 60% threshold, it should be put on a downward path so as to reduce excess debt by 1/20 annually. It should be emphasised that the Stability and Growth Pact does not preclude increasing the level of permanent expenditure or the size of the public sector. The purpose of the rules is to ensure that increases are achieved in a fiscally sustainable way that does not lead to sudden jumps in the deficit.

On 20 March 2020, the European Commission published a communication in which the general escape clause of the Stability and Growth Pact was activated based of the severe economic downturn caused by the coronavirus outbreak. On 3 March 2021, the Commission's communication on fiscal policy clarified that the decision to deactivate the general escape clause should be based on an overall assessment of the state of the economy, the level of economic activity in the EU compared to pre-crisis levels being the key quantitative criterion. On the basis of the Commission's Spring 2021 Economic Forecast, the general escape clause is expected to be deactivated as of 2023. In Finland, parliament approved emergency legislation on 18 March 2020, and on 20 March 2020 in the proposal for the first budget amendment the government announced that under the circumstances the budget ceiling

framework would not limit central government expenditures in 2020. For 2021, the ceiling framework was reactivated with exceptions, see section 4.3.

In 2021, the debt-to-GDP ratio went above 70% and is not expected to stabilise in the medium run as increasing age-related costs are weighing on Finnish public finances. The EU-rule framework is currently under review, and while it seems likely that the reference values of the 3% net borrowing-to-GDP ratio or the 60% debt-to-GDP ratio are not going to be changed, they could be modified to fit the current understanding of long-run prospects. For example, the 100% debt-to-GDP reference value would be consistent, in a steady state, with the 3% deficit limit and a 3% nominal growth rate.[13] As a result, there will be pressures on Finland to decrease the GDP shares of general government deficit and debt. While there is also agreement that the Finnish public sector has a considerable long-run sustainability problem, there is no consensus on what fiscal policy actions are required to tackle it. Addressing this lack of consensus would help the government set short- and medium-term targets in a way that would support the needed strengthening of public finances. A broad consensus is needed to help avoid using any fiscal space created by possible consolidation for politically motivated short-term spending.

[13] For a discussion see e.g. Francová et. al (2021).

Box 4.1. Effects of Public debt on the economy

The fiscal cost of public debt is currently very low in Finland. Economics literature suggests that, even in the absence of fiscal costs, public debt may have welfare effects in an economy that is not over-accumulating capital like Finland today. According to a review by Puonti (2022), empirical studies that provide country-specific results point to a turning point beyond which public debt becomes harmful that is lower than the current Finnish debt-to-GDP ratio of 69%. Not only the debt ratio but also the debt trajectory are found to matter for growth. High and rising debt ratios are found to be detrimental to growth, but the effect is weaker or even vanishes when the ratios are declining. From this perspective, the upward trend in Finland's public debt ratio constitutes a risk factor for long-run economic growth.

Both national savings and productive investment are needed to increase national income and potential output in future. Deficits, in both the public and the private sector, can boost the economy in the short run by increasing aggregate demand. In the long run, lower aggregate saving can reduce economic growth via slower capital accumulation. Puonti (2022) lists research-based evidence of high public debt leading to private sector dissaving, a reduction in private investment and lower capital accumulation. The crowding-out effect is likely to be more pronounced in a country with a high portion of domestic debt as domestic debt purchases displace productive investment in the country (Broner et al. 2013). On the other hand, a large portion of external debt subjects the country to the risk of a sudden halt in financial flows (debt overhang).

As Puonti (2022) notes, that the relationship between debt and growth is complex and depends on country-specific characteristics that may change over time, providing support for country-specific debt limits or rates of debt reduction. A country's fiscal limit depends on the overall range of fiscal institutions prevailing in the country, with fiscal expectations and credibility integral elements of these, see e.g. Leeper et al. 2011, Ahlborn and Schweickert 2017. By committing to a fiscal plan, the government can reduce uncertainty, contribute to a good investment climate, and thus increase its fiscal leeway. High public debt creates expectations about future tax increases and increases uncertainty about public sector performance, reducing incentives to save and invest. By being informative about its fiscal plans and respecting fiscal institutions, the government can anchor expectations and create a stable investment climate. The Finnish budgeting framework and the EU's common fiscal rules are part of these fiscal institutions in Finland.

According to the risk-management view of public debt, by reducing debt today, government can prepare for unanticipated events requiring significant public borrowing in the future. By reducing the debt burden, government can contain the distortionary effect of taxation required to service the debt. Reducing debt in an economic upturn, when private demand is strong and when monetary policy is accommodative, results in fiscal policy that is optimal both in the short and long run, minimising the potentially harmful effect of fiscal consolidation on economic growth. Policies and structural reforms boosting economic growth allow the debt ratio to decline through economic growth, reducing the need for fiscal consolidation.

Public debt is discussed in more detail in the background paper by Päivi Puonti (2022).

4.3. Central government spending limits and budget decisions

Central government on-budget spending, i.e. spending by ministries, government institutions and agencies, is partly constrained by spending limits.[14] The spending limits cover about 80% of budgetary items, and do not apply to expenditures that depend on cyclical conditions, interest on central government debt, financial investment expenditure, and expenditures related to transmitted payments and external funding contributions. Changes in the criteria for cyclical expenditures are included in the spending limits, e.g. unemployment benefits, housing allowances and basic social assistance. Excluded from the ceiling is the compensation paid to municipalities for tax policy changes that affect their revenue, e.g. changes in the bases for labour or income taxes.

The government updated the rules on the spending limit framework for the new government term in 2019. While the main set of rules remained unaltered, two additional items of flexibility were added to the spending limit: 1) the option to increase central government spending by EUR 500 million in two subsequent years if the economic situation is exceptional, and 2) the option to use any remainder on one-off expenditure items in the following year,

[14] Central government spending that is not included in the budget consists of spending by universities and Yle (the Finnish public broadcasting company), spending by limited liability companies controlled by central government and operating outside of the financial markets, and spending by funds owned by central government.

assuming that the spending limits have not been completely exhausted by supplementary budgets.

In spring 2020, the government announced that under the circumstances the budget ceiling framework would not limit central government expenditures in 2020. The severe downturn in 2020 also required the flexibility clause (exceptional situation mechanism) to be activated. As a result, the spending limits for 2021 and 2022 were increased by EUR 500 million instead of increasing the limits in 2020. The reasoning was the growing need for one-off spending related to Covid-19 and the economic downturn. The business cycle is currently forecast to normalise by 2022, leaving scant justification for the additional support for aggregate demand of EUR 500 million in 2022.

The government's proposal for central government budget for 2021 was in deficit by EUR 11.7 billion, with decided expenditure of EUR 65.2 billion. During the year the government made four amending budgets, and the following gives a rough overview of the contents of these, see also Table 4.3.1, which lists the budgets as approved by parliament. In the first amending budget the government increased expenditure by EUR 394 million, of which increases in social and healthcare spending amounted to approximately EUR 150 million and expenditure related to Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU) amounted to EUR 130 million. Other increases were mainly related to Covid-19 and to purchases of vaccines. The tax revenue estimates for 2021 were revised upwards.

The second amending budget increased central government expenditure by EUR 277 million, containing an aid package of EUR 225.86 million for the culture, sports and events sector and an additional appropriation of EUR 40 million to cover costs for the restaurant closure policy.

The third amending budget increased expenditure by EUR 2171 million, including expenditure increases under the Recovery and Resilience Plan of approximately EUR 117 million. There was also a total of EUR 92 million to pay for expenditure on measures financed by the European Agricultural Fund for Rural Development (EAFRD). Additional funding for the EAFRD recovery instrument is entirely financed by the EU. The supplementary budget contained numerous expenditure additions, the largest of which were the following: an increase of EUR 223.5 million is proposed for the acquisition of Covid-19 vaccines, funding for the Finnish Border Guard was increased by EUR 120 million to cover the cost of acquiring coastguard vessels, EUR 257 million to capitalise

the Finnish gas network company Suomen Kaasuverkko Oy , and a transfer of EUR 650 million to the State Guarantee Fund for the capitalisation of Finnvera Plc's export guarantee and special guarantee activities. The revenue forecast was decreased by EUR 185 million.

The fourth amending budget contained an updated forecast with revenue EUR 1.9 billion higher, social security expenditure EUR 242 million lower, renewable energy generation subsidies EUR 40 million lower due to increases in energy prices, and loans for research and innovation EUR 80 million lower due to reduced demand. These decreases were partially offset by various smaller increases in spending. As a result, total expenditure was EUR 249 million lower.

Table 4.3.1. Central government budget expenditure and revenue estimates for 2021

Budgets approved by parliament, EUR million	Revenue	Expenditure	Balance
Approved budget for 2021	53 503	65 245	-11 743
1st amending budget	+415	+394	+21
2nd amending budget	-9	+277	-286
3rd amending budget	-185	+2 171	-2 357
4th amending budget	1 924	-249	+2 172
	55 647	67 839	-12 192

Sources: Ministry of Finance and Parliament.

The spending limits for 2021 were set at EUR 50.9 billion in spring 2020, including supplementary budget provision, unallocated reserve and provision for future-oriented investments. After that, the spending limits were increased due to one-off and compulsory fiscal expenditure needs arising from the coronavirus situation, due to the exceptional situation mechanism and due to minor structural corrections and changes in price forecasts. The fourth amending budget set expenditure inside the ceilings at EUR 53.1 billion and expenditure outside the ceiling at EUR 14.7 billion.

In spring 2021 the spending limits were increased by EUR 900 million for 2022 and by EUR 500 million for 2023. As part of the package, expenditure of EUR 370 million under the spending limits will be reallocated permanently from 2023 onwards. The increases in spending limits were motivated by the revised policy stance – the government is targeting a gradually decreasing

spending path. Government expenditure was increased in 2020 and 2021 directly due to Covid-19-related spending and other support measures. As these spending items will not be needed on the same scale in 2022 or 2023, there is scant justification for the extra spending in 2022 and 2023 from a business cycle perspective.

Also, the increase in spending limits goes against the principles of the government's own spending limit rules. The purpose of the spending limits in central government finances is to limit the total amount of expenditure to be financed by taxpayers. The Finnish spending limit framework has been used in different contexts – e.g. in relation to the EU's fiscal policy coordination procedure –as an example of a well-functioning fiscal policy rule. Keeping growth in public expenditure under control reduces concerns over sudden adjustments in fiscal policy. Such concerns could hamper the decision-making process of economic agents. While there were good reasons to use resources on healthcare or to increase expenditure in 2022 and 2023, placing items outside the spending limits and extending the limits means that there was no need to displace any other spending items. Finland's spending limits are by their nature a political agreement and there is a good chance that exceptional political circumstances will materialise in future too and that the path that has now been opened for an increase in the tax burden will also be utilised in future.

In the budget bill for 2022, the government proposes expenditure outside the spending limits of EUR 12 billion and expenditure inside the ceilings of EUR 52.8 billion. The expenditure ceiling also includes EUR 300 million of supplementary budget provisions, and EUR 117 million of unallocated reserves. Compared to the spending limits agreed in 2019, the spending limits in 2022 are increased by EUR 900 million, as noted above, and by EUR 500 million due to the exceptional situation mechanism. However, spending on future-oriented investments is EUR 507 million lower than originally planned.

The third amending budget for 2021 increased investments under the Recovery and Resilience plan by EUR 3.76 million. The draft budget for 2022 proposed appropriations and authorisations totalling EUR 1.2 billion to implement the Recovery and recovery Plan, of which approximately EUR 636 million was budgeted as appropriations for 2022. Payments from the EU to Finland's central government will be based on the progress of the national plan and achievement of the milestones and objectives set. Revenues from the

RRF will accrue more slowly than the use of appropriations. Finland's contribution to repayment of the RRF of EUR 6.6 billion, indexed at year 2018 prices, will be payable between 2028 and 2058.

In 2019 the government launched a future-oriented investment programme of temporary spending of up to EUR 3 billion in 2020-2022. The package was an incongruous collection of items for different ministries. The EUR 750 million for 2020 was divided up amongst 85 separate items, with the median allocation being only around EUR 3 million. The use of funds in 2021 was decided in two parts, in 2019 and in the budget proposal for 2021. The total use of funds, EUR 785.1 million, was about EUR 450 million lower than planned in 2019. The biggest spending items were related to education at all levels and support for R&D&I activity, but also to development cooperation. The largest funding themes in the future-oriented innovation package in 2022 are education and supporting preparation of the health and social care reform. In 2022, the package amounts to EUR 466 million, over EUR 0.5 billion less than originally planned. Total spending on the 'future-oriented investments' package in 2020-2022 is EUR 2 billion. In 2020 the remaining reserve was decided to divide up so that it could also be used on 'other measures motivated by structural and business cycle policies.' In the General Government Fiscal Plan for 2022-2025, it was decided to transfer EUR 366.8 million of that reserve as a timing change to cover 2023 expenditure.

Overall, many of the items included in the package do not bear close resemblance to investments. While spending on some items may be beneficial in the long run, it is misleading to label the entirety as an investment package. The largest spending item is education, and it is not clear why this should be financed temporarily for 2020-2023 only. The package was intended to be financed through asset sales. According to the budget for 2022, income from dividends and sales of shares will be EUR 2.4 billion in both 2021 and 2022, which is more than was spent on the package. As the package seems to consist of spending items, instead of investment items, it has decreased the net wealth of central government. Decisions concerning the size and composition of the central government financial asset portfolio should be made separately, based on considerations such as whether government ownership may alleviate market imperfections.

