



**Fiscal Outlook of the Czech Republic**

November 2022

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The Fiscal Outlook of the Czech Republic is published by the Economic Policy Department of the MF CR, since 2016 annually, usually in November. It contains forecast of the current and next year (i.e. up to 2023) and also the outlook of some economic indicators to the following 2 years (i.e. up to 2025). The Outlook is available on internet pages of MF CR at:

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## List of Abbreviations

c. p.	current prices
CR	Czech Republic
CNB	Czech National Bank
CZK	Czech koruna currency code
EC	European Commission
ECB	European Central Bank
ESA 2010	European System of National and Regional Accounts from year 2010
EU, EU27	European Union (EU27 coverage)
EUR	euro currency code
GDP	gross domestic product
IMF	International Monetary Fund
MF CR	Ministry of Finance of the Czech Republic
MoLSA	Ministry of Labour and Social Affairs of the Czech Republic
PEPP	Pandemic Emergency Purchase Programme
PSPP	Public Sector Purchase Programme
p. a.	<i>per annum</i> (per year)
pp	percentage point
s. p.	constant prices (volumes)

## Country codes

AT – Austria, BE – Belgium, BG – Bulgaria, CY – Cyprus, CZ – Czech Republic, DE – Germany, DK – Denmark, EE – Estonia, ES – Spain, FI – Finland, FR – France, GR – Greece, HR – Croatia, HU – Hungary, IE – Ireland, IT – Italy, LT – Lithuania, LU – Luxembourg, LV – Latvia, MT – Malta, NL – Netherlands, PL – Poland, PT – Portugal, RO – Romania, SE – Sweden, SI – Slovenia, SK – Slovakia, UK – United Kingdom

## Symbols Used in Tables

A dash (–) in place of number indicates that the phenomenon did not occur or is not possible for logical reasons.

## Cut-off Date for Data Sources

Macroeconomic data used pertain to the 1 November 2022 release, fiscal data to the 1 November 2022 release, international comparison to the 21 October 2022 release and government bond yields to the 12 October 2022 release, respectively.

## Note

In some cases, published aggregates do not match the sum of individual items to the last decimal point due to rounding. “Billion” means a thousand million.



# Introduction and Summary

Public finances have recently faced unprecedented pressures that go beyond those of normal economic crises. Anti-epidemic, stabilisation and redistributive measures that dominated discretionary interventions during the epidemic have been gradually replaced by instruments to help overcome periods of volatile and increased prices of key commodities. The growth prospects of the world economy, with the unresolved consequences of the pandemic, have been disrupted by the Russian Federation, which invaded the territory of Ukraine at the end of February and sparked a military conflict. The energy dependence on Russia, particularly in Europe, the sanctions imposed to dampen aggression and the instability in fossil fuel markets have led to massive energy price rises that are having a significant impact on households and businesses.

Rising energy prices are reflected in the entire economy in the form of more expensive production inputs and contribute to the overall increase in the price level. The annual rate of consumer price inflation has risen to close to 18% in the Czech Republic. The sharp rise in the cost of living and the decline in real household consumption will dampen economic activity in the first half of 2022 and probably early next year. The situation calls for emergency and temporary measures. On the other hand, high prices are creating extraordinary windfall gains in some sectors of the economy. It is in these sectors that the opportunity arises to mobilise additional resources to cover temporary government subsidy and transfer programmes.

The original draft of the state budget for 2022 with a deficit of CZK 376.6 billion was revised after the elections in October 2021. The balance was improved by almost CZK 100 billion after taking into account higher expected revenues and including adjustments on the expenditure side. The migration wave and the effects of high inflation led, due to either compensation transfers or an increase in social spending, to an increase in the approved deficit in 2022 to CZK 375 billion. For 2023, the government approved a state budget deficit of CZK 295 billion.

The balance of the public finances of the Czech Republic is primarily determined by the performance of the state budget. Therefore, we expect the general government deficit to exceed 4% of GDP both this year and next. In the following years, the balance could improve above -3% of GDP. Still significant deficits will be reflected in the level of debt. It could increase by about 4 percentage points over 2022 and 2023 and approach 47% of GDP in 2025. From an adjustment perspective, fiscal policy should be broadly neutral over the forecast and outlook horizon.

The structural deficit of around 3% of GDP is in line with the fiscal rule set by the Act on Fiscal Responsibility Rules. The expenditure frameworks were derived on a declining structural deficit trajectory, with a value of 3.7% of GDP applied for 2025. This implies that the fiscal rule should be obeyed in all years. On the other hand, structural imbalance of 3 percentage points is unsustainable in the long term. It is thus clear that public finances in the Czech Republic will have to undergo fiscal consolidation as soon as the situation allows. However, there will be room for this only after the end of current crisis and resolving its consequences.

In terms of spending in social systems, the issue of their long-term financial sustainability is still not solved. This has been negatively affected by the increase in debt in recent years. Structural reforms in the labour market, pensions, health care and long-term care thus become still more

urgent. In its programme statement, the government declared its intention to prepare a comprehensive pension reform, which should be presented in 2023.

The thematic chapter of the Fiscal Outlook focuses on the institutional set-up of selected social systems in the Czech Republic and the possibility of increasing the long-term financial resilience of the pension system. The chapter is based on the identification of age cohorts for which there is potential to increase economic activity and employment rates. Based on the analysis, it therefore focuses primarily on two groups, namely women of prime working age at the beginning of their careers and the elderly. For working-age women, it reflects the institutional model of Austria and envisages adjusting the length of paid maternity and parental leave in line with our culturally close southern neighbour. For the elderly, we assume that the retirement age is shifted in line with life expectancy, as is already possible under Czech legislation, although it has not yet been applied.

These findings are consistent with the recommendations consistently given to the Czech Republic by international and supranational institutions. They have the potential not only to increase the growth of the Czech economy, but also to help address the financial aspect of the long-term sustainability of public finances. For example, by aligning the maternity and parental leave regime with Austria and shifting the retirement age in line with life expectancy, the future deficit in the pension system could be reduced by 1.6% of GDP, i.e. by CZK 107 billion in current prices.

Although even this amount would not resolve the entire expected magnitude of the pension imbalance, it would significantly reduce it and would move the Czech Republic from high to medium risk in terms of the sustainability of public finances assessment. In case of successful fiscal consolidation in the medium term and further reforms in the health and long-term care systems, the Czech Republic could return to the low risk category, improving its position in financial markets and preparing for future challenges.

# 1 Macroeconomic Framework of the Fiscal Forecast

The macroeconomic framework of the fiscal forecast works with a scenario in which a significant reduction in gas supplies from Russia to the European Union can be covered by imports of natural gas (including liquefied gas) from other suppliers, savings on the demand side and, in this heating season, the use of gas in storage. Furthermore, it is expected that, due to the vaccination of the population and the high number of people who have already had COVID-19, macroeconomically significant anti-epidemic restrictions will not be necessary. On the other hand, problems in production and supply chains should persist in the coming year, but their intensity should gradually decrease.

While the economy grew in the first half of this year despite adverse circumstances, it is expected to go through a recession in the second half and early next year. Nevertheless, **gross domestic product** is likely to increase by 2.4% for the full year 2022. Economic activity should be driven by fixed capital investment and increased inventory accumulation. Household final consumption expenditure will be dampened by a sharp increase in the cost of living, especially energy prices, and tighter monetary policy. The external trade balance should be neutral for GDP growth.

In 2023, with a positive contribution from net exports and a negative impact of domestic demand, the economy could contract by 0.2%. In the following years, economic growth could be close to 3%, driven by both domestic and external demand.

**Household final consumption expenditure** should be negatively affected this year by the fall in real disposable income and the tightening of monetary policy. The increase in the cost of living will mainly affect low-income households, while the effect of the rising price level on middle- and especially high-income households could be cushioned by savings, including the drawdown of exceptional savings accumulated during the epidemic. Lower taxation of labour and government measures limiting the impact of rising energy prices should have a positive impact on the annual dynamics. Concerns about further price increases may have motivated households to undertake some spending earlier in the year, but the drop in consumer confidence should become fully apparent in H2. In view of the above strongly negative factors, real household consumption could grow by only 0.2% this year. Given the ongoing decline in real disposable income due to increased inflationary pressures, and the tight financial situation of households, household consumption should decrease in 2023. However, household spending should be boosted next year by refugees from Ukraine. As a result, household consumption could fall by 0.8% in 2023. In subsequent years, growth could be around 3.5%.

**Gross fixed capital formation** is expected to recover significantly in 2022 thanks to economic growth abroad and high production capacity utilization. Government spending, supported by the implementation of projects co-financed by EU funds, should have a moderately positive impact on investment activity. Monetary conditions, which were strongly accommodative in the previous year, have a significant stimulative effect; given the length of the transmission mechanism, their positive

impact is felt in 2022. However, private investment in the second half of the year may be weighed down by economic problems in euro area countries, higher costs and prices of capital goods, and a substantial increase in uncertainty about gas supplies and rising energy prices. The anticipated easing of these difficulties, together with purchases of military equipment and the use of expiring EU funds from the previous financial perspective, should cushion the impact of the marked slowdown in the euro area economy and the restrictive effects of monetary policy next year. Thus, gross fixed capital formation is expected to increase by 5.1% in 2022 and 1.5% next year. In 2024, the growth should fall to 0.1% in connection with a shift to the new EU multiannual financial perspective.

**High inflation** slows economic growth and lowers living standards. Annual inflation is expected to fall significantly to close to 15% in Q4 2022, thanks to the energy saving package. The average inflation rate is therefore expected to reach 15.0% this year. Not only food, fuel, electricity, natural gas and imputed rent, but also other categories of goods and services are contributing significantly to the exceptionally strong consumer price growth. Domestic demand pressures are boosting inflation, but these should gradually start to be dampened by the previous increase in monetary policy rates. In 2023, the average inflation rate could slow to 9.5%. Inflationary pressures will mainly consist of the gradual pass-through of higher corporate costs to prices of goods and services for consumers and continued energy price increases, which will, however, be capped from above by the price ceiling for electricity and natural gas. Disinflation should continue in the following years, aided by a gradual appreciation of the koruna against the euro resulting from renewed real economic convergence. However, annual consumer price inflation should approach the Czech National Bank's 2% inflation target only at the end of 2025.

**Labour market** imbalances related to labour shortages continue to manifest themselves. The unemployment rate has been close to 2.5% since the beginning of this year, contributing to higher wage and salary dynamics. Demand for foreign workers remains strong.

Employment is expected to decline slightly at the end of this year and the beginning of next year due to rising costs for businesses and the expected economic recession. After that, however, employment should pick up again, albeit only slightly, thanks to a gradual recovery in economic activity. Employment is expected

to grow by 1.9% in 2022, and then to be essentially flat in 2023. The unemployment rate could reach 2.5% on average in 2022, but we expect it to rise to 3.1% next year due to worse macroeconomic developments. Persistent labour market tightness will push up wage and salary growth, which will lag behind inflation, though. The average real wage should thus fall both this year and next. Wages and salaries could increase by 10.0% in 2022, with the pace of growth gradually declining in the following years.

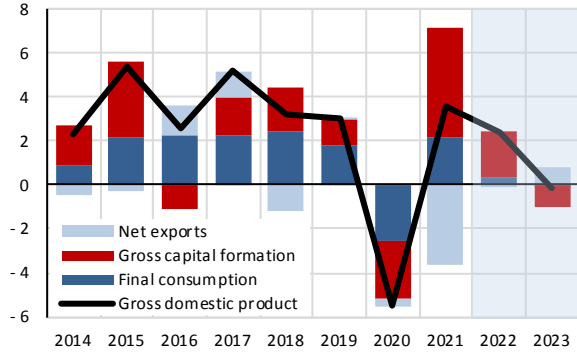
The **current account of the balance of payments** showed a deficit of 3.5% of GDP in Q2 2022, mainly reflecting a deterioration in the balance of goods due to significantly negative terms of trade driven by mineral fuel prices. Slowing economic growth abroad, and rising prices of energy and other inputs are expected to continue contributing to the negative balance of goods this year and next. Thus, the current account deficit is expected to reach 5.4% of GDP in 2022, narrowing to 5.3% of GDP in 2023.

The forecast is subject to a number of **risks** that, in aggregate, we consider to be **biased to the downside**.

The main risk is the possibility that the shortfall in natural gas supplies from Russia to the EU is not fully compensated by increased imports from other suppliers from winter 2023/2024 onwards. In addition, there remain challenges in global supply chains (including in relation to China's zero-COVID policy), as well as the risk of the emergence and spread of new coronavirus variants against which available vaccines or experienced disease would provide little protection. The evolution of inflation and inflation expectations or the composition and intensity of fiscal consolidation are also risks. On the one hand, an influx of refugees from Ukraine could alleviate labour market imbalances and weaken upward pressure on wages, but potentially failed integration could pose a significant social problem in the future. In addition, cyclical and structural developments in the automotive industry and overvaluation of residential real estate prices are internal risks. On the positive side, the extraordinary increase in household savings during the epidemic could help cushion the impact of higher consumer prices on consumption.

**Graph 1.1: Real GDP**

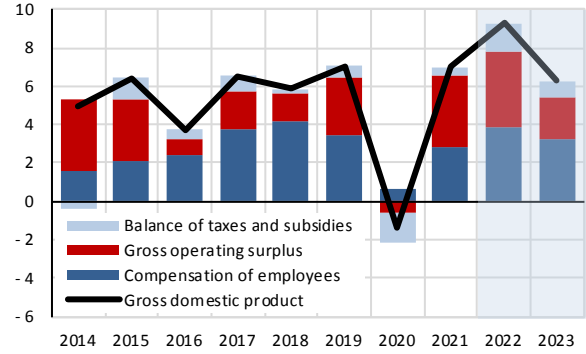
real GDP change in %, contributions in pp



Source: MF CR (2022b).

**Graph 1.2: Nominal GDP – Income Approach**

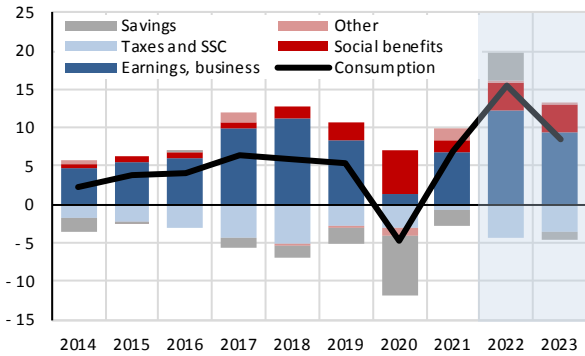
nominal GDP change in %, contributions in pp



Source: MF CR (2022b).

**Graph 1.3: Nominal Households Consumption**

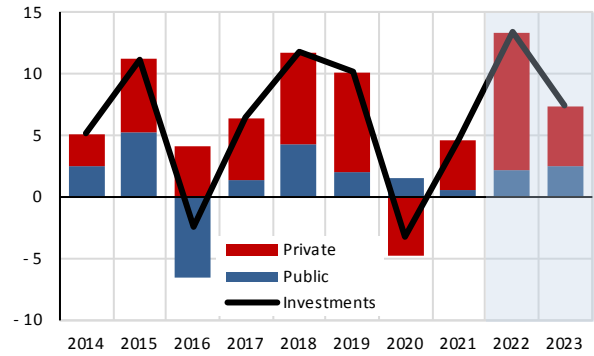
change of nominal households consumption in %, contributions in pp



Source: MF CR (2022b).

**Graph 1.4: Nominal Investments**

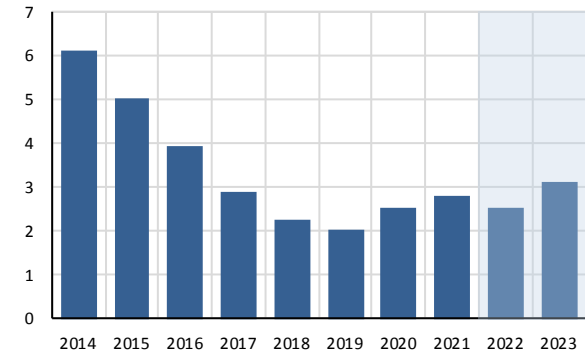
change of nominal investments in %, contributions in pp



Source: MF CR (2022b).

**Graph 1.5: Unemployment Rate**

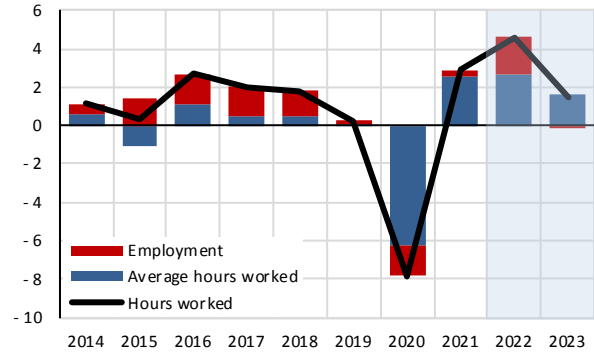
% of labour force, Labour Force Survey methodology



Source: MF CR (2022b).

**Graph 1.6: Hours Worked**

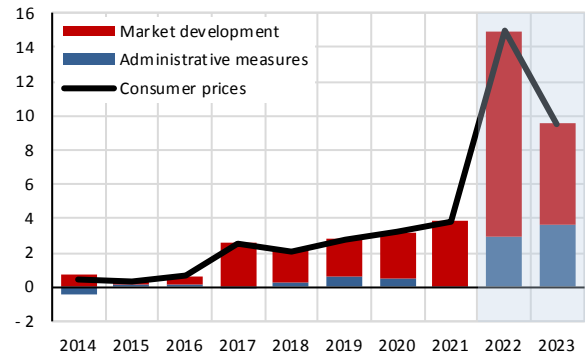
change in %, contributions in pp, National Accounts methodology



Source: MF CR (2022b).

**Graph 1.7: Consumer Prices**

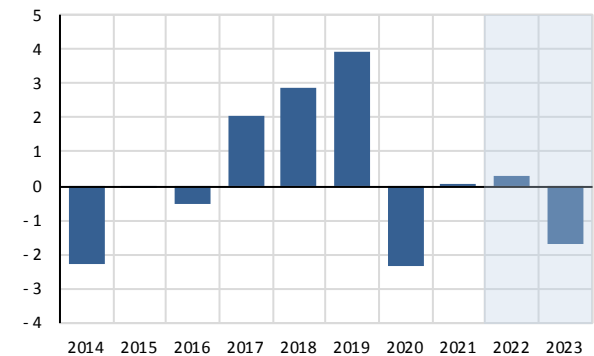
average rate of consumer price inflation in %, contributions in pp



Source: MF CR (2022b).

**Graph 1.8: Output Gap**

% of potential product



Source: MF CR (2022b).

**Table 1.1: Comparison of Fiscal Outlook and Convergence Programme Scenarios**

		Fiscal Outlook (November 2022)					Convergence Programme (April 2022)				
		2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
<b>External Assumptions</b>											
Real GDP in EU	<i>change in %</i>	5.3	3.4	0.5	1.7	2.2	5.3	2.5	3.1	2.8	1.7
Prices of oil (Brent)	<i>USD/barrel</i>	70.8	102.2	83.0	76.2	72.4	70.8	104.8	91.3	83.5	78.8
Exchange rate USD/EUR	<i>USD/EUR</i>	1.18	1.04	1.00	1.01	1.03	1.18	1.11	1.10	1.10	1.10
Exchange rate CZK/EUR	<i>CZK/EUR</i>	25.6	24.6	24.5	24.3	24.1	25.6	24.4	24.2	24.1	24.0
<b>Real Values</b>											
GDP	<i>change in %</i>	3.5	2.4	-0.2	3.0	2.7	3.3	1.2	3.6	3.2	2.4
Households consumption	<i>change in %</i>	4.1	0.2	-0.8	3.8	3.2	4.4	0.5	4.5	4.0	3.5
Government consumption	<i>change in %</i>	1.5	1.2	1.7	1.4	1.7	3.0	1.0	1.0	1.1	1.6
Gross fixed capital formation	<i>change in %</i>	0.7	5.1	1.5	0.1	1.8	0.6	2.2	5.9	0.1	0.2
Contribution of final domestic demand	<i>p.p.</i>	2.4	1.7	0.4	2.2	2.4	2.8	1.0	3.9	2.2	2.0
Contribution of foreign trade	<i>p.p.</i>	-3.6	0.0	0.8	1.0	0.7	-3.8	0.1	0.2	1.3	0.9
Output gap	<i>%</i>	0.0	0.3	-1.7	-0.6	0.7	-0.7	-1.8	-0.5	-0.1	-0.1
<b>Others</b>											
Nominal GDP	<i>CZK bill.</i>	6108	6674	7092	7577	7987	6121	6618	7135	7550	7904
Harmonised index of consumer prices	<i>change in %</i>	3.3	14.4	9.5	3.5	2.4	3.3	11.3	4.2	2.0	2.0
Employment	<i>change in %</i>	0.4	1.9	-0.2	0.3	0.2	0.1	2.1	1.3	0.2	0.1
Unemployment rate	<i>%</i>	2.8	2.5	3.1	3.0	2.8	2.8	2.5	2.6	2.4	2.3
Wages and salaries	<i>change in %</i>	5.8	10.0	7.4	5.7	4.2	6.6	6.0	6.2	3.9	4.0
<b>General Government</b>											
Revenue	<i>% of GDP</i>	41.4	41.7	43.2	41.7	40.6	40.5	40.4	40.0	38.5	37.6
Value-added tax	<i>change in %</i>	9.7	17.7	7.2	5.9	5.0	9.7	12.2	8.8	4.4	4.4
Excise taxes	<i>change in %</i>	2.6	1.7	0.3	6.1	0.3	2.6	4.2	5.2	0.2	0.6
Personal income tax	<i>change in %</i>	-23.3	3.9	8.0	6.3	4.4	-25.2	-0.2	6.2	4.2	4.0
Corporate income tax	<i>change in %</i>	29.2	5.3	36.4	-3.8	-0.9	3.9	9.0	10.8	7.0	4.8
Social security contributions	<i>change in %</i>	11.4	6.9	6.9	5.9	3.9	11.4	4.4	5.3	3.2	3.4
Expenditure	<i>% of GDP</i>	46.5	46.3	47.5	44.2	43.0	46.4	45.0	43.2	41.4	40.3
Compensation of employees	<i>change in %</i>	6.8	1.7	6.6	4.0	3.5	6.7	0.5	3.2	3.0	3.5
Intermediate consumption	<i>change in %</i>	2.5	13.5	10.7	3.4	3.4	2.3	11.7	5.0	3.0	3.0
Social transfers in kind	<i>change in %</i>	7.1	9.2	7.3	2.8	2.6	11.0	2.1	2.2	2.3	2.3
Social benefits other than in kind	<i>change in %</i>	4.7	10.5	10.6	3.9	3.0	4.7	7.0	7.0	3.4	1.8
Gross fixed capital formation	<i>change in %</i>	3.8	11.5	14.9	-8.6	-2.6	3.1	10.0	10.4	-13.3	-6.2
Balance	<i>% of GDP</i>	-5.1	-4.6	-4.3	-2.5	-2.3	-5.9	-4.5	-3.2	-2.9	-2.7
Structural balance	<i>% of GDP</i>	-3.5	-3.1	-3.3	-3.0	-2.9	-4.0	-3.1	-3.1	-2.9	-2.7
Debt	<i>% of GDP</i>	42.0	43.9	46.1	46.2	46.7	41.9	42.7	43.4	44.4	45.4

Source: MF CR (2022a, 2022b).

## 2 General Government Development

The anti-epidemic and expansionary measures implemented in the past two years have led to a significant increase in the general government sector indebtedness. The first plans to consolidate public finances appeared as early as in autumn 2020. With the current government in place, the draft state budget for 2022 was reworked, with the deficit reduced by almost CZK 100 billion. With the outbreak of the war in Ukraine and the energy crisis, the government finally proceeded to revise the deficit back to CZK 375 billion, which, however, includes additional expenditure related to the migration wave as well as support for households and companies due to expensive energy. These factors will undoubtedly determine also the 2023 performance, for which a state budget deficit of CZK 295 billion has been approved. The general government sector is thus expected to run deficits in excess of 4% of GDP in both 2022 and 2023.

The forecast of the Fiscal Outlook of the CR envisages a gradual reduction of the general government deficit to 2.3% of GDP in 2025. The balance should fall below the **Maastricht criterion** and the **Stability and Growth Pact** reference value for excessive deficit in 2024. However, the future scenario is burdened by an extreme degree of uncertainty regarding the overall geopolitical situation, the development in energy prices and hence the overall inflation rate, the realised revenues from the windfall tax or the European Revenue Cap Mechanism regarding price caps for electricity producers. The bearer of the public finance deficit will be the state budget, which is by far the most burdened by the stabilisation function of economic policy and fiscal expansion.

Surplus balances of local governments and health insurance companies should cushion the structural deficit of central government with a dominant share of the state budget. However, both these parts of the public finances have received significant compensations during the epidemic of the past two years at the expense of the state budget to mitigate the negative effects of the recession on

their performance. While local governments experienced a deterioration in the balance in the form of a decline in the surplus in 2020, their surplus rose to almost 1% of GDP in 2021. In contrast, the double-digit growth in expenditure of health insurance companies led to deficit performance in both 2020 and 2021, although their performance should return to balanced to slightly surplus values as the epidemic subsidies. Given that both local governments and social security funds achieve their economic results due to transfers from the state budget, subsequent consolidation will require discussion involving entities across the government sector. This is again becoming utterly relevant with the expected recession. In the event of an economic downturn, it is virtually impossible to pursue an expansionary fiscal policy on the revenue side without affecting local government revenues. In a system where almost all macroeconomically significant tax revenues are shared to a significant extent, the vehicle for fiscal policy is no longer only the central government, but all 14 regions and 6 257 municipalities, which cannot be coordinated effectively.

**Table 2.1: Fiscal Policy Stance**

*in % of GDP, fiscal effort in percentage points*

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
							<i>Forecast</i>	<i>Forecast</i>	<i>Outlook</i>	<i>Outlook</i>
<b>General government balance</b>	<b>0.7</b>	<b>1.5</b>	<b>0.9</b>	<b>0.3</b>	<b>-5.8</b>	<b>-5.1</b>	<b>-4.6</b>	<b>-4.3</b>	<b>-2.5</b>	<b>-2.3</b>
Cyclical component according to OECD method	-0.2	0.7	1.0	1.3	-0.8	0.0	0.1	-0.6	-0.2	0.2
One-off and other temporary measures	0.1	0.0	-0.1	0.0	-2.3	-1.6	-1.6	-0.3	0.6	0.4
Structural balance according to OECD method	0.8	0.8	0.0	-1.1	-2.6	-3.5	-3.1	-3.3	-3.0	-2.9
<b>Fiscal effort according to OECD method</b>	<b>1.2</b>	<b>0.0</b>	<b>-0.8</b>	<b>-1.0</b>	<b>-1.6</b>	<b>-0.9</b>	<b>0.4</b>	<b>-0.2</b>	<b>0.4</b>	<b>0.0</b>
Cyclical component according to ECB method	0.0	0.5	0.9	1.3	-0.5	0.2	-0.3	-0.7	-0.1	0.4
Structural balance according to ECB method	0.7	1.0	0.1	-1.0	-3.0	-3.7	-2.8	-3.3	-3.1	-3.1
<b>Fiscal effort according to ECB method</b>	<b>0.8</b>	<b>0.3</b>	<b>-0.9</b>	<b>-1.1</b>	<b>-2.0</b>	<b>-0.7</b>	<b>0.9</b>	<b>-0.5</b>	<b>0.2</b>	<b>0.0</b>

*Note: The method of Organisation of Economic Co-operation and Development calculates the cyclical component directly from output gap, whereas the European Central Bank models the cyclical development of specific macroeconomic bases (compensation of employees in the private sector, wages in the private sector, net operating surplus, consumption of households and unemployment). These bases have different cyclical behaviour than the GDP and its potential.*

*Source: CZSO (2022a, 2022b). Forecast and calculations by MF CR.*

## 2.1 Balance, Structural Balance and Expenditure Frameworks

The general government sector is expected to end 2022 with a deficit of 4.6% of GDP, and 3.1% of GDP in structural terms. The estimate reflects the economic and financial consequences of the Russian aggression against Ukraine and the related humanitarian crisis, assistance to households and firms burdened by extreme price increases, as well as the fiscal stimulus measures of recent years triggered by the COVID-19 epidemic. The main burden is borne by the **state budget**, whose planned deficit has been widened to CZK 375 billion by the amendment to the state budget act for this year (Chamber of Deputies Print No. 284). In addition to the economic forecast for the second half of the year and data from the quarterly national accounts for the first and second quarters, the accrual estimate for this year is also based on the cash performance of the key components of the public budgets to date (MF CR, 2022c). The cash balance of the state budget for the first 10 months of this year ended with a deficit of CZK 286.7 billion, and thus was CZK 48.2 billion better than for the same period in 2021. Local governments, with a surplus of CZK 60.3 billion at the end of September, achieved a CZK 15.6 billion better balance year-on-year. The cash balance of health insurance companies ended with a surplus of CZK 4.1 billion for the same period, meaning an improvement of almost CZK 11 billion year-on-year.

The state budget deficit will continue to be a determinant of the public finance balance in the years to come. For 2023, the Chamber of Deputies approved a deficit of CZK 295 billion in the first reading (Chamber of Deputies Print No. 315), while for the outlook years the government has prepared a plan to reduce the deficits to CZK 280 and 260 billion, respectively. By contrast, local governments should again show positive balances of around 0.7% of GDP over the entire outlook horizon and social security funds may achieve a slight surplus as well. We expect the general government deficit to fall by 0.3 pp to 4.3% of GDP in 2023. In the following years, it should hover around 2.5% of GDP.

The setting of the state budget and state funds budgets is based on the fiscal rule set out in Act No. 23/2017 Coll., on Fiscal Responsibility Rules, as amended. The act prescribes the maximum level of **expenditure ceilings** of the state budget and state funds with respect to the

forecast balances of remaining general government entities. In deriving the expenditure ceilings, it was allowed to start from a maximum structural deficit of 5.1% of GDP for 2023, which was tightened by 0.4 pp by government decision, i.e. to 4.7% of GDP. In the following years, the maximum structural deficit is reduced by 0.5 pp year-on-year, i.e. to 3.7% of GDP for 2025.

We estimate **structural deficits** in the forecast and outlook at 3.3% of GDP in 2023, with a subsequent decrease to 3% of GDP in 2024 and 2025. The year-on-year deterioration in 2023 is primarily driven by another extraordinary pension indexation and discretionary measures on the revenue side (especially for value-added tax). Neither temporary exceptional expenditure nor exceptional revenue affects the structural balance. A stabilisation of the current situation should lead to a slight adjustment between structural revenue and expenditure.

The logic of the fiscal rule, including the ex-post assessment, is that if structural deficits are around 3% of GDP, the rule should be met in all years. On the other hand, the current setting of public finances limits considerably the scope for a faster pace of consolidation, as was the case for 2023. In other words, a faster consolidation will require additional discretionary measures after 2025 at the latest.