4.4. Council views

Although the recovery in 2021 was faster than expected, the accommodative fiscal policy stance for 2021 can still be regarded as appropriate. The economy has been recovering from a fairly deep crisis and has performed below its long-term potential.

Downside risks in the global economy are still substantial due to the ongoing Covid-19 pandemic and new variants. In its 2020 report the EPC emphasized the need for appropriate fiscal space, which is needed to provide support during crises. The developments in 2021 have further underscored the importance of having adequate fiscal space.

The prospects for 2022 appear, however, relatively promising. The output gap is expected to be closed and unemployment to reach values close to its equilibrium level. While the fiscal policy stance for 2022 is less expansionary than it was in 2020-21, it will still increase aggregate demand. Under normal circumstances fiscal policy stance could be regarded as too loose. A risk of lower than expected growth, however, can motivate an accommodative fiscal stance for 2022. It would still be useful if the government could communicate the reasons for the fiscal policy stance in a clear manner.

Current forecasts depict large fiscal deficit for years after the current government term, which worsens the sustainability of public finances. In order to mitigate the negative fiscal consequences, any new measures, deemed necessary to support firms and the economy, should be well targeted.

Similarly as before the crisis, Finland's general government budget has a structural deficit, but public debt levels have increased. One should therefore start gradually consolidating public finances. The adjustment does not have to be immediate, but its speed should pick up from what the government is planning. A clear plan for fiscal adjustments starting from 2023 should be prepared.

The government decision to raise the spending ceiling amid of its term erodes the credibility of this mechanism – which has performed well earlier – to act as a fiscal anchor and spending restraint. Instead, the government could have sought to make fiscal space for new spending needs also by cutting some other government expenditure. The crisis has also increased the importance

of credibility in fiscal policy, because of e.g. the need to keep borrowing costs at bay.

Changing economic conditions – chief among them the need to finance green transition – also require investments by the public sector. One consequence of this is that other expenditures should be scrutinized, to make space for climate action.

The deficit in the local government sector is expected to continue. This fact, together with the transition costs related to health-care regions, will require attending to in the coming years.

5. Fiscal sustainability and fiscal risks

Fiscal sustainability is broadly defined as the ability of a government to maintain its current spending, taxation and other policies without threatening insolvency. In countries facing an acute debt crisis, insolvency, or an inability to borrow funds to cover a budget deficit, the lack of fiscal sustainability is a very immediate problem. Although the debt-to-GDP ratio has risen rapidly, this is currently not the case for Finland, as the government is able to borrow at very low, even negative, interest rates. For Finland the problem is fiscal sustainability in the longer term.

In the medium term, the debt-to-GDP ratio is expected to increase further without corrective decisions. Alongside the growth in age related expenditure, private and public finances will be burdened by the costs from actions needed to combat climate change. A well-managed green transition could benefit the Finnish economy, but inappropriate policy choices may prove costly.

In this chapter we discuss several topics related to fiscal sustainability: the general government balance sheet and short-term risks, medium- and long-term fiscal sustainability, and details of the government's sustainability roadmap. We also discuss the relation between climate change and fiscal sustainability.

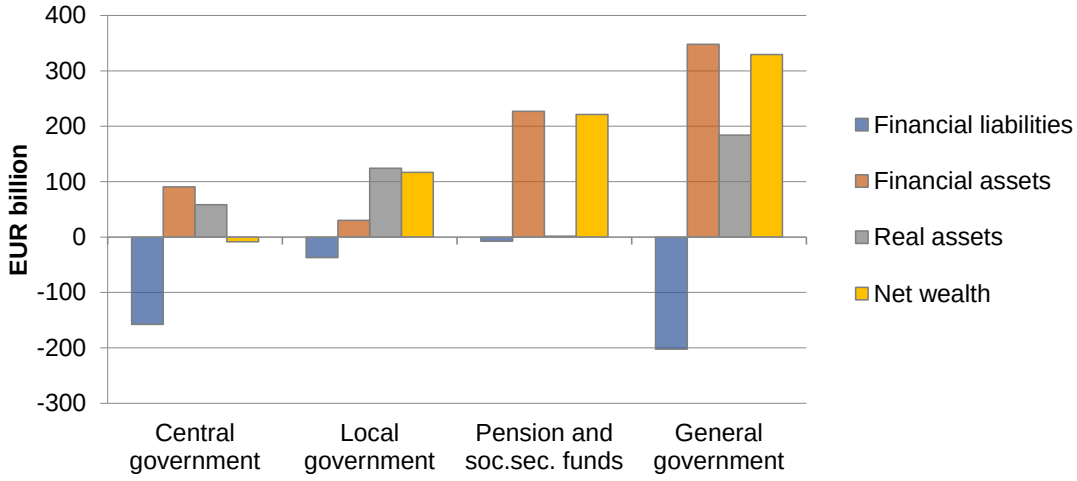
5.1. General government assets and liabilities

Fiscal sustainability is determined by the accumulation of assets and liabilities in the past, and assumptions about how these assets and liabilities will evolve in the future. Government decisions that have an immediate effect on its assets and liabilities also influence future expenditure and revenue flows.

In Finland, pension funds are defined to be part of the general government. As a result, the value of general government financial assets exceeds the market value of government financial liabilities, i.e. the general government net debt position is negative. In 2020, the total value of general government financial assets was approximately EUR 350 billion, while the total value of gross debt and liabilities was EUR 202 billion. Most of the financial assets are held by pension funds and have been accumulated to cover the funded part of accrued pensions.

General government real assets consist mostly of land, buildings and structures. Almost two thirds of these real assets are owned by local governments and one third by central government. General government net wealth, the sum of financial assets and liabilities and real assets, was almost EUR 330 billion in 2020, see Figure 5.1.1. General government net worth, defined as net wealth plus pension liabilities, is below -200% of GDP.

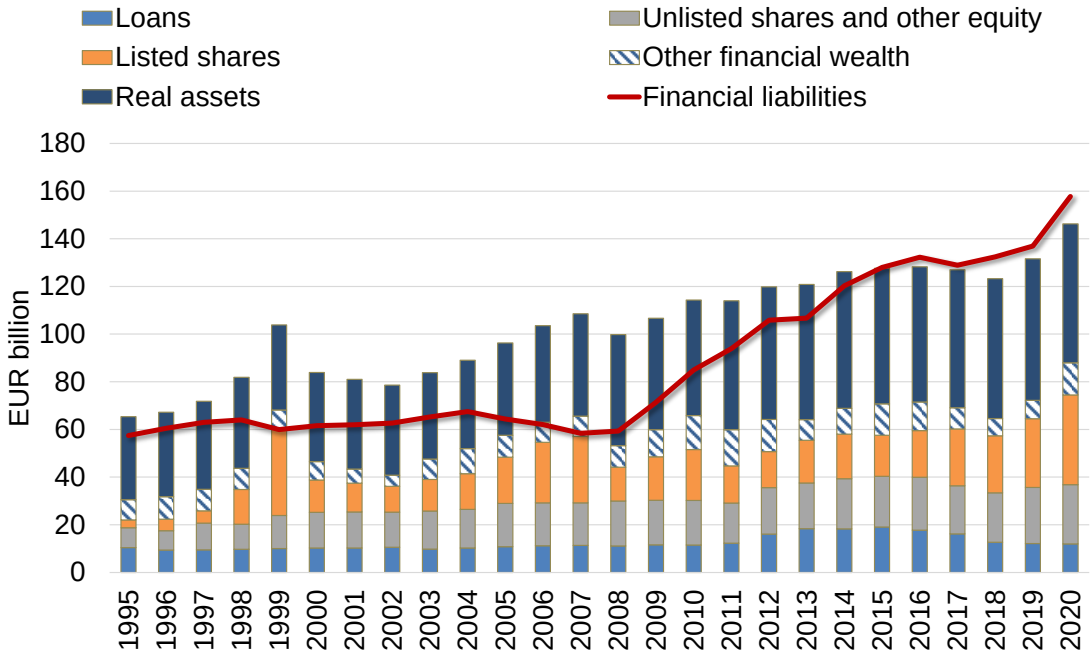
Figure 5.1.1. General government wealth in 2020.



Sources: Statistics Finland and EPC.

Figure 5.1.2 charts the evolution of the stock of central government financial and real assets and financial liabilities. After being rather stable at EUR 60-70 billion in the 2010s, central government financial wealth increased to EUR 88 billion in 2020. Central government real wealth declined in 2020. The figure also shows the deteriorating net financial position of the government sector from positive net wealth of EUR 7.2 billion in 2007 to negative net wealth of EUR -70 billion in 2020. The net wealth of central government turned negative in 2015.

Figure 5.1.2. Central government financial and real assets and financial liabilities.



Sources: Financial Accounts by Statistics Finland and EPC.

The value of the stock of shares owned by central government tends to vary annually as the market value of listed companies varies. The government earns dividend income from these companies and may sell some or all of the stocks it owns. The listed shares owned by the central government are either under the direct control of the Prime Minister's Office or controlled by the special holding company Solidium, which is a major shareholder in 11 listed companies. If a company is considered to be of strategic interest, the government typically wants full or at least partial control over its decision-making. Such control can be exercised by holding sufficient voting power at the company's shareholder meetings. Selling assets reduces this voting power.

However, private equity holders may see risks in government ownership in that company decisions are steered in directions that are not compatible with their best interests, which could then adversely affect the company's market price. In autumn 2021 the government transferred its ownership of shares of SSAB Ltd, a Nordic steel-producing company, from Solidium to the Prime Minister's Office, possibly indicating its intention to use its voting power to speed up the green transition in Finland. The possible market effect of such potentially adverse ownership policy is an example of the hidden incidental costs of policies for the green transition, see section 5.2.

The current government has indicated that it will sell financial assets to finance its programme of increased temporary expenditure in 2021-2022. The sale of assets amounted EUR 2.4 billion in 2021, equalling the budgeted amount for 2022. In terms of net wealth, the sale of assets is only neutral if the revenue from sales is used to finance investments in real assets. So-called 'future-oriented investments' do not accumulate real assets in full, meaning that net wealth will be even more negative in the future. Any deficit must at least initially be financed through new debt or by selling assets, i.e. by a reduction in net wealth.

5.2. On the fiscal consequences of climate change

In the current discussion and in the political decisions made in the past few years national action to mitigate the effects of global warming has focused on emission taxes and public expenditure, or at times subsidies for so-called greener production. However, climate change per se will eventually have an impact on public budgets on both the expenditure side and the revenue side. This subsection discusses the fiscal consequences of policies to mitigate and to adapt to global warming and climate change, especially from the viewpoint of fiscal sustainability.

In principle, the government intervenes in markets to resolve market failures and to provide efficient allocation of resources. While decisions in markets have apparently followed the increased awareness and changes in general attitudes towards climate change, the acceleration of the mitigation process through public interventions also seems to be necessary. The choice of the optimal mix between adaptation and mitigation is difficult as the mitigation of global warming suffers from a free-rider problem, as noted in the Finnish public discussion, whereas adaptation costs and benefits are often very local. Finland, however, follows international and EU agreements on cutting emissions, on top of which there are national targets. Hence both mitigation and adaptation are needed.

In general, public intervention to mitigate climate change can be considered as re-allocation of resources, from undesired activity to activity that does not accelerate climate change. As mitigation and adaption are likely to continue for a long time, one conclusion is that climate change will increase the allocative role of the state. Currently, at least in Finland, we are in a situation where

policies are focused on the mitigation of global warming, but as global warming continues, we will need to start adapting to it, which will require different policies and have a different impact on fiscal outcomes. One has to note that mitigation policies may increase inequalities through increasing the price of energy and basic goods, thus compensation via other tax and transfer policies will probably be needed.

The Climate Change Act (609/2015) sets out the planning system for climate change policy, consisting of the following parts: 1) a long-term climate change policy plan; 2) a medium-term climate change policy plan based on the projections and goals of the long-term plan; 3) the national adaptation plan for climate change. The purpose of the planning system for climate change policy is to determine the reduction targets for greenhouse gas emissions and the goals of adaptation to climate change, as well as the measures required to reach these goals and targets in different administrative branches, as provided below in more detail. The long-term plan for climate change policy and the national adaptation plan for climate change should be approved at least once every 10 years. The government must approve a medium-term plan for climate change policy once per electoral term, by the government.

According to the national adaptation plan for climate change, see Ministry of Agriculture and Forestry (2014), extreme weather events such as floods and storms are the most likely situations to have to adapt to. In the short term, climate change may have positive effects for some industries in Finland, for example, by enabling the use of more productive and sustainable varieties in agriculture and forestry, reducing the need for heating or health risks due to cold. On the aggregate level, these small benefits will be offset by the costs of appropriate increases in climate risk management. Also, the potential positive effects of climate change in Finland could turn negative if climate change is not successfully contained. For example, the risks of cereal production in Finland increase significantly if the climate is more than 4 degrees warmer than today.

Both the risks and the costs and benefits of adjustment actions may be distributed unevenly among different groups in society. For example, Känzig (2021) finds that tightening carbon pricing regimes leads to a significant increase in energy prices, a persistent fall in emissions and an uptick in green innovation, but it also leads to a temporary fall in economic activity, which is not borne equally across society. His research suggests that poorer households lower their consumption significantly, while richer households are less

affected. Within the same region, climate change can affect different kinds of livelihoods in different ways. It is important that adaptation measures are assessed and selected based on an overall impact assessment. Including adaptation as part of the normal functioning of the economy can save costs and offer opportunities. If no adjustment action is taken or it is done in isolation, the costs could become significant in the long run. Timing adjustment efforts in a way that is economically effective requires combining the best available natural and economic information and looking at the costs and benefits over time.