We expect the **fiscal impulse** (Graph 2.1.6) to be roughly balanced in 2022, as well as its revenue and expenditure side. The fact that the impulse does not reach negative values with positive fiscal effort (Graph 2.1.5) is mainly due to the exclusion of the impact of the increase in EU revenue. The volume of one-off measures affecting the impulse has not changed much this year, although their composition did. The amount of measures responding to anti-epidemic restrictions has declined, but has been replaced by support to households and businesses affected by energy price increases and humanitarian expenditure for refugees from Ukraine.

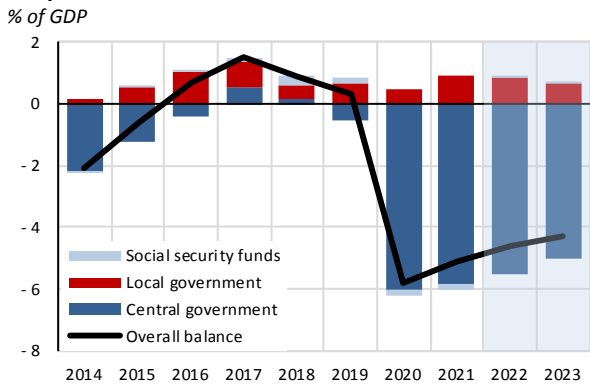
We assume a negative fiscal impulse in 2023. The coincidence of negative fiscal effort and fiscal impulse is due to the impact of items outside the fiscal effort, mainly the termination of one-off measures of a humanitarian nature, compensation related to the epidemic period, or a qualitative change in energy measures setting.

**Table 2.1.1: General Government Development**

		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
								Forecast	Forecast	Outlook	Outlook
<b>Total revenue</b>	% of GDP	40.5	40.5	41.5	41.3	41.5	41.4	41.7	43.2	41.7	40.6
	change in %	1.6	6.6	8.5	6.7	-1.2	6.9	10.0	10.1	3.0	2.8
<b>Total expenditure</b>	% of GDP	39.8	39.0	40.6	41.1	47.2	46.5	46.3	47.5	44.2	43.0
	change in %	-1.7	4.5	10.3	8.2	13.4	5.4	8.8	9.0	-0.5	2.4
<b>General government balance</b>	% of GDP	0.7	1.5	0.9	0.3	-5.8	-5.1	-4.6	-4.3	-2.5	-2.3
Central government	% of GDP	-0.4	0.5	0.1	-0.6	-6.0	-5.8	-5.5	-5.0	-3.3	-3.0
Local governments	% of GDP	1.0	0.8	0.4	0.6	0.5	0.9	0.9	0.7	0.7	0.6
Social security funds	% of GDP	0.1	0.2	0.3	0.2	-0.2	-0.2	0.0	0.1	0.1	0.1

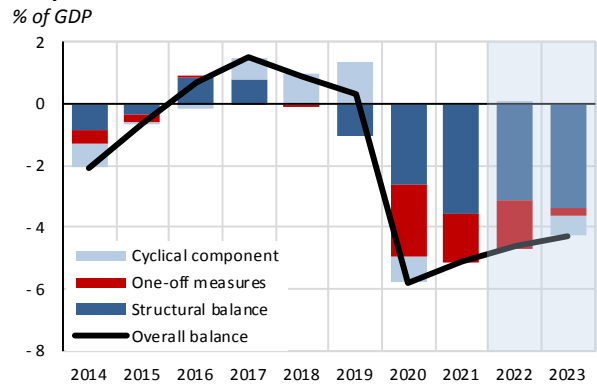
Source: CZSO (2022a, 2022b). Forecast and calculations by MF CR.

**Graph 2.1.1: General Government Balance**



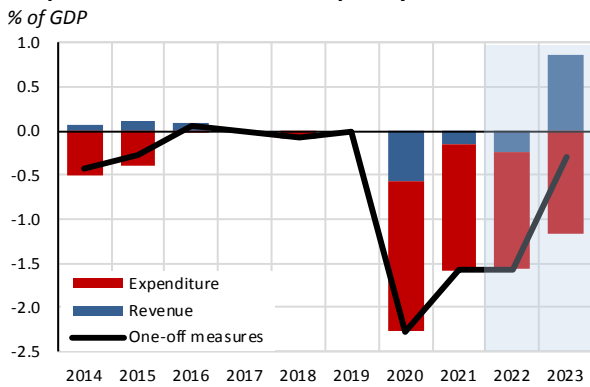
Source: CZSO (2022a, 2022b). MF CR forecast.

**Graph 2.1.2: Overall and Structural Balance**



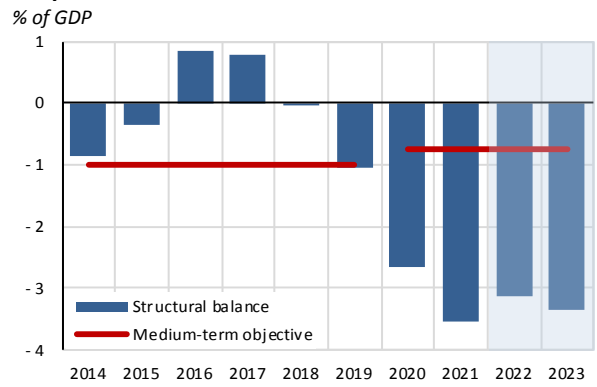
Source: CZSO (2022a, 2022b). MF CR calculations and forecast.

**Graph 2.1.3: One-off and Temporary Measures**



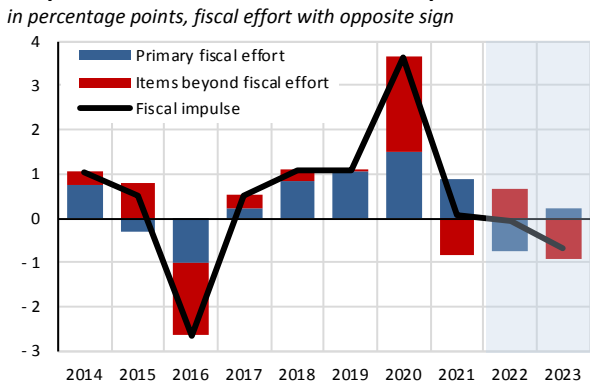
Source: MF CR.

**Graph 2.1.4: Structural Balance and MTO**



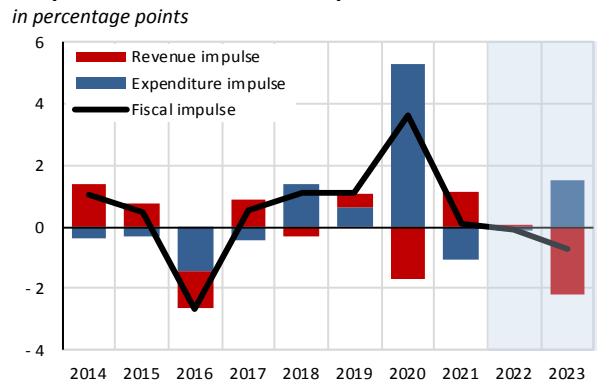
Source: MF CR.

**Graph 2.1.5: Fiscal Effort and Fiscal Impulse**



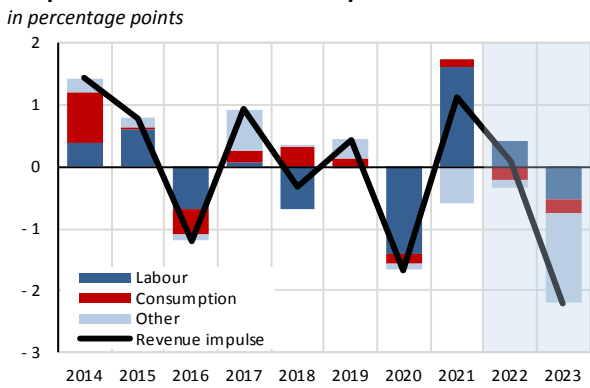
Source: MF CR.

**Graph 2.1.6: Overall Fiscal Impulse**



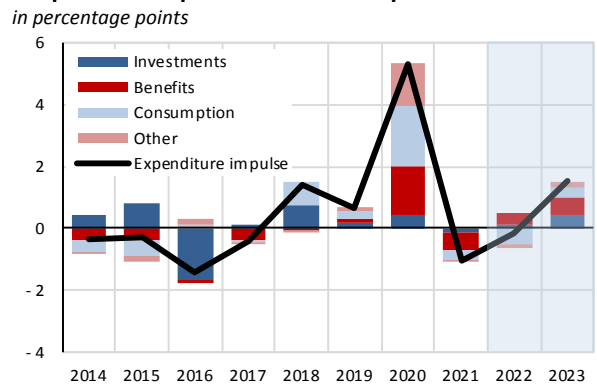
Source: MF CR.

**Graph 2.1.7: Revenue Fiscal Impulse**



Source: MF CR.

**Graph 2.1.8: Expenditure Fiscal Impulse**



Source: MF CR.



## 2.2 General Government Revenue

**Total general government revenue** is foreseen to grow by 10% to reach 41.7% of GDP in 2022. However, the high expected growth in nominal GDP will lead to a 0.6 pp decline in the composite tax quota to 35.2% of GDP (Graph 2.2.1), despite an estimated 7.5% growth in tax and social security contribution revenue (Graph 2.2.2). In 2023, mainly due to the taxation of extraordinary profits and sales in selected sectors, revenues may increase by more than 10% to reach 43.2% of GDP. In the following years, the dynamics will drop significantly.

**Personal income tax** revenue is expected to be 3.9% higher year-on-year this year, as the estimated 10.0% growth in the wage bill in the economy is counteracted by a CZK 3,000 increase in the basic taxpayer credit, with an impact of CZK 12.3 billion (Act No. 609/2020 Coll.). The tax exemption of government bond proceeds (Act No. 609/2020 Coll.), together with the additional impact of the flat-rate income tax regime for sole traders with incomes of up to CZK 1 million (Act No. 540/2020 Coll.) and the change in the taxation of low-emission company cars used also for private purposes (Act No. 142/2022 Coll.) should amount to CZK 0.4 billion in 2022. The ongoing regime of tax exemption of government bonds proceeds and the extension of the flat-rate regime to sole traders with annual income of up to CZK 2 million will further reduce tax revenue by an estimated CZK 0.5 billion in 2023. The temporary increase in the limit for applying the donation deduction to 30% of the tax base (Act No. 609/2020 Coll.) was extended to 2022, and at the same time, the range of recipients and the purpose of providing gratuitous services in connection with aid to Ukraine and its inhabitants were expanded (Act No. 128/2022 Coll.), which in combination represents an essentially zero effect in 2022 and a positive impact of CZK 0.3 billion in 2023.

**Social security contributions** also depend on expected earnings developments, with an estimated growth of less than 7% in 2022 and 2023. The extraordinary remuneration of workers in the health care sector, social services and the armed forces back in 2021 influence this year's dynamics of employee taxation and social security contributions. The monthly payment for the state insured increased by CZK 200 per person as of 1 January 2022 (Government Regulation No. 253/2021 Coll.), but with effect from 31 August 2022 it was reduced again by CZK 480 so that the average for the whole year would reach 2021 level (Act No. 260/2022 Coll.). The payment by the state budget for temporary protection granted citizens of Ukraine will bring an estimated CZK 5 billion to the public health insurance system. For 2023, the monthly payment per state insured person will increase to CZK 1 900, and will be automatically indexed in subsequent years (Act No. 260/2022 Coll.) on the basis of price and real wage increases (similar to pensions). The additional revenue for health insurance companies from this should amount

to about CZK 10 billion in 2023, and a similar amount can be expected for 2024. CZK 0.8 billion more was spent this year than in 2021 on the payment of the extraordinary allowance for persons quarantined due to the COVID-19 disease (Act No. 121/2021 Coll., as amended by Act No. 182/2021 Coll., Act No. 518/2021 Coll.). The change in the taxation of low-emission official vehicles used also for private purposes also has a negative impact of CZK 0.2 billion in 2022 and an additional CZK 0.3 billion in the following year (Act No. 142/2022). It also reflects the introduction of a discount on social security contributions for employers arranging part-time work (5% of the aggregate of the monthly assessment bases of the employees to whom the discount is applied) in the amount of CZK 2.9 billion and an additional CZK 0.3 billion in 2024 (Act No. 216/2022 Coll.).

In the case of **corporate income tax**, we expect growth of 5.3% this year and an acceleration to 36.4% in 2023 due to the tax on extraordinary profits in the estimated amount of CZK 77.6 billion. The consequent declining yield of this new form of taxation is the reason for the negative growth of corporate income tax in 2024 and 2025. This year, the growth of the tax yield is dampened by termination of the changed method of creation and tax deductibility of insurance companies' technical provisions with an impact of CZK 5.3 billion (Act No. 364/2019 Coll.), the extension of the validity of extraordinary depreciation of CZK 1.0 billion (Act No. 609/2020 Coll., Chamber of Deputies Print No. 254) and the tax exemption of CZK 1.5 billion on government bonds proceeds (Act No. 609/2020 Coll.). The latter measure will reduce the tax revenue by another CZK 2.2 billion in 2023. The introduction of the 'meal voucher lump sum' is associated with an additional negative effect of CZK 0.2 billion this year and CZK 1.3 billion the following year (Act No. 609/2020 Coll.). Similarly to the personal income tax, the increase in the limit for claiming the donation deduction has been extended to 2022 and the range of beneficiaries and purposes for supporting Ukraine has been expanded, with an impact of CZK 0.3 billion (Act No. 128/2022 Coll.). Positive effect has fading away of the negative impact of the increase in the entry price threshold for depreciation of tangible assets, estimated at CZK 1.6 billion this year (Act No. 609/2020 Coll.).

For **value added tax revenue**, we forecast growth of 17.7% in 2022, driven by strong nominal household consumption, followed by a gradual slowdown down to 5.0% in 2025. We estimate the negative effect of previously approved discretionary measures, such as the reclassification of selected services to the second reduced tax rate in the first half of 2020 (Act No. 256/2019 Coll.) and the reduction of the rate for accommodation, sports and cultural events, ski lifts and other selected services from July 2020 (Act No. 299/2020

Coll.), to total CZK 2.8 billion this year. On the other hand, the waiver of the tax on electricity and gas supplies at the end of 2021 (Government Resolution No. 907/2021) in the amount of CZK 5.4 billion positively affects the dynamics in 2022. The termination of the value added tax waiver on the purchase of respirators or the year-on-year lower impact of the tax waiver on the purchase of vaccines and tests is expected to generate CZK 1.6 billion this year and an additional CZK 0.7 billion next year. Tax revenue in 2023, on the other hand, should be negatively affected by the increase in the turnover limit for value added tax registration from CZK 1 million to CZK 2 million. The estimated impact is CZK 10 billion.

For **excise duties**, excluding renewable energy subsidies, we forecast an increase in revenue of 1.7% this year and 0.3% the following year. The main impacts include the introduction of the solar electricity levy for equipment put into operation in 2009 and the increase in rates for 2010 equipment with an impact of CZK 3.0 billion in 2022 (Act No. 382/2021 Coll.) and an increase in the tax on tobacco products of around CZK 2.5 billion this as well as next year (Act No. 609/2020 Coll.). The waiving of the renewable energy levy for households and companies represents an estimated revenue shortfall of CZK 4.6 billion this year and an additional CZK 13.8 billion in 2023. The dynamics is further dampened by the reduction of excise duties on petrol and diesel for the

period from June to September 2022, or in the case of diesel until the end of 2023, with calculated impact of CZK 6.7 billion this year, increased by a further CZK 2.9 billion in 2023 (Act No. 131/2022 Coll., Act No. 286/2022 Coll.). In response to the rise in fuel prices, the road tax on cars and vans up to 12 tonnes was also abolished from this year and the rates for trucks over 12 tonnes were reduced, with an estimated revenue shortfall of CZK 4.2 billion (Act No. 142/2022 Coll.). In the case of other taxes on production and imports, the introduction and later extension of the register of excluded persons will lead to a reduction in gambling tax revenue of CZK 1.5 billion in 2022 and a further CZK 0.3 billion in 2023 (Act No. 186/2016 Coll.).

We expect a significant acceleration of revenue **transfers** both in 2022 and 2023. The forecast reflects the ramp-up of EU co-financed projects from the ending 2014–2020 financial perspective and to a small extent from the upcoming 2021–2027 financial perspective, as well as from the EU Next Generation Instrument. In addition, the dynamics of transfers is reinforced in 2023 by the expected revenue of CZK 15 billion from the price caps set for electricity producers under the European Revenue Cap Mechanism, and we do not yet foresee revenue from this title for the following years. Under **property income**, higher profits this year are expected to translate into an adequate increase in the state budget's dividend income.

**Table 2.2.1: General Government Revenue Outlook**

		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
								Forecast	Forecast	Outlook	Outlook
<b>Total revenue</b>	<i>bill. CZK</i>	<b>1941</b>	<b>2069</b>	<b>2245</b>	<b>2394</b>	<b>2367</b>	<b>2530</b>	<b>2784</b>	<b>3064</b>	<b>3157</b>	<b>3246</b>
	<i>change in %</i>	1.6	6.6	8.5	6.7	-1.2	6.9	10.0	10.1	3.0	2.8
<b>Tax revenue</b>	<i>bill. CZK</i>	<b>972</b>	<b>1043</b>	<b>1106</b>	<b>1179</b>	<b>1137</b>	<b>1173</b>	<b>1267</b>	<b>1407</b>	<b>1491</b>	<b>1554</b>
	<i>change in %</i>	6.1	7.2	6.1	6.6	-3.5	3.2	8.0	11.0	6.0	4.2
Taxes on production and imports	<i>bill. CZK</i>	587	626	647	688	651	705	778	811	891	945
	<i>change in %</i>	4.4	6.7	3.4	6.3	-5.3	8.2	10.3	4.2	9.9	6.0
Value added tax	<i>bill. CZK</i>	354	388	409	435	422	464	546	585	619	650
	<i>change in %</i>	6.2	9.5	5.4	6.6	-3.0	9.7	17.7	7.2	5.9	5.0
Excise taxes	<i>bill. CZK</i>	158	164	165	168	157	162	164	165	175	175
	<i>change in %</i>	3.0	3.6	0.8	1.7	-6.4	2.6	1.7	0.3	6.1	0.3
Current taxes	<i>bill. CZK</i>	385	416	458	491	485	468	489	596	599	609
	<i>change in %</i>	8.8	8.0	10.1	7.0	-1.0	-3.6	4.5	21.8	0.6	1.5
Personal income tax	<i>bill. CZK</i>	207	229	261	287	298	228	237	256	273	285
	<i>change in %</i>	10.9	10.5	13.8	10.2	3.6	-23.3	3.9	8.0	6.3	4.4
Corporate income tax	<i>bill. CZK</i>	167	176	187	192	177	228	241	328	316	313
	<i>change in %</i>	6.8	5.2	6.3	2.9	-8.1	29.2	5.3	36.4	-3.8	-0.9
<b>Social contributions</b>	<i>bill. CZK</i>	<b>703</b>	<b>760</b>	<b>834</b>	<b>895</b>	<b>909</b>	<b>1 013</b>	<b>1 083</b>	<b>1 159</b>	<b>1 227</b>	<b>1 275</b>
	<i>change in %</i>	6.1	8.0	9.8	7.3	1.6	11.4	6.9	6.9	5.9	3.9
<b>Property income</b>	<i>bill. CZK</i>	<b>37</b>	<b>31</b>	<b>35</b>	<b>32</b>	<b>34</b>	<b>38</b>	<b>64</b>	<b>78</b>	<b>61</b>	<b>51</b>
	<i>change in %</i>	0.8	-17.9	14.3	-7.5	5.6	12.5	66.2	22.4	-22.5	-16.0
<b>Other</b>	<i>bill. CZK</i>	<b>228</b>	<b>236</b>	<b>270</b>	<b>288</b>	<b>286</b>	<b>305</b>	<b>369</b>	<b>421</b>	<b>378</b>	<b>366</b>
	<i>change in %</i>	-22.3	3.4	14.4	6.7	-0.7	6.6	21.0	13.9	-10.1	-3.3
Revenues from the EU	<i>bill. CZK</i>	30	38	60	64	65	67	116	144	109	89
	<i>change in %</i>	-70.6	27.1	57.5	6.8	2.2	3.2	72.1	24.7	-24.4	-18.2
<b>Tax burden</b>	<i>% of GDP</i>	<b>34.9</b>	<b>35.3</b>	<b>35.8</b>	<b>35.8</b>	<b>35.8</b>	<b>35.8</b>	<b>35.2</b>	<b>36.2</b>	<b>35.9</b>	<b>35.4</b>

Note: Excise taxes are adjusted for subsidies on renewable energy resources.

Source: CZSO (2022b). Forecast and calculations by MF CR.

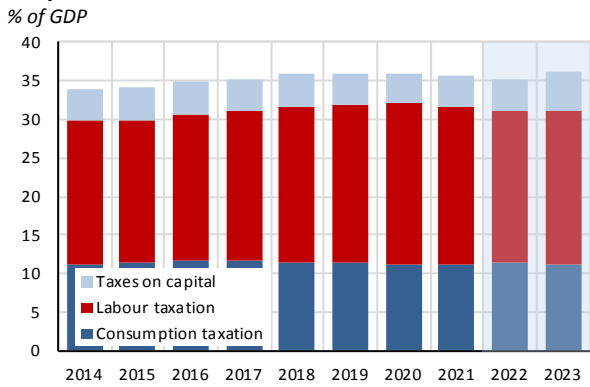
**Table 2.2.2: Discretionary Revenue Measures***in CZK bn.*

		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
								<i>Forecast</i>	<i>Forecast</i>	<i>Outlook</i>	<i>Outlook</i>
<b>Total revenue measures</b>	<i>bill. CZK</i>	<b>25.7</b>	<b>18.7</b>	<b>16.5</b>	<b>14.6</b>	<b>-33.0</b>	<b>-77.3</b>	<b>-27.9</b>	<b>65.4</b>	<b>-16.3</b>	<b>-19.5</b>
Labour taxation	<i>bill. CZK</i>	8.6	13.0	13.5	13.6	-22.6	-65.2	-13.8	-1.9	-0.4	-0.1
Taxes on capital	<i>bill. CZK</i>	-5.7	1.5	0.3	-	-13.7	-2.4	-10.9	76.3	-28.8	-19.3
Consumption taxation	<i>bill. CZK</i>	19.2	8.4	2.6	-0.3	6.8	-12.0	-3.1	-23.9	27.9	0.3
Other revenue	<i>bill. CZK</i>	3.6	-4.2	0.1	1.3	-3.6	2.3	-0.1	14.8	-15.0	-0.3

*Note: Figures represent YoY discretionary changes that are stemming from all envisaged and approved measures on revenue side. Positive values mean YoY improvement of a balance.*

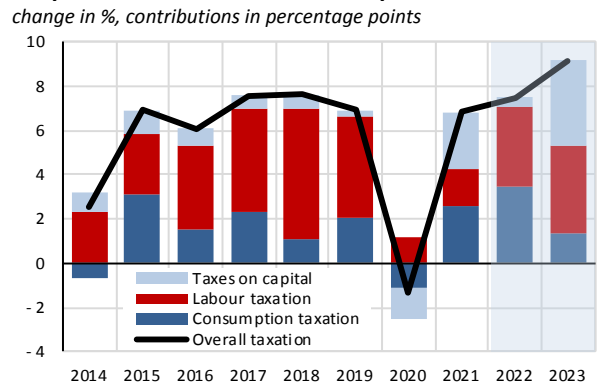
*Source: MF CR.*

**Graph 2.2.1: Tax Revenue Structure**



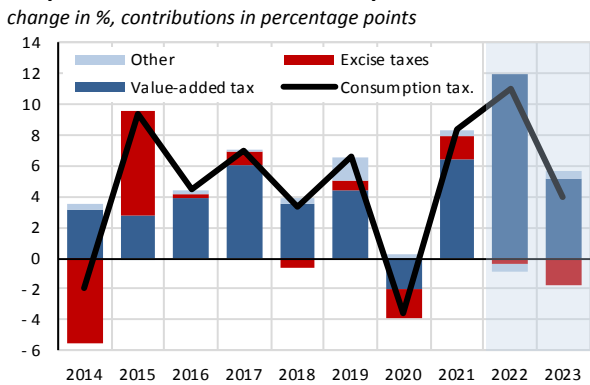
Source: CZSO (2022a, 2022b). MF CR forecast.

**Graph 2.2.2: Tax Revenue Development**



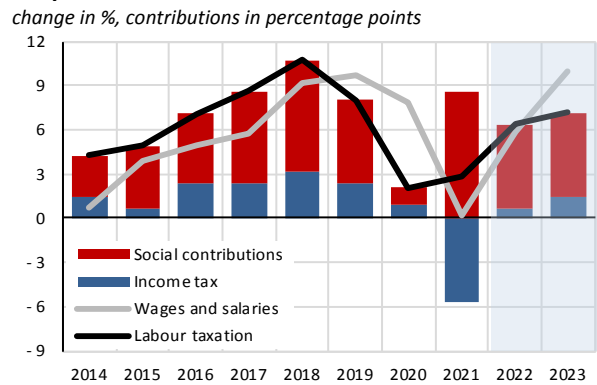
Source: CZSO (2022b). MF CR forecast.

**Graph 2.2.3: Taxation of Consumption**



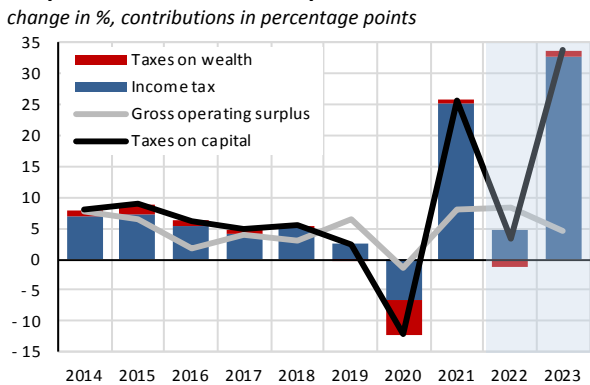
Source: CZSO (2022b). MF CR forecast.

**Graph 2.2.4: Taxation of Labour**



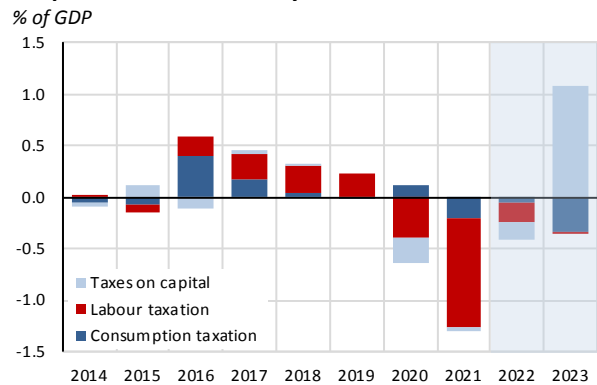
Source: CZSO (2022a, 2022b). MF CR forecast.

**Graph 2.2.5: Taxation of Capital**



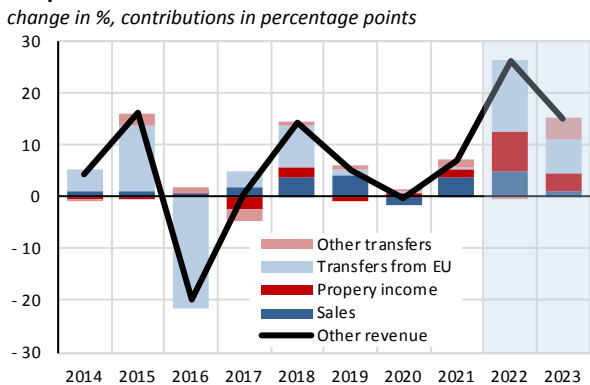
Source: CZSO (2022a, 2022b). MF CR forecast.

**Graph 2.2.6: Discretionary Tax Measures**



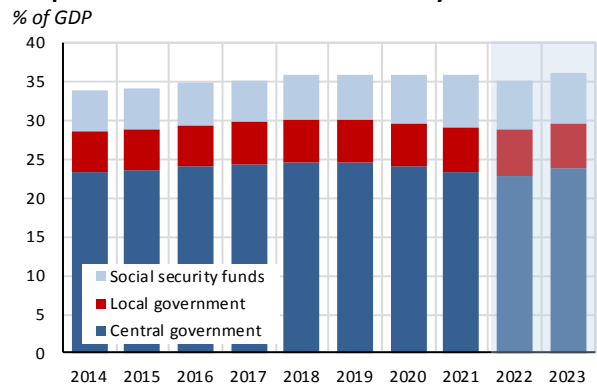
Source: MF CR.

**Graph 2.2.7: Other Revenue**



Source: CZSO (2022b). MF CR forecast.

**Graph 2.2.8: Tax and Social Revenue by Subsectors**



Source: CZSO (2022a, 2022b). MF CR forecast.

## 2.3 General Government Expenditure

**General government expenditure** is foreseen to grow by 8.8% in 2022 (see Graph 2.3.2), but to remain almost unchanged in relative terms at 46.3% of GDP (see Graph 2.3.1). We expect a similar pace next year, when the ratio rises to 47.5% of GDP. The increase in spending stems from the support in consequence of energy crisis and should gradually subside. We therefore expect the ratio of total expenditure to GDP to fall again in the outlook years.

Growth in **government final consumption** expenditure is expected to accelerate to 6.1% and 7.3% this year and next, respectively, and, unlike in the past few years, will be driven mainly by **intermediate consumption** (see Graph 2.3.8). The estimate of 13.5% growth this year takes into account the exceptionally high inflation and the impact of EU co-financed projects. The impact of the migration wave from Ukraine is also reflected in the volume of purchases of goods and services, for example, in the form of accommodation for Ukrainian refugees using the own accommodation capacities of state and local governments, provision of food and other material assistance. After a double-digit growth in intermediate consumption in 2023, its dynamics should slow down significantly to 3.4% in both remaining years of the outlook.

The increased base due to exceptional remuneration payments last year and moderate salary indexation will increase **compensation of general government employees** by 1.7% this year (see Graph 2.3.3). As of January 2022, the salary tariffs of doctors and non-medical health workers in grades 8 to 15 were increased by 6%, as well as the salaries of non-medical health workers in grades 2 to 7 and social service workers by CZK 700. The salary scales of soldiers and members of the security forces were also increased by the same fixed amount. Teachers in the regional education system saw a 2% increase in their salary scales, while at the same time higher employment in the education system is included, as well as performance agreements for staff involved in the education of Ukrainian children. The forecast also includes a 10% increase in the tariffs of non-teaching staff in education and civil servants working in culture, contributory organisations or covered by the Civil Service Act, starting in September this year. The same percentage increase is applied to the salary scales of the military and security forces from January 2023.

The 9.2% growth in **social transfers in kind** in 2022 reflects spending on social services and health care, also used by Ukrainian refugees. In addition, it reflects the extension of the range of persons who can apply for housing benefit, as well as an increase in its actual amount due to the sharp rise in energy prices, which will require around CZK 3.4 billion (Act No. 17/2022 Coll., Government Regulation No. 289/2022 Coll.). In the following year, the dynamics should slow down slightly to 7.3%, which will be

mainly due to the expenditure of health insurance companies.

The rate of over 10% of **cash social benefits** is determined by pension benefits, as in previous years (see Graph 2.3.4). This year's standard pension indexation in January was increased by CZK 300 by the amendment to Act No.323/2021 Coll. (CZK 10.6 billion). It is further amplified by two extraordinary indexations due to high inflation rates, by an average of CZK 1 017 with an impact of about CZK 20 billion since June (Government Regulation No. 35/2022 and No. 36/2022) and by an average of CZK 700 since September, amounting to about CZK 8 billion (Government Regulation No. 136/2022 and No.137/2022). From January 2023, according to the statutory indexation formula, the average pension will rise by a further CZK 825 (Government Regulations No. 290/2022 and No. 291/2022), and an increase of CZK 500 per month for each child raised has been approved, with an impact of CZK 18.4 billion in 2023 (Act No. 323/2021 Coll.). The costs of this year's extraordinary indexation for the corresponding part of the year will also have an impact in the following year, and the forecast of expected price developments does not rule out another extraordinary indexation in the middle of next year. According to the current forecast, inflation could exceed 6% in January 2023 relative to the June index. This extraordinary indexation would have an impact of almost CZK 20 billion in the following year and an additional CZK 14 billion in 2024.

The increase concerns also the benefits that support families with children, such as an increase in child benefits and parental leave allowance (Act No. 285/2021 Coll.), extension of the paid paternal leave from 1 to 2 weeks (Act No. 330/2021 Coll.) and an increase in foster care benefits (Government Regulation No. 292/2022 Coll.) with an aggregate impact of CZK 3.3 billion in 2022. Due to the effectiveness of the latter measure only from October 2022, we are counting on an additional impact of CZK 0.3 billion in 2023. The introduction of the institute of substitute maintenance for dependent children, after a negligible impact in 2022, will require an additional CZK 0.2 billion in 2023 (Act No. 588/2020 Coll.). This year, the social benefit system extended the one-off allowance of CZK 5,000 per child under 18 for a household with a gross annual income of up to CZK 1 million, for a total of CZK 7.8 billion (Act No. 196/2022 Coll.). The impact of the increase in the care allowance for persons in 3rd and 4th degree of dependence is calculated for this year at CZK 3.4 billion (Act No. 328/2021 Coll.). A further increase of CZK 2.1 billion in expenditure on social benefits in 2022 is related to the extraordinary indexation of the subsistence and subsistence minima from April and July 2022, respectively (Government Regulation No. 75/2022 and No. 204/2022) and by additional CZK 0.2 billion in 2023. By contrast, the end of the payment of the special care allowance during epidemic should mean year-on-year

savings of CZK 3.9 billion this year and a further CZK 0.9 billion next year. In connection with refugees from Ukraine, a humanitarian benefit of an estimated CZK 10.4 billion is being paid this year (Act No. 66/2022 Coll. and No. 198/2022 Coll.) and the state budget transfer to the public health insurance system is higher by about CZK 5 billion. We also expect an increase in expenditure on unemployment benefits in 2023 due to the predicted recession.

Higher debt and interest rates will increase **interest costs** by almost 60% this year (Graph 2.3.7). We then expect interest rates to rise in the following years until the end of the outlook, when they should reach 1.2% of GDP.

We expect **fixed asset investment expenditure** to increase by 11.5% this year and to accelerate further by almost 15% next year (see Graph 2.3.6). Investments should be significantly supported by EU budget funds in both years, not only because of the approaching end of the 2014–2020 programming period, but also because of the use of funds from the launched 2021–2027 programming period, as well as from the EU Next Generation Instrument. Their share in total general government investment is expected to be almost a quarter this year and to increase further to 30% next year.

Assistance to companies with raised costs caused by high energy prices (Government Resolution No. 786/2022), for which CZK 30 billion is made available by an amendment to the State Budget Act for 2022, will substantially increase the volume of **subsidies** this year. In contrast, anti-epidemic measures and related support programmes have been terminated. Under the COVID – Uncovered Costs, COVID 2022 – Sectoral Support, COVID BUS, COVID – Accommodation, COVID – Advent Markets and Antivirus programmes, we record an accrual expenditure of around CZK 2.5 billion for this year (Government Resolutions No. 95/2022 and No. 96/2022). The provision of accommodation for Ukrainian refugees in private accommodation facilities paid for by the regions with a state contribution of CZK 250 per person per night will require an estimated CZK 1.4 billion this year (Government Resolution No. 207/2022). The amount was increased to CZK 350 with effect from 1 November 2022

(Government Regulation No. 322/2022), increasing expenditure by CZK 0.2 billion this year and CZK 1.3 billion next year. As a result, subsidies will fall by 8.6% in 2022. Stabilisation of energy markets should lead to a reduction in support. Therefore, at the end of the outlook horizon, we expect subsidies to fall below 2% of GDP.

This year's 16.6% increase in **current transfers** is mainly due to assistance to households concerning higher energy costs (electricity, gas, heat) in the form of the so-called savings tariff with an allocation of CZK 18.5 billion (Act No. 232/2022 Coll.). The contribution to fellow-feeling households for accommodation of refugees from Ukraine will require an estimated CZK 1.6 billion (Government Regulation No. 73/2022 and No. 205/2022). In 2023, transfers are expected to accelerate to 70% due to compensations paid as a result of energy price caps for households, SMEs, government institutions, etc., amounting to a budgeted CZK 83 billion. Similarly to the revenue side of the European Revenue Cap Mechanism, we currently assume a one-off impact in one year only.

There are several exceptional factors reflected in **capital transfers** in 2022. First of all, it concerns the payment of refunds of deposits of former customers of Sberbank CZ, a. s. from the Financial Market Guarantee System in the amount of CZK 7.8 billion (the remaining part, for which the assumption of recoverability has been adopted, is considered to be a financial operation with no impact on the balance on the basis of consultation with Eurostat). Secondly, there is the accrual impact of payments to the Czech Post for the net universal service costs for the period 2018–2022 totalling CZK 7.5 billion. Thirdly, the forecast works with a gratuitous transfer of military equipment and material to Ukraine in the order of several CZK billions. These factors are counteracted by the positive effect of the end of the payment of the compensation bonus and the year-on-year lower impact of the loss carryback mechanism (Act No. 299/2020 Coll.), which dampens the dynamics of capital transfers to 5.7%. As a result of the unwinding of these exceptional factors, capital transfers are expected to fall by more than 40% back to their normal level in 2023.

**Table 2.3.1: General Government Expenditure**

		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
								Forecast	Forecast	Outlook	Outlook
<b>Total expenditure</b>	<i>bill. CZK</i>	<b>1 907</b>	<b>1 992</b>	<b>2 196</b>	<b>2 378</b>	<b>2 696</b>	<b>2 841</b>	<b>3 091</b>	<b>3 367</b>	<b>3 349</b>	<b>3 431</b>
	<i>change in %</i>	-1.7	4.5	10.3	8.2	13.4	5.4	8.8	9.0	-0.5	2.4
Compensation of employees	<i>bill. CZK</i>	419	462	521	576	633	676	688	733	763	789
	<i>change in %</i>	5.4	10.1	12.8	10.5	10.0	6.8	1.7	6.6	4.0	3.5
Intermediate consumption	<i>bill. CZK</i>	291	296	326	339	346	355	403	446	461	477
	<i>change in %</i>	2.8	1.6	10.0	4.1	2.0	2.5	13.5	10.7	3.4	3.4
Social benefits other than in kind	<i>bill. CZK</i>	605	624	658	709	821	859	950	1 050	1 091	1 124
	<i>change in %</i>	2.5	3.1	5.5	7.7	15.8	4.7	10.5	10.6	3.9	3.0
Social transfers in kind	<i>bill. CZK</i>	148	152	160	177	205	219	240	257	264	271
	<i>change in %</i>	4.3	3.1	4.7	10.9	15.8	7.1	9.2	7.3	2.8	2.6
Property income	<i>bill. CZK</i>	44	38	40	41	44	46	73	78	85	94
	<i>change in %</i>	-10.6	-14.2	6.7	1.5	7.6	5.1	57.7	6.1	10.2	9.7
Subsidies	<i>bill. CZK</i>	108	110	119	128	173	200	183	159	150	150
	<i>change in %</i>	2.6	1.7	8.8	7.3	35.1	15.8	-8.6	-13.2	-5.7	-0.1
Gross fixed capital formation	<i>bill. CZK</i>	155	171	224	253	277	287	320	368	337	328
	<i>change in %</i>	-34.3	10.2	31.3	12.6	9.5	3.8	11.5	14.9	-8.6	-2.6
Capital transfers	<i>bill. CZK</i>	36	30	35	36	67	55	58	35	36	34
	<i>change in %</i>	-12.8	-14.9	16.2	1.3	87.8	-17.5	5.7	-40.6	2.9	-5.6
Other expenditure	<i>bill. CZK</i>	100	109	113	120	130	142	176	242	162	165
	<i>change in %</i>	5.6	9.1	3.6	6.0	8.5	9.5	23.5	37.5	-32.8	1.5

Source: CZSO (2022b). Forecast and calculations by MF CR.

**Table 2.3.2: Discretionary Expenditure Measures**

in CZK bn.

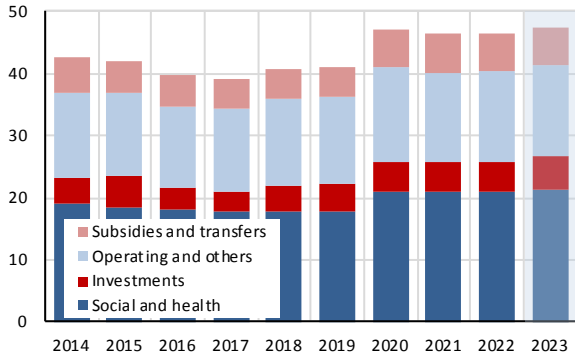
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
								Forecast	Forecast	Outlook	Outlook
<b>Total expenditure measures</b>	<i>bill. CZK</i>	<b>-22.4</b>	<b>-49.3</b>	<b>-61.3</b>	<b>-48.8</b>	<b>-181.4</b>	<b>5.1</b>	<b>-7.2</b>	<b>-28.8</b>	<b>82.5</b>	<b>-0.6</b>
Social benefits	<i>bill. CZK</i>	-4.4	-3.5	-10.9	-17.3	-49.4	19.7	-33.8	-0.3	-0.5	-0.6
Compensation of employees*	<i>bill. CZK</i>	-20.6	-27.7	-32.2	-30.0	-34.3	-9.9	3.9	-20.5	-	-
Healthcare	<i>bill. CZK</i>	-5.3	-10.1	-13.0	-	-24.7	5.9	12.6	0.2	-	-
Subsidies	<i>bill. CZK</i>	-8.4	-4.3	0.5	-1.6	-44.9	-12.3	24.0	32.5	0.0	-
Capital transfers	<i>bill. CZK</i>	4.1	2.9	-5.8	4.3	-27.6	8.5	11.9	12.6	-	-
Other expenditure	<i>bill. CZK</i>	12.3	-6.6	0.2	-4.3	-0.5	-6.7	-25.7	-53.3	83.0	-

Note: Figures represent YoY discretionary changes that are stemming from all envisaged and approved measures on expenditure side. Positive values mean YoY improvement of balance. \*) Compensation of employees are updated not earlier than the final agreement on the state budget proposal.

Source: MF CR.

**Graph 2.3.1: Total Expenditure Structure**

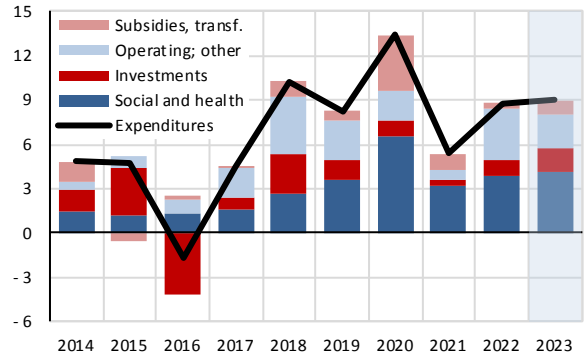
% of GDP



Source: CZSO (2022a, 2022b). MF CR forecast.

**Graph 2.3.2: Total Expenditure Development**

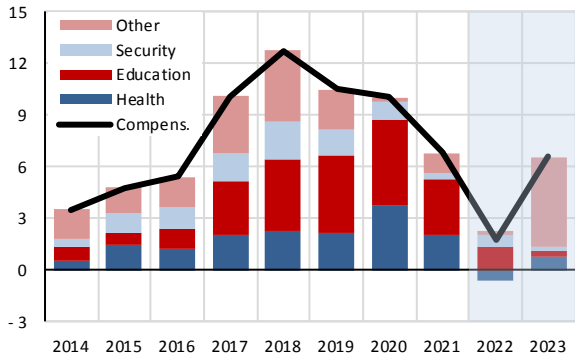
change in %, contributions in percentage points



Source: CZSO (2022b). MF CR forecast.

**Graph 2.3.3: Compensation of Employees**

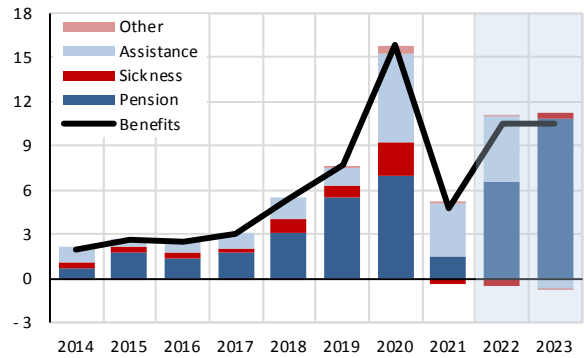
change in %, contributions in percentage points



Source: CZSO (2022b). MF CR forecast.

**Graph 2.3.4: Cash Social Benefits**

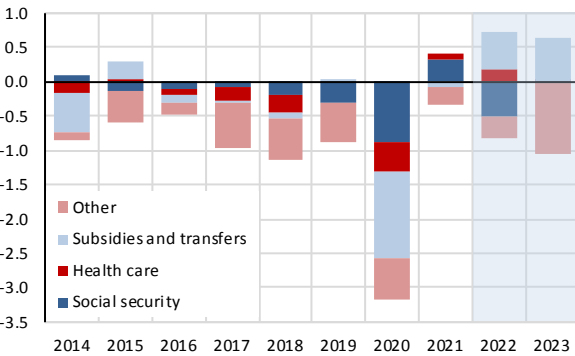
change in %, contributions in percentage points



Source: CZSO (2022a, 2022b). MF CR forecast.

**Graph 2.3.5: Discretionary Expenditure Measures**

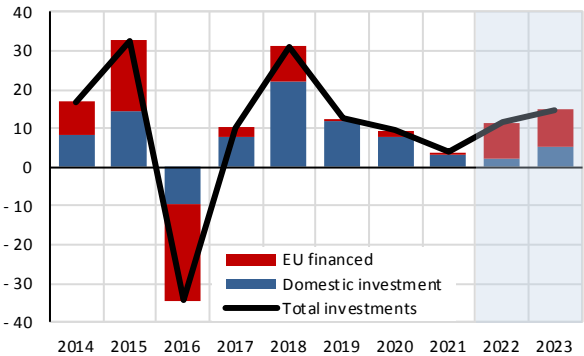
% of GDP



Source: MF CR.

**Graph 2.3.6: General Government Investment**

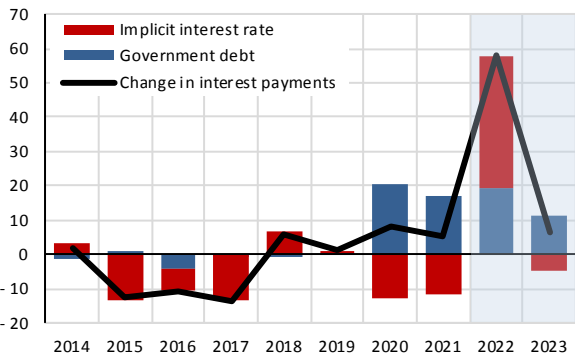
change in %, contributions in percentage points



Source: CZSO (2022b). MF CR forecast.

**Graph 2.3.7: Interest Expenditure**

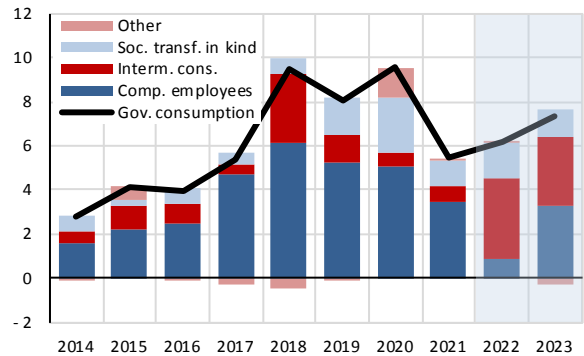
change in %, contributions in percentage points



Source: CZSO (2022b). MF CR forecast.

**Graph 2.3.8: Final Consumption Expenditure**

change in %, contributions in percentage points



Source: CZSO (2022b). MF CR forecast.



## 2.4 General Government Debt

The deficit performance of the general government will be reflected in the level of debt, which is projected to reach 43.9% of GDP at the end of 2022. The relatively low increase in the debt quota of 1.8 pp is driven by a forecasted 9.3% growth in nominal GDP.

Autonomous development in the general government sector foresees a decline in public deficits, although the Czech economy is expected to experience a mild recession at the turn of 2022 and 2023. Yet, the debt ratio will continue to rise, especially at the beginning of the outlook horizon. In 2023, we expect the debt ratio to grow by 2.2 pp to 46.1% of GDP. With the reduction of general government (state budget) deficits and stable economic growth, we expect the increase in the debt quota to slow down slightly. At the end of the forecast horizon, the debt ratio should reach around 47% of GDP.

Thus, the Czech Republic should fulfil the **Maastricht debt criterion** and the **Stability and Growth Pact criterion** (60% of GDP). The level of the debt quota also fulfils the **national rule** set by the Fiscal Responsibility Rules Act, which assesses the level of general government debt net of the cash reserve generated by the financing of government debt against the 55% of GDP threshold (Table 2.4.1).

In terms of contributions to the change in debt, the deficit and the evolution of interest costs are the dominant factors. In relative terms, interest costs are forecast to remain at 1.1% of GDP until almost the end of the outlook, before rising slightly to 1.2% of GDP in 2025. Interest costs were last at this level in 2014 and

2015, respectively. The forecast assumes a rise in government bond yields in 2023 and a subsequent decline. The long-term interest rate for convergence purposes is expected to increase by 0.4 pp from an expected average of 4.4% p.a. in 2022 and could subsequently fall to just below 3% p.a. We forecast even higher levels for 5-year bond yields. Conversely, nominal economic growth of just above 6% in the outlook years should put the brakes on debt quota increases.

The current forecast does not foresee any significant privatisation revenues under Act No. 92/1991 Coll., on the conditions of transfer of state property to other persons, as amended.

The largest share of general government debt is held by central government (Table 2.4.1), whose debt is expected to reach almost CZK 3 027 billion in 2022. It would thus account for about 97% of total (unconsolidated) general government debt. Local government debt accounts for the remaining roughly 3%. We estimate that it will reach CZK 90.4 billion in 2022 and will rather stagnate in the following years due to the projected surpluses. The social security funds have constantly a negligible indebtedness. In addition, we forecast health insurance companies to be consistently in surplus again from 2022 onwards. Given that the performance of the general government sector will be determined by central government deficits adjusted by surpluses of other subsectors, we expect the weight of central government debt to increase slightly further to almost 98% by the end of the outlook horizon.

**Table 2.4.1: Gross Consolidated Government Debt**

		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
								Forecast	Forecast	Outlook	Outlook
<b>General government</b>	<i>CZK bn</i>	<b>1 755</b>	<b>1 750</b>	<b>1 735</b>	<b>1 740</b>	<b>2 150</b>	<b>2 567</b>	<b>2 927</b>	<b>3 270</b>	<b>3 504</b>	<b>3 726</b>
Central government	<i>CZK bn</i>	1 714	1 734	1 752	1 793	2 223	2 661	3 027	3 392	3 648	3 895
Local government	<i>CZK bn</i>	89	85	84	84	87	87	90	91	92	91
Social security funds	<i>CZK bn</i>	0	0	0	0	1	1	0	0	0	0
<b>General government debt to GDP ratio</b>	<i>% of GDP</i>	<b>36.6</b>	<b>34.2</b>	<b>32.1</b>	<b>30.0</b>	<b>37.7</b>	<b>42.0</b>	<b>43.9</b>	<b>46.1</b>	<b>46.2</b>	<b>46.7</b>
<b>Contributions to change in debt-to-GDP ratio</b>											
Change in debt	<i>p.p.</i>	-3.1	-2.3	-2.2	-2.0	7.6	4.4	1.8	2.3	0.1	0.4
<b>Primary deficit</b>	<i>p.p.</i>	<b>-1.6</b>	<b>-2.2</b>	<b>-1.6</b>	<b>-1.0</b>	<b>5.0</b>	<b>4.3</b>	<b>3.5</b>	<b>3.2</b>	<b>1.4</b>	<b>1.1</b>
<b>Interest</b>	<i>p.p.</i>	<b>0.9</b>	<b>0.7</b>	<b>0.7</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>	<b>1.1</b>	<b>1.1</b>	<b>1.1</b>	<b>1.2</b>
<b>Nominal GDP growth</b>	<i>p.p.</i>	<b>-1.4</b>	<b>-2.2</b>	<b>-1.9</b>	<b>-2.1</b>	<b>0.4</b>	<b>-2.5</b>	<b>-3.6</b>	<b>-2.6</b>	<b>-3.0</b>	<b>-2.4</b>
<b>Stock-flow adjustment</b> <sup>1)</sup>	<i>p.p.</i>	<b>-1.0</b>	<b>1.4</b>	<b>0.6</b>	<b>0.4</b>	<b>1.4</b>	<b>1.7</b>	<b>0.8</b>	<b>0.6</b>	<b>0.5</b>	<b>0.5</b>
Debt for Act No. 23/2017 Coll. <sup>2)</sup>	<i>% of GDP</i>	36.5	34.2	32.1	30.0	37.7	42.0	43.9	46.1	46.2	46.7
Liquid financial assets <sup>3)</sup>	<i>% of GDP</i>	12.8	14.8	14.7	13.9	16.2	19.4	18.3	17.5	16.8	16.3
Net financial debt <sup>4)</sup>	<i>% of GDP</i>	23.8	19.4	17.4	16.1	21.5	22.6	25.5	28.6	29.4	30.4

1) The stock-flow adjustment consists of differences between cash and accrual, net acquisition of financial assets and revaluation effects and other measures.

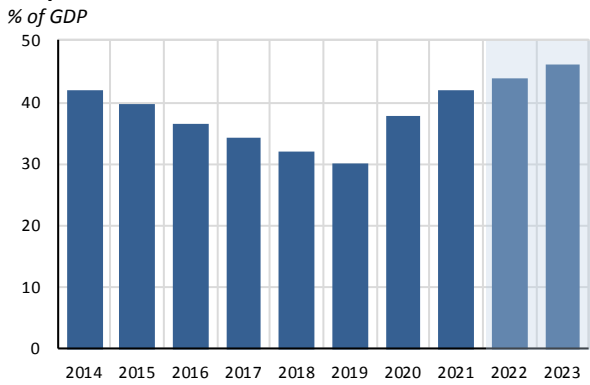
2) Public sector institutions debt according to Act No. 23/2017 Coll. is defined as the difference between the general government debt and disposable cash reserves created according to Act No. 218/2000 Coll.

3) Liquid financial assets are monetary gold, Special Drawing Rights, currency and deposits, market value of securities other than shares (in market value), shares and other equity quoted in stock exchange.

4) Net financial debt is the difference between the debt according to Act No. 23/2017 Coll. and liquid financial assets.

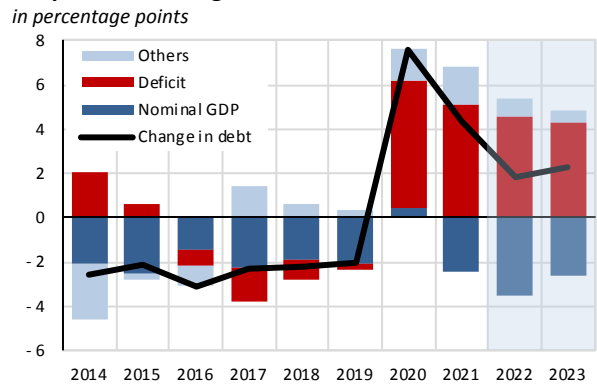
Source: CZSO (2022b). Forecast and calculations by MF CR.

**Graph 2.4.1: General Government Debt**



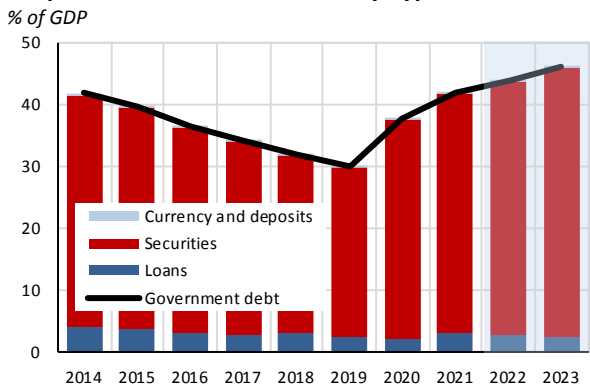
Source: CZSO (2022a, 2022b). MF CR forecast.

**Graph 2.4.2: Change in the Debt Ratio**



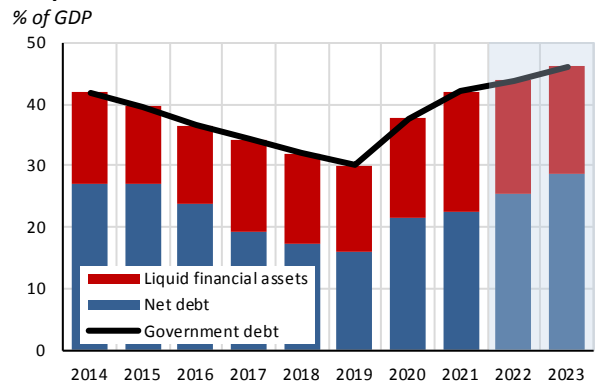
Source: CZSO (2022a, 2022b). MF CR forecast.

**Graph 2.4.3: Government Debt by Type of Instrument**



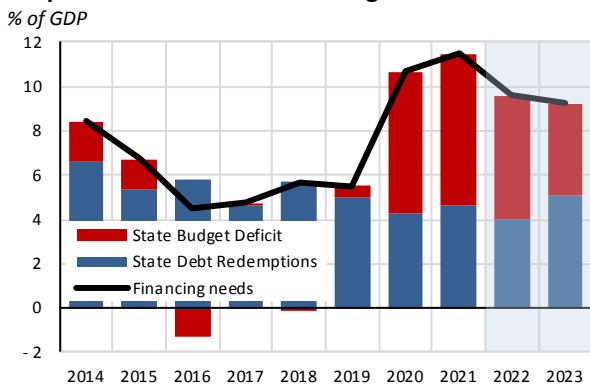
Source: CZSO (2022a, 2022b). MF CR forecast.

**Graph 2.4.4: Net and Gross Government Debt**



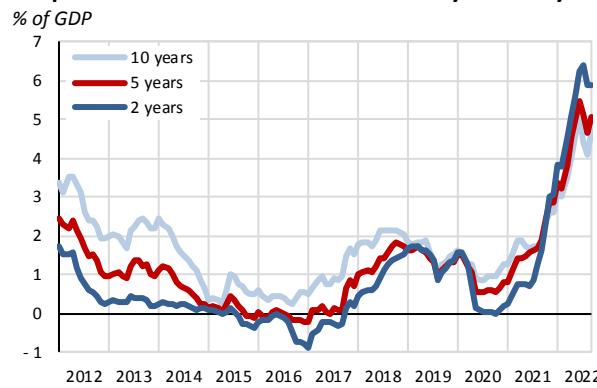
Source: CZSO (2022a, 2022b). MF CR forecast.

**Graph 2.4.5: State Debt Financing Needs**



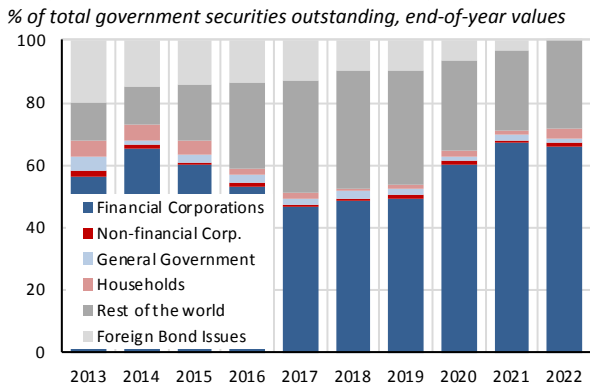
Source: CZSO (2022b). MF CR forecast.

**Graph 2.4.6: Government Bond Yields by Maturity**



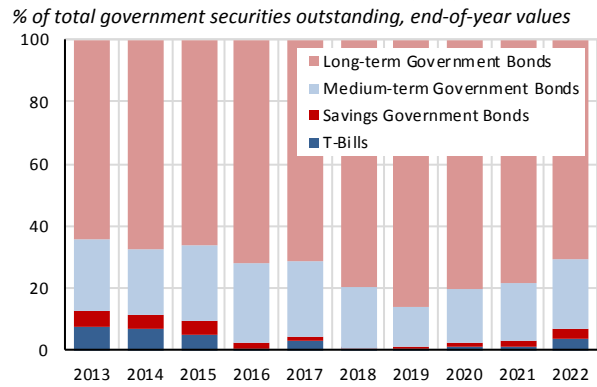
Source: CNB (2022).

**Graph 2.4.7: Government Securities by Type of Holder**



Note: The value for 2022 reflects the state at the end of September.  
Source: MF CR.

**Graph 2.4.8: Government Securities by Type of Instrument**



Note: The value for 2022 reflects the state at the end of September.  
Source: MF CR.

## 2.5 Sensitivity Analysis

The sensitivity analysis is calculated using the MF CR's dynamic stochastic general equilibrium model. Alternative scenarios focus on certain issues of possible future developments. The first scenario considers lower economic growth in the EU and its effects on highly open Czech economy, which is dependent on the external environment. The second alternative scenario assesses a possible sudden increase in interest rates. Both alternative scenarios are derived from the Fiscal Outlook baseline scenario. In the alternative scenarios, we assume that the situation progresses differently from the baseline scenario, always in the first half of 2023.

Economic developments in EU trading partners are a pivotal factor for the economic growth of the CR's small open economy. The first scenario assumes **slower GDP growth in the EU** by 2.6 pp in 2023, which corresponds to standard deviation over the period 2002–2021.

Initially, the reduction in external demand for domestic products would be reflected in a drop in net exports. However, subsequent pressure on currency depreciation would cushion the negative effect on net exports by making imports more expensive. A worse external trade result would slow the growth of the CR's real GDP by 0.6 pp in 2023 compared to the baseline scenario. Lower growth in corporate profits due to weaker exports would slow investment growth by 0.6 pp. A negative income effect in the form of relatively lower growth of wages and returns on capital would slow down household consumption by 0.3 pp.