The first medium-term climate change policy plan was approved in 2017 and the second was still under preparation by the Ministry of Environment at the end of 2021. The medium-term climate change policy plan will be updated in such a way that it meets the government's objective of carbon neutrality in Finland by 2035.

The government's mitigation policies are often motivated by different market failures, e.g. asymmetric knowledge of negative externalities, where private markets do not opt for an efficient level of mitigation. Some Finnish mitigation policies have taken the form of fiscal instruments, like CO_2-based taxes and subsidies for green investments or consumption, but there have also been restrictions, quotas, or output reduction targets. According to an analysis by Acemoglu et al. (2012), optimal environmental regulation should always use both an input tax to control current emissions and research subsidies or profit taxes to influence the direction of research towards cleaner technologies. Using incentive taxation as a normal source of revenue will lead to problems when the changes brought about in the economy lower tax revenue. Also, increases in expenditure due to possible subsidies are more acceptable when they are at least partly financed by incentive taxes and do not thus displace other expenditure. There are also market-based instruments like emissions quotas and trading systems that influence actors' behaviour by affecting their economic incentives. The behaviour of the economy can be altered, for example through regulation that bans undesired technologies or regulation that makes using certain desired technologies mandatory. The direct budget effect of these is marginal as the private economy bears the costs, while possible dynamic effects on revenue and expenditure are difficult to assess.

Assessing the total fiscal impact of mitigation policies to reduce emissions to a given extent is difficult without knowing the composition of the policies selected. As argued above, policies that yield the same outcome can be done

through public finances or through direct legislation. Also, some policies can be complementary, e.g. an incentive tax may induce changes in behaviour but regulation might be necessary to direct these changes in the desired direction. As the global warming process continues and technology develops further, searching for the optimal policy mix can become an iterative process that has to take into account not only environmental and growth outcomes but also equity and welfare issues. Equity considerations have already emerged in Finland in the form of a discussion on the future of peat fields and forestry policies.

Direct adaption measures may include e.g. investments in the construction of new infrastructure or investments protecting existing ones and, if disaster strikes, relief and reconstruction efforts. Estimating the costs of adaptation is challenging as the effects of climate change may vary according to region even in Finland, and most of the economic impacts stem from international linkages or channels, such as supply chains or the financial markets. Increased risks of disruption in the global economy due to climate change may increase the need for domestic macroeconomic stabilisation policies in the future. As global warming has already begun, some amount of adaptation could already be necessary. It is also often argued that climate change may reduce some of the costs faced in Finland, thus reducing adaption costs.

The fiscal impacts of mitigation have been realised at the EU level, with agreement reached on extra spending on the Next Generation EU package, which also includes fiscal measures to promote investments in the green transition. In some discussions the package is seen as a post-Covid recovery package. While long-term structural change cannot be achieved in the aftermath of a short recession, the implementation of the necessary policies and changes may become more affordable when the resources required are not deployed elsewhere. In the future, spending on the required mitigation and adaption policies may be used to stabilise economic fluctuations.

The impact of climate change on the economy has two components: “physical risks”, i.e. the consequences of the environmental impact, and “transition risks”, i.e. the consequences of policies aimed at mitigating climate change (Batten, 2018).

Mitigation and adaptation policies re-allocate resources and change economic structures, which will require changes in the tax structure. Also, changes in investment due to global warming may reduce investments in productivity

growth, and rapid changes in industrial structures tend to increase frictional unemployment.

The European Commission's 2019 debt sustainability monitor (2020) divides the fiscal impacts of climate change into non-discretionary and discretionary measures, see Table 5.2.1. The discretionary measures category covers the effects of the adaptation policies and mitigation policies discussed above.

Table 5.2.1. Fiscal impacts: non-discretionary and discretionary measures.

Non-discretionary measures and effects	Discretionary measures
Public spending to repair damage	Adaptation policies
Social transfers to households affected by severe events	Public investment in infrastructure
Materialization of state quarantees	Adaptation subsidies
	Rainy day funds
Reduction in tax revenue	Mitigation policies
Increases in healthcare spending	Carbon taxes and emission trading
	Public subsidies for green transition

Source: European Commission (2020)

It would be appropriate to discuss the risks posed by global warming in central government risk reports. Possible risky items could include the costs of risk-sharing of climate-related events that could affect the national economy directly or indirectly through the impact of contingent liabilities. An example of such a report is risk and fiscal sustainability analysis by Office for Budget Responsibility (2019).

Global warming introduces a growing level of uncertainty into public finances. Understanding the nature of related risks can help to prepare for them. Robust policies and flexibility are key to dealing with heightened uncertainty. Global warming may increase the risk of events emerging outside the economy, i.e. risks that cannot be directly controlled via regulation. As the transitory economic effects of the realisation of these risks are likely to be at least partly covered via public finances, i.e. debt accumulation, it might be appropriate to reduce the pressure to accumulate public debt for non-climate reasons and keep debt at sustainable levels. If the expected negative effects are of a permanent nature, there is even a stronger argument to avoid unsustainable growth in public debt.

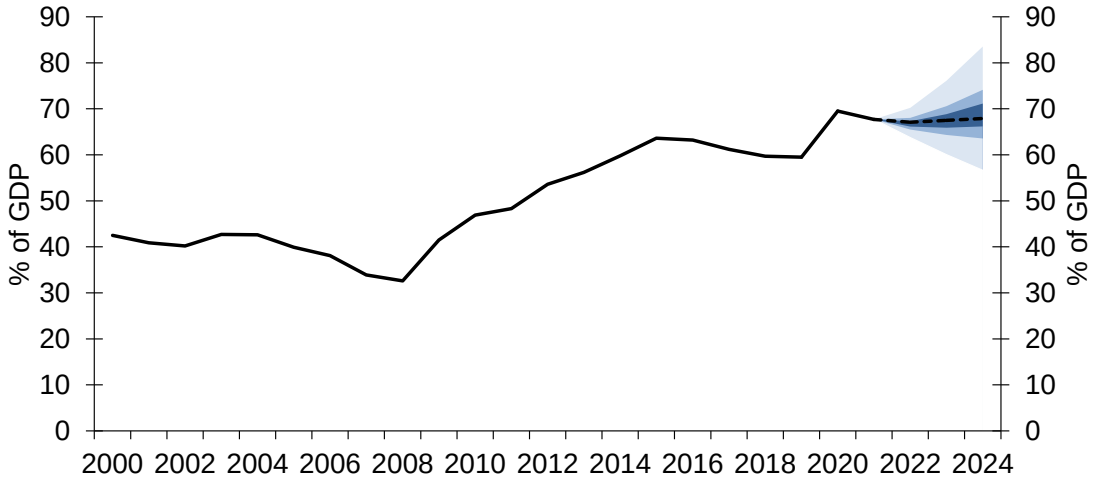
5.3. Fiscal risks

Sound public finances are necessary in normal times to stabilise the economy and to help the economy recover from particularly difficult times. Changes affecting the public sector balance sheet can hinder the government's ability to fulfil these functions. With appropriate fiscal risk management, public finances can be made more robust. Fiscal risk management should also be considered when formulating fiscal rules. From the viewpoint of fiscal risks, there should be a target for fiscal space to ensure that the risks associated with central government expenditure and revenue can be faced without immediate problems in deficit financing.

Balance sheet risks arise because of events or changes in trends that affect assets or debt liabilities. These may also occur if the government takes on additional liabilities to finance private-sector entities, or if there are changes in the value of existing assets or liabilities. Recent capitalisations of Finnair Ltd and Finavia Ltd can be regarded as such events.

The main short- and medium-term risks associated with revenue and expenditure flows are macro risks, i.e. risks of unexpected economic events, domestic or international. In 2020 the Finnish economy experienced the realisation of macro risk in the form of a global pandemic. Current forecasts for 2022 also contain considerable downward risks. These exceptional risks surrounding economic forecasts were well communicated in the Ministry of Finance's winter forecast. The short-term outlook for general government finances is linked to the evolution of the pandemic and to the availability of vaccines. The macro risks can be illustrated e.g. with econometric models. Figure 5.3.1 presents a simulated forecast for the general government debt-to-GDP ratio based on previous data and statistical variance. Assuming no change in economic policy in 2022-2024, there is a 10% change that the debt-to-GDP ratio will exceed 80% in 2024.

Figure 5.3.1. Probability distributions of the government debt-to-GDP ratio in 2022-2024



Sources: EPC, based on Statistics Finland and policy forecast by Ministry of Finance.
Note: Black line represents the data and the forecast by Ministry of Finance. The tax ratio and nominal spending are assumed to be fixed in 2022-2024. The forecast for 2021 is considered as data. For more details see EPC (2018)

In 2020 state guarantees have risen as part of the business subsidies provided through guarantees by Finnvera.[15] In the second quarter of 2021, central government guarantees totalled EUR 62.7 billion, approximately 25% of forecast GDP. State guarantees are often used as a business subsidy as they are budget-neutral if the associated contingent risks are not taken into account. In 2021 the increased risks were noted and an appropriation to cover possible losses was included. It was decided that this appropriation would be outside the central government spending limits, i.e. the budgeting practice is not yet neutral between different ways of subsidising businesses. According to Finnvera (2021), Finnvera's Export Guarantee and Special Guarantee activities had to make provisions totalling EUR 1,222 million for loan losses for 2020 as a result of impairment of the macroeconomic forecasts and the risk ratings of individual risk items, but significant final losses have not been realised.

The simulation of fiscal risk presented above disregarded the interest rate risk. In previous years the Finnish economy has benefited from low market

[15] Finnvera is a government-owned specialised financing company and is Finland's official export credit agency (ECA). Finnvera provides guarantees against political or commercial risks associated with the financing of exports. Political risks are risks that arise from the economic or political situation in a country where a Finnish export company has customers. Commercial risks pertain either to the buyer or to the buyer's bank. The risk involved in the contingent liabilities of Finnvera and the Housing Fund of Finland is discussed in Junttila and Raatikainen (2020).

interest rates. The public sector's benefits from lower rates accumulate slowly as its debt is issued at different maturities, and lower rates apply only to new and refinanced debt. Accelerating inflation in the second half of 2021 was a reminder that the era of unusually low interest rates could be coming to an end. Higher than forecast interest rates would increase the effective interest rate rather slowly, as the effective rate decreases as long as new debt can be issued at a lower interest rate than debt that is redeemed. According to data from the State Treasury, in 2022-2027 redemptions of government serial bonds will amount to EUR 57.5 billion. The schedule presented in Table 5.3.1 shows that the amount of debt to be refinanced in the near future is running at interest rates that are above currently forecast market rates. Interest rates moderately higher than forecast would start to increase the effective interest rate from 2026 onwards.

Table 5.3.1. Amount of outstanding central government serial bonds and average coupon interest rate by year of maturity.

	Average interest rate	Amount, EUR billion
2022	0.81 %	10.35
2023	0.70 %	10.775
2024	1.11 %	9.015
2025	2.61 %	11.002
2026	0.34 %	9.675
2027	0.50 %	6.721

Source: State Treasury.

Higher interest rates would naturally directly increase interest rate expenditure. On the other hand, the interest rate affects the profit earned from financial wealth, which would balance out most of the effect of interest rate movements on the general government financial position.

5.4. Medium- and long-term sustainability of public finances

In previous sections we discussed the sustainability of public finances in the short term. While the short-term fiscal risk indicators do not suggest any immediate need for consolidation, there is also a need to look at the sustainability of public finances over a longer period. Using the long-term projections in the Ministry of Finance's sustainability calculations, we assess the sustainability of public finances over the period 2023-2035, i.e. over the following

three parliamentary terms. Public finances can be considered sustainable if there is no need for policy change over the period defined. In our analysis this translates into a required short-term consolidation that keeps the debt-to-GDP ratio on a path towards the 60% threshold level.

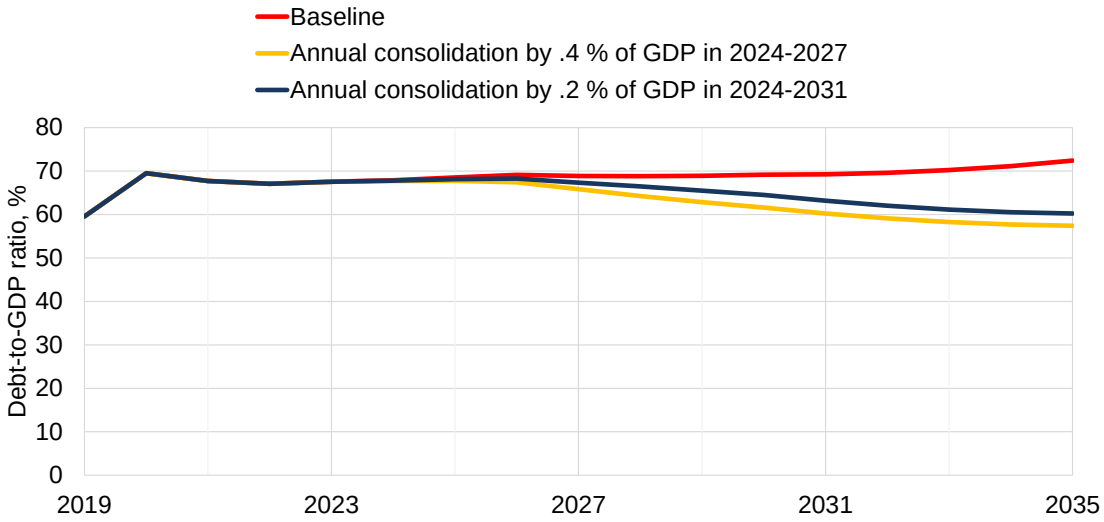
Figure 5.4.1 presents the results of our medium-term sustainability analysis. In the baseline projection, based on the long-term sustainability calculations of the Ministry of Finance and other information available in the MoF Autumn and Winter Forecasts, the debt-to-GDP ratio will reach over 80% by 2040. In the baseline calculations it is assumed that age-related expenditure increases in line with the population forecast, that interest expenditure on debt and revenue from financial wealth evolve according to the stock of debt and financial wealth, and that the GDP shares of other revenue and expenditure remain constant after 2024. The debt is assumed to increase gradually by EUR 5 billion in 2026-2030, due to funding the acquisition of fighter jets. In the years 2028-2058, too, central government will be burdened by the repayment of debt accumulated for the EU's RRF programme of EUR 6.6 billion.