The impact on the general government balance is negative by 0.2 pp in the first year of the outlook, with a maximum differential of 0.1 percentage points in subsequent years. The lower economic performance has an impact on taxes and social security contributions on the revenue side; on the expenditure side, it mainly leads to an increase in spending on unemployment benefits. In the years of the outlook, the effect of lower inflation on the indexation of pension benefits is moderately positive. Debt would then increase by 0.2 pp more in 2023 than in the baseline and, thereafter, the

difference would increase to 0.4 pp at the end of outlook. In addition to a higher deficit, this would reflect a lower level of nominal GDP over the entire horizon.

The dynamic model in the second scenario simulates the **additional tightening of monetary policy** in 2023 by 1.1 pp above the baseline scenario. This value corresponds to the standard deviation of developments in the short-term interest rate in the period from 2002 and 2021.

A more restrictive monetary policy would have a negative effect on economic development. Pressure on the appreciation of the Czech currency would increase price of exports, while imported goods would become relatively cheaper. In view of the high import intensity of exports, a slight slowdown in exports by 0.3 pp would exert downward pressure on imports. Lower income and a fall in profits of business entities would have a similar effect. The result would be a slight reduction in import growth compared to the baseline scenario.

Lower household incomes due to slower wage growth would also affect consumption adversely. Furthermore, a higher interest rate would stimulate households to save and therefore put off consumption until some point further in the future. As a result, contractionary monetary policy would lead to a slowdown in household consumption growth by 0.2 pp.

Businesses would see their profitability decrease due to a decline in both foreign and domestic demand. They would respond to the drop in profits and the increase in the cost of borrowing by cutting investment growth by 0.2 pp.

Given the negative impact of higher interest rates on investment, consumption and exports, the resulting impact on GDP growth would also be negative by 0.2 pp.

The impact on public finances in this scenario is relatively small. The effects on revenue and expenditure almost offset each other, with the most important expenditure items, i.e. social expenditure "benefiting" from lower inflation and real wage dynamics. As a result, the general government debt ratio at the end of the outlook differs from the baseline by only 0.2 pp.

**Table 2.5.1: Baseline and Model Scenarios of Macroeconomic Simulations**

		2022	2023	2024	2025
		Forecast	Forecast/ Simul.	Outlook/ Simul.	Outlook/ Simul.
<b>Gross domestic product (real)</b>	<i>change in %</i>	<b>2.4</b>	<b>-0.2</b>	<b>3.0</b>	<b>2.7</b>
Private consumption	<i>change in %</i>	0.2	-0.8	3.8	3.2
Gross fixed capital formation	<i>change in %</i>	5.1	1.5	0.1	1.8
Exports	<i>change in %</i>	2.7	2.1	4.3	3.1
Imports	<i>change in %</i>	2.8	1.0	2.9	2.2
<b>Consumer Price Inflation</b>	<i>change in %</i>	<b>15.0</b>	<b>9.5</b>	<b>3.5</b>	<b>2.4</b>
<b>Employment</b>	<i>change in %</i>	<b>-0.9</b>	<b>-0.1</b>	<b>0.4</b>	<b>0.2</b>
<b>Wage bill</b>	<i>change in %</i>	<b>10.0</b>	<b>7.4</b>	<b>5.7</b>	<b>4.2</b>
<b>Unemployment rate</b>	<i>in %</i>	<b>2.5</b>	<b>3.1</b>	<b>3.0</b>	<b>2.8</b>
<b>General government balance</b>	<i>% of GDP</i>	<b>-4.6</b>	<b>-4.3</b>	<b>-2.5</b>	<b>-2.3</b>
<b>Gross government debt</b>	<i>% of GDP</i>	<b>43.9</b>	<b>46.1</b>	<b>46.2</b>	<b>46.7</b>
<b>Alternative Scenario I - Lower GDP Growth in EU in 2023</b>					
<b>Gross domestic product (real)</b>	<i>change in %</i>	<b>2.4</b>	<b>-0.8</b>	<b>3.0</b>	<b>2.7</b>
Private consumption	<i>change in %</i>	0.2	-1.1	3.7	3.2
Gross fixed capital formation	<i>change in %</i>	5.1	0.9	-0.1	1.8
Exports	<i>change in %</i>	2.7	0.5	4.1	3.1
Imports	<i>change in %</i>	2.8	-0.3	2.5	2.2
<b>Consumer Price Inflation</b>	<i>change in %</i>	<b>15.0</b>	<b>9.4</b>	<b>3.5</b>	<b>2.4</b>
<b>Employment</b>	<i>change in %</i>	<b>-0.9</b>	<b>-0.6</b>	<b>0.5</b>	<b>0.3</b>
<b>Wage bill</b>	<i>change in %</i>	<b>10.0</b>	<b>6.6</b>	<b>5.7</b>	<b>4.2</b>
<b>Unemployment rate</b>	<i>in %</i>	<b>2.5</b>	<b>3.6</b>	<b>3.0</b>	<b>2.8</b>
<b>General government balance</b>	<i>% of GDP</i>	<b>-4.6</b>	<b>-4.5</b>	<b>-2.6</b>	<b>-2.3</b>
<b>Gross government debt</b>	<i>% of GDP</i>	<b>43.9</b>	<b>46.3</b>	<b>46.5</b>	<b>47.1</b>
<b>Alternative Scenario II - Increase in Domestic Interest Rate</b>					
<b>Gross domestic product (real)</b>	<i>change in %</i>	<b>2.4</b>	<b>-0.4</b>	<b>2.9</b>	<b>2.7</b>
Private consumption	<i>change in %</i>	0.2	-1.0	3.7	3.2
Gross fixed capital formation	<i>change in %</i>	5.1	1.3	0.2	1.9
Exports	<i>change in %</i>	2.7	1.8	4.1	3.0
Imports	<i>change in %</i>	2.8	0.8	2.8	2.2
<b>Consumer Price Inflation</b>	<i>change in %</i>	<b>15.0</b>	<b>8.9</b>	<b>3.2</b>	<b>2.3</b>
<b>Employment</b>	<i>change in %</i>	<b>-0.9</b>	<b>-0.2</b>	<b>0.4</b>	<b>0.2</b>
<b>Wage bill</b>	<i>change in %</i>	<b>10.0</b>	<b>7.2</b>	<b>5.6</b>	<b>4.1</b>
<b>Unemployment rate</b>	<i>in %</i>	<b>2.5</b>	<b>3.4</b>	<b>3.0</b>	<b>2.8</b>
<b>General government balance</b>	<i>% of GDP</i>	<b>-4.6</b>	<b>-4.4</b>	<b>-2.5</b>	<b>-2.3</b>
<b>Gross government debt</b>	<i>% of GDP</i>	<b>43.9</b>	<b>46.2</b>	<b>46.4</b>	<b>46.9</b>

Source: MF CR (2022b). MF CR forecast, calculations and simulations.

## 3 International Comparison

The global COVID-19 pandemic and the associated fiscal expenditures had a significant impact on public finances in 2020 and 2021. Although public finances in the EU improved by more than 2 pp on average relative to the first year of the pandemic, the deficit was still relatively high at 4.6% of GDP. However, there are significant differences between countries. The Nordic countries, namely Denmark and Sweden, have coped best with the external shock, with their balances not falling below -3% of GDP throughout the epidemic and in the case of Denmark not even going into negative values. This year, the EU countries' economies will be strongly affected by the consequences of the conflict in Ukraine, especially the escalation of prices and the costs of dealing with the energy crisis. Nevertheless, further consolidation should take place and 11 countries expect to meet the Maastricht threshold for government deficits.

High deficits are keeping the supply of government bonds strong, which, together with rising inflation, is pushing up interest costs. In the case of 10-year government bond yields for convergence purposes in EU countries, yields have risen by around 2.5 pp on average over the course of this year. The high rate of inflation also led to a change in the course of monetary policy, e.g. through the end of quantitative easing programs and the rise of interest rates. Significant differences in debt levels across EU countries increase the risk of negative effects of monetary restrictions.

### 3.1 Public Balance and Debt in EU Countries

With the exception of Latvia, Bulgaria and Slovakia, the **balance** in relation to GDP in **2021** improved year-on-year in all EU countries, most notably in Lithuania (by 6.0 pp), Poland (by 5.1 pp) and Croatia (by 4.7 pp). A surplus was recorded by Denmark (3.6%) and, after a one-year break also by Luxembourg (0.8%). Conversely, the highest deficit was achieved by Malta (7.8%), followed by Greece, Italy, Hungary, Romania, Latvia, Spain and France, i.e. the countries with the highest deficits in 2020 as well. Compared to the 2022 spring notification, Denmark improved its surplus significantly in 2021 (by 1.3 pp), followed by the CR (by 0.8 pp), Slovakia (by 0.7 pp) and Slovenia (by 0.5 pp). The common factor behind this improvement was mainly higher corporate income taxes.

While 15 countries remained below the Stability and Growth Pact benchmark in 2021 (compared to two countries in 2020), the excessive deficit procedure still applies only to Romania, whose 2021 deficit was in line with the set targets, but whose insufficient fiscal efforts do not guarantee the successful implementation of the medium-term consolidation strategy (EC, 2021a). The activation of the March 2020 general escape clause applied for the remaining 14 EU countries, which allows them to deviate from the budgetary requirements set by the European fiscal framework<sup>1</sup> because their excessive deficits arose from a sudden and unexpected economic downturn due to the pandemic as an exceptional event.

For the year **2022**, according to the autumn notification of the government deficits and debt, the highest deficit is expected in Latvia (6.5% of GDP), Romania (6.2% of GDP) and Hungary (6.1% of GDP). Compared to the balances in 2021, an improvement is predicted in 20 EU countries, including the CR, but the most notably in Greece (by 3.3 pp) and Cyprus (by 2.9 pp). On the contrary, the year-on-year

balance will worsen the most in Poland (by 2.8 pp) and Denmark (by 2.5 pp), which will, however, remain in surplus, together with the aforementioned Cyprus at the level of 1.2% of GDP. The third country with a surplus is expected to be Ireland (0.2% of GDP), thanks to the performance of social security funds<sup>2</sup>. Compared to the 2022 spring notification, due to the updated input data, the 2022 forecasts have improved the most in the Netherlands (by 3.3 pp), Croatia (by 1.4 pp) and Cyprus (by 1.6 pp), while they have deteriorated the most in Latvia (by 1.7 pp) and Hungary (by 1.2 pp)<sup>3</sup>.

The same countries as last year are likely to remain below the **Stability and Growth Pact reference value** for the deficit in 2022, with the exception of Poland (see above).

Quite successful reduction of the general government debt in the relation to GDP recorded in the recent past has been significantly disrupted by the extremely unfavourable influences mentioned in the introduction. However, for the year **2021**, the indicator managed to be reduced in most countries (in total for the EU by 1.9 pp) and a similar situation is expected for 2022. This does not apply to the CR, which, together with Latvia and Malta, will record increase of indebtedness in both years (by 4.4 pp in 2021, which is the most of all EU countries and corresponds to the highest growth rate of debt – by 19.4%). The **debt criterion of 60% of GDP** for 2021 was not met by 14 Member States, with Slovakia added to the previous 13. On the other hand, the level of general government debt in relation to GDP decreased year-on-year in 20 countries (most notably in Cyprus by 12.5 pp or in Greece by 11.7 pp, which thus fell below the level of 200% of GDP level), while

<sup>1</sup> Articles 5(1) and 6(3) for euro area countries and Articles 9(1) and 10(3) for Member States in Council Regulation (EC) No 1466/97, and Articles 3(5) and 5(2) of Council Regulation (EC) No 1467/97.

<sup>2</sup> Data for this sub-sector (usually health insurance companies) are newly reported by Ireland from autumn 2021. Following the UK's exit from the EU, Malta remains the only country that does not report data for social security funds.

<sup>3</sup> Data for France and Slovenia were not available for the 2022 spring notification.

it remained unchanged in Luxembourg. Estonia still has the lowest debt-to-GDP ratio (17.6% of GDP), although it has more than doubled in the last two years.

In 2022, year-on-year improvements in debt are expected in 21 EU countries, the largest again in Greece (by 25.4 pp) and Cyprus (by 11.7 pp), where, along with Denmark, Ireland and Sweden, a year-on-year debt reduction is also predicted in absolute terms. On the other hand, the remaining 6 countries (Malta, the CR, Latvia, Bulgaria, Estonia and, slightly, Luxembourg) are expected to see an increase in their indebtedness. In 2022, 15 EU countries, with Malta newly included, will cross the reference threshold of the 60% of GDP. On the contrary, the relative debt for 2022 should fall below the pre-crisis level of 2019

in 5 EU countries – Denmark, Ireland, Greece, Sweden and Cyprus, where its level will fall below 100% of GDP, thanks to higher GDP growth.

Compared to the 2022<sup>3</sup> spring notification, Greece (by 10.1 pp), the Netherlands (by 8.9 pp) and Latvia (by 6.0 pp) present the largest changes in debt for the better, due to updated input data or methodological adjustments. On the contrary, Finland will most likely record the highest debt growth, even over whole period 2018–2022 in the range of 5.1–6.6 pp. The reason is the increase in debt due to the obligations of the ARA housing programme (the Centre for Housing Finance and Development responsible for the housing policy in Finland) and the expansion of the government sector by housing enterprises owned by it.

### 3.2 Public Debt Financing in EU Countries

In 2021, in the context of the coronavirus pandemic, **bond markets** in EU countries were affected by both loose national fiscal policy and central bank monetary policy.

Last year, the European Central Bank continued to purchase government bonds within the framework of the Emergency Pandemic Asset Purchase Program (PEPP) in the countries of the **Eurozone**, in an average net monthly amount of approximately EUR 141 billion. At the same time, purchases of government bonds on secondary markets (PSPP) were also carried out in an average net monthly rate of around EUR 14 billion. In the period from September 2019 to the end of 2021, through these programmes and the policy of low interest rates (the deposit interest rate at –0.5%, the primary rate at 0.0%), the 10-year sovereign government bonds yields for convergence purposes (hereinafter 10-year government bonds) in Eurozone countries were kept at relatively very low levels. During this period, 10-year government bonds achieved yields close to zero or even negative (e.g. in Germany, Finland, Austria or Slovakia), with the exception of the countries of in south of Europe, where the yields were on average 0.7% p.a. Last year, looking at the whole yield curve, there was only a very moderate average annual increase in yields of around 0.1 pp in the 9 to 30-year maturity segment, while at the shorter end of the yield curve yields even decreased year-on-year by around 0.1 pp. Despite the high level of government indebtedness, particularly in the countries of Southern Europe (Italy, Spain, France, Greece and Cyprus), thanks to the monetary policy of the European Central Bank, these countries were able to finance their borrowing needs by issuing government bonds, even with very long maturities at interest yields below the yields on 10-year government bonds of several times less indebted countries outside the euro area. For example, the Greek government conducted two auctions of 30-year government bonds last year at an average yield of 1.7% p.a., the Italian government held four auctions of 30-

year bonds at 1.7% p.a., and even carried out a syndicated issue of a 50-year government bond at an average yield of 2.2% p.a. The French government also held several auctions of long-term government bonds (30-year at an average yield of 0.8% p.a., 50-year at 1.1% p.a.). However, from August 2021, government bond yields in all euro area countries started to increase slightly. The primary reason was the expected tightening of the European Central Bank's monetary policy in response to rising inflation rates. A rapid increase in yields (particularly in Greece, Spain, Italy, Portugal and Cyprus) occurred at the end of 2021 and during the first half of 2022. This was result of the confirmation of the end of net asset purchases under the PEPP at the end of March 2022<sup>4</sup>, with maturing sovereign bond principal amounts to be reinvested until at least the end of 2024. Southern European countries in particular participated in this programme, with their total cumulative net purchases exceeding more than half of the total programme volume. Since the end of the PEPP, the interest rate spreads of the southern countries have averaged 1.1 pp in Spain, 2.0 pp in Italy and even 2.4 pp in Greece compared to German 10-year government bonds in the second quarter of 2022, thereby the so-called risk of fragmentation (i.e. the risk of too large differences in government bond yields between individual countries) significantly increased. This risk subsequently reduces the effects of monetary policy transmission across euro area countries. This is why in July 2022 the European Central Bank approved a new bond purchase instrument, the so-called Transmission Protection Instrument. This instrument consists of the purchase of public sector bonds (with maturities of up to 10 years) on the secondary market of those countries that will be affected by deteriorated conditions for

<sup>4</sup> At the same time, it was decided to increase the volume of government bond purchases within the framework of the PSPP, however, from July 2022, these purchases have also been suspended and only principal reinvestments are taking place.

financing the government's borrowing needs and will meet conditions in terms of compliance with EU fiscal rules and fiscal sustainability. This should limit the risk that monetary policy tightening will translate into an excessive widening of spreads between sovereign bond yields across countries, which would significantly increase the cost of servicing government debt, especially in the countries of Southern Europe, and cause considerable pressure on their fiscal sustainability.<sup>5</sup> After the approval of this new instrument, there has been a relative "calming" of the bond markets, but due to the further increase in interest rates by the European Central Bank (deposit interest rate to 1.5%, primary interest rate to 2.25%), the 10-year government bond yields started to rise again. By the end of September, in the countries of Southern Europe, they were on average 3.6% p.a. (in Greece and Italy even exceeding 4% p.a.). In relatively less indebted countries (e.g. the Netherlands, Ireland) they reached around 2.3% p.a., while in Germany they rose to 1.8% p.a. Ten-year government bond yields are thus at their highest level since 2013 in most Eurozone countries.

In **non-euro area countries**, the 10-year government bond yields increased on average year-on-year last year by an average of 0.5 pp (except for Croatia and Romania, where was an average year-on-year decrease in yields by approx. 0.3 pp, and in Bulgaria by 0.1 pp). Ten-year government bond yields rose the most in the CR and Hungary (both by approx. 0.8 pp on average). At the end of 2021, only Denmark achieved negative 10-year government bond yields. The reason for the onset of a growth trend in government bond yields in countries outside the Eurozone is mainly the tightening of monetary policy by most national central banks from the second half of 2021 in response to the rising rate of inflation. For example, during the years 2021–2022, the central bank in the CR raised its base rate to the current level of 7% p.a., in Hungary to 13% p.a., in Poland to 6.75% p.a. or in Romania to 6.25% p.a. Very restrictive monetary policy combined with the expansionary fiscal policy due to the support of households and firms in the context of high energy prices, has led to the level of 10-year government bond yields in these countries of 4.6% p.a. on average at the end of the third quarter of 2022, i.e. approx. 2.6 pp higher than at the end of 2021. Hungarian (4.8 pp) and Polish (2.9 pp) sovereign bonds recorded the largest increases, with Hungarian sovereign bond yields reaching 9.2% p.a. in September 2022<sup>6</sup>. Along the entire yield curve of Czech, Hungarian,

Polish or Romanian government bonds, the yields of government bonds at the shorter end of the curve are higher than those of long-dated bonds (10 years and above). In countries with less tight monetary policies (Denmark and Sweden), 10-year government bond yields are at several times lower levels in the third quarter of 2022 (on average at 1.7% p.a.), yet both countries are at their highest levels since 2014. Thus, no country outside the euro area has currently negative 10-year government bond yields.

However, government bond issues are not the only way to cover public debt. There are countries in the EU with a significant share of **loans for financing**. National autumn notifications of general government deficit and debt show that loans accounted for a significant part of the government debt in Greece (75.2% of total debt), Estonia (62.4%) and Cyprus (35.3%) in 2021. Sweden (30.8%) and Croatia (29.7%) also have enduring share of loans around 30% of the total debt. In Estonia, the share of loans from the European Investment Bank in the total debt has decreased by 30 pp since 2020, as the increase in debt is covered by the issuance of government bonds, which the government quite exceptionally sold in 2020 in connection with the pandemic and in 2022 to finance the impact of the energy crisis. On the contrary, in Greece, the share of loans (from the International Monetary Fund and EU stabilisation mechanisms) for debt financing has slightly decreased in the last five years due to the return of Greek government bonds to the bond markets in 2017.

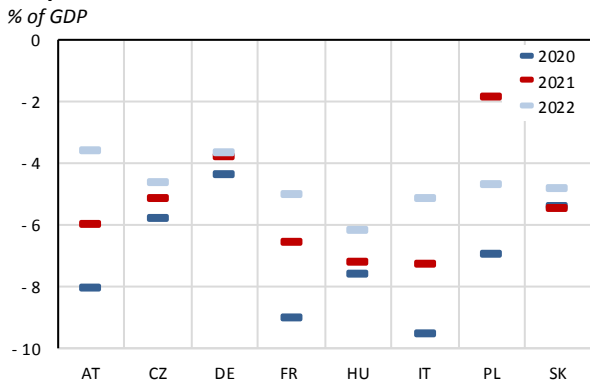
EU countries also have the opportunity to finance specific investments and reforms through soft loans from several EU instruments. The most important is the **Recovery and Resilience Facility**, which has a total allocation of EUR 385.8 billion for loans to Member States. Italy in particular intends to use this financing instrument (EUR 122.6 billion in approved loans), while Romania (EUR 14.9 billion), Greece (EUR 12.7 billion), Poland (EUR 11.5 billion) and Portugal (EUR 2.7 billion) are also planning to borrow an order of magnitude less. In Slovenia and Cyprus, the planned volume of loans is up to EUR 1 billion. The CR is considering (Government Resolution No. 861/2022) the possibility of a loan up to EUR 14.3 billion to finance the country's energy transition. Another instrument with temporary support is **SURE**, with a total loan allocation of EUR 100 billion, which can be used to finance eligible expenditure to mitigate the unemployment risk due to the COVID-19 epidemic from 2020–2022. A total of EUR 91.8 billion has already been disbursed under this programme to 19 EU Member States, of which Italy (EUR 27.4 billion), Spain (EUR 21.3 billion) and Poland (EUR 9.7 billion euros). To the CR has been disbursed EUR 2 billion so far, with a further EUR 2.5 billion already approved by the European Commission.

for 30-year bonds. At the short end of the yield curve, yields have on average increased even by 6 pp and 3-month Treasury bills currently reach an auction yield of approx. 13% p.a.

<sup>5</sup> For example, the auctions of very long-dated government bonds in France saw the yield on the 30-year government bond rise by 1.3 pp to 2.5% p.a. during 2022, in Spain by 1.4 pp to 3.3 % p.a. or in Italy by 2.4 pp to 4.2 % p.a. In Greece, there have been no auctions of long-term government bonds this year (only one 10-year and one 5-year bond), with borrowing needs financed by Treasury bill issues and by reinvestments of German and Dutch bonds from asset purchase programmes.

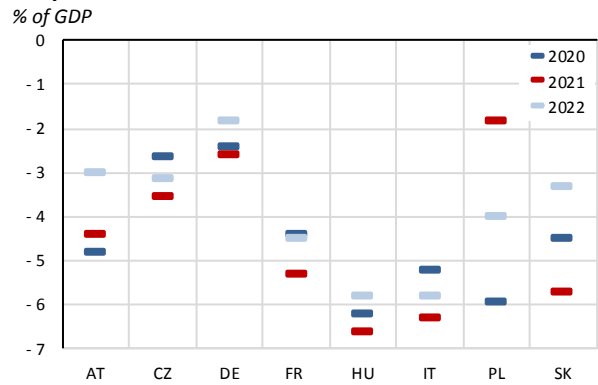
<sup>6</sup> During 2022, in the auctions of Hungarian government bonds with a very long time to maturity, there has been a year-on-year average growth of yields of 3.7 pp in the case of 20-year bonds, and by 4.5 pp

**Graph 3.1: Balance of Selected EU Countries**



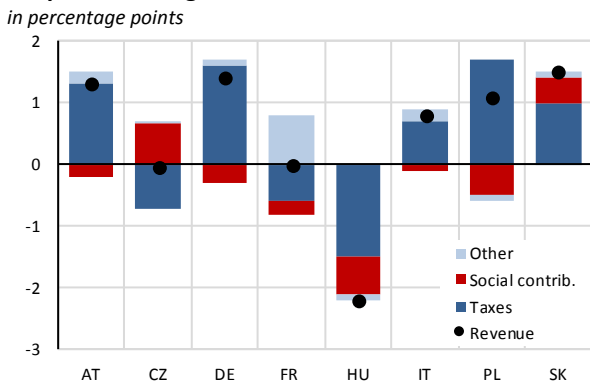
Source: Eurostat (2022b). CR data: CZSO (2022a, 2022b) and MF CR.

**Graph 3.2: Structural Balance of Selected EU Countries**



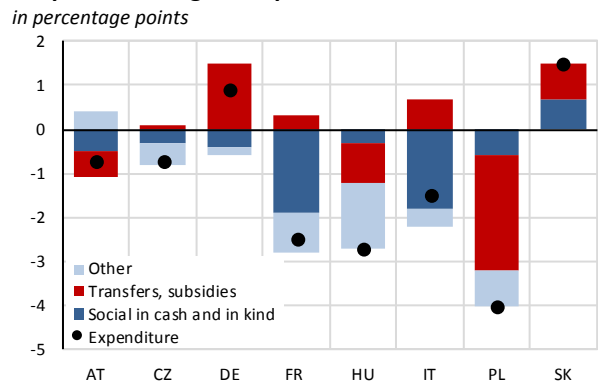
Source: EC (2022a). CR data: CZSO (2022a, 2022b) and MF CR.

**Graph 3.3: Change in Revenue in 2020–2021**



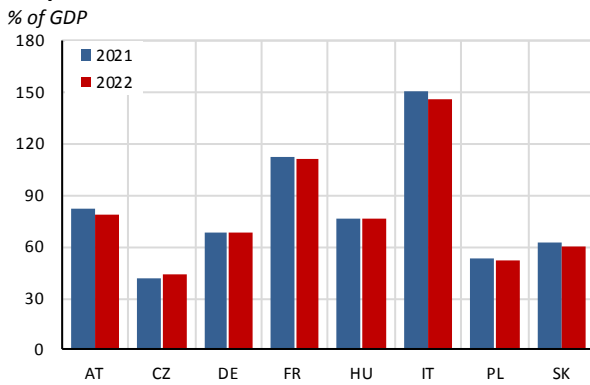
Source: Eurostat (2022a, 2022b). CR data: CZSO (2022a, 2022b).

**Graph 3.4: Change in Expenditure in 2020–2021**



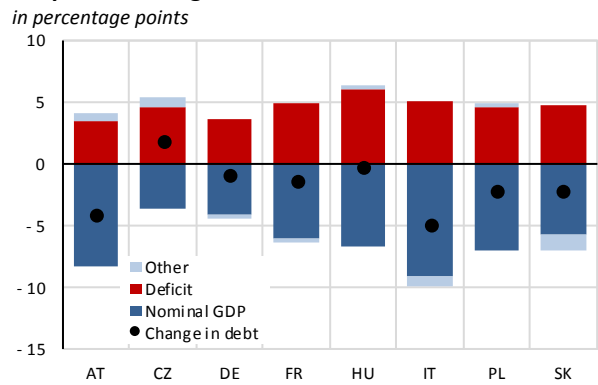
Source: Eurostat (2022a, 2022b). CR data: CZSO (2022a, 2022b).

**Graph 3.5: Debt of Selected EU Countries**



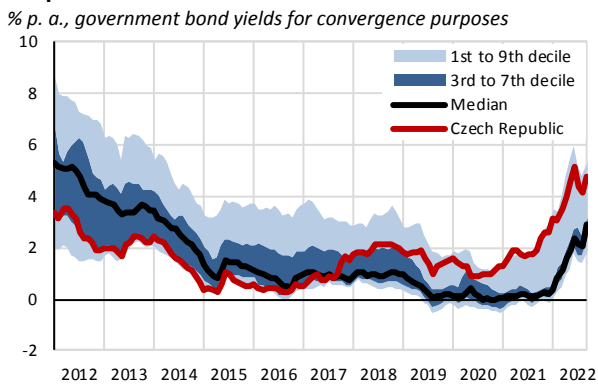
Source: Eurostat (2022b). CR data: CZSO (2022a, 2022b). and MF CR.

**Graph 3.6: Change in Debt-to GDP ratio in 2021–2022**



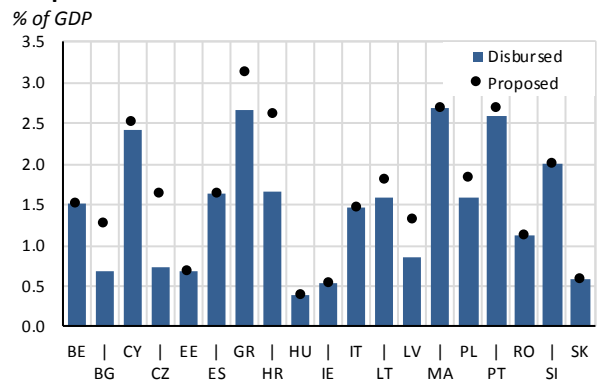
Source: Eurostat (2022b). CR data: CZSO (2022a, 2022b). and MF CR.

**Graph 3.7: Bond Yields in the CR and EU Countries**



Source: ECB (2022).

**Graph 3.8: Loans from the SURE instrument**



Source: EC (2022a, 2022b).



## 4 Long-term Sustainability of the Pension System

Long-term sustainability is one of the consistently discussed issues of Czech public finances. Although the process of population ageing is already present, the greatest risk is posed by demographic developments that are likely to occur in the next few decades and will significantly increase the ratio of people of retirement age to the economically active population. This will intensify the pressure on social spending and the need to reform social systems. In the past, several expert groups have been set up in the Czech Republic with the aim of reforming the pension system and possibly also the health system, but no broader political consensus has yet been found for comprehensive reform. The current government also set this goal in its programme statement.

### 4.1 Development of Parametric Changes in the Pension System

In addition to the macroeconomic and demographic assumptions and projections (Table 4.2.1), the factors influencing the long-term projections are also the approved pension reform measures known at the time the projections are made.

Among the parameters of the pension system, the **statutory retirement age** deserves primary attention. With effect from 1 January 2018 (Act No. 203/2017 Coll.), the latest change so far has left the retirement age rising only until it is unified at 65 years for men and women during the next decade. The Ministry of Labour and Social Affairs is mandated by law to assess the retirement age at regular five-year intervals and, if necessary, propose adjustments to the retirement age so that insured persons spend, on average, a quarter of their lives in old-age pensions. Moreover, changes in the setting of the retirement age should not affect persons who will be over 55 years of age at the time of the review. Although the first assessment (MoLSA, 2019) indicated a need to adjust the retirement age for at least those currently in their forties and younger, the government decided to leave the statutory retirement age at its current setting of 65 for the time being.

The development of the statutory retirement age also affects the conditions of permanent **widows' and widowers' pensions**, where the age limit is linked to old-age pensions. For **early retirement pensions**, the

threshold is gradually moving from three to five years before the statutory retirement age. Persons whose statutory age is at least 65 can use this maximum five-year period, though at the cost of significant penalties.