Figure 5.4.1. presents two scenarios to give an overview of the required consolidation to reach different debt-to-GDP ratios. These calculations also take into account the effect of consolidation on GDP growth by assuming fiscal policy multipliers based on literature.[16] In the first scenario, the debt-to-GDP ratio reaches the 60% threshold over the next three parliamentary terms after annual consolidation of 0.4% of GDP in the years 2024-2027, i.e. in the next parliamentary term. This amount of consolidation, by EUR 3.8 billion in total, has adverse effects on economic growth and decreases the debt-to-GDP ratio at a faster pace than required by the EU's fiscal rules.

In the second scenario, the consolidation is milder and distributed across two parliamentary terms. A consolidation of 0.2% of GDP keeps the debt-to-GDP ratio on the required path towards the 60% threshold value. The required 0.2% of GDP would translate into almost EUR 0.5 billion of annual consolidation. Given the projected increase in age-related expenditures in the 2030s, the debt-to-GDP ratio will start to increase again after 2035, requiring further consolidation in both scenarios.

[16] Consolidation through changes in revenue and expenditure is assumed to affect the economy in a symmetric fashion, i.e. the simulations do not differentiate between different measures. The effect of gradual consolidation on GDP growth is small. Figure 5.4.1 is based on multiplier values of 0.85. For a discussion on fiscal policy multipliers, see e.g. Seuri (2019) and Ahonen (2020).

Figure 5.4.1. Putting the debt-to-GDP ratio on a downward path requires significant effort.



Sources: EPC calculations based on the sustainability assessment of the Ministry of Finance done in August 2021 and Ministry of Finance Winter Forecast 2021.

Although our medium-term analysis is based on the same prediction of increases in age-related expenditure as the long-term sustainability framework produced by the Ministry of Finance, the consolidation requirement is not fully comparable. It should also be noted that the purpose of these calculations is to demonstrate the difficulty of bringing down the debt-to-GDP ratio in the absence of unforeseen favourable economic developments.

The long-term sustainability gap indicates the permanent adjustment in the primary budget balance (as a percentage of GDP) needed to ensure that the present value of future taxes is sufficient to cover the present value of future expenditures (plus the cost of servicing existing net debt). The sustainability gap estimate depends on projected population growth and various other factors, and so needs to be regularly updated.

The Ministry of Finance estimated in autumn 2021 that the long-term sustainability gap is approximately 3% of GDP. The long-term sustainability gap, or in European Commission phraseology the S2 indicator, has four elements: future growth in age-related spending, future costs of existing public debt, structural primary deficit in the base year of the calculation and future changes in financial property income. The breakdown of the sustainability gap estimate is given in Table 5.4.1.

Table 5.4.1. Decomposition of the S2 sustainability indicator.

Present value of interest expenditure on initial debt	0.5
Primary deficit in base year	0.8
Change in capital income	-0.5
Changes in aged-related expenditure	2.0
S2 sustainability gap	**2.7**

Sources: Background material for the Ministry of Finance Autumn 2021 Forecast.

Reducing the primary deficit would directly improve sustainability gap. Closing the sustainability gap, fully or partially, through growth policies is not straightforward as economic growth, through growth in per capita income or through technological change, also tends to increase demand for services and the required quality of services. As a well-defined assumption of sustainability calculations, the unit cost of age-related services, as a share of GDP, remains fixed over time and changes in overall costs are caused by changes in the extent of services required. Although the current social and health care reform is not motivated by reducing the growth in age-related costs, considerations related to restricting the link between economic growth and healthcare costs should have more weight in future.

Because of its long-term nature, the S2 sustainability indicator should not be taken as direct policy advice. In the sustainability framework, if general government finances were consolidated by the amount indicated by the S2 indicator over the current government term, public finances would be in surplus and the debt-to-GDP ratio would be on a downward path. Increasing expenditure would eventually decrease the surplus, but the debt-to-GDP ratio would stabilise at close to 10 %. Any smaller consolidation would eventually lead to an infinitely increasing debt-to-GDP ratio, and any larger consolidation would lead to an infinite accumulation of wealth. The nature of these calculations is indicative.

These medium-term and long-term projections disregard all cyclical variation in the economy and can only be regarded as a yardstick, but they help us to identify the main problems in public finances. According to both the medium-term and long-term sustainability indicators, the main source of the unsustainability of Finnish public finances is the prevailing structural deficit as well as the accumulation of debt and rising costs due to increasing needs for publicly funded services.

To find solutions to this problem, the government launched an initiative to strengthen the sustainability of public finances. The initiative was launched

in the beginning of April 2020 and its goal was to prepare a so-called roadmap to define the potential of different policy measures in reducing the long-term sustainability gap. The first draft of the roadmap was published in autumn 2020 and included a list of possible areas for structural reforms. The required strengthening of public finances was then estimated to be EUR 5 billion, but on an unknown horizon and via unspecified measures. At the end of April 2021, the government published a revised version of the sustainability road map. The current objective is to reach an employment rate of 75% and contain the growth in indebtedness by the middle of the decade.

While the potential sources for strengthening public finances remained the same as in the June 2020 version of the document, they were a little more specific, and they were stated as:

- Increasing employment and reducing unemployment through decisions leading to an increase in employment of 80,000 persons, fiscal benefit of c. EUR 1-2 billion
- Strengthening the conditions for economic growth via increasing the GDP share of R&D investments to 4% by 2030, increasing labour immigration by 30,000 persons by 2030, increasing skills and continuous learning, fiscal benefit of c. EUR 1-2 billion
- Increasing the productivity of public administration via improvements in cost efficiency, fiscal benefit of c. EUR 1 billion.
- Cost reductions from the social and healthcare reform, fiscal benefit of c. EUR .4 billion

The recognised potential varies between EUR 3.5 and 5.5 billion. Completing the required strengthening of public finances of EUR 5 billion with the above sources would require their potential to be used to the full, making it appear somewhat unrealistic. There are also uncertainties associated with the timeline of the suggested reforms as the outcomes of structural reforms may take time to materialise. Although the government has introduced various employment measures, many of these measures are planned to come into force in 2023, leaving a relatively short time for their fiscal effects to accumulate. The growth effect of increased R&D spending is likely to be positive, but implementing it will cause fiscal costs in the short run. In spring 2021, government noted that according to assessment by the Ministry of Finance a fiscal effort of EUR 2-2.5 billion during the years 2024-2029 would turn debt-ratio into a decline by the middle of the decade.

Although the roadmap for strengthening the sustainability of public finances needs to be more precise, the Economic Policy Council welcomes the initiative taken for long-term planning. Finding ways to promote economic activity is particularly welcome. Many of the potentials recognised can be interpreted as fiscal stringency, as in principle they come down to using less resources for public administration and services. It is hard to sustain such measures over a decade, especially as this period includes two elections.

5.5. Council views

The Finnish economy still faces a significant sustainability gap. Solving this problem requires measures that bite in the long run, but the credibility of them is increased if these decisions are made early enough.

In the medium term, the debt-to-GDP ratio is expected to reach 80 per cent by late 2030s, without corrective action. An annual consolidation in the order of 0.2-0.4 per cent of GDP would be needed to stabilize the debt in the medium run.

While downside macro risks motivate a cautious approach to fiscal consolidation, they also imply that the sustainability issues become more prevalent. It is paramount to have sufficient fiscal space in future crises as well, which necessitates preserving fiscal sustainability.

The extent of contingent liabilities, already high in Finland relative to other countries in the pre-crisis period, has continued to grow. The accumulation of these liabilities is an addition to long-run fiscal risks.

Mitigation and adaptation to climate change will become costly. Well managed green transition could reduce these costs; however, wrong policy choices may induce further costs to public sector or to private sector. It would be suitable to discuss the risks raised by the global warming in central government risk reports.

Pressures towards spending on green transition and age-related expenditure will require reconsideration of current composition of public expenditure between investments and consumption. Savings could be sought from subsidies or tax exemptions that are not conducive to combatting climate change.

These developments underscore the need for a credible medium-term plan to improve fiscal balance. The EPC has previously suggested that this could be done through parliamentary negotiations, the decisions of which would serve as an anchor not only for the current but also for future governments.

6. Growth policies

The 2010s have been labelled a lost decade for the Finnish economy. The average annual growth rate of real GDP was 1.2%, and in the long run economic growth will be burdened by a decreasing number of working-age people. In the past decade developed industrial countries have experienced a slowdown in aggregate labour productivity growth.

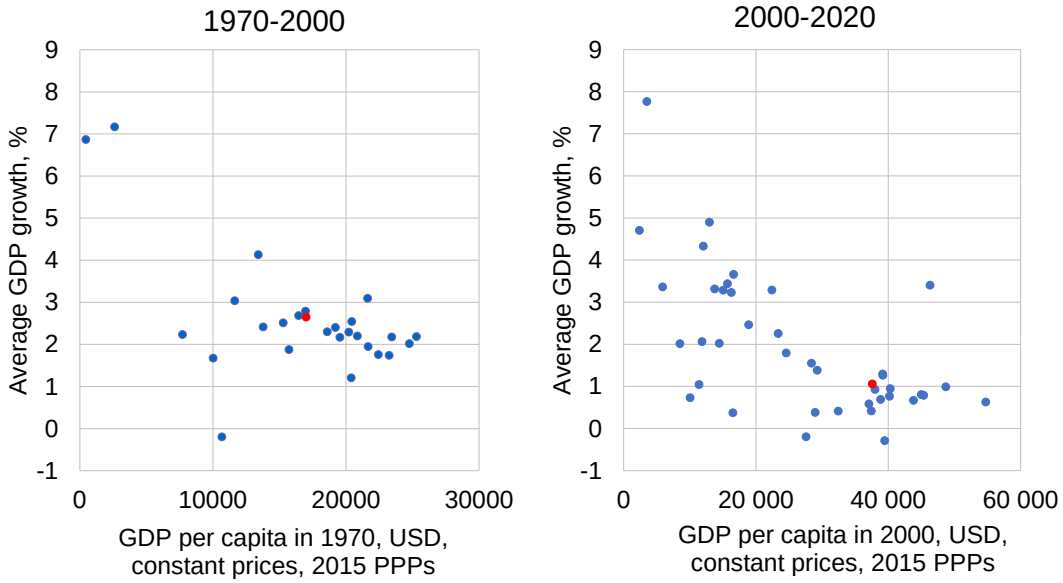
Labour productivity increases through capital deepening, increases in human capital and technological advancement. Increasing the amount of investments in research and development is on the current policy agenda in various developed countries, including Finland. The cuts in education and R&D subsidies in Finland in the 2010s have most likely had a negative impact on the accumulation of human capital and new innovations in Finland.

In this chapter we discuss economic growth, innovation, research and development and education.

6.1. On economic growth

Economic growth is commonly measured as the annual rate of increase in a country's gross domestic product (GDP). Per capita growth rates vary greatly between countries. Based on OECD data, Figure 6.1.1 compares average per capita growth rates in different countries over two time periods, between 1970-2000 and between 2000-2020. The highest growth rates are usually experienced in countries with relatively low per capita GDP, while countries with relatively high per capita GDP tend to grow at a lower rate with small differences in their growth rates. GDP growth in low-income countries is thought to be supported by the so-called catching up effect, i.e. these countries can increase their productivity via implementing new innovations originating in countries with higher income levels. Also, GDP per-capita growth seems to decelerate when countries become richer.

Figure 6.1.1. Growth of per capita GDP seems to decelerate as countries become richer and more technologically advanced.