**Pension indexation** is determined by the sum of the increase in the consumer price index or the pensioners cost-of-living index (whichever is higher) and one half of the real wage growth. This adjustment has been in force since 1 January 2018, also as a result of the adoption of Act No. 203/2017 Coll. Indexation is carried out once a year on 1 January, except the case of inflation reaching at least 5% since the end of the previous reference period. However, only the earnings-related part of pension benefits are indexed in such exceptional periods. In addition, there is also limited discretion for the government with effect from 2017 (Act No. 212/2016 Coll.). If the increase in the average pension according to the standard indexation formula does not reach 2.7%, the government is entitled to raise pension indexation rate up to this value by regulation. In other cases, the statutory indexation formula is applied. Beyond this, however, further adjustments have been made, either by adding CZK 1 000 to all pensioners over 85 years of age from 2019 (Act No. 191/2018 Coll.), or by an ad hoc increase in the average pension in 2020 by CZK 900 (Act No. 244/2019 Coll.) or CZK 300 for 2022 (Act No. 323/2021 Coll.).

### 4.2 Pension Projections

Eurostat's latest population projection (2019) expects a decline in the Czech population by almost 4.5% in the long term. The dependency ratio, measured as the ratio of people aged 65 and over to people of working age 15–64, is set to almost double by 2070, reaching around 54%. Of course, this is not only a consequence of the decline in the number of people of working age, but also of the increase in life expectancy. The share of people aged 85 and over in the number of people aged 65 and over is projected to more than double over the projection horizon (Graph 4.2.3).

The geopolitical situation in Eastern Europe triggered a strong wave of migration after the Russian invasion of

Ukraine, which also affected the Czech Republic. The impact of these changes is summarised in Box 1.

Demographic developments and the statutory retirement age primarily determine the trend in long-term pension projections. This implies that pension expenditure is expected to grow more slowly relative to GDP until 2030. After 2030, the increase in the retirement age comes to a halt, and those born the 1970s start retiring. This leads to a rather dramatic increase in spending to almost 12% of GDP just before 2060, with a subsequent decline slightly below 11% of GDP at the end of the projection horizon in 2070 (Table 4.2.1, lower part). The decline in spending is again driven by demographic factors, as people born in the

1990s and later will retire and replace those born earlier during a demographic bulge.

We expect the balance of the pension system to be negative over the entire projection horizon. The projection has already taken into account a widening of the pension deficit due to the economic impact of the pandemic. From a surplus of 0.3% of GDP in 2019, the performance ended up with a deficit of 0.7% of GDP in 2020. In contrast, in 2021, there is a resumption of revenue growth and the impact of the pandemic is strongly reflected on the expenditure side by a decline in the number of pension beneficiaries. The system thus ended up near-balanced. As a result of falling real wages and lower social security contributions' dynamics on the one hand, and a significant increase in inflation leading to two extraordinary indexations in 2022, the balance of the pension system is expected to fall back into deficits of up to 1% of GDP. As the situation stabilises (lower inflation rates), it should gradually improve, and we project a deficit of 0.3% of GDP around 2030. However, the balance will deteriorate again in the following period due to demographic developments, deepening to -3.5% of GDP around 2060. In the last decade of the projection (see above), the deficit should start to decline, falling by around 1 pp in 2070.

The **assumptions of the baseline scenario** over such a long horizon are, of course, subject to considerable uncertainty. A change in assumptions can then be quite important for the assessment of the sustainability of the system.

The EC projection (2021b) assumes constant **revenues of the pension system** in line with a constant share of labour compensation in GDP and a constant contribution rate. Given that the share of labour factor compensation is low in the Czech Republic compared to developed countries, we can expect relatively higher wage bill dynamics in the future compared to nominal GDP growth. In the alternative scenario, we therefore assume that the share of compensation of employees in GDP would reach the current level of Germany by the end of the projection horizon (2070). Germany was chosen as the most similar economy in terms of structure and foreign trade. This would have a positive effect on the revenue side at a given contribution rate, but at the same time relatively higher wages and salaries would increase future pension benefits. Spending (Graph 4.2.5) would rise from a baseline level of 9.5% of GDP to 13.2% of GDP in this scenario, peaking in 2059 (see also Box 2 in MF CR, 2019 for more details, where

the higher share of workers' compensation in developed countries was one of the significant factors explaining the lower ratio of pension spending to GDP in the Czech Republic). However, the balance would not differ substantially from the scenario in the EC (2021b) (Graph 4.2.6). In the relatively short run, higher earnings would cushion the fall into deficit, but in the longer run, higher earnings would be reflected in higher pension outlays. Deficits would then start to widen somewhat more.

Investment that would increase the **rate of total factor productivity** by 0.2 pp would lead to a 0.3 pp reduction in the ratio of pension expenditure to GDP. The scenario of a drop in total factor productivity by 0.2 pp would have a negative impact on expenditures on a similar scale (see Graph 4.2.4). Other alternative scenarios are almost symmetrically similar.

By contrast, a two-year increase in **life expectancy** would increase pension expenditure by 0.7 pp due to the effect of a longer average duration of old-age pensions (see Graph 4.2.7).

A 20% lower **fertility rate** would burden the pension account with 1.5 pp of higher expenditure (Graph 4.2.8). However, the fertility rate has already increased substantially in recent years and is likely to fall rather than rise in the coming years. At the same time, under the current setting of pension system parameters, spending over a given horizon declines relatively at higher fertility rates, but the pressure on the pension system will be all the greater beyond its end, i.e. after 2070.

The **retirement age** plays a significant role in the evolution of expenditure. Continuing to raise it above the current ceiling of 65 years for another two years (at the same rate as the age for men has been rising) would improve the system's balance by up to 0.6% of GDP in the long run (Graph 4.2.9). Conversely, if further growth would almost immediately stop and would remain at 63 years, additional expenditure pressures would deepen the system deficit by up to 0.9% of GDP in 2070.

The last scenario works with **different rates of indexation**. Compared to the baseline scenario, where the indexation covers inflation rate and half of real wage growth, the alternative scenario considers increases by inflation and one third of real wage growth, or only by inflation. A lower adjustment for real wage growth would reduce expenditure by up to 0.4 pp in the long run, and a price-only indexation would reduce it by as much as 1.0 pp (Graph 4.2.10).

### Box 1: Annual Update of Eurostat's Demographic Projections

On 28 September 2022, Eurostat published the regular annual update of its population projections. While this does not replace the still valid EUROPOP 2019 projection, it provides additional information in the interim period before the publication of detailed projections within the regular three-year cycle. The update primarily serves to refine the medium-term macroeconomic and fiscal forecasts in the context of the European Semester.

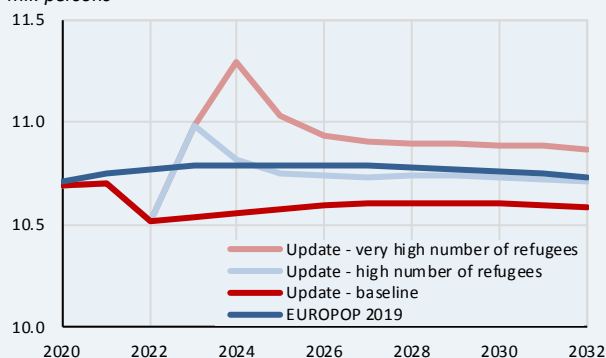
Graph 4.2.1 illustrates the predicted evolution of the total population on 1 January of each year over the next ten years. In addition to the baseline scenario, two alternative scenarios are calculated with respect to the migration wave of refugees from Ukraine. The high refugee scenario assumes an influx of refugees only in 2022 and a gradual return of refugees at a constant rate in the following years, so that at the end of 2031, 10% of the total influx would remain in the Czech population. In the case of the very high refugee scenario, a continued arrival of migrants is assumed also in 2023, followed by a similar outflow until the end of 2031, when 15% of the total number of arrivals from 2022 and 2023 would stay.

A comparison of the EUROPOP2019 baseline scenarios and the current update shows that the population trend remains the same in the future, but at a lower level. This is due to a decline in the population, especially in 2021, when the number of people in the Czech Republic decreased by about 185 000 according to last year's Census of Population, Houses and Flats (CZSO, 2022c). For the alternative scenarios, we estimate the inflow of migrants for the whole year 2022 and 2023 respectively, based on the data available from January to August this year. In total, the arrival of almost 430 thousand persons is considered in this year in both alternatives and 292 thousand persons in the following year in the very high scenario. In the more moderate alternative, there would already be an outflow of almost 185 000 persons in 2023. Graph 4.2.2 shows how these scenarios affect the predominantly working-age population. The comparison is very similar, and in this case, the updated alternative with a high refugee inflow is again closest in levels to the EUROPOP 2019 baseline scenario.

A new full-fledged EUROPOP2022 projection should be ready next spring. The final numbers may also be affected by the methodology of demographic projections, in particular the, already many times modified, model for estimating the migration balance, which is all the more uncertain in light of the current Russian aggression against Ukraine.

**Graph 4.2.1: Total Population Projections**

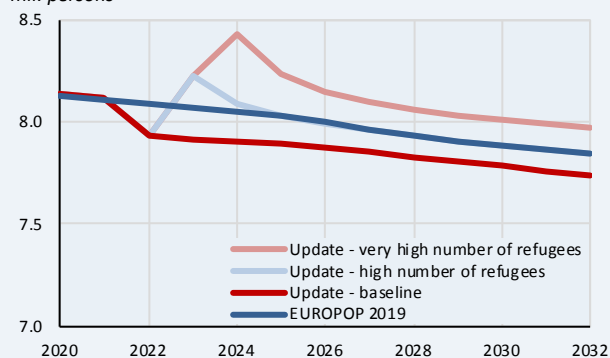
mil. persons



Source: Eurostat (2019, 2022c).

**Graph 4.2.2: Projections of Population 15–74**

mil. persons



Source: Eurostat (2019, 2022c).

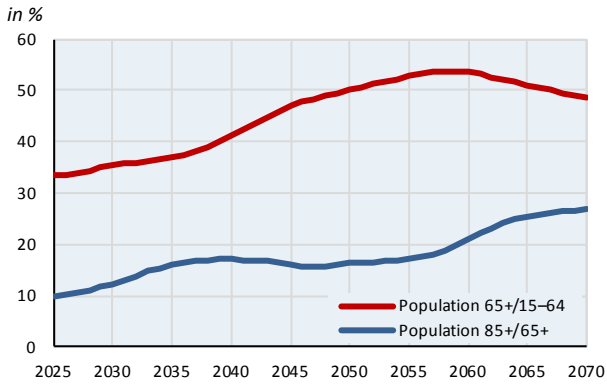
**Table 4.2.1: Basic Demographic and Macroeconomic Assumptions and Pension Expenditure Projections**

		2019	2020	2030	2040	2050	2060	2070
			Projection	Projection	Projection	Projection	Projection	Projection
<b>Labour productivity growth</b>	per hour	2.0	1.9	2.2	2.1	1.9	1.7	1.5
<b>Real GDP growth</b>	%	2.6	-6.2	1.9	1.3	1.3	1.7	1.5
<b>Total participation rate (aged 20–64)</b>	%	82.0	82.2	81.7	80.3	81.0	82.0	81.3
<b>Unemployment rate (aged 20–64)</b>	%	2.0	4.8	3.5	3.5	3.5	3.5	3.5
<b>Population aged 65+</b>	% of total population	19.8	20.1	22.1	25.0	28.3	29.6	27.9
<b>Total pensions</b>		<b>8.0</b>	<b>9.5</b>	<b>8.8</b>	<b>9.8</b>	<b>11.4</b>	<b>11.8</b>	<b>10.9</b>
Old-age pensions		6.7	7.9	7.4	8.5	10.1	10.4	9.5
Disability pensions		0.8	0.9	0.8	0.7	0.7	0.7	0.7
Survivors' pensions		0.5	0.6	0.6	0.6	0.6	0.7	0.7

Note: The values in the table correspond to the assumptions of the long-term projections at the time they were made in the first half of 2020. The sum of values for each type of pension expenditure is not necessarily equal to the total expenditure due to rounding.

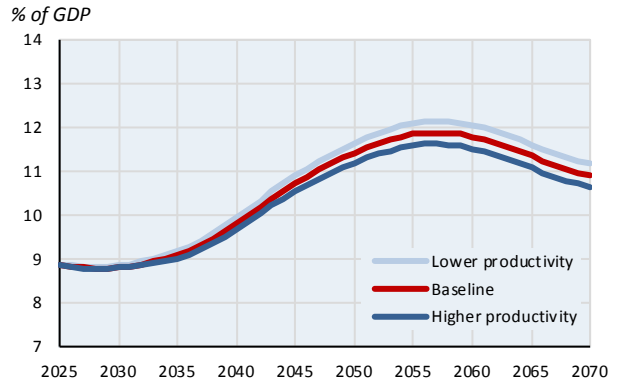
Source: EC (2020), Eurostat (2019), MF CR calculations.

**Graph 4.2.3: Dependency Ratio and 85+/65+ Ratio**



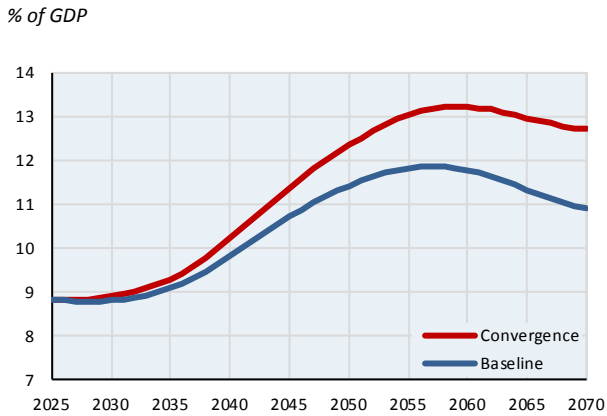
Source: Eurostat (2019). MF CR adjustment.

**Graph 4.2.4: Alternative Productivity Scenarios**



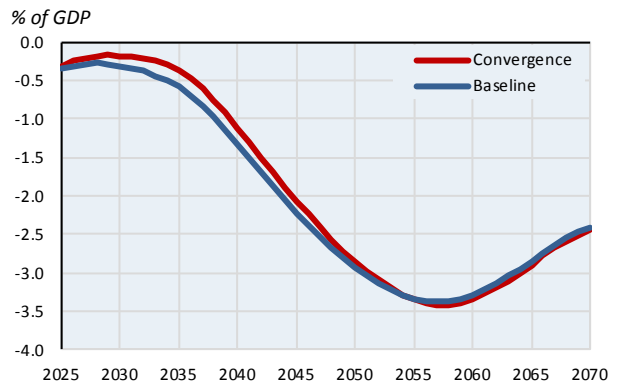
Source: MF CR calculations.

**Graph 4.2.5: Alternative Wage Convergence Scenario**



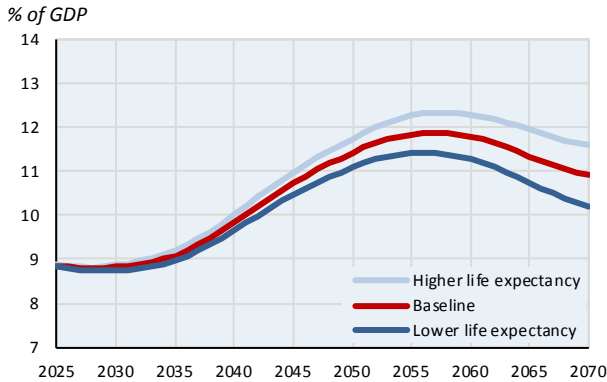
Source: MF CR calculations.

**Graph 4.2.6: Alternative Wage Convergence Scenario – Balance**



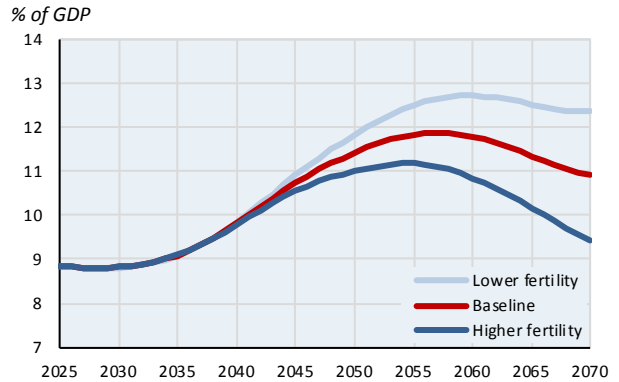
Source: MF CR calculations.

**Graph 4.2.7: Alternative Life Expectancy Scenarios**



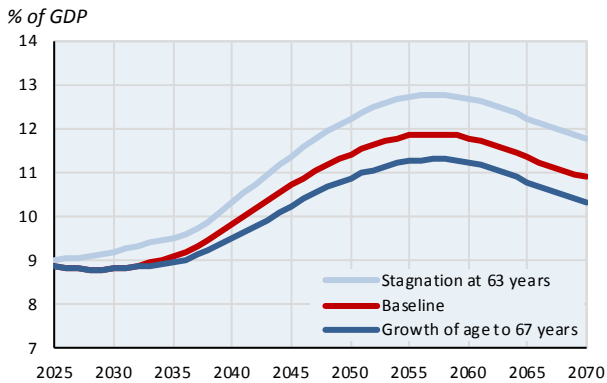
Source: MF CR calculations.

**Graph 4.2.8: Alternative Fertility Rates Scenarios**



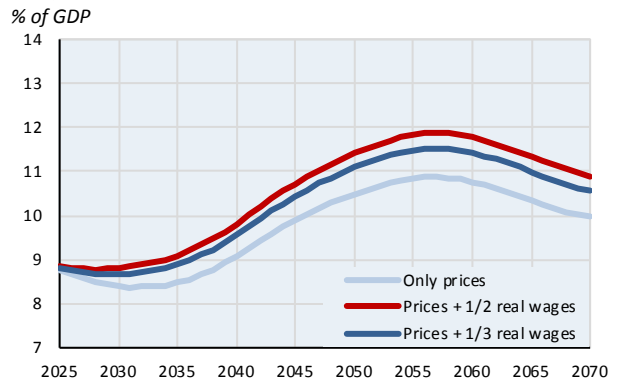
Source: MF CR calculations.

**Graph 4.2.9: Alternative Retirement Age Scenarios**



Source: MF CR calculations.

**Graph 4.2.10: Alternative Indexation Scenarios**



Source: MF CR calculations.

## 5 Participation Rates and Setting up of Social Systems

The phenomenon of long-term imbalances in the social systems of the CR, like in recent times persistently tense situation on the labour market, raises the question of how to positively influence the participation rate. Higher participation of certain population groups is one of the frequent recommendations from international institutions such as the Organisation for Economic Co-operation and Development (OECD, 2018a, 2020a), the European Commission (EC, 2022c) or the International Monetary Fund (IMF, 2022). Although increasing participation rates is relevant from the perspective of all time horizons, the chapter focuses rather on issues related to the long term. It identifies bottlenecks in the institutional set-up of the relevant social systems in the CR and analyses their impact on the participation rates of people in the relevant age groups. Specifically, this concerns maternity and parental leave schemes linked to pre-school childcare services and, on the other hand, the setting of the retirement age as a strong signal for leaving the labour market. The first two sub-chapters therefore focus on participation rates, particularly for women of prime working age, while the third to sixth sub-chapters compare social systems in the EU and their impact on participation rates of selected groups. The penultimate sub-chapter outlines a scenario of structural reforms with the resulting increase in participation rates to levels comparable within the EU and the last sub-chapter summarises the conclusions.

### 5.1 Economic Activity – General Trends

The labour market is one of the most watched markets in the national economy. Its imbalances have direct economic and social impacts. The main labour market indicators monitored include the economic activity rate (participation rate). This indicates the proportion of people in the population who are active in the labour market, i.e. either employed or unemployed. There are number of factors that determine the participation rate. In addition to historical and cultural aspects, there are the institutions set up by the social systems of each country. Long duration of paid maternity and parental leave for women of reproductive age (see Chapter 5.3) or low retirement age for the older population (see Chapter 5.6) reduce their participation in the labour market. While the participation rate alone may not yet be indicative of actual labour utilisation in the national economy, it is an important indicator for targeting relevant structural reforms.

Although the participation rate in the CR is relatively high among EU countries (Graph 5.1.1), there are age cohorts that lag behind. For both men and women, this is up-to-24 age group (Graph 5.1.2). In the population cohorts aged 25 and over, relatively lower participation rates are evident among women (Graph 5.1.3), which changes from age 40 and above. Between the ages of 45 and 55, female participation rates are even among the highest in the EU. For men, economic activity rates are among the highest in the EU between the ages of 25 and 60. After the age of 60, there is a turning point and the CR is closer to the EU average (practically around the median of EU countries).

During the second half of the 20th century, women's participation rates increased significantly while men's participation rates declined slightly (Olivetti and Petrongolo, 2016). There were several reasons for the increase in women's participation rate, notably the rise in education levels, changes in institutions (attitudes towards women and their work activity) and the development of the service sector, in which women

found strong employment due to their comparative advantage in this segment (Ngai and Petrongolo, 2017). However, the increase in participation rates has entailed a visible decline in fertility rates in advanced economies, with fertility rates falling below the simple replacement rate since the 1980s (UN, 2022). In countries where part-time work became more widespread, the effect on fertility rates was smaller. However, women took up part-time work more involuntarily due to circumstances (Lim, 2002), although this attitude is likely to be changing over time (Eurostat, 2018). Part-time work is still the domain of women, with around one-third of employed women in the EU working part-time compared to just under 10% of men (EC, 2017). According to the Eurostat data, the CR is one of the EU countries where part-time jobs are used relatively less (Graph 5.1.4) as they account for around 6% of total employment for people aged 15–64, with women accounting for around 10% of part-time jobs.

However, in recent decades, the growth of participation rates in the EU has been relatively moderate. For younger age cohorts, a decline is more evident, while for those over 45, female-driven participation continues to increase. The participation rate of new entrants to the labour market increases with increasing age, influenced by changes in pension systems and increases in the statutory retirement age.

In the CR, the development over the last 20 years has been slightly different. After the beginning of the new millennium, the economic activity rate trended downwards until the Great Recession of 2008–2010, from which it started to grow (except during the epidemic period). The increase from 2008 to 2021 is almost 7 pp. However, the evolution across age cohorts was different. The economic activity rates of both men and women aged 15–24, but also only of women between 30 and 40, have declined. In contrast, the increase in activity was particularly marked for women over 55. In the 55–64 age group, the difference in

female participation rates between 2008 and 2021 is almost 30 pp. This can be explained by the higher retirement age of men compared to women (especially those with more children), and the subsequent adjustments to bring them together (i.e. slower growth in retirement age for men than for women).

Differences in economic activity rates between men and women also stem from the persistent division of roles within the family, where women are usually the primary caregivers for children or the pensioner (EC, 2017). In all EU countries, women's labour market participation is lower than men's, although the degree of difference varies. The CR is consistently among the EU countries where the difference in participation rates is higher. The highest differences are in the southern countries (Greece, Italy, Malta) and Romania, while the lowest are in the Nordic countries (Sweden, Finland, the Baltics).

However, the differences do not have the same impact on women in terms of their earnings. Accordingly, Cukrowska-Torzewska and Lovász (2017) divide EU Member States into three groups:

*“In the first group [Southern Europe], female employment is low and the gender wage gap is relatively small. It is mostly driven by the gender wage gap among childless individuals and the positive fatherhood wage gap, while mothers who work receive a higher wages compared to childless women. The length of leaves in these countries is short, mothers who return to work do so soon after having their child, which does not lead to their wage disadvantage relative to childless women.*

*In Western European countries, the gender wage gap is mostly attributed to the existence of a significant fatherhood premium [i.e. a positive difference in wages between fathers and childless men]. Motherhood wage gaps [i.e. differences in wages between mothers and childless women] exist but play a marginal role, despite the higher maternal employment rates in these countries. Norms and policies enable mothers to combine work and family obligations – particularly flexible jobs, access to childcare, and moderate length, well-paid leaves – and upon their return to work, they do experience a significant wage penalty.*

*In CEE [Central and Eastern European] countries, all three gaps – the motherhood and the fatherhood wage gaps, as well as the gender wage gap among childless individuals – are significant contributors to gender wage inequality. In these countries, the state generally explicitly supports mothers as the primary childcare providers: mothers are granted long paid leaves with job protection, institutional childcare under age 3 is scarce, and societal views are unsupportive of mothers' earlier return to work. This leads to many mothers returning to work after long career breaks, and higher motherhood wage gaps that play an important role in shaping the overall gender wage gap.”*

Part-time jobs may also be relevant in this comparison. In 2021, almost a third of employed women aged 25–54 with children (32.3%) worked part-time in the EU, compared to 20.9% of employed childless women. The opposite is true for men: 5.0% of employed men with children worked part-time, which was lower than the share of childless men (7.4%). Part-time work is mainly the preserve of Western European countries (including Austria and Germany), followed by Southern European countries (Eurostat, 2022d). Part of the gender pay gap in the Western European group can thus be explained by the higher share of part-time work. In the case of Central and Eastern European countries, however, such an explanation does not hold and the relatively high gender pay gap in the CR must be traced to long absences from the labour market.

Factors of gender inequality are discussed, for example, by Bonthuis et al. (2019), Lodovici et al. (2016) or Bettio et al. (2013). The first group of factors includes different labour market functioning of women and men, consisting of employment rates and length of 'working life', length of working time or differences in remuneration. The second group is represented by family status, or whether or not a woman has a child. Kleven et al. (2018) point out that before the birth of a child, earnings and employment rates are similar for men and women, but after the birth of a child, both parameters start to diverge and the gap gradually widens. The reduction in employment and earnings for women gradually reaches about 20%, reflecting not only lower participation and total hours worked but also the choice of occupation, the characteristics of the sector concerned and the choice of employer. Kalb (2018) mentions a negative effect on the earnings of women in Austria who returned from parental leave longer than 18 months compared to those who returned earlier. In the first few years after returning to work, the wage gap was approximately 14–16%, but then declined further over time.

Raising participation rates is essential for extensive growth of the economy's potential output. The need intensifies further if the working-age population declines and the rate of structurally comparable vacancies exceeds the unemployment rate. It is also central to the long-term sustainability of public finances. Developed countries are facing increasing spending pressures in social systems (pensions, health care, long-term care). Participation also undoubtedly affects the revenue side of public budgets. Economic growth combined with higher tax revenues and social security contributions is one of the most effective options. Economic activity needs to be boosted by well-targeted structural reforms (IMF, 2018). In the case of the CR, the following groups (apart from increased immigration) have been identified by the analysis:

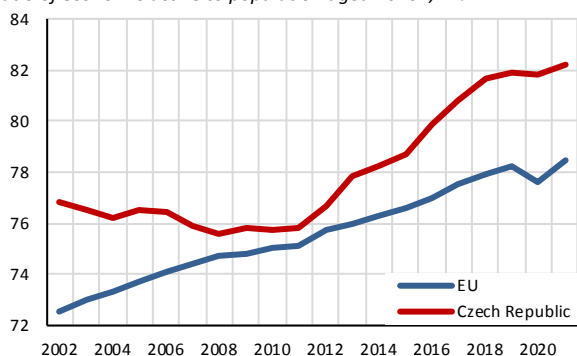
- young people under 25 (who are not the focus of this chapter),
- women in the first half of their working-age period and

- people over 55 years of age, including elderly citizens.

For other groups, the possibilities for increasing participation rate are virtually exhausted.

**Graph 5.1.1: Participation Rate in the CR and EU**

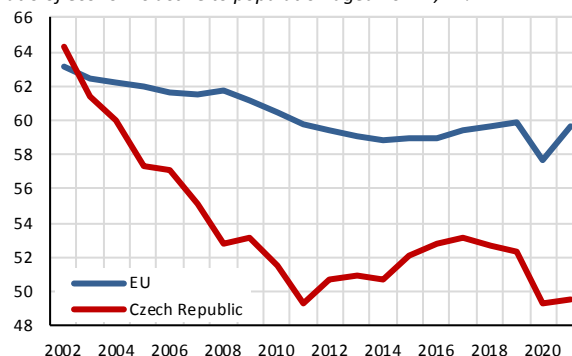
ratio of economic active to population aged 20–64, in %



Source: Eurostat (2022a).

**Graph 5.1.2: Participation of Young Adults in the CR and EU**

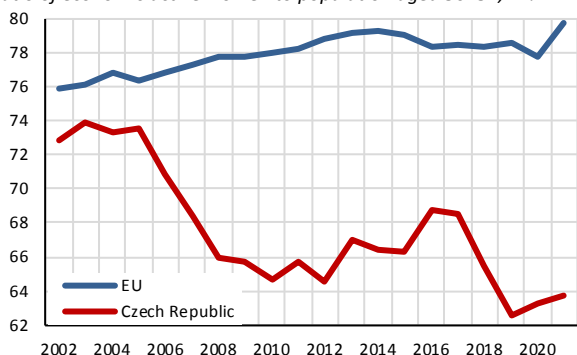
ratio of economic active to population aged 20–24, in %



Source: Eurostat (2022a).

**Graph 5.1.3: Female Participation Rate in the CR and EU**

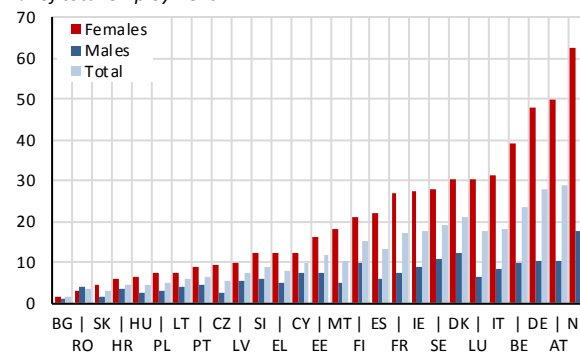
ratio of economic active women to population aged 30–34, in %



Source: Eurostat (2022a).

**Graph 5.1.4: Part-time Jobs in EU**

in % of total employment



Source: Eurostat (2022a).

## 5.2 Factors Affecting the Participation and Employment of Women with Children

During the parental leave, it is relevant to monitor the employment of women with children, since the protection of a job for a certain period and the possibility of returning to work, rather than being unemployed afterwards, play a role in a woman's decision to reduce the length of parental leave. Thus, the factors influencing participation rates are essentially the same as those influencing the employment rate of women with children. The age profiles of male and female employment over the life cycle show considerable differences in most EU countries. Male employment has an inverted "U" shape during working life. Employment rates tend to be low for young men because many have not yet completed their education. It then gradually increases between the ages of 25 and 39 and stabilises between the ages of 40 and 54 before falling again as retirement age approaches. This employment profile is evident to varying degrees in almost all EU countries, but perhaps most markedly in the Southern European countries (Greece, Italy, Portugal and Spain) and the countries of Central and Eastern Europe (the CR, Hungary, Poland, Slovakia and Slovenia). In contrast, the employment patterns of women by age

are more diverse. In France and Italy, for example, they also follow an inverted "U", but at lower levels than for men at all ages. In Ireland, Luxembourg, the Netherlands and Malta, female employment rates are relatively high after the start of a career, but start to fall around the age of 30. This suggests that some women leave the labour market as soon as they become mothers and do not return even after their children have grown up. In several EU countries (e.g. CR, Hungary, Slovakia), the employment profile of women by age resembles the letter "M". Women's employment initially increases, declines between the ages of 25 and 35 due to parenthood, and then increases again as children grow up. Employment profiles by age also differ in terms of educational attainment. In the case of the CR, in the 30–34 age cohort, the difference in employment rates between women with primary education and women with tertiary education is more than 20 pp.

The employment rate of women aged 25–54 in the CR reached 78.4% in 2021, which was 3.3 pp higher than the EU average. However, for women with a child under the age of 6, the CR has the lowest long-term employment rate among EU countries, at around 41%

and 47% for two children (with the youngest child under the age of 6). In 2021, the difference with the EU average was therefore about 31 pp and 22.1 pp for two children. For the segment of the youngest children aged 6 and above, the employment rate of women in the CR can be considered comparable to that of other EU countries. It can therefore be concluded that the length of paid maternity and parental leave and other related factors significantly influence the decline in the employment rate of women in the CR. For example, Ruhm (1998), Jaumotte (2003) and Pronzato (2009) report that the legal anchoring of parental leave and the provided protection of job have a very positive effect on women's employment. The authors point out that paid parental leave up to the age of 1 year of a child

significantly reduces women's employment rates. However, the strength of the effect decreases significantly as the length of the support period increases.

Despite the gradual extension of parental leave flexibility to both parents, care for young children, and the associated lower participation and earnings, is still primarily associated with women (see Box No. 2). The resulting negative labour market consequences could be positively influenced, according to e.g. IMF (2018), by:

- appropriate family policy settings,
- Adequate early-childhood education provision,
- more flexibility in jobs.

### **Box 2: Analysis of Factors affecting the Labour Market Position of Women with Children**

The analysis of selected factors that may influence labour market characteristics for women with children is carried out using data for EU countries and the UK for the period 2006 to 2021. The choice of relevant variables characterising different government policies to support families with children was based on a search of academic studies, primarily Ruhm (1998), Blau and Kahn (2013) and Olivetti and Petrongolo (2017). The explanatory variables chosen were:

- a) Maximum job protection period (in weeks) – this is the maximum number of weeks of parental leave that a woman's job is protected by law and that she can take regardless of her income (the sum of maternity leave, parental leave and home childcare),
- b) Total paid leave (in weeks) – the sum of the number of weeks mothers receive income replacement while caring for a child;
- c) Total paid leave available to fathers (%) – this is the share of paid leave available to fathers on the total paid leave including maternity, parental and paternity leave;
- d) amount of expenditure on early-childhood education and care (% of GDP) – this is public expenditure spent in the ISCED 0 category.

The labour market parameters that could be influenced by the above variables were chosen to be:

- a) female employment rate – this is the employment rate of women aged 25–54 with one child under the age of 6;
- b) gender pay gap – the ratio of the difference between the median earnings of men and women to the median earnings of men;
- c) gender gap in employment – the difference between the employment rate of men and women aged 20–64 in p.p.

Using correlation analysis of individual variables (averages for 2006–2021), a negative correlation was found for the maximum duration of job protection and the employment rate of women with children and the gender gap in employment. This was similar for total paid leave. On the other hand, the level of expenditure on early-childhood education and care showed a positive correlation with the employment rate of women with children.

Table 5.2.1 shows the results of a panel regression that quantifies the impact of the above explanatory variables on the labour market characteristics of women with children. Statistical significance of the parameters was found for the effect of the duration of job protection on the employment rate of women with children. Job protection increases the likelihood of women returning to work, as it provides job security and possibly position security. However, the relationship changes with increasing length of job protection and too long job protection may have an inverse effect on the gender pay gap due to longer career breaks. In addition, the level of public expenditure on early-childhood education and care is expected to have a substantial impact on the lowering of gender pay gap as well as in gender gap in employment. This can be explained by the justified demand for more support for early-childhood education, which will enable women to return to work more quickly with shorter career breaks and thus lower gender inequality.

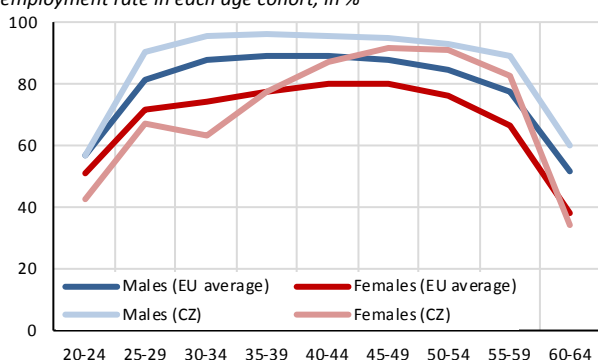


	Employment rate of women	Gender wage gap	Gender gap in employment
<b>Maximum length of job-protected leave</b>	0.18 *** (-0,05)	-0.05 ** (0,03)	-0.07 (0,06)
<b>Total duration of paid leave</b>	-0.03 (0,02)	0.02 (0,01)	0.08 ** (0,04)
<b>Total paid leave for fathers</b>	-0.00 (0,03)	0.02 (0,02)	-0.03 (0,02)
<b>Expenditure on early-childhood education and care</b>	0.09 (2,04)	-7.71 *** (1,08)	-3.23 *** (1,42)
<b>Constant</b>	49.74 *** (5,39)	31.32 *** (2,81)	15.96 *** (4,49)
R-squared adjusted	0.95	0.95	0.91
Number of observations	248	242	176
Time period	2006–2018	2006–2018	2009–2018
Number of countries	23	22	21

*Note: Standard errors are in parentheses. All specifications of the model include fixed effect. \*\*\*p<0.01; \*\*p<0.05; \*p<0.1.  
Source: MF CR calculations.*

**Graph 5.2.1: Men’s and Women’s Employment Profiles over the Life-course**

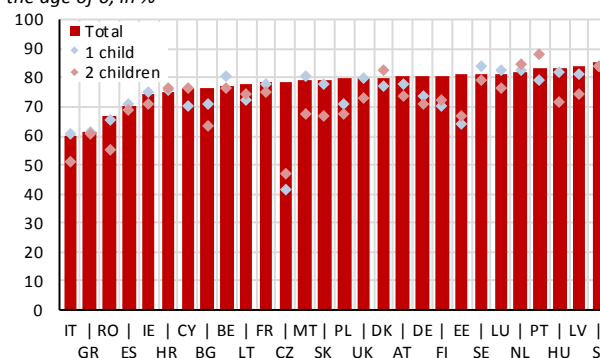
employment rate in each age cohort, in %



Source: OECD (2022a). MF CR calculations.

**Graph 5.2.2: Employment of Women in EU countries**

employment rate of women aged 25–54 with the youngest child under the age of 6, in %



Source: Eurostat (2022a).

## 5.3 Early Childcare

Family policy aimed at supporting families with young children is most often realised by the state through direct social support associated with the job protection, the tax system and early childhood educational development and pre-primary education. While the total support amounts around 2.6% of GDP on the long-term average in the EU, in the CR it amounts to 3% of GDP, of which, rather unusually, a third is realised through tax expenditure (child tax credit, low-income spouse tax credit and tax credit for child placement in early childhood education). In contrast, the share of public spending on services (e.g. nurseries and playgroups) is among the lowest in the EU. The proportion of expenditure on direct social support for families with children is close to 2% of GDP as in the EU average.

The most important direct social support provided by the state to families with children in the period immediately preceding and following the birth of a child is maternity allowance and parental allowance, which in some countries are followed by home care leave. A

minority share is taken up by other relevant cash social benefits such as childbirth allowances, child benefit, paternity allowance and others.

### 5.3.1 Maternity Leave

In the CR, according to Act No.187/2006 Coll., on Sickness Insurance, the length of **paid maternity leave** is 28 weeks, divided into 6–8 weeks before the birth and 22–20 weeks after the birth of the child. In the event of the birth of more than one child, it is extended to 37 weeks. Eligibility for payment of wage replacement is subject to participation in sickness insurance for at least 270 calendar days in the last two years. The wage replacement is paid for the entire period of maternity leave at the rate of 70% of the reduced daily assessment base based on the gross earnings for the last 12 months.

Under Articles 8 and 9 of Council Directive 92/85/EEC, the minimum length of maternity leave in the EU is set at 14 weeks, divided before or after the birth of the child in accordance with national law, but with a minimum of

2 weeks before or after the birth of the child. In 2022, the average length of paid maternity leave in EU countries is 21 weeks, with an average of 5 weeks before and 16 weeks after the birth of the child. This places the CR among the countries with longer maternity leave, but the difference is not significant. The importance of maternity leave in the family policy system is primarily in terms of supporting the relationship between the woman and the newborn child. As reported, for example, by Van Niel et al. (2020), Ruhm (2000) or Heymann et al. (2011), sufficiently long (about 12 weeks after the birth of the child) paid maternity leave has a very positive effect on the psychological and health development of both the woman and the child, including a significant reduction in infant mortality. In the study, the authors show that extending paid maternity leave in European countries by 10 weeks led to a 5% reduction in infant mortality. The infant mortality rate in the CR (2.3%) was the third lowest among EU countries in 2020 (3.3% on average). However, no impact on the cognitive development of pre-primary aged children has been shown for potential extensions of maternity or parental leave, according to Liu and Skans (2010), Baker and Milligan (2005) or Danzer and Lavy (2016).

In terms of the replacement rate, half of the EU countries have a replacement rate of 100% of the average of the woman's previous earnings for a certain period before the birth of the child for the entire duration of the maternity leave.<sup>7</sup> However, in some countries the replacement rate is not stable throughout the maternity leave period. In Poland, for example, the amount of the replacement ratio depends on the length of maternity leave taken, while in Belgium and Finland the percentage of the woman's previous average income is reduced during maternity leave in line with the cap on the maximum amount of the allowance. In most EU countries, the maternity allowance is paid from the social security system. In Denmark, Romania and Malta it is paid by the employer, and in Austria, Germany and Greece both the social security system and the employer contribute to the payment.

### 5.3.2 Parental Leave

The shorter maternity leave is followed in all EU countries by **parental leave**, which is very often associated with allowance and job protection for a certain period of time. In the CR, the maximum length of parental leave is up to 3 years of age of the youngest child, and the employee's job is protected by law for this entire period. According to Act No. 117/1995 Coll., on State Social Support, an allowance in the total amount of CZK 300,000 is paid to parents in the case of one born child (CZK 450,000 in the case of the birth of two or

more children) , up to a maximum of 4 years of age of the youngest child. The monthly amount of the parental allowance and, implicitly, the duration of its use is determined by the amount of the daily assessment base for determining maternity allowance or sickness benefits in connection with the birth or adoption of the child. If at least one parent in the family is able to reach 70% of 30 times the daily assessment base on the date of birth of the youngest child, the parent can choose the monthly amount and thus the total duration of paying of the parental allowance in a limited way. If this amount is less than CZK 13,000, the parental allowance is paid up to a maximum of this amount. If the amount is greater than CZK 13,000, the monthly parental allowance for the youngest child can be chosen up to the amount calculated (however, up to a maximum of 70% of 30 times the reduced daily assessment base). The payment system thus set up implies a minimum period of payment of parental allowance of approx. 6 months from the end of the maternity leave.

Parental leave systems vary widely across the EU. It varies in terms of length, payment of the allowance during the leave, flexibility, or whether the entitlement is individual or familial. According to Directive 2010/18/EU, the minimum length of parental leave is set at 4 months, but the Directive does not specify any requirements regarding the parental allowance or its flexibility. The length of parental leave is a basic variable according to which European countries can be divided into two groups. Countries where paid parental leave is shorter than the EU average (about 17 months) include e.g. Belgium, Poland, Croatia, Denmark and Portugal. Countries where paid parental leave is longer than 17 months include e.g. the CR, Estonia, Hungary, Lithuania, Slovakia and Austria.

The CR has the longest duration of paid parental leave permitted by law in the EU. Determining the appropriate length of parental leave is not straightforward. Galtry and Callister (2005) recommend taking into account several factors, such as the participation of mothers on the labour market, the convalescence of the child and mother after childbirth, the formation of the parent-child relationship, the physical and mental development of the child, breastfeeding and gender equality. It points out that too short length of parental leave has a negative impact on the vast majority of these factors, while too long length of parental leave is potentially damaging to parents (or especially mothers, who use it most) in employment and economic terms. Ferragina (2020) examined a total of 238 studies on maternity and parental leave, including complementary childcare services. The consensus in the literature is quite clear. Short maternity and parental leaves do not have a positive effect on mothers in terms of their participation, nor on children. On the other hand, long parental leave has a clear negative effect on women's labour market participation: *"Countries with long [parental] leaves but low cash benefits and low access to*

<sup>7</sup> Some countries have added a cap on the maximum monthly allowance. However, these are countries where the length of maternity leave is shorter (17 weeks on average) than in the Czech Republic.

childcare services tend to experience the lowest maternal employment rates and the highest employment gaps between mothers and childless women across the OECD area.”

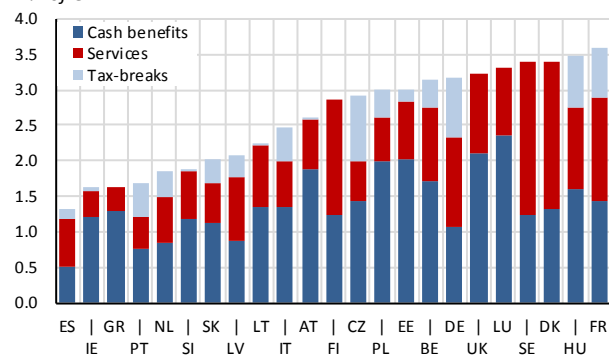
According to Eriksson et al. (2022), a very important factor influencing the length of time women stay on parental leave is educational attainment. The employment rate of women with primary education and with one child under 6 years of age is extremely low (only about 23% in the CR). As the level of education increases, the employment rate of women increases, due to their faster return from parental leave to the labour market. Bergemann and Riphahn (2022) and Stahl and Schober (2018) also confirm a positive correlation between higher levels of education for women and faster return to the labour market, while a negative correlation is shown for men.

According to Nešporová (2015), the most common duration of drawing of the parental allowance in the CR is up to 3 years of age of the child. Yet, almost a quarter of claimants stop drawing the allowance when the child

is over 3 years old. The current mechanism of calculating the monthly amount of parental allowance in the CR in the form of the total maximum amount available for drawing it leads to the fact that it is very disadvantageous for women to choose a short variant of drawing (up to 1 year of the child’s age). This would result in impossibility of drawing a significant amount of the total allowance for the vast majority of claimants. The option of drawing up to 2 years of age of child is then economically efficient from a gross earning threshold of about CZK 23,000. If the maximum duration of paid parental leave would be reduced to the EU average, i.e. 17 months after the end of maternity leave, the monthly amount of parental allowance would be CZK 17,725 under the current mechanism. Such a level is economically inefficient, especially for low-income people. It would thus be necessary to adjust the threshold, or to change the calculation of the parental allowance entirely according to the mechanism usual in other EU countries (i.e. a certain percentage of the claimant’s earning with the addition of a cap on the monthly amount).

**Graph 5.3.1: Public Expenditure on Family Policy in EU**

in % of GDP

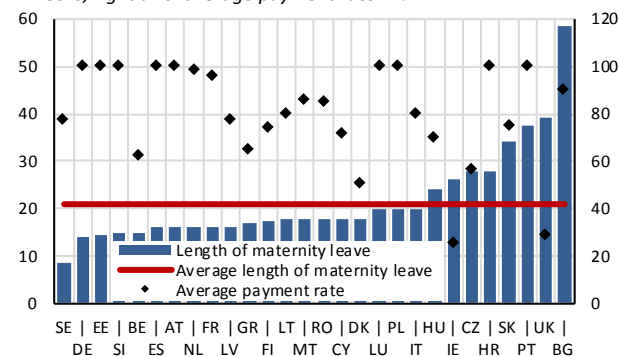


Note: The latest data in international comparison is only available for 2017. However, the long-term time series shows stability in the individual areas of public expenditure on family policy as a proportion of GDP, so a similar proportion can be assumed for the present. Data for Cyprus and Romania are not available.

Source: OECD (2022a).

**Graph 5.3.2: Length of Paid Maternity Leave in EU**

in weeks; right axis: average payment rate in %

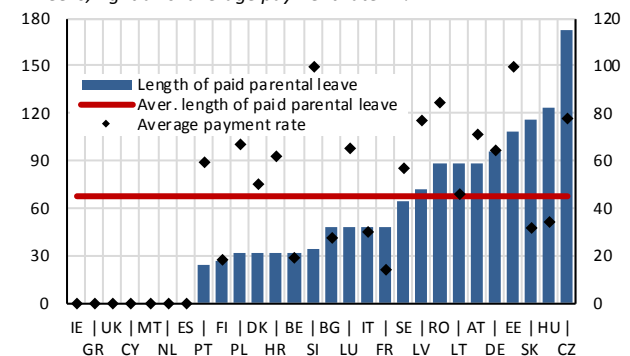


Note: The overview also includes data for the United Kingdom, but it is not included in the calculation of the average length of paid maternity leave.

Source: INLPR (2022), MISSOC (2022), OECD (2022a). MF CR calculations.

**Graph 5.3.3: Length of Paid Parental Leave in EU**

in weeks; right axis: average payment rate in %

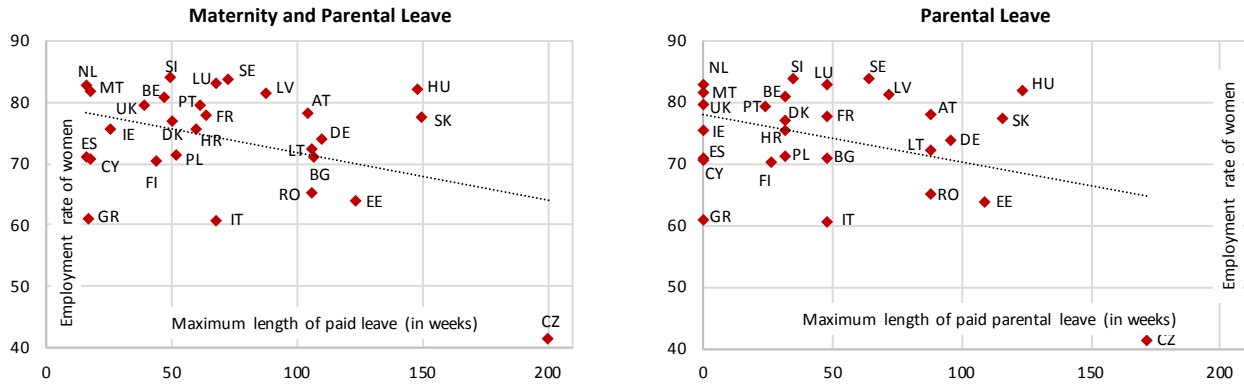


Note: Greece, Ireland, Cyprus, Malta, the Netherlands, Spain have parental leave, but no contributions are paid during the leave. The United Kingdom is also included in the overview.

Source: INLPR (2022), MISSOC (2022), OECD (2022a). MF CR calculations.

### Graph 5.3.4: Employment rate of Women with 1 child and Maximum Length of Paid Leave

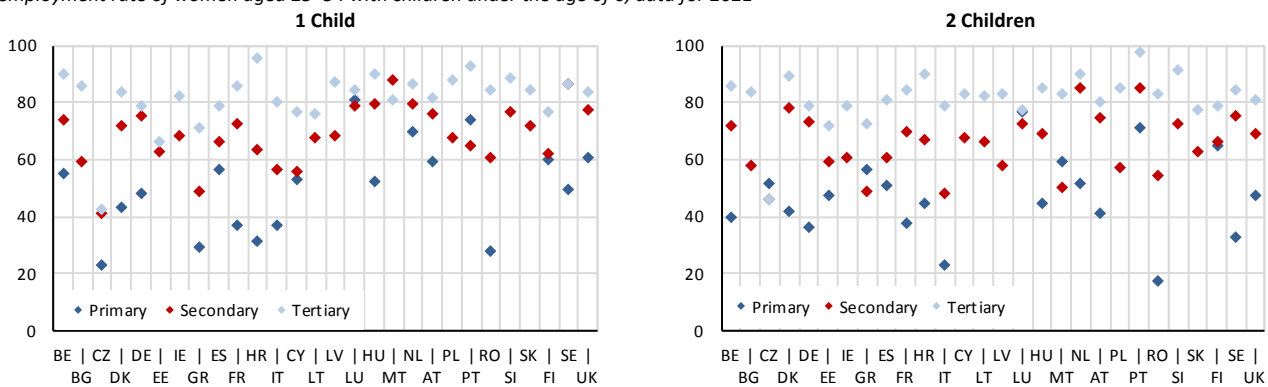
employment rate of women aged 25–54 with 1 child under the age of 6, data for 2021



Source: Eurostat (2022a), INLPR (2022). MF CR calculations.

### Graph 5.3.5: Employment of Women by Education in EU

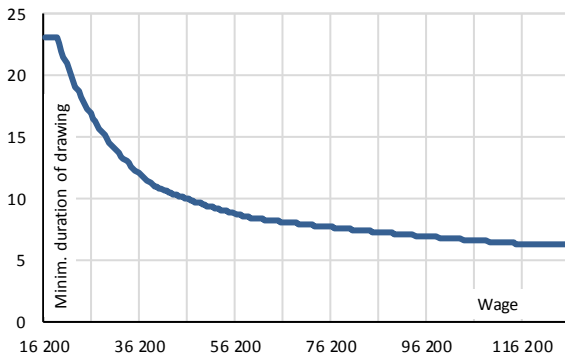
employment rate of women aged 25–54 with children under the age of 6, data for 2021



Source: Eurostat (2022a).

### Graph 5.3.6: Duration of Parental Allowance Drawing by Wage in the CR

in months, horizontal axis in CZK

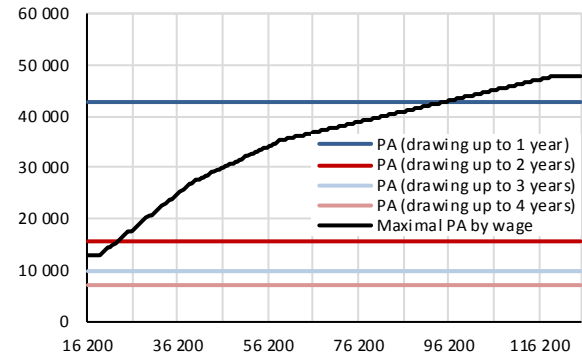


Note: The duration of drawing is calculated in such a way that the total amount of parental allowance is always used up depending on the claimant's wage.

Source: MF CR calculations.

### Graph 5.3.7: Monthly Parental Allowance by Duration of Drawing in the CR

in CZK



Source: MF CR calculations.

## 5.4 Development of Early-childhood Education and Care

Early childhood education systems vary considerably across the EU.<sup>8</sup> In particular, in terms of how they are

financed, the type of provision (e.g. full-day or half-day attendance, location of provision, etc.) or the target age

<sup>8</sup> Early childhood education can be divided into two categories - formal and non-formal. Formal includes services under the ISCED 2011 classification that meet certain criteria (institutionalisation, scope of provision, level of qualified staff, etc.) and also services that are an integral part of national ECEC provision but do not meet one or more

of the criteria to be considered as an educational programme under the ISCED 2011 classification (e.g. crèche in France). Informal childcare is unregulated care provided by the child's parents either in the child's home or elsewhere, provided by relatives, friends or nannies.

group of children. In many EU countries, the development of early-childhood education has taken place in the context of the adoption of the Barcelona targets in 2002, which require EU Member States to include 33% of children under 3 years of age and 90% of children between 3 years of age and compulsory school age in early-childhood education and care.<sup>9</sup> In the CR, early-childhood education is generally provided for children between the ages of 3 and 6, but not before the age of 2. According to Act No. 561/2004 Coll., a child under the age of 3 is not legally entitled to enrolment in nursery school, but it is compulsory for a child who completes 5 years by the end of August of a given year. As Datta Gupta et al. (2008) point out, using the example of some Nordic countries (notably Denmark, Norway and Sweden), a well-developed early-childhood education and care system leads to higher employment rates for women with children. These countries spend persistently about 1.1–1.8% of GDP on early-childhood education and care from public budgets, while in the CR the long-term average of such expenditure is about 0.5% of GDP (the EU average is 0.7% of GDP). The positive impact of quality early-childhood education on women's faster return to the labour market, as well as its positive impact on children's cognitive and emotional development, their learning ability, etc., is also confirmed by OECD (2018b). Children who start their education at a relatively early age are more likely to have better educational outcomes in the future. It has been shown, e.g. by Havnes and Mogstad (2015) or Naudeau et al. (2011) that the first three years of life are crucial for the development of emotional control, social skills or adaptive capacity in later life. According to, e.g. Felfe and Lalive (2018), Dustmann and Schoenberg (2012) or Goodman and Sianesi (2005), early-childhood education has a positive impact on these matters. Dietrichson et al. (2020) then conclude, based on a synthesis of 26 studies, that early-childhood education has a subsequent positive impact on future educational attainment and better labour market participation. This is particularly true for children from disadvantaged socio-economic backgrounds, as they often have fewer opportunities to develop these skills in the home environment.

The correlation between women's participation rate and the enrolment rate of children in early-childhood education and care is particularly strong for women whose youngest child has not yet reached the age of 3. Countries with the highest rates of employment of mothers of young children (full-time and part-time), such as Denmark, Luxembourg, the Netherlands, Portugal and Slovenia, also have a high proportion of young children enrolled in early-childhood education and care. A similar relationship exists for women whose

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<sup>9</sup> The EC is currently proposing to increase the targets so that by 2030 at least 50% of children under three and at least 96% of children aged three to compulsory school age participate in early-childhood education and care.

youngest child is between 3 and 5 years old, but it is weaker than for women with younger children. In countries with a low supply of early-childhood education and care, such as Austria, the CR, Finland, Greece, Italy and Poland, the lack of availability of early-childhood education and care for the youngest children is compensated by the extensive use of informal childcare facilities. These services are generally unregulated care arranged by the child's parent in either the child's home or elsewhere, and provided by relatives, friends or nannies. However, with the exception of the CR, these countries also have above-average female employment rates.

Three key factors influence higher enrolment rates in early-childhood education. The first is the age of the child from which early-childhood education is provided. In countries with shorter paid parental leave, the age limit for starting early-childhood education is usually set very low (Austria, Denmark, Belgium or Sweden).

The second factor is the amount of household income. In particular, early-childhood care services can be quite costly for low- and middle-income households, despite various types of public support (tax credits, cash social benefits, etc.). In 2019, the average net household costs (i.e. childcare payments less allowances or credits, tax deductions and benefit changes in consequence of placing the child to early-childhood care services, etc.) for this type of service were about 14% of the median earning of a woman in full-time employment. In Slovakia or Ireland, the net costs were even one third of the median earning, while in Italy, the CR and Germany (where households use government transfers or are exempt from payments) net costs were very low, but a necessary condition is that sufficient provision of early-childhood education is also ensured.

The costs of early-childhood education and care as well as household income (Graph 5.4.3, right-hand panel) have subsequently an impact on enrolment rates. The enrolment rate for children under 3 years of age in low-income households is on average one-third lower than that of children in high-income households in EU countries. In countries such as France and Ireland, the difference in enrolment rates between children from high- and low-income families exceeds 40 pp. By contrast, in Denmark, enrolment rates for young children are high regardless of parental income, due to high government transfers to support public services for this type of education. For children aged 3 to 5, enrolment rates in early-childhood education are already at an average of 84% even for low-income households, and over 90% for middle- and high-income households.

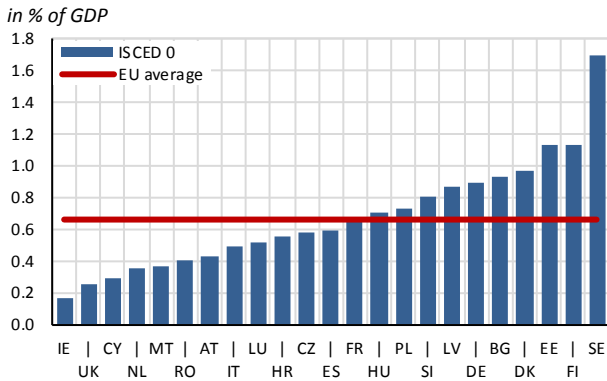
The general access to early-childhood education and its affordability is complemented by a third factor, namely how often during the working week this type of education is provided. The availability of full-time early-childhood education and care is crucial to enable women to work full-time and thus secure higher

earnings and career development, including the reduction of the gender gap.

The below-average enrolment rate of children in early-childhood education and care in the CR leads to the fact that in order to increase the employment of women with children, it is necessary to increase the (public) supply of these services in addition to adjusting the

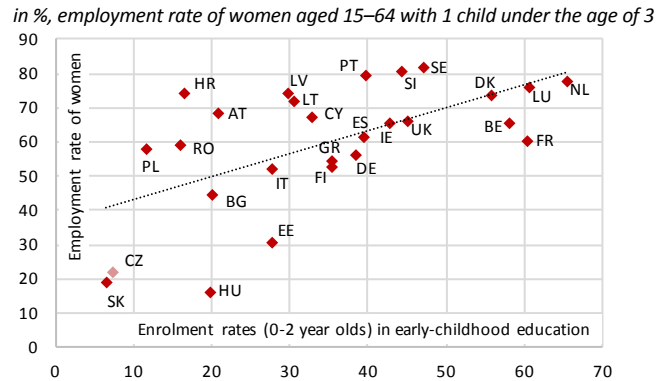
length of paid parental leave. As Kalíšková et al. (2016) show in their cost-benefit analysis of public support for nursery places, one additional nursery place represents a net positive benefit for public budgets. In line with the increase in supply, it would also be necessary to adjust the minimum age of a child for admission to early-childhood education.

**Graph 5.4.1: Public Expenditure on Early-childhood Education and Care**



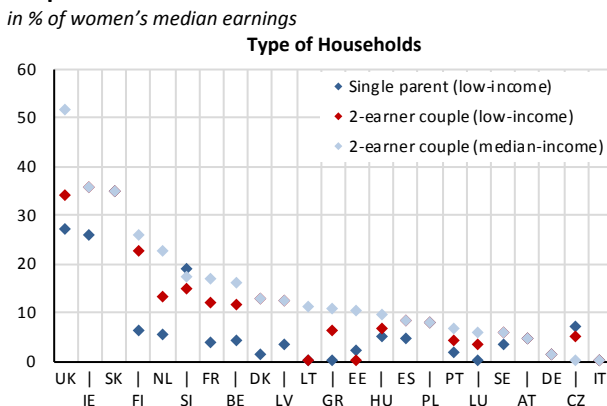
Note: 1) The data are for 2019. 2) According to the international classification ISCED 0 represents early-childhood education, including ISCED 01 (early-childhood development for children aged 0 to 3 years) and ISCED 02 (pre-primary education for children aged up to starting primary education). Source: Eurostat (2022a).

**Graph 5.4.2: Enrolment Rates in Early-childhood Education and Employment Rate of Women with Children**

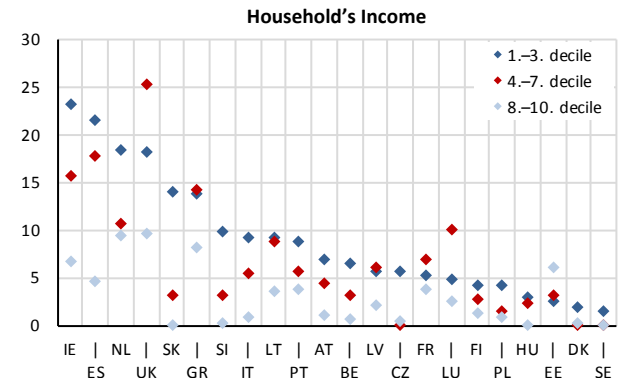


Source: OECD (2022a). MF CR calculations.