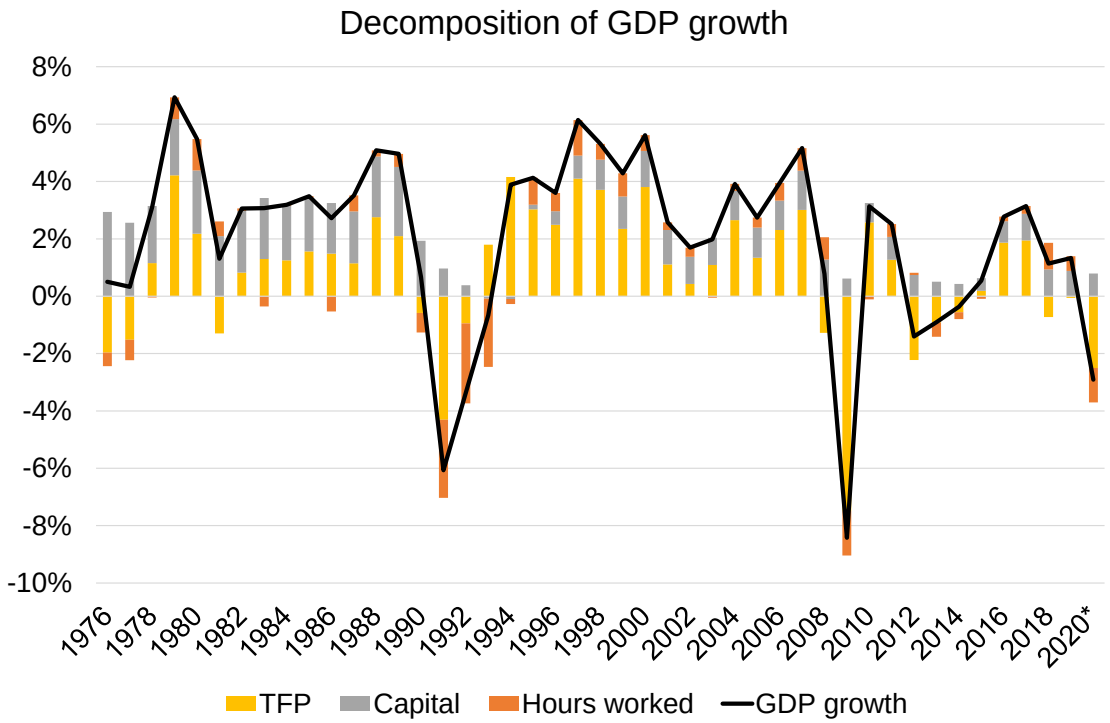
Sources: OECD, calculations by EPC.

Note: Finland marked with a red dot.

The simplest version of the theory of endogenous growth is to neglect the distinction between capital accumulation and technological process and explain GDP growth by growth in employment and in the capital deployed by employees. Investments, whether in human capital, physical capital or technological progress, are assumed to generate technological progress via learning by doing, which in the end raises the marginal product of capital. This so-called AK model assumes that high growth rates are sustained by saving a large fraction of GDP.

Using growth accounting, an invention by Solow (1957), one can decompose GDP growth into the accumulation of physical capital, labour input and productivity growth (total factor productivity, or TFP). As seen from Figure 6.1.2, from the production function perspective, Finnish GDP growth has been driven by growth in total factor productivity with capital accumulation playing a smaller share. The effects of changes in labour input, i.e. the total amount of hours worked in the economy, have been relatively small.

Figure 6.1.2.



Sources: National Accounts by Statistics Finland, calculations by EPC.

As the AK model neglects technological progress, it is not very informative for policies for economic growth. Instead of the simple AK model we can use innovation-based growth models to help us understand past technological progress and to assist in formulating policy recommendations. Romer's product-variety model (1990) builds on a natural assumption of diminishing returns to scale in production of each particular good. In this framework, innovations create new varieties of products and as a result help to distribute productive capital to a larger number of uses and make aggregate production more efficient. Innovators are motivated to R&D activity by possible monopoly profits resulting from a successful innovation.

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capital to a larger number of uses and make aggregate production more efficient. Innovators are motivated to R&D activity by possible monopoly profits resulting from a successful innovation.

During the Autumn 2021 the EPC commissioned the OECD to carry out an analysis for this report using two broad databases (MultiProd and DynEmp), and focusing on different dynamics within manufacturing and non-financial market services.[17] These industries represent the largest share of value added and employment in most of the countries, and where a competitive environment is key to foster the incentives for firms to innovate and grow. MultiProd and DynEmp databases contain a large number of indicators of enterprises (productivity, profitability, size, age, industry, etc.), corporate structures (number of enterprises, productivity dispersal between companies, market structure, etc.), as well as business dynamics (new and exit companies, growth of new enterprises, young people employment share of enterprises, etc.).

New firms are key for creative destruction, contribute significantly to job creation, and may be key to productive improvements and the introduction of radical innovations. In addition, the entry of new firms may further boost competition and provides innovation incentives for incumbents, and this effect may be particularly strong in industries that are closer to the technological frontier Aghion et. al. (2006). Overall, levels of entry rates in Finland appear to be relatively in line with other countries.

Competition is a key driving force of productivity growth in modern economies. It spurs innovation, boost the reallocation of resources and induce the entry of new and productive firms. The analysis of cross-country firm-based data, highlights that the Finnish private sector is characterised by higher levels of industry concentration relative to the benchmark countries, with the exception of digital services where it is aligned with the benchmark. This finding is in line with the findings by the Productivity Board (2021).

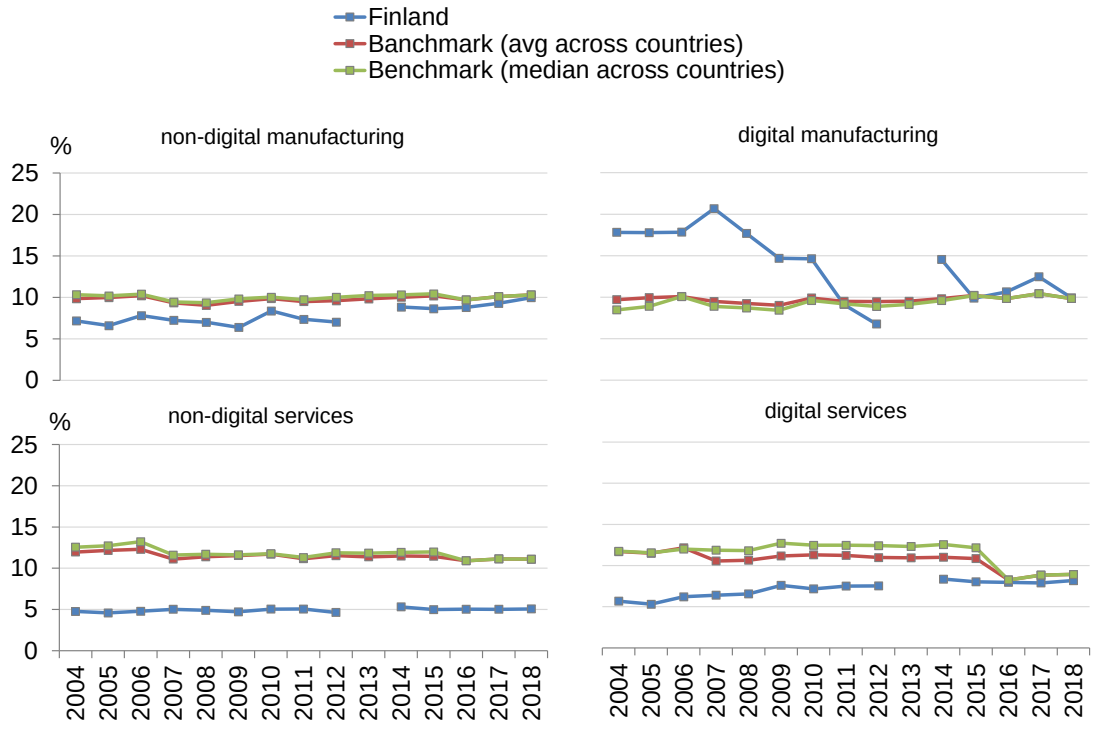
The fact that concentration in gross output is higher than the benchmark and productivity dispersion is lower (particularly in private services) may imply

[17] This productivity analysis was carried out at the OECD, Directorate for Science, Technology and Innovation and it is joint work with the staff of the OECD and two Finnish trainees, Outi Jurvanen and Auri Lassi. It is based on the commission made jointly by three Finnish expert panels (Economic Policy Council, Productivity Board and Research Division on Business Subsidies).

that industry share is less associated with productivity. If that is the case, resources may be less efficiently allocated than in benchmark countries.

To test this hypothesis, the OECD studied the covariance between the share of value added and firm productivity, a widely used indicator of the efficiency of resource allocation (commonly known as the Olley-Pakes covariance). Figure 6.1.3. shows that, in private services, this covariance provides a lower contribution to multifactor productivity in Finland relative to benchmark countries. In digital manufacturing, allocative efficiency was much higher than the benchmark before the financial crisis, but dropped markedly afterwards, mostly because of trends in the Computer & electric industry, linked to the decline of Nokia.

Figure 6.1.3. Share of Olley and Pakes covariance term into aggregate productivity.



Source: OECD MultiProd database.[18]

[18] This figure reports the Olley and Pakes covariance term over the log-level of productivity, on average over available years for the period 2004-2018 in Finland and the benchmark group of countries, by SNA A38 sectors grouped according to their digital intensity following Calvino et al. (2018), and focusing on manufacturing and non-financial market services. The benchmark group consists of Belgium, France, Italy and Sweden. The covariance term is defined as the covariance of value added and log-level MFP productivity over the average value added. This is then divided by the value-added-weighted average log multifactor productivity. SNA A38 sector-level shares are aggregated using sectoral weights in terms of value added. The year 2013 is excluded from the Finnish data due to a break in the time series related to StatFin's business statistics renewal.

The higher concentration is associated with lower productivity dispersion and lower allocative efficiency of resources, hinting to the potential of significant productivity growth by supporting the reallocation of resources in the economy. Further analyses are needed to identify which frictions are preventing the reallocation of resources.

On a more positive side, higher concentration is not associated with higher mark-ups or higher barriers to entry and growth of new firms. Indeed, the levels of Finnish mark-ups are comparable to the benchmark and they appear not to have grown over the period of analysis. Mark-ups were computed for Finnish and benchmark firms using a structural econometric estimate. According to analysis by OECD, Finnish mark-up levels are similar to the benchmark in manufacturing sectors, where international competition likely pushes mark-ups towards lower and comparable levels across countries. In Finnish non-financial market services, average mark-ups are generally lower than the average of the benchmark, particularly in non-digital sectors, and comparable to the median country.

Thus, while industry concentration in Finland is higher, firms do not seem to exploit their market share to impose higher mark-ups: it may, thus, seem that higher concentration is not associated with higher market power.

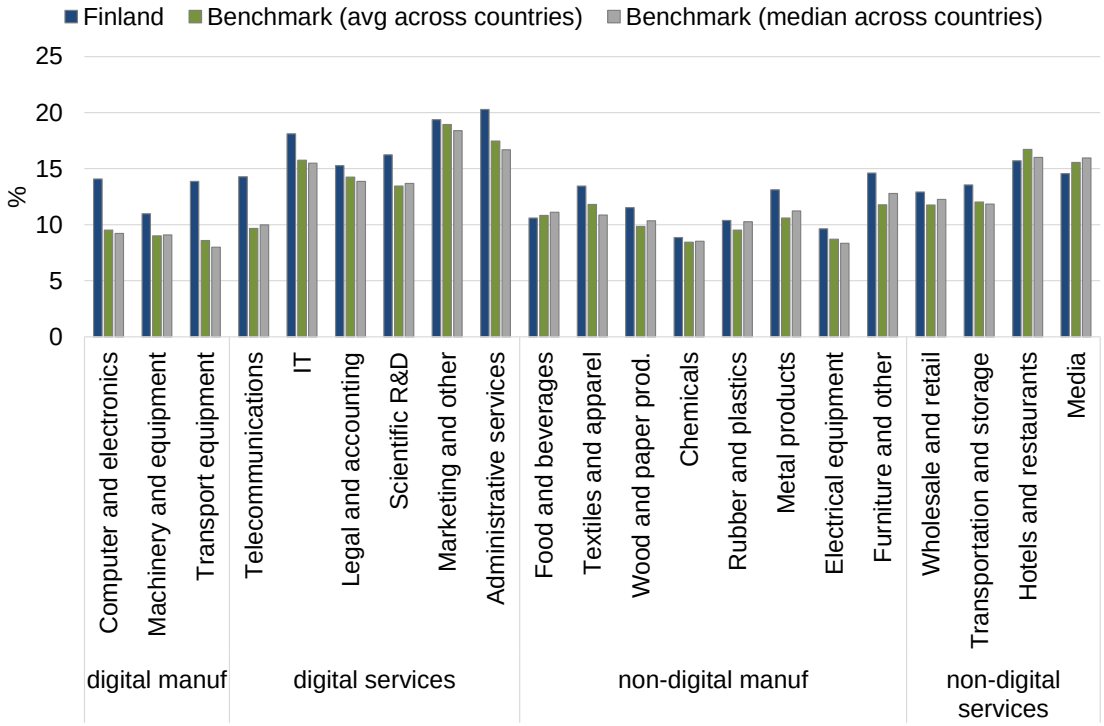
Moreover, business dynamism and the contribution of young firms to employment appears to be larger in Finland relative to the benchmark, showing that the positive forces of creative destruction have supported growth. Previous evidence has indeed pointed to the role of "up-or-out dynamics", whereby young innovative and successful firms grow rapidly and contribute to job creation, productivity and economic growth, or quickly fail and exit the market, allowing resources to be reallocated to more productive uses, see Haltiwanger et. al (2013) and Criscuolo et. al (2017). Results by the OECD suggest that the share of micro-entrants surviving five years is overall in line with the average or median survival share in the benchmark group of countries. In manufacturing, the survival of micro-entrants appeared higher in Finland relative to the benchmark for earlier cohorts, but have become more comparable for latest cohorts. In services, survival of micro-entrants also appear slightly higher than the average of benchmark countries, depending on cohorts, except for the 2009 one – possibly due to a stronger impact of the financial crisis on Finnish firms.

The analysis also shows that the survival of micro-entrants is associated with stronger growth in Finland relative to the benchmark. In Finland, on average across cohorts, 21% (16%) of manufacturing (services) firms that enter with 2 to 9 persons engaged have 10 or more persons engaged after five years. In the benchmark, the share of growing firms is only 16% and 10% in manufacturing and services respectively. Accordingly, the post-entry growth of micro-entrants, defined as the growth of total employment in micro-entrants, appear significantly higher in Finland than in the comparison group of countries.