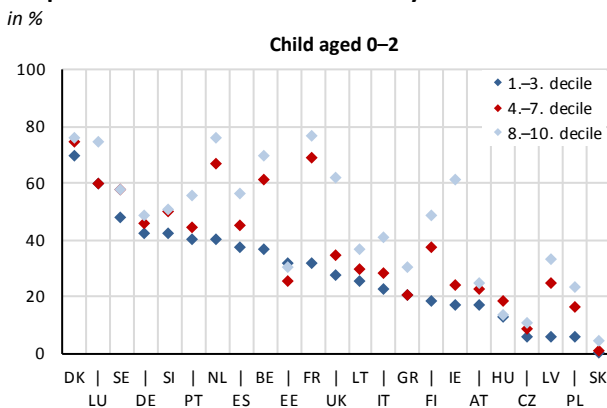
**Graph 5.4.3: Net Costs of Households with Children on Early-childhood Education and Care**



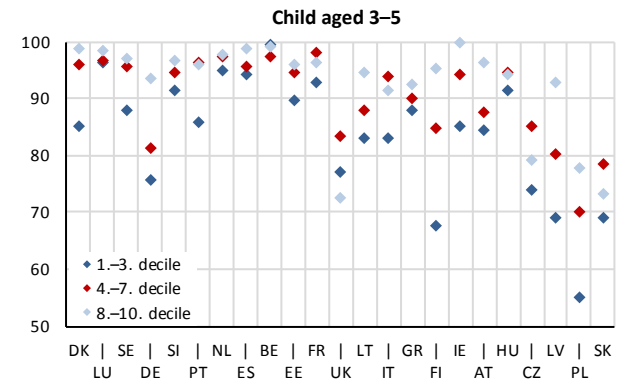
Source: OECD (2020c).



**Graph 5.4.4: Enrolment Rates in Early-childhood Education and Care by Household's Income**



Source: OECD (2020c) based on EU-SILC (2017).



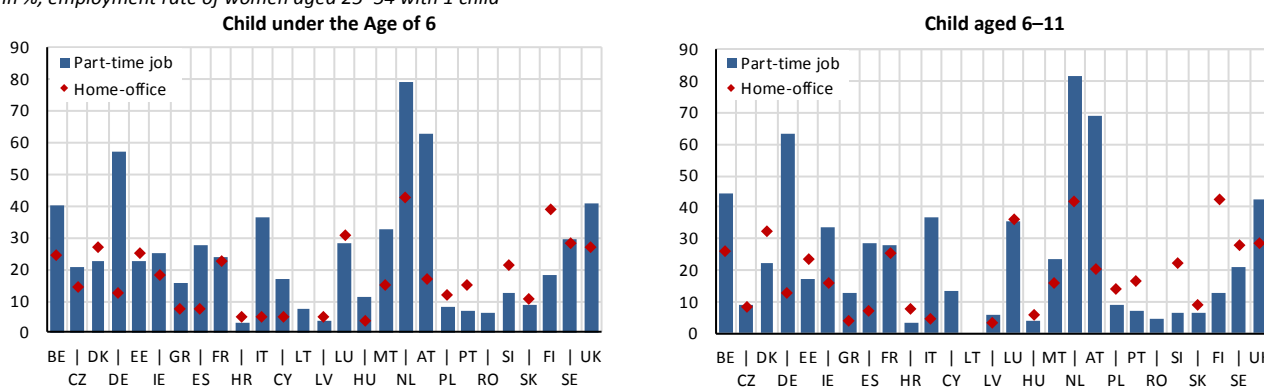
## 5.5 Flexibility in Setting of the Working Arrangement

The decision on subsequent women participation on labour market (i.e. temporary leave or part-time job) after the birth of a child is influenced by a number of factors, such as the family situation in terms of the number and age of children, the presence of a partner, the level of household income, education or the woman's current occupation (Tomlinson, 2006). The existence of paid parental leave, its length, as well as the availability of childcare or other forms of childcare services are also important considerations in the decision-making process. According to Directive (EU) 2019/1158, working parents of children under 8 years of age have the right to flexible working arrangements, which include reduced working hours, flexible working

hours and workplace flexibility. Chung and van der Horst (2018) or Lott (2018) have shown the positive effect of flexible working options on a faster return to the labour market. However, as they point out, it also depends on the form of labour law and country-specific labour market characteristics. This leads to the fact that in Germany, for example, women very often return to work with reduced working hours, whereas in the UK they return to work full-time. In the CR, the share of part-time jobs in employment of women with one child under the age of 6 years is around 25% in 2021, which is below the EU average (almost 30%), but from the long term perspective, this is the highest level of employment in this category in the CR.

**Graph 5.5.1: Flexibility in Employment of Women with Children**

in %, employment rate of women aged 25–54 with 1 child



Note: Data are for 2019, the last “pre-covid” year where the labour market is not distorted by the significant increase in home-office arrangement in particular. Source: Eurostat (2022a).

## 5.6 Seniors

Another potential source of labour force in the CR is undoubtedly the age group over 55 years. Although participation rates generally decline with higher age, the ageing of strong population cohorts will make it necessary to focus on this group.

In the CR, Act No. 155/1995 Coll., on Pension Insurance, regulates the conditions for entitlement to a pension. In the case of old-age pensions, people have to fulfil two conditions – the sufficient contributory period and reaching a specified age. In the case of the contributory period, it is necessary to obtain at least 35 years of insurance (including legally defined non-contributory periods of insurance, when a person is de facto not insured, but is nevertheless regarded as if he or she were insured), or 30 years (without non-contributory periods of insurance). The retirement age is being extended and aligned for men and women at 65, which should be achieved within the next decade. If the minimum contributory period is met, early retirement is also possible 3 years before the standard retirement age or at age of 60. However, early retirement pension benefits are subject to a penalty which increases non-linearly with increasing length of early retirement.

The amount of the old-age pension depends on previous earnings and the length of the contributory period. The personal assessment base is made up of previous earnings, but these are reduced according to the so-called reduction thresholds: up to 44% of the average wage, earnings are taken into account in full; above this threshold up to 4 times the average wage, only 26% of earnings are taken into account. Higher earnings are not involved for calculation of the pension. For each contributory year (with non-contributory periods of insurance included), 1.5% of the calculation base is taken into account.

For people aged 55+, the most important factors for leaving economic activity are the labour market situation, the set-up of social systems, the health status of the population and personal preferences (ECB, 2020). In case of the setting of social systems, these are the parameters of disability and old-age pensions. The more generous conditions offered by the schemes – the amount of expenditure on pensions, the average pension benefit and the retirement age – the more unfavourable their impact on economic activity rates (ECB, 2020; IMF, 2018).

Although the setting up of social systems alone is not sufficient to increase participation, as the factors listed above suggest, there are nevertheless good conditions for the adjustments to be potentially successful. As noted by IMF (2018) or MF CR (2019), increases in life expectancy are generally accompanied by increases in healthy life expectancy. In terms of personal preferences and social norms, the statutory retirement age usually plays an important role. In the CR, the majority of people retire at the statutory retirement age, but almost 30% retire even before it (as of June 2022, 28% of old-age pensions in payment were early retirement pensions, compared with 30% for men), and only a very small minority works beyond statutory retirement age. This confirms EC (2021b) or OECD (2022b) data on effective retirement age (i.e. the age at which people really leave the labour market). In the CR, this age is relatively close to the statutory retirement age (Graph 5.6.1). This is true despite the fact that the rewards for later retirement are above average across the OECD and actuarially neutral (OECD, 2020b).

Within the pension system itself, IMF (2018) primarily distinguishes three indicators as determinants of participation rates: retirement age, pension expenditure and replacement ratio (i.e. the ratio of pension benefits to wages). The retirement age in the CR is relatively low, especially when taking into account the age at which early retirement is possible (OECD, 2020b). In 2019, the retirement age in the CR was one of the lowest in the EU. So far, the target age of 65 is still rather low within the EU, and in the CR it will only be reached for both sexes during the next decade.

A comparison of the statutory retirement age and participation rates for the 60–64 age cohorts in EU countries shows a positive relationship for both men and women (Graph 5.6.2). This finding is not surprising and demonstrates that a shift in the retirement age has the potential to dampen pressures on the pension system not only on the expenditure side but also on the revenue side of public budgets, or mitigate potential labour market imbalances.

For pension expenditure, a number of specific characteristics of individual pension systems make comparisons difficult. In simplified terms, the Czech pension expenditure as a share of GDP is below average in the EU. However, as reported by the MF CR (2019), after adjusting for differences in population structure,

different national income distribution and different taxation conditions in individual countries, expenditure on pensions in the CR is around the EU average.

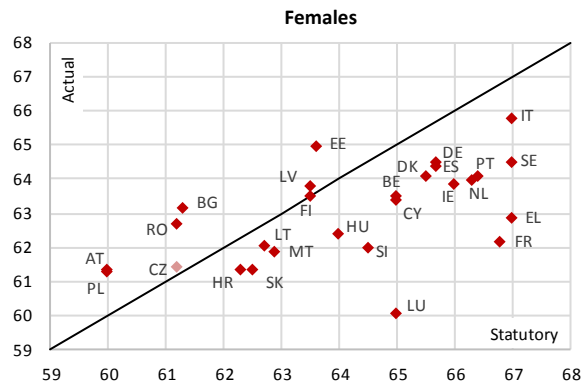
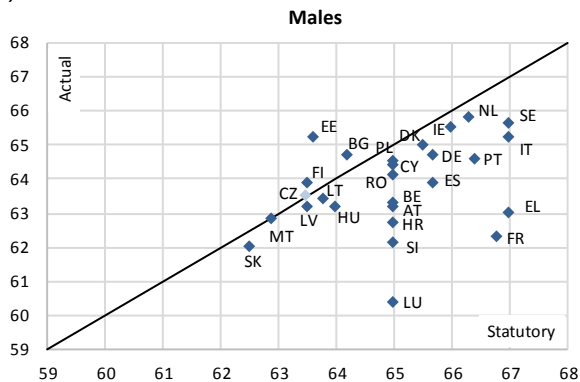
Differences in pension taxation between countries not only affect the size of pension spending in general, but also directly affect the size of pensioners' disposable income. In terms of gross replacement ratios (i.e. ratio measuring pension benefits before taxes and contributions on gross wages), the CR is just below the OECD average, but the situation is reversed for the net replacement ratio. Nevertheless, within the EU, it is also just below the average for the net replacement ratio. However, the set-up of the Czech pension system is extremely redistributive. For low-income individuals, the net replacement ratio is the third highest among OECD countries and the second highest in the EU (OECD, 2021). Similarly, the Czech pension system also levels out pensions between men and women. While men's and women's wages differ significantly in the CR, the differences in pensions are much smaller (Graph 5.6.3). Stably, the difference in average pensions between men and women in the age cohort 65 years and older is about 13%, while the EU average is 27.5%. However, individual countries differ significantly, with the gender gap in pensions in Germany, Italy, France and Austria reaching around 35%, while in Slovakia and Denmark it is below 10%.

In the CR, the calculation of pension benefits is relatively complicated (OECD, 2020b). This makes retirement decisions very difficult. Residents' decision-making around the statutory age relative to benefits for later retirement suggests that the amount of the benefit does not play a very large role in the timing of retirement. Although benefits are largely levelled out after calculation, the amount of benefits can influence the decision to continue working in retirement.

Another potentially important factor for the economic activity rate is the fact that the CR is generally one of the countries where labour market participation is relatively high. The relatively strong significance of the statutory retirement age on the participation rate of people over 55 years of age is then also shown for the CR, compared to other developed countries, by IMF (2018). Therefore, a strong potential for the CR to increase its labour force can be inferred if the retirement age threshold is shifted.

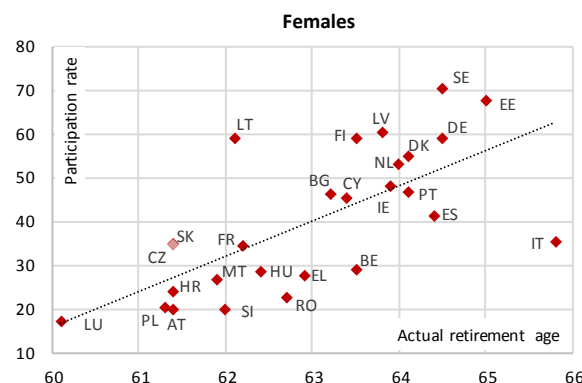
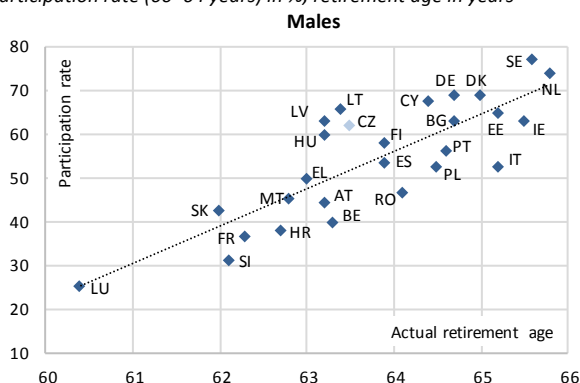


**Graph 5.6.1: Statutory and Effective Retirement Age**  
in years



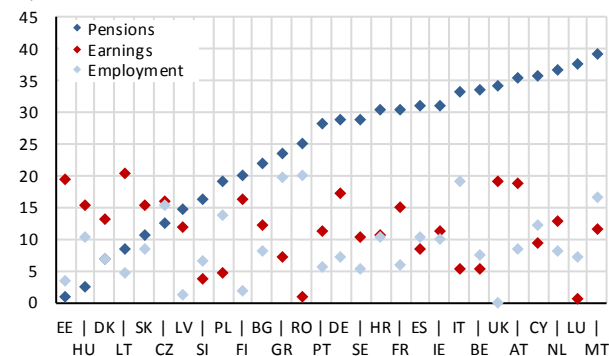
Source: EC (2021b).

**Graph 5.6.2: Effective Retirement Age and Participation Rate**  
participation rate (60–64 years) in %, retirement age in years



Source: EC (2021b), Eurostat (2022a).

**Graph 5.6.3: Gender Gap in Employment, Wages and Pensions**  
in %



Note: Gender gap in employment for age cohorts 20–64 years.

Source: Eurostat (2022a).

## 5.7 Alternative Scenarios for Assumptions about the Level of Economic Activity

The alternative scenarios focus on assessing the long-term impacts of the weaknesses in labour market participation of working-age population identified in the previous sections. These are mainly women in the first half of their working careers and the elderly, for whom there is a potential for greater labour market participation, even in the light of international comparisons. The analysis focuses on two possible reform measures in the form of shortening the duration of paid maternity and parental leave and increase in the statutory retirement age. This would not only have long-term macroeconomic implications, but also,

and above all, implications for the pension system, on which the labour market has a major impact.

The calculations are primarily based on population data and demographic projections by Eurostat (2019), whose time horizon allows analysing impacts up to 2070. The long-term macroeconomic framework is prepared using a cohort simulation model. It stems from the model used by the European Commission published in Carone (2005). The projections of the pension system are then carried out with a model developed at the MF CR, which is described in more detail in Marval and Štork (2018).

### 5.7.1 Shorter Maternity and Parental Leave

Austrian institutional setting served as an inspiration for this scenario. It is a similar economy where paid parental leave is on average one year shorter than in the Czech Republic (moreover also maternity leave is 12 weeks shorter) and, consequently, younger age cohorts of women have significantly higher participation rates. Although parental leave in the CR is not exclusive to women, their numbers are significantly higher. In 2021, there were more than 292,000 women, compared to more than 5,000 men (MoLSA, 2022). In most cases, it is likely to be split parental leave, with women returning to work earlier. However, given the relatively negligible number of men, we abstract from this.

The projection of the number of women on maternity and parental leave is based on the number of women in given age cohorts and expected fertility rates. The alternative scenario assumes a reduction of paid maternity and parental leave by a total of one and a quarter years from 2025, thus bringing women back into the labour market earlier. These measures would strengthen the labour force by around 120 000 young working-age population each year.

Graph 5.7.1 and Graph 5.7.2 show the impact of the measures on female participation rates in the selected cohorts in the base year. The most significant increase, of almost 16 pp, is for the cohort of women aged 30–34. Overall, the cohorts most affected by shorter maternity and parental leave, i.e. 25–39 year olds, could see their participation rates increase by 12 pp, accounting for almost 3% of total employment in the economy.

A comparison of the current state of women's labour market participation with the aforementioned Austria (Graph 5.7.3, Graph 5.7.4) shows that while the CR has relatively high participation rates in older age cohorts, Austria is better off among younger generations. The projection of the evolution of participation rates in the horizon up to 2070 reflects the expected changes in participation rates related to the potential reduction of parental leave to the Austrian level. A comparison of the target situation (Graph 5.7.5 and Graph 5.7.6) shows that especially for the youngest people under 25 the entire gap between the CR and Austria would not completely vanish due to other factors like schooling. Even so, the gap would be reduced by more than 7 pp for this age group. However, there would be a more pronounced convergence in the 25–54 age group, where the difference would fall only to approx. 1 pp.

### 5.7.2 Longer Working Career

Although the participation of older age cohorts in the CR is relatively high, there is room for further increase in line with the growth of the life expectancy in good health. Adjustments to the statutory age for old-age pension eligibility are also relatively effective in supporting the stabilisation of the pension system, as they help to eliminate additional expenditure pressures due to longer life expectancy. In the current system in

the CR, there is a tool in the form of a review mechanism where the Ministry of Labour and Social Affairs analyses the ratio of expected time spent in retirement to total life expectancy every 5 years in a report on the pension system. It also determines how high the retirement age should be so that each generation spends a quarter of its life in retirement. However, this recommendation is not binding on the government.

The longer working career scenario considers a continued increase in the retirement age above the current ceiling of 65 years in line with the expected increase in life expectancy as shown by demographic projections. Graph 5.7.7 illustrates the rate of age increase above today's ceiling, which is expected to be reached after 2030. Further increases in the retirement age would thus affect generations born after 1965. The rate for both sexes would be essentially the same as the current rate of age increase for men, i.e. about 2 months for each year of birth. Graph 5.7.8 shows the age at which the generations would retire in selected calendar years.

The shift in the retirement age would be reflected in a gradual increase in participation rates, which by 2070 could be 8 pp for the 55–64 cohort and almost 6 pp for the 65–74 cohort. The overall participation rate for 20–74 year olds could then increase by 2.5 pp just because of the increase in the age limit.

### 5.7.3 Effects of Higher Labour Force Participation

Both measures would not only strengthen the potential of the Czech economy, but also would directly or indirectly affect public finances. As these measures have an effect on the revenues and expenditures of the pension system, they would affect its balance and thus the overall long-term sustainability of public finances in the CR.

Higher labour market participation would strengthen the revenue side through higher social security contributions. By shortening maternity and parental leave, the system's revenues could be up to 2.8% higher by 2070 compared to the baseline scenario; by extending active careers by a further 2.4%. Thus, in aggregate, the level of annual revenues would be 5.2% higher. The positive effect would also be higher GDP, which would be 5% higher than GDP in the baseline scenario at the end of the projection horizon if both measures were implemented.

The evolution of expenditure and the overall balance of the system is illustrated in Graph 5.7.9.<sup>10</sup> On the expenditure side, further increases in the retirement age would initially ease the pressures due to the lower number of old-age pensioners,<sup>11</sup> while in the

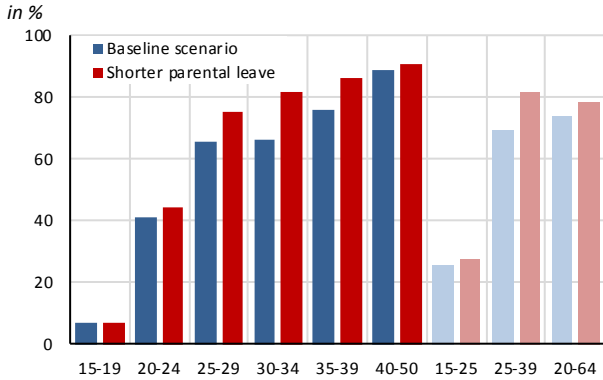
<sup>10</sup> The results of each scenario in the graphs expressed as a share of GDP are affected by different GDP in the denominator and therefore cannot be added individually.

<sup>11</sup> In contrast, the number of disability pensions would also increase, but the total number of pensions would be lower than in the baseline scenario.

subsequent period this effect would be somewhat dampened by higher pensions granted, both from longer careers and from higher earnings of women returning earlier to the labour market. Cumulatively, these measures could dampen expenditure by around 1.2 pp

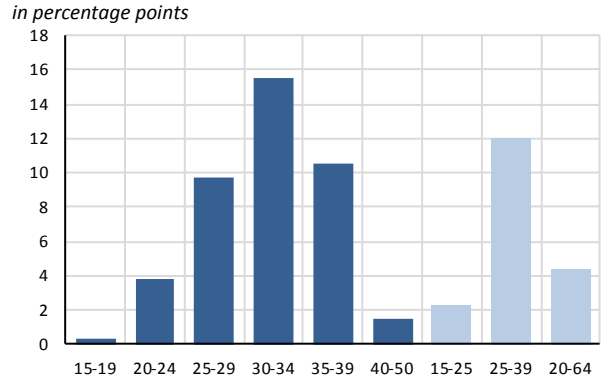
over the projection horizon. The overall balance of the system would also improve as a result of higher revenues and lower expenditures. This might be roughly 1.6 pp. in the period of expenditure peak before 2060.

**Graph 5.7.1: Participation Rate of Women in Selected Age Cohorts in the CR**



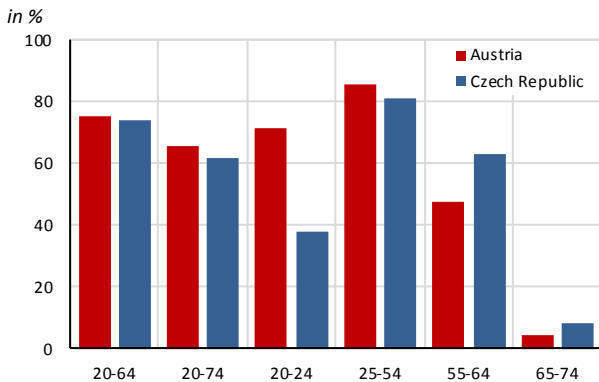
Source: MF CR calculations.

**Graph 5.7.2: Change in Participation Rates due to Shorter Parental Leave**



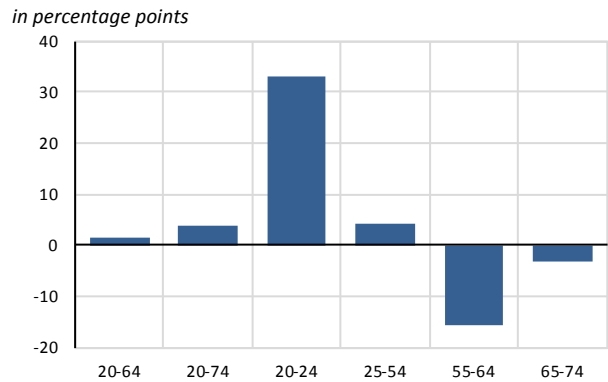
Source: MF CR calculations.

**Graph 5.7.3: Participation Rates of Women in the CR and Austria in 2019**



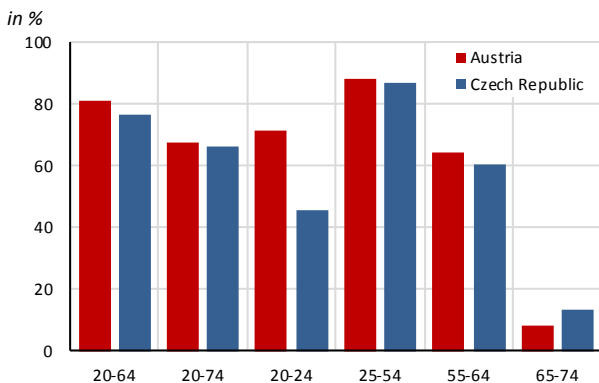
Source: EC (2021b). MF CR calculations.

**Graph 5.7.4: Differences in Participation Rates of Women Between Austria and the CR in 2019**



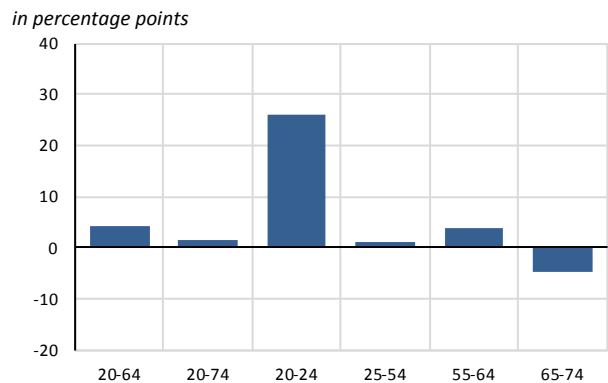
Source: EC (2021b). MF CR calculations.

**Graph 5.7.5: Participation Rates of Women in the CR and Austria in 2070**



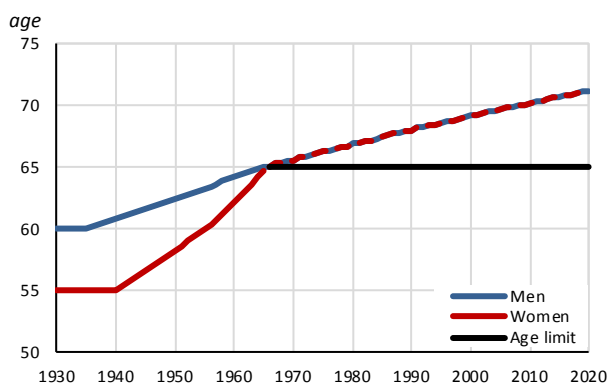
Source: EC (2021b). MF CR calculations.

**Graph 5.7.6: Differences in Participation Rates of Women Between Austria and the CR in 2070**



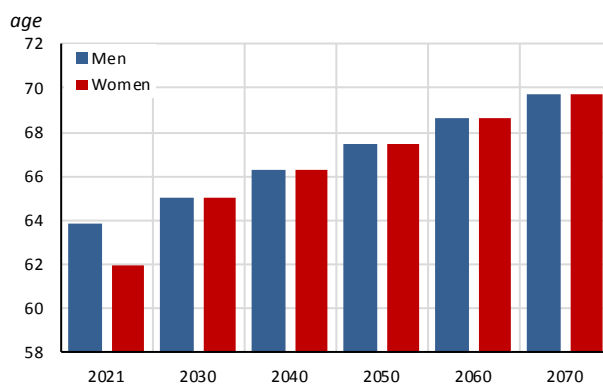
Source: EC (2021b). MF CR calculations.

**Graph 5.7.7: Further Increase of Age Limit Scenario – Years of Births**



Note: For women – the retirement age of women with two children.  
Source: Act No. 155/1995 Coll. MF CR calculations.

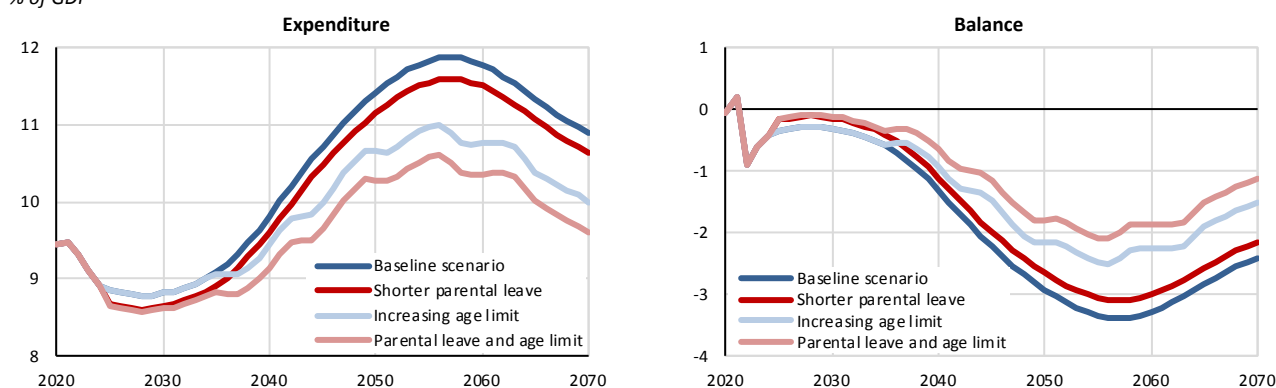
**Graph 5.7.8: Further Increase of Age Limit Scenario – Calendar Years**



Source: Act No. 155/1995 Coll. MF CR calculations.

**Graph 5.7.9: Expenditure and Balance of Pension System in Individual Scenarios**

% of GDP



Note: The minor breaks in the scenarios containing the age shift are due to technical reasons. The model works with annual data, therefore the increase in the age limit is not so gradual. However, this does not have a major impact on the overall appearance of the results.  
Source: MF CR calculations.

## 5.8 Conclusion

One way to strengthen the financial resilience of public social systems is to increase the economic activity rate of the population. The analysis of the Czech labour market and international comparisons has identified three groups of the population that have the potential to increase their labour market participation rates. These are young people up to 24 years of age, women of prime working age and the population over 55 years of age.

For women of prime working age, significant career breaks are to blame. In addition, the possibility of long maternity and parental leave is accompanied by an arrangement that tends to “force” women to stay at home longer. This has a negative impact on their subsequent employment and earnings. Previous attempts to address these problems have been limited primarily to the pension system, which largely eliminates the inequalities of previous earnings by calculating benefits. It thus addresses ex post the effect, not the cause.

For the elderly, labour market behaviour depends to a large extent on retirement settings. The retirement age itself is a strong signal to leave the labour market in the

CR. In a society facing the phenomenon of ageing and prolonged healthy life expectancy, it is highly advisable to look for ways and conditions to motivate people to remain economically active up to older age.

The effect of changes leading to higher economic activity rates among these groups is not negligible. As our calculations show, increasing the participation rate of women by shortening maternity and parental leave to the Austrian level and at the same time shifting the retirement age according to life expectancy would reduce the imbalance of the pension system by up to 1.6 pp.

However, the reforms outlined are not self-sustaining and must be associated with comprehensive labour market reforms. Changes in maternity and parental leave arrangements should be accompanied by reforms in labour-law relations and increased provision of early-childhood education and care. Staying longer in the labour market at the end of a career involves not only moving the retirement threshold and reducing early retirements, but also adapting working conditions, including increased flexibility.

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- Act No. 155/1995 Coll., on Pension Insurance, as amended.
- Act No. 218/2000 Coll., on Budgetary Rules and of Amendment of Certain Related Acts (Budgetary Rules), as amended.
- Act No. 561/2004 Coll., on Pre-school, Primary, Secondary, Higher Vocational and Other Education (Education Act), as amended.
- Act No. 187/2006 Coll., on Sickness Insurance, as amended.
- Act No. 186/2016 Coll., on Gambling, as amended.
- Act No. 212/2016 Coll., amending the Act No. 155/1995 Coll., on Pension Insurance, as amended and Other Related Acts.
- Act No. 23/2017 Coll., on Fiscal Responsibility Rules, as amended.
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# A Annex of Tables

The data on general government sector aggregates in ESA 2010 methodology are consolidated at the relevant levels.

**Table A.1: General Government Revenue**

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Total revenue</b>	<i>CZK bn</i>	<b>1 667</b>	<b>1 714</b>	<b>1 762</b>	<b>1 910</b>	<b>1 941</b>	<b>2 069</b>	<b>2 245</b>	<b>2 394</b>	<b>2 367</b>	<b>2 530</b>
	<i>% growth</i>	1.4	2.8	2.8	8.4	1.6	6.6	8.5	6.7	-1.2	6.9
Current taxes on inc., wealth, etc.	<i>CZK bn</i>	303	313	335	354	385	416	458	491	485	468
	<i>% growth</i>	0.9	3.3	7.1	5.6	8.8	8.0	10.1	7.0	-1.0	-3.6
Social contributions <sup>1)</sup>	<i>CZK bn</i>	600	607	629	663	703	760	834	895	909	1 013
	<i>% growth</i>	1.3	1.1	3.6	5.5	6.1	8.0	9.8	7.3	1.6	11.4
Taxes on production and imports <sup>2)</sup>	<i>CZK bn</i>	502	521	513	562	587	626	647	688	651	705
	<i>% growth</i>	4.3	3.9	-1.6	9.5	4.4	6.7	3.4	6.3	-5.3	8.2
Capital taxes <sup>3)</sup>	<i>CZK bn</i>	0	0	0	0	0	0	0	0	0	0
	<i>% growth</i>	0.9	-33.3	-93.5	10.0	54.5	70.6	-24.1	-45.5	191.7	-40.0
Property income	<i>CZK bn</i>	35	38	37	37	37	31	35	32	34	38
	<i>% growth</i>	0.8	6.9	-2.3	-0.4	0.8	-17.9	14.3	-7.5	5.6	12.5
Interest	<i>CZK bn</i>	10	10	8	7	6	5	8	12	10	9
	<i>% growth</i>	6.8	-6.1	-13.4	-21.2	-7.8	-19.7	66.0	40.1	-16.5	-4.4
Other property income	<i>CZK bn</i>	25	28	29	30	31	26	27	21	24	29
	<i>% growth</i>	-1.5	12.3	1.6	5.8	2.8	-17.6	4.3	-22.2	17.9	19.2
Sales <sup>4)</sup>	<i>CZK bn</i>	148	150	152	155	158	163	174	186	181	194
	<i>% growth</i>	1.1	1.1	1.8	2.0	1.7	3.4	6.4	7.3	-2.7	6.8
Other current transfers and subs.	<i>CZK bn</i>	39	44	42	49	40	40	51	53	51	56
	<i>% growth</i>	10.5	13.5	-4.5	15.1	-18.5	1.5	26.0	5.1	-3.7	8.5
Investment grants	<i>CZK bn</i>	35	36	49	81	23	26	42	44	49	50
	<i>% growth</i>	-29.0	1.5	36.3	66.6	-72.1	15.4	60.4	5.2	10.4	3.8
Other capital transfers	<i>CZK bn</i>	4	5	5	9	8	6	4	5	5	5
	<i>% growth</i>	9.3	18.6	-10.6	92.3	-6.1	-21.3	-40.9	20.7	4.8	5.3

<sup>1)</sup> Compulsory and voluntary payments of employers (on behalf of employees), employees, self-employed and self-payers to social security institutions and health insurance enterprises.

<sup>2)</sup> Compulsory payments, which are levied by general government, in respect of the production or import and/or usage of production factors (for example VAT, excises etc.).

<sup>3)</sup> Irregular taxes to the government on the values of the property, assets or net worth owned by institutional.

<sup>4)</sup> Consists of market output, output produced for own final use and payments for other non-market output.

Source: CZSO (2022b).

**Table A.2: General Government Tax Revenue and Social Contributions**

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Taxes and social contributions</b>	<i>CZK bn</i>	<b>1 405</b>	<b>1 441</b>	<b>1 477</b>	<b>1 579</b>	<b>1 675</b>	<b>1 802</b>	<b>1 940</b>	<b>2 074</b>	<b>2 046</b>	<b>2 186</b>
	<i>% growth</i>	2.3	2.5	2.5	6.9	6.1	7.6	7.6	6.9	-1.3	6.8
<b>Current taxes on income, wealth, etc.</b>	<i>CZK bn</i>	<b>303</b>	<b>313</b>	<b>335</b>	<b>354</b>	<b>385</b>	<b>416</b>	<b>458</b>	<b>491</b>	<b>485</b>	<b>468</b>
	<i>% growth</i>	0.9	3.3	7.1	5.6	8.8	8.0	10.1	7.0	-1.0	-3.6
Individuals or households	<i>CZK bn</i>	165	170	181	187	207	229	261	287	298	228
	<i>% growth</i>	2.4	3.1	6.5	3.0	10.9	10.5	13.8	10.2	3.6	-23.3
Corporations	<i>CZK bn</i>	127	133	144	157	167	176	187	192	177	228
	<i>% growth</i>	-1.2	4.0	8.5	8.8	6.8	5.2	6.3	2.9	-8.1	29.2
Levy on lottery revenue	<i>CZK bn</i>	-	-	-	-	-	-	-	-	-	-
	<i>% growth</i>	-	-	-	-	-	-	-	-	-	-
Other current taxes	<i>CZK bn</i>	10	10	10	11	11	12	11	11	11	11
	<i>% growth</i>	1.8	-1.4	0.0	5.4	2.2	4.4	-5.8	-0.6	-0.8	4.0
<b>Social security contributions</b>	<i>CZK bn</i>	<b>600</b>	<b>607</b>	<b>629</b>	<b>663</b>	<b>703</b>	<b>760</b>	<b>834</b>	<b>895</b>	<b>909</b>	<b>1 013</b>
	<i>% growth</i>	1.3	1.1	3.6	5.5	6.1	8.0	9.8	7.3	1.6	11.4
Social insurance	<i>CZK bn</i>	371	372	385	406	431	470	516	555	543	598
	<i>% growth</i>	0.9	0.4	3.3	5.6	6.2	9.0	9.8	7.5	-2.2	10.2
Health insurance	<i>CZK bn</i>	222	227	237	249	264	281	308	329	354	402
	<i>% growth</i>	2	2	4	5	6	6	10	7	8	13
Payments for state-insured	<i>CZK bn</i>	52.9	53.7	59.9	60.9	62.3	65.3	68.4	71.9	97.3	126.3
	<i>% growth</i>	-0.2	1.5	11.5	1.8	2.1	4.8	4.8	5.1	35.4	29.9
Injury insurance	<i>CZK bn</i>	6	6	6	7	7	8	8	9	9	10
	<i>% growth</i>	1.9	0.2	0.9	4.0	5.5	6.7	9.7	7.2	1.4	5.4
Imputed social contributions	<i>CZK bn</i>	1	1	1	1	1	1	1	2	3	4
	<i>% growth</i>	-5.1	4.6	-21.5	40.1	-1.9	16.1	21.9	30.9	70.3	11.9
<b>Taxes on production and imports</b>	<i>CZK bn</i>	<b>502</b>	<b>521</b>	<b>513</b>	<b>562</b>	<b>587</b>	<b>626</b>	<b>647</b>	<b>688</b>	<b>651</b>	<b>705</b>
	<i>% growth</i>	4.3	3.9	-1.6	9.5	4.4	6.7	3.4	6.3	-5.3	8.2
Taxes on products <sup>1)</sup>	<i>CZK bn</i>	479	501	489	538	562	601	619	650	611	661
	<i>% growth</i>	4.8	4.7	-2.3	10.0	4.4	6.9	3.1	4.9	-5.9	8.2
Value added tax	<i>CZK bn</i>	286	304	319	333	354	388	409	435	422	464
	<i>% growth</i>	3.5	6.2	5.2	4.3	6.2	9.5	5.4	6.6	-3.0	9.7
Excises	<i>CZK bn</i>	176	179	151	183	181	186	186	188	177	183
	<i>% growth</i>	2.9	1.6	-15.4	21.0	-0.8	2.3	0.0	1.3	-5.8	3.3
Other taxes on products <sup>2)</sup>	<i>CZK bn</i>	17	19	19	22	27	28	25	26	12	15
	<i>% growth</i>	75.9	10.5	0.0	17.5	20.4	3.9	-8.6	3.9	-55.9	28.9
Other taxes on production <sup>3)</sup>	<i>CZK bn</i>	23	20	24	24	25	25	28	38	40	44
	<i>% growth</i>	-4.9	-13.1	18.4	-0.3	5.3	2.4	9.9	37.2	4.9	8.7
<b>Capital taxes</b>	<i>CZK bn</i>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<i>% growth</i>	0.9	-33.3	-93.5	10.0	54.5	70.6	-24.1	-45.5	191.7	-40.0

<sup>1)</sup> Taxes that are payable per unit of good or service produced or transacted.

<sup>2)</sup> This item contains, for example, customs duty, taxes from imported agricultural products, taxes from financial and capital transactions, payments from entertainment, lottery, game and betting taxes and other.

<sup>3)</sup> All taxes that enterprises incur as a result of engaging in production, independently of the quantity or value of the goods and services produced or sold (real estate tax, road tax, waste water toll etc.).

Source: CZSO (2022b).

**Table A.3: General Government Expenditure**

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Total expenditure</b>	<i>CZK bn</i>	<b>1 827</b>	<b>1 767</b>	<b>1 852</b>	<b>1 940</b>	<b>1 907</b>	<b>1 992</b>	<b>2 196</b>	<b>2 378</b>	<b>2 696</b>	<b>2 841</b>
	<i>% growth</i>	4.1	-3.3	4.8	4.7	-1.7	4.5	10.3	8.2	13.4	5.4
Compensation of employees	<i>CZK bn</i>	359	367	380	398	419	462	521	576	633	676
	<i>% growth</i>	2.7	2.0	3.5	4.8	5.4	10.1	12.8	10.5	10.0	6.8
Intermediate consumption	<i>CZK bn</i>	259	270	274	284	291	296	326	339	346	355
	<i>% growth</i>	-7.8	4.1	1.5	3.5	2.8	1.6	10.0	4.1	2.0	2.5
Social benefits other than in kind <sup>1)</sup>	<i>CZK bn</i>	554	564	576	591	605	624	658	709	821	859
	<i>% growth</i>	1.6	1.8	2.0	2.6	2.5	3.1	5.5	7.7	15.8	4.7
Social transfers in kind	<i>CZK bn</i>	130	133	140	142	148	152	160	177	205	219
	<i>% growth</i>	4.7	2.6	4.8	1.4	4.3	3.1	4.7	10.9	15.8	7.1
Property income	<i>CZK bn</i>	59	55	57	49	44	38	40	41	44	46
	<i>% growth</i>	9.9	-5.8	2.6	-13.0	-10.6	-14.2	6.7	1.5	7.6	5.1
Interest	<i>CZK bn</i>	58	55	56	49	44	38	40	41	44	46
	<i>% growth</i>	9.1	-4.9	2.0	-12.7	-10.6	-13.6	5.8	1.3	8.0	5.4
Other property income	<i>CZK bn</i>	1	0	1	0	0	0	0	0	0	0
	<i>% growth</i>	117.2	-69.4	119.1	-44.4	-1.8	-91.2	1246.4	29.7	-24.9	-30.8
Subsidies	<i>CZK bn</i>	91	96	99	105	108	110	119	128	173	200
	<i>% growth</i>	0.0	5.1	3.8	5.6	2.6	1.7	8.8	7.3	35.1	15.8
Gross fixed capital formation	<i>CZK bn</i>	169	152	178	236	155	171	224	253	277	287
	<i>% growth</i>	-6.5	-10.0	16.8	32.8	-34.3	10.2	31.3	12.6	9.5	3.8
Capital transfers <sup>2)</sup>	<i>CZK bn</i>	121	39	60	41	36	30	35	36	67	55
	<i>% growth</i>	169.8	-67.5	53.4	-32.3	-12.8	-14.9	16.2	1.3	87.8	-17.5
Investment grants <sup>3)</sup>	<i>CZK bn</i>	31	21	18	15	13	15	23	18	22	23
	<i>% growth</i>	-1.8	-32.2	-14.5	-19.1	-12.8	14.4	57.6	-20.3	18.1	7.7
Other capital transfers	<i>CZK bn</i>	89	18	42	26	23	16	12	17	45	32
	<i>% growth</i>	598.0	-79.8	133.5	-37.9	-12.8	-31.4	-22.6	42.4	162.3	-29.6
Other expenditure	<i>CZK bn</i>	84	90	89	95	100	109	113	120	130	142
	<i>% growth</i>	0.7	7.3	-1.2	6.6	5.6	9.1	3.6	6.0	8.5	9.5
<b>Final consumption expenditure</b>	<i>CZK bn</i>	<b>795</b>	<b>817</b>	<b>840</b>	<b>875</b>	<b>910</b>	<b>959</b>	<b>1 050</b>	<b>1 134</b>	<b>1 243</b>	<b>1 310</b>
	<i>% growth</i>	-1.1	2.7	2.8	4.1	4.0	5.4	9.5	8.0	9.5	5.4
Collective consumption <sup>4)</sup>	<i>CZK bn</i>	365	378	384	405	423	442	484	511	538	543
	<i>% growth</i>	-3.1	3.5	1.7	5.4	4.3	4.6	9.6	5.6	5.2	0.9
Individual consumption	<i>CZK bn</i>	430	439	456	470	487	517	566	623	705	768
	<i>% growth</i>	0.6	2.1	3.8	3.1	3.6	6.1	9.5	10.2	13.1	8.9

<sup>1)</sup> Social benefits, which should serve households to relieve their costs or losses stemming from existence or development of some risks or needs. Mainly benefits paid in case of old age, disability, sickness, motherhood, unemployment, work injury, work sickness, current social need etc.

<sup>2)</sup> Transactions of capital distribution, which have no influence either on beneficiary's ordinary income or these transaction's payer but on amount of their net property. Both in cash and in kind.

<sup>3)</sup> Capital transfers in cash or in kind made by governments to other institutional units to finance all or part of the costs of their gross fixed capital formation.

<sup>4)</sup> Value of all collective services provided to the whole society or to specific groups, i.e. expenditure for public services, defence, security, justice, health protection, environmental protection, research and development, infrastructure development and economy.

Source: CZSO (2022b), MF CR.

**Table A.4: General Government Net Lending/Borrowing by Subsectors**

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>General government</b>	<i>CZK bn</i>	<b>-159</b>	<b>-53</b>	<b>-90</b>	<b>-30</b>	<b>34</b>	<b>77</b>	<b>48</b>	<b>17</b>	<b>-329</b>	<b>-312</b>
Central government	<i>CZK bn</i>	-150	-66	-95	-58	-20	27	8	-32	-344	-357
Local governments	<i>CZK bn</i>	-2	12	8	26	50	42	24	38	26	55
Social security funds	<i>CZK bn</i>	-6.8	0.9	-2.7	1.9	4.9	8.2	16.6	11.4	-11.7	-9.3

Source: CZSO (2022b).

**Table A.5: General Government Debt by Instruments**

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>General government debt</b>	<i>CZK bn</i>	<b>1 805</b>	<b>1 840</b>	<b>1 819</b>	<b>1 836</b>	<b>1 755</b>	<b>1 750</b>	<b>1 735</b>	<b>1 740</b>	<b>2 150</b>	<b>2 567</b>
	<i>% growth</i>	11.9	1.9	-1.2	0.9	-4.4	-0.3	-0.9	0.3	23.5	19.4
Currency and deposits	<i>CZK bn</i>	9	9	14	7	9	6	9	5	11	16
	<i>% growth</i>	-36.1	-5.2	56.2	-48.8	31.1	-35.6	47.0	-40.8	112.6	48.0
Securities other than shares	<i>CZK bn</i>	1 603	1 639	1 623	1 648	1 593	1 602	1 554	1 596	2 012	2 358
	<i>% growth</i>	13.9	2.2	-1.0	1.6	-3.4	0.6	-3.0	2.7	26.1	17.2
Loans	<i>CZK bn</i>	193	192	182	181	153	141	172	139	127	193
	<i>% growth</i>	0.8	-0.1	-5.3	-0.9	-15.5	-7.4	21.8	-19.0	-8.8	51.7

Note: Government debt consists of following financial instruments: currency and deposits, securities issued other than shares excluding financial derivatives and loans. It is expressed in the nominal value, which is considered equivalent to the face value. It is consolidated, i.e. the debt in holding of other subjects of the government sector is omitted.

Source: CZSO (2022b).

**Table A.6: General Government Balance and Debt of EU Countries**

in % of GDP

	Balance					Debt				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
<b>EU27</b>	-0.8	-0.4	-0.5	-6.9	.	81.3	79.3	77.2	90.1	.
<b>EA19<sup>1)</sup></b>	-0.9	-0.4	-0.6	-7.2	-7.6	87.5	85.5	83.6	97.3	.
<b>Austria</b>	-0.8	0.2	0.6	-8.3	-6.0	78.5	74.0	70.6	83.2	82.8
<b>Belgium</b>	-0.7	-0.8	-1.9	-9.1	-8.0	102.0	99.9	97.7	112.8	112.5
<b>Bulgaria</b>	1.6	1.7	2.1	-4.0	-5.7	25.1	22.1	20.0	24.7	26.7
<b>Croatia</b>	0.8	0.2	0.3	-7.4	-3.8	76.7	73.3	71.1	87.3	86.7
<b>Cyprus</b>	1.9	-3.5	1.3	-5.7	-4.9	92.9	98.3	91.1	115.3	104.2
<b>Czech Republic<sup>2)</sup></b>	1.5	0.9	0.3	-5.6	-7.2	34.2	32.1	30.0	37.7	43.3
<b>Denmark</b>	1.8	0.8	4.1	-0.2	-1.9	35.9	34.0	33.6	42.1	40.0
<b>Estonia</b>	-0.5	-0.6	0.1	-5.6	-3.3	9.1	8.2	8.6	19.0	17.7
<b>Finland</b>	-0.7	-0.9	-0.9	-5.5	-3.9	61.2	59.8	59.5	69.5	71.2
<b>France</b>	-3.0	-2.3	-3.1	-9.1	-8.4	98.1	97.8	97.5	115.0	115.6
<b>Germany</b>	1.3	1.9	1.5	-4.3	-7.3	64.7	61.3	58.9	68.7	72.3
<b>Greece</b>	0.6	0.9	1.1	-10.1	-9.6	179.5	186.4	180.7	206.3	197.9
<b>Hungary</b>	-2.5	-2.1	-2.1	-8.0	-7.5	72.1	69.1	65.5	80.1	79.5
<b>Ireland</b>	-0.3	0.1	0.5	-4.9	-3.1	67.8	63.1	57.2	58.4	55.6
<b>Italy</b>	-2.4	-2.2	-1.5	-9.6	-9.4	134.2	134.4	134.3	155.6	153.5
<b>Latvia</b>	-0.8	-0.8	-0.6	-4.5	-9.3	39.0	37.1	36.7	43.2	48.9
<b>Lithuania</b>	0.4	0.5	0.5	-7.2	-6.6	39.1	33.7	35.9	46.6	46.0
<b>Luxembourg</b>	1.4	3.0	2.3	-3.5	-0.6	21.8	20.8	22.3	24.8	25.8
<b>Malta</b>	3.2	1.9	0.5	-9.7	-11.1	47.7	43.6	40.7	53.5	61.3
<b>Netherlands</b>	1.3	1.4	1.7	-4.2	-6.0	56.9	52.4	48.5	54.3	57.8
<b>Poland</b>	-1.5	-0.2	-0.7	-7.1	-5.3	50.6	48.8	45.6	57.4	57.0
<b>Portugal</b>	-3.0	-0.3	0.1	-5.8	-4.5	126.1	121.5	116.6	135.2	128.0
<b>Romania</b>	-2.6	-2.9	-4.4	-9.4	-8.0	35.1	34.7	35.3	47.4	49.3
<b>Slovakia</b>	-1.0	-1.0	-1.3	-5.5	-8.8	51.6	49.6	48.1	59.7	62.7
<b>Slovenia</b>	-0.1	0.7	0.4	-7.7	-7.5	74.2	70.3	65.6	79.8	78.5
<b>Spain</b>	-3.0	-2.5	-2.9	-11.0	-8.4	98.6	97.5	95.5	120.0	118.4
<b>Sweden</b>	1.4	0.8	0.6	-2.8	-1.8	40.7	38.9	34.9	39.7	37.8

<sup>1)</sup> 19 current member states – Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain.

<sup>2)</sup> Data for 2022 are based on the current estimate of MF CR.

Source: Eurostat (2022b).



**Table A.7: Transactions of General Government of EU Countries in 2021***in % of GDP*

	Revenue	Expenditure	Compen. of employees	Cash social benefits	Collective consumption	Individual consumption	Investments <sup>1</sup>	Interest expenditure
<b>European Union</b>	46.8	51.5	10.5	17.3	8.1	13.9	3.2	1.4
<b>Euro Zone</b>	47.2	52.3	10.2	17.9	8.0	14.0	3.0	1.5
<b>Austria</b>	50.0	56.0	11.0	19.5	7.4	14.3	3.5	1.1
<b>Belgium</b>	49.9	55.5	12.5	18.1	8.4	15.6	2.7	1.7
<b>Bulgaria</b>	36.7	40.6	11.1	12.2	9.0	9.9	2.6	0.5
<b>Croatia</b>	46.0	48.5	12.4	13.0	10.8	11.4	4.7	1.5
<b>Cyprus</b>	41.4	43.1	12.5	12.8	8.8	10.8	2.7	1.8
<b>Czech Republic</b>	41.4	46.5	11.1	14.1	8.9	12.6	4.7	0.8
<b>Denmark</b>	54.4	50.8	14.9	15.5	7.0	17.3	3.4	0.6
<b>Estonia</b>	39.0	41.5	10.9	12.4	8.3	11.5	5.6	0.0
<b>Finland</b>	52.8	55.5	12.7	18.6	8.2	16.2	4.2	0.5
<b>France</b>	52.5	59.0	12.5	20.3	8.1	16.1	3.6	1.4
<b>Germany</b>	47.5	51.3	8.2	17.0	8.0	14.2	2.6	0.6
<b>Greece</b>	50.0	57.4	12.4	19.6	11.5	10.2	3.6	2.5
<b>Hungary</b>	41.3	48.4	10.6	10.8	11.2	9.7	6.3	2.3
<b>Ireland</b>	23.2	24.8	6.2	7.0	4.0	8.2	2.1	0.8
<b>Italy</b>	48.1	55.3	9.9	22.3	8.1	11.7	2.9	3.6
<b>Latvia</b>	37.0	44.0	11.5	12.4	9.9	10.7	5.2	0.5
<b>Lithuania</b>	36.5	37.5	10.7	13.0	6.7	10.8	3.1	0.4
<b>Luxembourg</b>	43.7	42.9	10.2	15.1	6.7	10.8	4.1	0.2
<b>Malta</b>	37.0	44.8	12.0	8.4	7.7	12.8	3.9	1.1
<b>Netherlands</b>	44.0	46.6	8.6	10.6	8.3	18.0	3.4	0.6
<b>Poland</b>	42.4	44.2	10.5	16.0	8.5	10.3	4.1	1.1
<b>Portugal</b>	44.9	47.8	11.6	17.4	8.2	10.6	2.6	2.4
<b>Romania</b>	32.8	39.9	11.1	12.5	10.1	7.6	4.2	1.3
<b>Slovakia</b>	40.9	46.3	11.5	15.2	11.5	10.0	3.1	1.1
<b>Slovenia</b>	44.6	49.3	12.7	16.3	7.9	12.7	4.7	1.2
<b>Spain</b>	43.7	50.6	12.2	18.9	8.5	13.0	2.7	2.2
<b>Sweden</b>	49.4	49.5	12.5	12.0	7.2	18.7	4.8	0.2

<sup>1)</sup> *Gross fixed capital formation.*<sup>2)</sup> *19 current member states – Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain.**Source: Eurostat (2022a).*

## B Glossary

**Accrual methodology** means that economic transactions are recorded at the time an economic value is created, transformed or cancelled or when amounts due or claims increase or decrease, regardless of when the transaction will be paid (unlike the cash principle employed in the budgeting process of the state budget).

**Capital transfers** include acquisition or loss of an asset without equivalent consideration. They may be made in cash or in kind.

**Cash social benefits** are social security benefits (e.g. pensions, social welfare benefits) paid out from the government to households.

**Compensation of employees** is composed of wages and salaries incl. accessories, i. e. contributions paid by employers (social security contributions or other contributions such as the Cultural and Social Needs Fund). This is a component of the final consumption of the general government.

**Cyclically adjusted balance** of the general government sector is used to identify the fiscal policy stance because it does not include impact of those parts of revenues and expenditures which are generated by the position of the economy in the business cycle.

**Discretionary measures** are direct interventions of the government in the structure of general government revenue and expenditure.

Government **final consumption expenditure** includes government payments which are subsequently used for consumption of individuals in the household sector (mainly reimbursement of healthcare by health insurance companies for services provided by medical facilities) or they are consumed by the entire society (such as expenditure on army, police, judiciary, state administration, etc.).

**Fiscal effort** is an annual change in the structural balance indicating expansive or restrictive fiscal policy in a given year.

**Fiscal impulse** is used to assess the impact of the government's fiscal policy on economic growth. It is usually expressed in annual terms, where a decrease in certain government revenues or an increase in certain government expenditures represents a positive impulse, and an increase in certain revenues or a decrease in certain expenditures represents a negative impulse. The basis for calculation of the fiscal impulse is the YoY change in the cyclically-adjusted balance with the opposite sign, adjusted for: interest payments, income from EU Funds, financial mechanisms and contributions to the EU budget and certain one-off and temporary measures. See also MF CR (2015).

The **general government sector** is defined by internationally harmonized rules at the EU level. In the CR, the general government sector includes, in the ESA 2010 methodology, three main subsectors: central government, local government and social security funds.

**Government Deficit and Debt Notification** is quantification of fiscal indicators submitted by each EU Member State twice a year to the European Commission, according to the Council Regulation (EC) No. 479/2009 of 25 May 2009 on the

application of the Protocol on the excessive deficit procedure annexed to the Treaty establishing the European Community, as amended. It is compiled for the general government sector using the accrual methodology. The Czech Statistical Office processes data for the past four years  $t-4$  to  $t-1$ ; MF CR supplies prediction for the current year  $t$ . Notification includes a basic set of notification tables, which include mainly key indicators such as balance and debt, including explanations of the link to balance in the national methodology as well as a number of additional questionnaires such as a table of state guarantees, etc.

**Gross fixed capital formation** expresses net acquisition of fixed capital, i.e. its acquisitions less disposals, achieved by production activities of production and institutional units. It represents investment activities of units.

**Intermediate Consumption** is a component of the final consumption of the general government and contains the general government purchase of goods and services, which are consumed in the given time period.

**Medium-Term Objective (MTO)** is expressed in the structural balance and implies long-term sustainability of public finance of the country. For the CR it currently corresponds to the level of structural balance of  $-0.75\%$  of GDP.

**One-off and other temporary operations** are measures on the expenditure or revenue side which only have a temporary impact on general government balance, and they often stem from events outside the direct control of the government (e.g. expenditures on removing the consequences of floods).

**Output gap** is the difference between real and potential product (often expressed as a ratio to potential product). It determines the position of the economy in the business cycle.

**Social transfers in kind** reflect the value of goods and services provided particularly in the form of health and social care, education, housing. They are mostly in-kind benefits related to the health insurance (amounts for medical devices, medical or dental treatment, surgery, etc.), funded by health insurance companies to those, who provide these goods and services. They are a component of the final consumption of the general government.

**Subsidies** are current non-repayable payments made by the government sector or European Union institutions to resident producers.

**Structural balance** is the difference between cyclically adjusted balance, and one-off and temporary operations (for both components see above).

General government **tax revenue** is divided into consumption, labour and capital taxation. Consumption taxation is mainly represented by value-added and excise taxes, as well as import duties, gambling taxes, certain other items of product taxes, pollution taxes and household licence payments. Labour taxation consists of personal income tax and social and health insurance contributions. Capital taxation includes, in addition to corporate income tax, taxes on financial transactions, certain items of taxes on production and current taxes on capital.

# C Lists of Thematic Chapters and Boxes of Previous Fiscal Outlooks of the Czech Republic

## List of Thematic Chapters of Previous Fiscal Outlooks of the Czech Republic

Published	Topic
November 2014	Long-term Pension Projections
November 2015	Fiscal Impulse Fiscal Framework Reform in the Czech Republic
November 2016	Long-term Projections of Public Expenditure on Health Care
November 2017	Fiscal Councils
November 2019	Proposal for the New EU Fiscal Rule
January 2021	Measures to support the Economy in Response to the COVID-19 Pandemic
November 2021	EU Funds and their Impact in the Czech Republic
November 2022	Participation Rates and Setting up of Social Systems

## List of Thematic Boxes of Previous Fiscal Outlooks of the Czech Republic

Published	Box Topic
November 2014	Box 1: Basic Changes in General Government Sector Statistics in relation with Transition to ESA 2010 Box 2: Changes in General Government Sector Statistics in the System of National Accounts Box 3: Planned Measures against Tax Evasion Box 4: Impact of New Estimates of Elasticities of Cyclically Sensitive Revenue and Expenditure on the Cyclical Component of Balance
May 2015	Box 1: Expansion of the General Government Sector
November 2015	Box 1: Expansion of the General Government Sector Box 2: Czech Economy Growth and the Tax Revenue Development in 2015 Box 3: Expenditure Rule Technique
November 2016	Box 1: Effect of Supply Factors on Health-Care Expenditure
November 2017	Box 1: Requirements of Directive 2011/85/EU and Regulation No 473/2013 on establishment of national fiscal councils Box 2: Selected recommendations of the European Fiscal Board for the implementation of fiscal policy and public budgeting in the euro-area countries for 2018
November 2018	Box 1: Changes in the Methodical Classification of Certain Revenue and Expenditure of General Government Sector Box2: National Methodology for the Classification of One-off and Other Temporary Measures
November 2019	Box 1: Healthy Ageing Box 2: Pension Expenditure in the CR and EU Member States Box 3: Excluding Specific Items from Expenditure Rules
January 2021	Box 1: Reaction of the Euro area Yield Curve of the Government Bonds on the ECB's measures Box 2 OECD Conclusions in the Review of the Pension System of the Czech Republic Box 3: Selected Studies to prevent the Spread of the Disease and mitigate the Economic Impact Box 4: Temporary Framework for State Aid Measures to support Economy Affected by COVID-19
November 2021	Box 1: Yield "Anomaly" on the Bond Market in EU Countries
November 2022	Box 1: Annual Update of Eurostat's Demographic Projections Box 2: Analysis of Factors affecting the Labour Market Position of Women with Children



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