Overall, these indicators suggest significant scale-up dynamics for start-ups in Finland. The relatively high growth of firms could be a sign of competitive forces whereby start-ups innovate to leapfrog the leader, also stimulating innovation of incumbent firms. However, from the point of view of the competition, these indicators could reflect to some extent opposite mechanisms. Higher survival coupled with higher growth could also refer to higher selection at entry and possible barriers at entry.

As a result of competition, market-based economies are further characterised by a continuous process of reallocation of resources even within narrowly defined industries, as some firms expand while other shrink. Increasing flexibility in the labour market contributes to the adoption and spread of new technologies, but there is no evidence of its innovation-accelerating impact. However, Maliranta et al. (2009) use Finnish data to examine whether workers spread R&D-generated knowledge when moving between firms. They find that hiring an employee with previous experience in R&D boosts productivity only when the employee is hired into a non-R&D function. In this context, Figure 6.1.4. displays job reallocation rates of incumbent firms, reflecting the simultaneous job creation and job destruction of incumbent firms within industries. Results suggest that overall Finland tends to display relatively high job reallocation rates of incumbents compared to the benchmark, especially in digital-manufacturing sectors. Some exceptions include Food and beverage, Media, as well Hotels and restaurants.

Figure 6.1.4. Job reallocation rates of incumbents (%) by SNA A38 sectors, grouped by digital intensity



Source: OECD DynEmp database.[19]

Over the period 2005-2007, job reallocations rates have declined by around 4 percentage points in Finland, a decline comparable to the change observed for the benchmark. As discussed in Calvino, Criscuolo and Verlhac (2020), these changes could be related to the role of market structure and firm heterogeneity, linked with the digitalisation, and increasing importance of intangible assets.

According to the analysis by the OECD, it is unlikely that they per se can explain major structural breaks in productivity growth, such as the slowdown experienced since the end of the financial crisis.

The impact of competition on innovation is theoretically ambiguous. On the one hand, the reward for innovation is monopoly profits, and high competition may tend to imply lower profits. Also, lower profits would limit the funds available to finance R&D. On the other hand, monopolists in a market with

[19] Note: This figure reports the level of average job reallocation rate of incumbents, in percentage, over the observed period in Finland and the benchmark group of countries by SNA A38 sectors and by digital intensive sectors. The benchmark group consists of Belgium, France, Italy, Portugal and Sweden. Job reallocation rate is defined as a sum of job destruction and job creation rate of incumbents over average (between time t-1 and t) total employment of incumbents in a sector.

high barriers to entry have little incentive to innovate and competition can induce firms to innovate for new products or cost-saving processes. Aghion et al. (2005) argue that the impact of greater competition on innovation is positive but turns negative at higher levels of competition. According to a survey by Shu and Steinwender (2019), foreign competition mostly drives increases in innovation.

While the Romer (1990) style product-variety model does not emphasize new technologies, so-called Schumpeterian growth theory focuses on quality-improving innovations. After a successful innovation, the technology frontier of a given sector is pushed forward and the innovator can displace the previous producer and products out of that sector. This continuous chain of innovations is referred to as creative destruction. The Schumpeterian framework distinguishes between two stocks of knowledge, the one accumulated by past innovators and one formed by the new innovator. The former helps us to understand and analyse the aggregate productivity of a country, or an industry in a given country, from the viewpoint of its distance to the international technological frontier.

Collins (2015) shows, with a theoretical model, that the level and growth rate of output and TFP increase if a country manages to transition from imitation to innovation. Her results show that imitation is beneficial and should be supported and encouraged until it becomes feasible and makes sense economically for a country to switch to innovation. Countries that are dependent on technology diffusion should focus on improving the efficiency of their R&D workers if they want to learn how to invent new products.

In his review, Pohjola (2022) divides fixed investments into investment in ICT equipment and in other capital. Finland has invested more than Sweden in buildings but less in growth-enhancing ICT devices, software and databases, as well as research and development. Based on OECD data, Finland is only in the middle group in the GDP share of these investments in a comparison of 16 countries. Switzerland, Sweden and the US make up the top three in this comparison.

As Finland has moved closer to the technological frontier, or in some industries even reached it and pushed it forward, its ability to maintain a high growth rate simply by implementing previous innovations has become more difficult. Investments in new non-mature technologies are expensive and

risky and may require the development of new production processes. These investments need resources in the form of capital and professionals.

In his background report for the Economic Policy Council, Pohjola (2022) concludes that economic growth in Finland has slowed more than in other industrial countries after the financial crisis. The main growth problem in the Finnish economy is the fact that TFP growth has stagnated in manufacturing and that TFP growth in services has not increased sufficiently to compensate it. Lower gross fixed capital formation in relation to its peers is not explained by profit rates being lower. In particular, investment in ICT has been much smaller in Finland than Sweden in 2011-2019, and thus the contribution of ICT capital to productivity growth has been twice as large in Sweden as in Finland (2001-2019). Also, the role of knowledge-intensive market services is much smaller than in Sweden, where superior economic growth arises from faster productivity growth in these services. Cuts in education and R&D have likely had a negative effect on R&D activities and also on productivity through capital intensity.

6.2. Policies to enhance growth

Productivity growth can be influenced indirectly by supporting the development of new ideas that improve productivity or the exploitation of already known ideas. In addition, the shift of resources, labour and capital from low-productivity industries to high-productivity sectors can be promoted. Due to the positive externality associated with innovation, companies invest too little in research, development and other innovation activities from the perspective of society as a whole. Private returns on R&D capital tend to be higher, according to empirical studies, than other capital returns. Societal returns from research and development, in turn, are higher than private returns, see e.g. OECD (2015). Supporting R&D with public financing is, therefore, justified.

In their recent review article, Bloom et al. (2019) discuss different forms of innovation policies. Their review indicates that indirect subsidies generated through tax cuts, skilled immigration, increases in trade and competition and direct R&D subsidies to businesses are among the most effective means of innovation policy in the short and medium term. A long-run policy to increase research and innovation would be to increase university degrees in science, technology, engineering and mathematics.

Direct subsidies and tax cuts increase research and development by lowering business costs. Direct subsidies allow better control of operations than with tax cuts, which give companies more discretion. Direct aid should be targeted at activities where the externalities are greatest, namely close to basic research and development. However, subsidies can only be obtained for projects for which they are sought. Tax cuts can instead be obtained by every eligible company. Tax subsidies are harder to allocate. Due to their lower administrative costs, the net social benefits of tax subsidies may outweigh direct subsidies, see e.g. Bloom et al. (2019).

Innovation can be incentivised by reducing corporate tax rates on income generated by a firm's intellectual property such as patents, copyrights, designs and trademarks. These so-called "patent boxes" do not necessarily lead to increases in research and development, but rather they are harmful to tax competition. There is also no justification for strengthening the protection of intangible assets, especially in an age of digitalisation.

In his article, Pohjola (2022) notes that the vast majority of studies looking at the effects of innovation policy have centred on the United States and other major economies. Therefore, the results obtained may not apply to small open economies such as Finland. The difference lies in the greater likelihood in a small economy that the effects of R&D subsidies will favour foreign companies and consumers compared to a large economy. The basis for the subsidies will then be weaker.

In Finland, spending on research and development activities increased strongly from the 1990s. This increase was driven by contributions from the private sector, largely Nokia and other electronics industries. State-funded R&D spending also grew rapidly, both in real terms and as a share of government spending relative to GDP. In the 2010s, this trend reversed after Nokia lost out in the mobile phone market. Industrial R&D activity has fallen to the levels of the late 1990s, and as a result the GDP ratio of research and development expenditure in the economy has also fallen below the levels in Sweden and Germany. Pohjola (2022) notes that the level of Finnish ICT investment is roughly half of that in Sweden and lower than average in a comparison of 16 OECD countries. Also, the GDP share of R&D spending has fallen below that of Germany and Sweden. Data from the International Federation of Robotics also shows that the number of industrial robots per 10,000 employees in Finnish manufacturing industry is about half of what Germany and Sweden

have. To respond to this problem, the government has set a 4% of GDP target for domestic R&D investment.

Such a quantitative R&D target is demanding, as it has been estimated to require additional contributions of EUR 600 million annually, including EUR 200 million in contributions by the public sector. This objective will set an anchor for the direction of Finnish growth policy, but an objective does not yet guarantee a desired outcome. As early as 2005, the government set a corresponding 4% target for the years ahead, but instead a period of stagnant innovation policy and a decline in the GDP ratio of R&D&I spending followed in the 2010s.

Most interest is focused on what forms of aid and subsidies will be increased or reintroduced. While most policy interest in Finland has focused on business subsidies, the benefits of additional contributions lie in basic research and increasing the number of professionals and research competencies. The chain from basic research to commercialisation of innovation is long and requires competent scientists and experts. Therefore, not all additional contributions should be in the form of business subsidies.

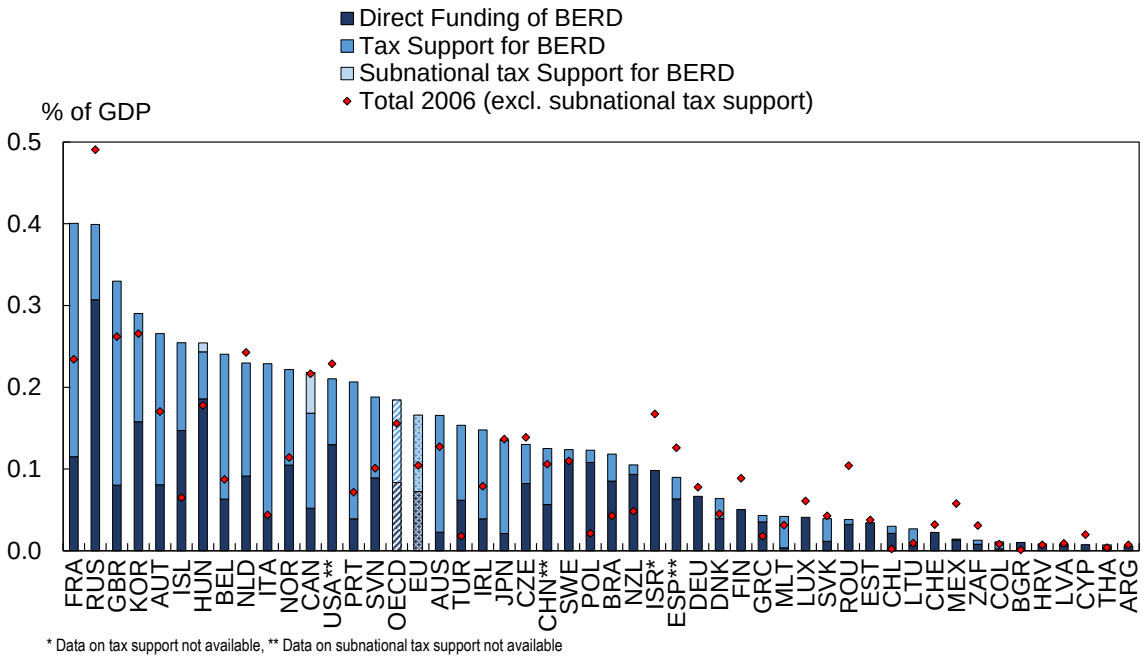
Of the various forms of aid, most attention now seems to be directed at R&D tax credits. The parliamentary working group on research, development and innovation, for instance, recommended introducing such a credit in Finland. This is also a change in mindset, as the Hetemäki Tax Working Group saw no need for this form of aid in Finland, see Ministry of Finance (2010). Also, a study evaluating R&D tax aid in the period 2013-14 concluded that tax incentives, even if better designed and informed, would hardly bring great value to the innovation system (Kuusi et al 2016).

In most OECD countries, such tax incentives are in place and their popularity has been on the rise. The advantages of tax incentives include the administrative ease of this type of aid, the simplicity of the application process and the neutral treatment of various forms of R&D. On the other hand, tax incentives may also be used for innovations which would have been undertaken anyway and may encourage an artificial categorisation of normal activities as R&D ('relabelling'). Empirical evidence on such behaviour is presented e.g. in an article by Chen et al. (2021), where the authors find that a quarter of the reported R&D increase in China, after the 2008 tax reform there, was due to relabelling. Their simulations show that both firm selection and relabelling play crucial roles and that policies that lead to greater increases in aggregate

R&D also tend to select firms with lower productivity. By accounting for re-labelling, the authors find that real R&D raises the productivity of Chinese firms and estimates a productivity elasticity of real R&D of 9%.

According to OECD data, at least 28 out of 38 OECD countries provided some form of tax relief to business enterprise R&D (BERD) in 2018, see Figure 6.2.1. In Finland, the GDP share of support for R&D activity is relatively small and is given only in the form of direct support. Among OECD countries, average support for R&D activity is 0.2% of GDP. Support is strongest in France, Russia, Great Britain, South-Korea and the Netherlands.

Figure 6.2.1. Support for R&D activity in business enterprises.



Source: OECD R&D Tax Incentives Database, March 2021.

According to a reference guide by Ernst & Young (2017), the implementation of R&D tax schemes varies widely across countries in a number of dimensions:

- Whether the scheme is a credit against taxes or a super-deduction (>100%) of R&D expenses, or even a reduction in social charges for R&D employees
- The size of the credit or deduction
- An incremental versus a level credit
- Whether or not SMEs are treated more favourably

- Details of the expenses allowed
- Whether unused credits can be carried forward to be used when the firm is profitable

An extensive study of 20 countries by the OECD, based on micro-level enterprise material, provides an indication of the effectiveness of tax incentives (OECD 2020). The results indicate a rule of thumb that additional support increases corporate R&D activity 1.4-fold. This increase is a natural consequence of the decline in the cost to businesses of these investments, but it does not in itself indicate the societal gain of the subsidy in the sense of cost-benefit analysis.

According to the OECD results, tax incentives increase R&D activity most in small businesses and the greatest increase is in product and process development expenditure, i.e. downstream of the innovation chain close to the market. These traits do not indicate high positive externalities and significant impacts for productivity in the economy as a whole. At the same time, the results give rise to caution, since the strongest argument for public R&D incentives is precisely the presence of positive externalities.

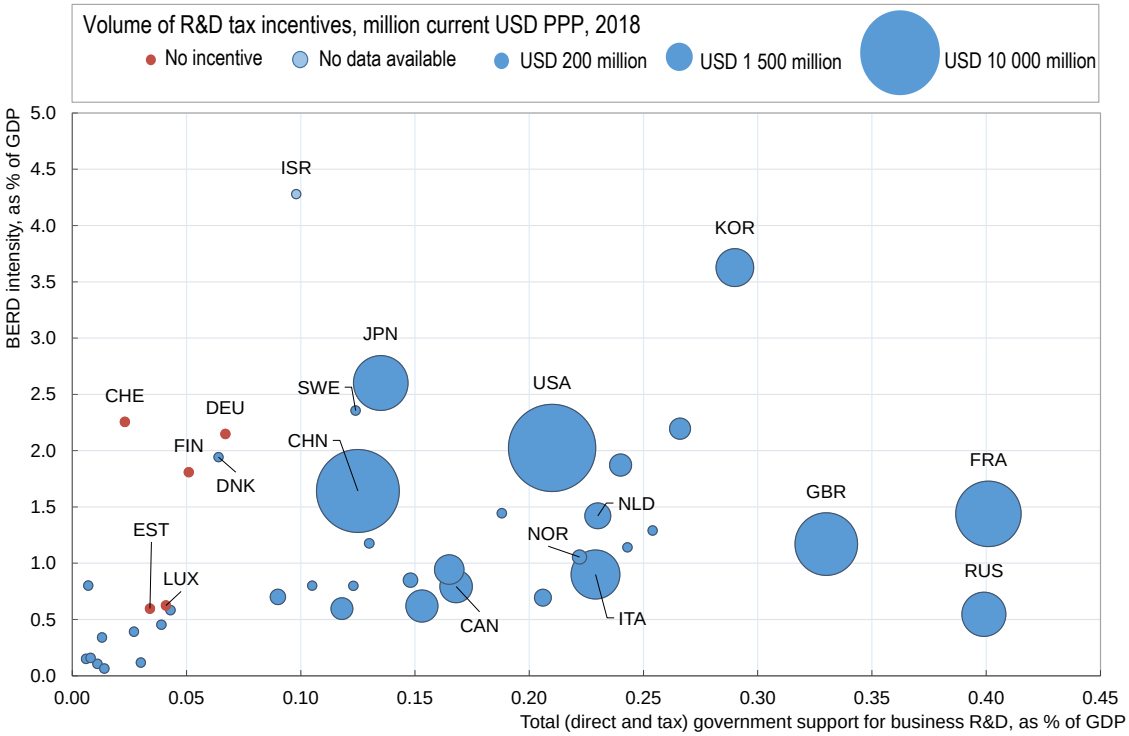
The link between economic growth and increases in overall R&D expenditure is not straightforward. Firms engaging in R&D activities compete for resources, in this case professionals and venture capital. With their general equilibrium model, Acemoglu et al. (2018) show that even if there was substantial underinvestment in R&D, the optimal policy would not be to subsidise R&D-type activities, because such subsidies increase R&D investments by firms of both low and high productivity. Instead, the optimal policy would be to free up resources from firms with low productivity to be used for R&D by firms with high productivity, and this can be achieved by encouraging the exit of low-productivity firms, for example by taxing the operations of all firms.

The study by Acemoglu et al. (2018) has been replicated with Finnish data by Einiö et al. (2022). While their results are broadly in line with the findings in Acemoglu et al. (2018), they find important results specific for Finland. They show that welfare and rate of economic growth can be accelerated with optimal policy also in Finland. Their results show that when the smallest firms (with 2-5 employees) are included into the analysis, innovation policy has a smaller potential to increase welfare as the innovation potential of individual firms and the fixed costs of operations are smaller in micro-sized firms. Thus,

for small firms, policy effects of subsidies joined with encouragement for creative destruction are moderately lower than estimated by Acemoglu et al. (2018). On the other hand, the result for Finnish firms with at least 5 employees indicate that the benefits of these policies would be generally larger than for those acquired with the data for United States.

A recent review article by Hall (2019) summarises some of the latest estimates of the tax-adjusted price elasticities of R&D. Chang (2018) uses US state-level data instrumented by federal tax changes to find elasticities of -2.8 to -3.8. Mulkay and Mairesse (2013) use the 2008 tax changes in France to find a price elasticity of -0.4 or higher, and Dechezlepretre et al. (2016) use a regression discontinuity approach to find an elasticity of -2.6 for SMEs in the UK. Guceri and Liu (2019) use similar data with an exogenous shift in eligibility thresholds to find an elasticity of -1.6.

Figure 6.2.2. Direct and tax support for business R&D and R&D intensity.



Source: OECD R&D Tax Incentives Database, March 2021.

However, in a country comparison, generous R&D support does not seem to directly increase the R&D intensity of the private sector. As can be seen in Figure 6.2.2., France, Russia and Great Britain, the largest supporters of R&D activity using varying shares of direct support and tax incentives, have relatively low R&D intensities. It is also noteworthy that Finland, Germany and

Switzerland rely solely on direct support but have an above-average R&D intensity.

The high amount of direct subsidies in some countries could reflect a tendency for political involvement in the selection of R&D projects. The literature does not provide unequivocal support for special projects being carried out by public authorities in a top-down manner. Admittedly, they may have other positive effects, such as mitigating climate change with the aim of a carbon-neutral economy.

With ambitious climate targets, business subsidies should also be assessed on the basis of their ability to accelerate the development of clean technologies. General R&D tax support is not the best tool when subsidies need to be targeted at the green transition in particular. The pressure on public spending will increase significantly if the choice of subsidies is not successful in linking the objectives of innovation and climate policy. This perspective favours the use of direct subsidies in order to reach climate policy goals.

Direct R&D subsidies could help to direct research and development in the required direction or towards fields that will increase overall social welfare. However, direct subsidies are usually costly for firms to apply for and for governments to manage. Also, direct subsidies may be too directed, e.g. recent subsidies for collaboration between firms and research institutions may be too narrow and result in a shift from other R&D activity instead of increasing total R&D spending. Also, in Finland subsidies are usually granted to companies that generate profits and have resources to apply, leaving small start-ups without public support.

In his analysis, Piekkola (2022) examines broad intangibles, including both organisational capital (OC) and ICT, as the major determinants of productivity[20] and evaluates technical change driven by R&D and OC workers through a novel measurement of innovation labour–biased technical change. According to his analysis, Finnish technical change driven by R&D and OC has continued at the level it was in the 2010s and no drop is registered in it after the financial crisis in any of the countries considered: Finland, Denmark, Norway and Slovenia. Broad intangibles are vital in evaluating firms' profitability. Piekkola's analysis for Finland shows that firms' mark-ups and hence profitability were lower in the slow-growth period of 2011-2014. Piekkola finds that

[20] The major difference from national accounting is that organisational capital (management and marketing capital) is also included in the analysis.

during the slow-growth period in Finland mark-ups still never went below the level in Denmark and Norway. Large Finnish firms have otherwise been among the most profitable relative to comparison countries.

According to Piekkola's analysis, business services have progressed relatively well in Finland compared to the reference countries Denmark and Norway and far better than in Slovenia. Knowledge-intensive services have registered a value-added growth rate of 5.7% in recent years (2016-2019) and the annual growth rate has been 3% since 2001, while the respective figures for private-sector growth as a whole are lower at 1.7% and 2.5%. Finland is surely behind Sweden in digital services, but he finds no evidence of backwardness compared to the other Nordic countries.

Piekkola's research raises doubts about using total factor productivity as a measure of technological change as changes in it largely relate to changes in mark-ups. Hence it is not a proper measure for evaluating technical change, which depends on broad intangibles. Another unexplored topic is the declining public-sector R&D intensity since the financial crisis. The levelling-down of R&D activity does not therefore apply to universities only, rather the entire public sector.

Skilled labour and education

An ageing population is often seen as a negative issue for economic growth, but there is no clear correlation between ageing and rising living standards. As the labour supply decreases, wages tend to rise, leaving companies replacing labour with machinery — in modern times with robots, computers, software and artificial intelligence. The result is an increase in labour productivity, see Acemoglu and Restrepo (2019) for discussion.

Differences in overall education expenditure between OECD countries are small, and few conclusions can be drawn from the growth effects of education expenditure on the basis of these differences. From the point of view of sources of economic growth, one needs to distinguish between imitation and frontier innovation, which in turn may be connected to different levels of education. Now that Finland, like the rest of Europe, has moved closer to the productivity frontier, the scope for imitation is running out, and it is increasingly essential to invest more in higher education to promote innovation and the latest technological innovations.

Also, the shift in the technological frontier widens the gap between jobs requiring basic skills only and medium-skilled jobs. Technological change requires older workers to be retrained in order to improve their capacity to imitate more efficient processes.

Takalo and Toivanen (2018) point out that innovative activity is concentrated geographically and that high-quality universities play a central role in this agglomeration process. Top universities contribute to the agglomeration of innovative activity, e.g. through the supply of educated individuals on which innovative activity depends: for example, Moretti (2004) finds a 0.5 percentage point increase in plant-level productivity as a consequence of a one percentage point increase in the share of college graduates in the population of a metropolitan area in the US. Adams (1990) uses US industry-level data to document that scientific knowledge, measured by scientific publications, increases total factor productivity but that the lag from basic research to productivity growth can be long: 20-30 years.

Although basic research is years away from patents and new products or processes, basic research done at high-quality universities is also a source of significant local knowledge spillover to the private sector. A survey by Takalo and Toivanen (2018) concludes that as innovative firms seek to benefit from these spillovers, they locate close to universities. In small open economies in particular, one should not discount the importance of high-quality basic research as a pull factor for foreign R&D.

Bianchi and Giorcelli (2019) study the effects of a change in the enrolment requirements for Italian majors in science, technology, engineering and mathematics (STEM). They find that an increase in STEM majors led to more innovation, especially in chemistry, medicine and information technology. However, they note that many STEM-trained graduates may choose to work in sectors that are not especially focused on research and development or innovation.

Participation in broadly defined STEM disciplines, including engineering, sciences, information technology, health and agriculture, varies by country/territory and over time. According analysis covering the years 2011-2015 by Freeman et al. (2019), the percentage of students in tertiary education enrolled in STEM disciplines was highest in Finland (53% on average), South Korea (47%), Germany (46%), and Sweden (45%). In terms of disciplines, South Korea and Germany have a higher share of students in engineering,

while Sweden and Finland have more students in health and welfare. Finland has the highest share of tertiary students in information and communications technologies.

A recent report for the Ministry of Employment and Economic Affairs (MoEE) by Husso and Moilanen (2021) points out that there is more cooperation between companies and universities in Finland than in many other EU countries. However, this cooperative activity has been declining in recent years. According to the MoEE report, the share of funding received from the private sector for higher education R&D expenditure in Finland was only 2.9% in 2018, slightly less than in Sweden. In South Korea and Germany, enterprises financed over 13% of higher education R&D expenditure in 2018. Raising the intensity of cooperation between companies and universities requires, among other things, a long-term increase in resources for cooperation and possibly changes in incentives.

Increasing R&D&I spending to 4% of GDP requires resources from both the private and public sector, but also a higher number of scientists, engineers and professionals. The government has launched several programmes to ease the entry of foreign professionals into the Finnish labour force.

Individual mobility may also be linked to tax rate differences between countries, and a growing number of studies investigate the impact of tax rates on the mobility of innovators and other groups. Kleven et al. (2020) review this literature and note that certain segments of the labour market, especially high-income workers and professions with little location-specific human capital, may be quite responsive to taxes in their location decisions. Akcigit et al. (2016) focus on top inventors and find large elasticities for foreign inventors (close to unity), and very small elasticities for domestic inventors (0.03). Kleven et al. (2013) examine how foreign experts reacted to the special tax rule for foreigners in Denmark. They also document a large elasticity for this group (around 1.5).

What this literature suggests is that special regimes to attract foreign key workers - such as that already in place in Finland - are desirable, since for this group migration decisions depend on tax rates, whereas lowering taxes for domestic workers because of possible emigration concerns does not seem warranted by the evidence on this matter.

Economic growth could be harmed by high costs in Finland relative to its trading partners. As prices and wages tend to adjust slowly to structural changes, with downward adjustment especially slow, economic growth can be low for an extended period. Following the financial crisis of 2008 and the simultaneous fall of Nokia as a global leader in the mobile phone industry, Finland saw a prolonged period of weak output growth. At the same time, many observers pointed to worsening cost competitiveness as a key factor in this situation. Kajanoja (2015) asserted that Finland needed to improve its cost competitiveness by 10%-15%. While there were also divergent views on the exact size of the so-called competitiveness gap, the need to combat the stagnant exports and slow productivity growth were widely recognized. The aim was to find policies with quite immediate effects and accordingly, the role of labour costs was emphasized as the main element of the growth policy. The government of prime minister Sipilä, which took office in 2015, pursued policies to improve cost competitiveness through the so-called competitiveness pact. According to the analysis presented in Box 6.1 and in Alhola and Keränen (2022), it seems that this policy helped to reduce unit labour costs and possibly increase demand for labour, but there seems to be scant evidence that it boosted Finnish exports in any substantial way. The period of rebalancing cost competitiveness has since been followed by policy with main emphasis on productivity growth and its determinants.

Box 6.1. How large are the potential effects of improving cost competitiveness?

Alhola and Keränen (2022) study the dynamic effects of changes in cost competitiveness in a panel of manufacturing industries in OECD countries with the focus on the effects on exports of changes in unit labor costs (ULC), which measure the average cost of labour per unit of output produced. They find a statistically significant but rather modest effect from relative changes in ULC on relative export performance. The estimated effect of a 1% increase in relative ULC on exports is close to -0.1% over the medium term depending on the model specification. That is, a 10% decrease in ULC would be associated with a roughly 1% increase in exports over the medium term at the industry level. Changes in relative labour compensation are found to have a larger absolute effect on exports than changes in relative productivity and it seems that the effect of changes in ULC on exports is larger in the euro area, where exchange rates are fixed.

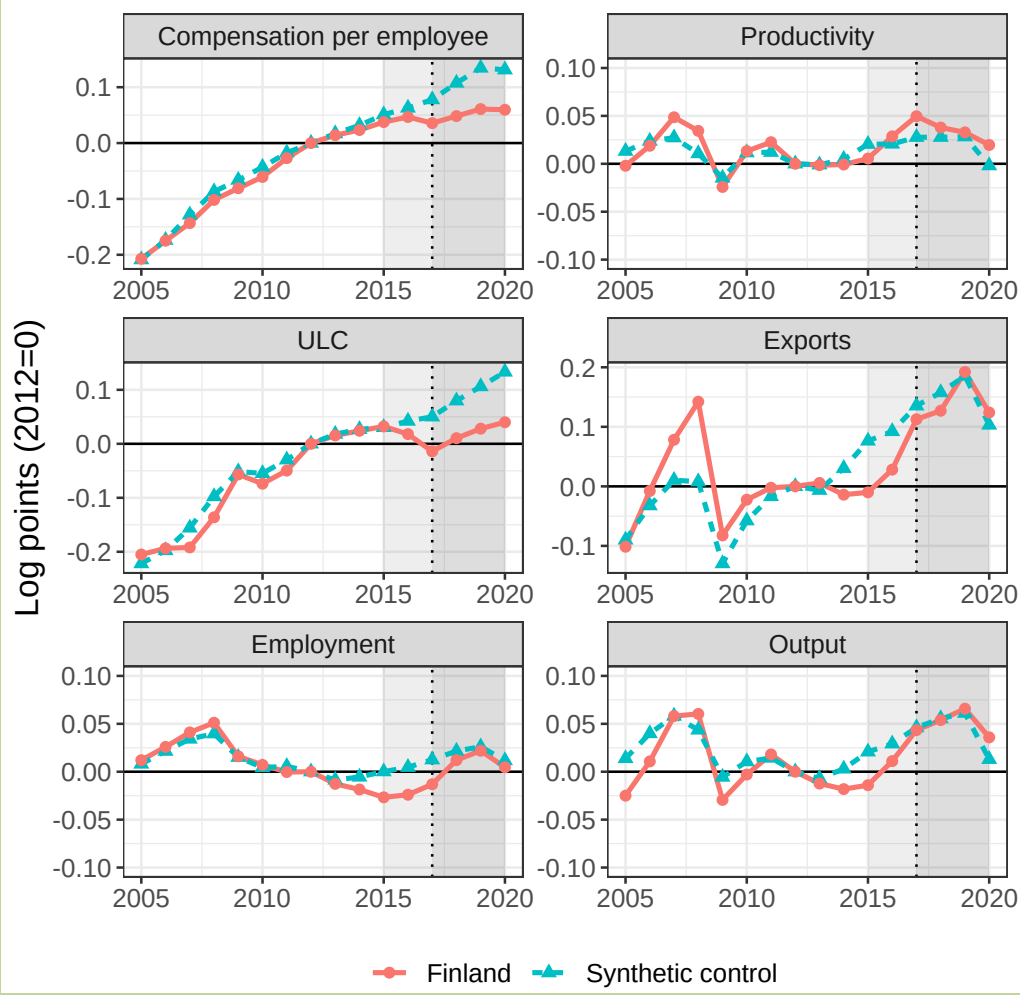
Alhola and Keränen (2022) also provide estimates of the effects of the Finnish competitiveness pact on Finnish manufacturing industries. They find a decrease of roughly 10% in ULC in the years immediately following the announcement of the pact but do not find a significant effect on export performance. Unfortunately, at the same time Finnish exports seem to have been affected by a shock related to the Russian aggression in Ukraine in 2014 and the resulting economic effects to which Finland was more exposed than other countries in the sample, which complicates the analysis.

Figure B6.1 provides additional results on the effects of the Finnish competitiveness pact. In this figure Finland is compared to a synthetic control group that is constructed as a weighted average of other advanced economies using OECD data. The weighting is done so as to best match the trajectories in compensation per employee and productivity in Finland over the years 2010-2014. The competitiveness pact took effect in 2017, but 2015 could be seen as the first year of the event as the pact had arguably been anticipated since 2015 (Alhola and Keränen, 2022) which is why matching is done using prior observations.

In Figure B6.1 we can see a clear gap appearing between the ULCs of Finland and the control at around 2017. This gap is driven mainly by compensation per employee, although Finnish productivity also improved over this time. In exports there is an improvement around the same time, but again Finnish exports seem to be affected by other events prior to the competitiveness pact and it is very difficult

to build a control that closely matches the path of Finnish exports. However, even though there is growth in Finnish exports, they seem to only reach the path of the synthetic control even as cost competitiveness improves when compared to the control. Interestingly, both employment and output, which started to deviate from control in 2014-2015, seem to improve as the competitiveness pact took effect. It is possible that the pact sped up the adjustment of the Finnish economy towards higher employment and output from an economic downturn but the evidence that it boosted Finnish exports in a substantial way seems somewhat weak.

Figure B6.1. Synthetic control estimates on the effects of the Finnish competitiveness pact.



Notes: The synthetic control is constructed by weighing other economies to best match the trajectories of compensation per employee and productivity in Finland over the years 2010-2014 and exports for the year 2014 as compared to the base year (2012). The highest weights in the synthetic control are for Sweden (0.375), Italy (0.295), Norway (0.275) and Greece (0.054). All other countries are given weights close to zero by the algorithm. The data is from OECD Economic Outlook 109. Exports are measured in USD, 2015 prices. Employment and Output (real GDP) are per working-age population (15-74-year-olds).

6.3. Council views

Productivity growth has slowed down in many developed economies, and the decline has been particularly pronounced in Finland. Coupled with a decline in working hours, per capita GDP in Finland has not grown at all since 2008.

Slow productivity growth is linked with a somewhat disappointing developments in investments. Investments in Finland are targeted relatively heavily in buildings and constructions, whereas investments in ICT, including software, are behind OECD average. In terms of data-intensive services, Finland is still trailing behind leading countries in structural change, especially Sweden. Targeted measures that support the emergence, adoption and spread of new ideas and contribute to the transition of productive resources from declining to growing industries are justified.

These developments are well recognized in the Finnish policy discussion. One possible reason behind the disappointing growth performance may be linked with the cuts in education and R&D subsidies in Finland in the 2010s, which probably had a reducing impact on research and development activities.

Finland already has in place many policies which are conducive to growth. To exemplify, the share of STEM fields in higher education is high. In its 2017 report, the EPC noted that Finland was lagging behind some other developed economies in the extent of university-level education. The recent measures to offer tertiary education for a higher share of the population are therefore well placed. Adequate financing of basic research should be a key component of the R&D policy package.

One key bottleneck is the availability of foreign specialists, and simplifying and streamlining their work permit processes is commendable. The presence of the limited special tax regime for these workers is also well motivated by the evidence regarding taxation and migration.

The Finnish R&D support system is an outlier among our peers because of very limited use of R&D tax credits. In this respect, the goal of the Parliamentary Working Group on Research, Development and Innovation that Finland should also introduce a more sizeable R&D tax credit is justified. Direct subsidies and tax credits have both relative strengths and weaknesses. Given how acute the productivity slowdown in the economy is, there is a need to support R&D more forcefully. This policy move could boost innovations – even if they

were more incremental in nature – which are difficult to reach via the often complex R&D subsidy process.

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Appendix 1.

Reform of adult education allowance, designed to promote simultaneous access to work and study for wage-earners. This reform took effect on 1 August 2020, and its estimated effect on employment is 200 persons. According to the Employment Fund's annual report, the number of adult education allowance recipients increased by 5%, which is a little higher than in previous years. The number of recipients receiving benefits following the new legislation was roughly 4,500 persons.

Raising the minimum age for entitlement to additional daily unemployment security. After the measure came into effect on 1 January 2020, unemployed persons born in 1961 or later qualify for additional days of unemployment protection at the age of 62, the previous age limit having been 61 years. The estimated employment effect is 6,500 to 7,000 additional employed persons.

Reduction in early childhood education payments by EUR 70 million will increase employment by about 2,500—3,600. The estimated effect is based on microsimulation modelling. According to the government proposal, the net effect of the measure on general government finances is negative by EUR 100 million. The measure took effect in August 2021.

Extension of compulsory education to the age of 18 years from the current 16. Measures associated with the expansion of compulsory education are explicitly targeted at the low-skilled and low-income segment of the population, where it can be assumed that they could reduce the number of years lost and thus increase the employment rate and help Finland to survive a long-term labour shortage caused by demographic change. The medium-term employment impact of the reform is estimated to be 1,600 persons and the long-term impact 15,000 persons. These estimates are based on Seuri et al (2018). The reform took effect in August 2021.

Nordic labour services model - in order to support job search and guidance services, assessment of the services needed by unemployed persons will be improved and job search support increased so that unemployed persons are targeted every two weeks in the early stages of job-searching. Jobseekers are

required to apply for 0-4 jobs a month, depending on the labour market situation in the region and their own capacity. If a jobseeker fails to meet the requirement, the penalty is a 5-day benefit loss, and a 10-day benefit loss in the event of repeated failure. According to the government proposal, the reform is estimated to increase employment by at least 9,500 persons. The reform package was referred to parliament in October 2021 and will take effect in May 2022.

The reform of the Nordic model consists of three main elements:

- intensive interviews of unemployed persons by employment service officials every second week for the first six months; if unemployment is prolonged intensive interviews are continued over one month for every new six-month period

- quantitative requirement for job applications, but simultaneously abolishing the current system of obligatory job offers

- new system of monitoring job search activity with a reform of the sanctions to become progressively increasing but reducing the maximum sanction.

The evaluation of each component is based on research literature studying the effects of similar reforms mainly in other Nordic countries using best-practice research methods and appear to have been competently estimated.[21] The reform is intended to bring about a fourfold increase in the number of interviews of unemployed persons, which requires approximately 1,200 more employment service officials.

Partial abolition of the activation model[22] by the previous government. According to a cautious assessment of the employment effects of the activation model, abolition decreased employment by 2,000 – 4,900 persons.

Increasing employment of over 55-year-olds mainly by abolishing additional days of unemployment protection. Employment of over 60-year-olds

[21] See EPC (2021) for more discussion.

[22] The activation model reduced unemployment benefits by 4.65% for inactive jobseekers. Activity was monitored in three-month periods, the requirement being to have done 18 hours of paid employment, participated in employment services for five days, or earned 241 euros as a self-employed person. Kyyrä et al. (2019) report that around one third of all benefit recipients faced sanctions due to inactivity, with older jobseekers being more likely than others to see their benefits cut. See also EPC (2021) for more detailed discussion.

would also be enhanced by an increase in the cap on the earned income deduction. The proposal also includes a new model of redundancy pay and a training obligation for those aged 55 or over and a new 70% wage support model for the over-55s. The package could potentially increase employment by 9,000 persons in the medium run. The reform package is under preparation and the government proposal is to be referred to parliament in 2022.

Simplification of the wage subsidy system by setting a level of aid of 50% regardless of the length of unemployment and increasing wage subsidies for employees with partial working capacity to 70%. Together with other minor details, the estimated employment effect of the reform is 500-1,000 persons, which is in line with research by Asplund et al. (2018), who find that subsidies increase the earnings of persons hired in the private sector via wage subsidies, and also increase their months of employment while simultaneously decreasing their months of unemployment. However, these effects are not found to be large. A more precise assessment of the employment effects of this reform has not been published. The reform has gone through the preparation stage and the government's proposal is to be referred to parliament in autumn 2022.

Linear model for partial disability pensions, providing a linear reconciliation of partial disability pensions and earned income. As well as a partial disability pension, recipients can earn income up to the protected amount without affecting their pension, and once the protected amount is exceeded, the pension is reduced linearly. The Ministry of Finance calculates that the economic incentives of the reform could improve employment of the partially employed by about 200 persons. The reform would increase the working effort of pensioners already in employment, meaning the change would not necessarily increase the number of employed people. Increased working effort by one group of employed persons can possibly reduce demand for labour from other groups. However, as the main effect is already quite small, any secondary effect would be of negligible size. The reform has gone through the preparation stage, and the government's proposal is to be referred to parliament in autumn 2022.