
Monetary and Fiscal Policy Interactions in the Czech Republic

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Presentation outline

1. Channels of influence of fiscal policy on monetary policy
2. Evaluation of fiscal policy real effects
3. Role of fiscal policy in the CNB's forecast
4. Policy interactions
5. Fiscal outlook
6. Summary and conclusions

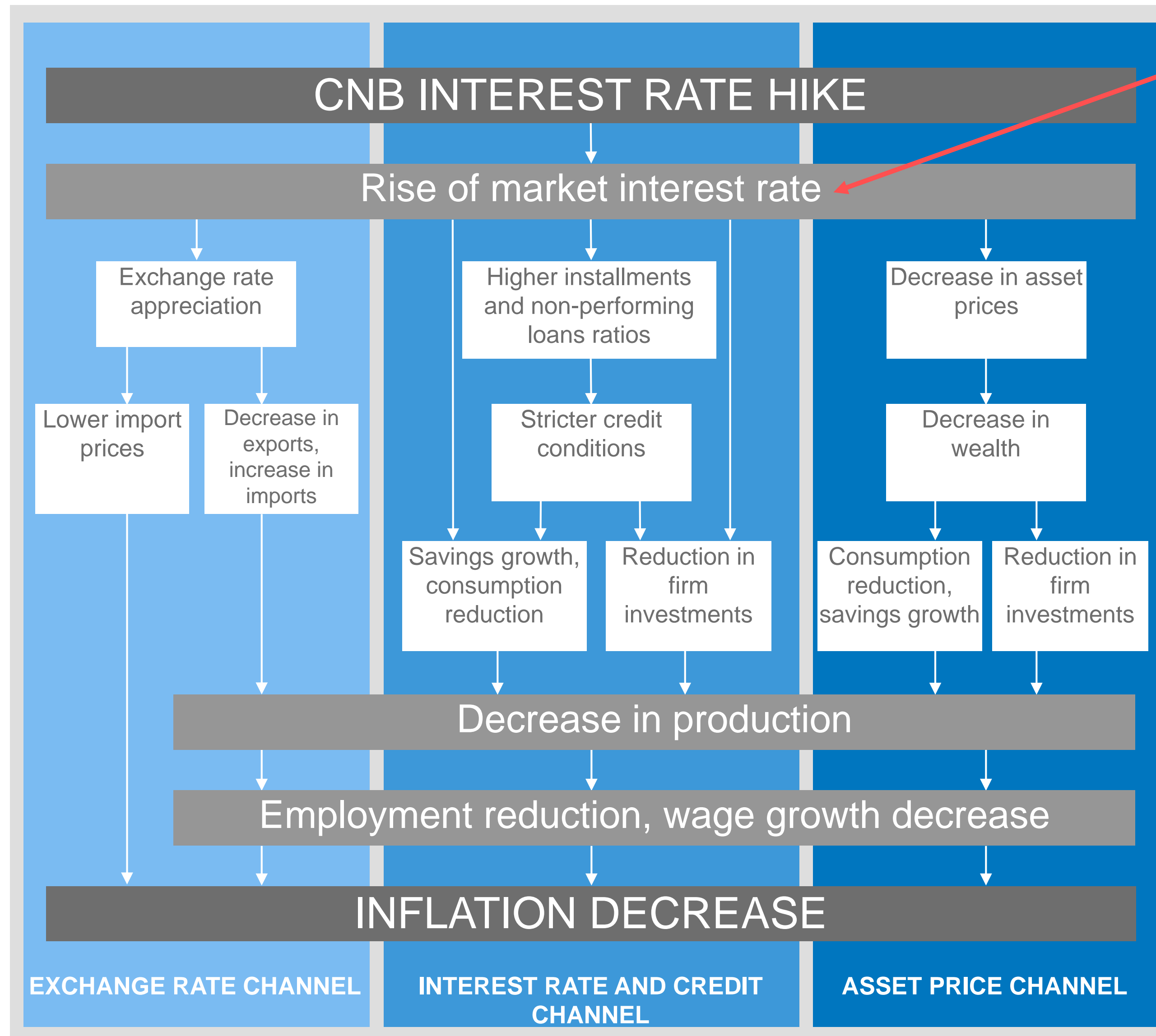


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Fiscal policy effects on interest rate transmission



Interest-rate effects

- Due to the role of government-bond yields in credit pricing
- Expansionary fiscal policy ~ higher medium- and long-term interest rates
- Higher government indebtedness ~ higher spreads on government bonds

Fiscal policy effects through aggregate demand

- **Fiscal discretion** can be understood as changes in taxes and government spending aimed at influencing macroeconomic developments. These changes are other than those induced by the business cycle.
- Discretionary changes of fiscal revenues and expenditures influence **aggregate demand**
 - Private consumption
 - Investment
 - Government consumption
- **Exogenous factor** for monetary policy decision making

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Evaluation of real effects of fiscal policy

- Anti-cyclical influence of fiscal policy set through functioning of „built-in“ automatic stabilizers (e.g. unemployment benefits or government spending with high inertia)
- Effects of government's discretionary action
- Two basic approaches to estimate effects of discretion:
 - **Bottom-up approach**: the sum of individual revenue and expenditure budgetary measures expressed as a share of nominal GDP
 - **Top-down approach**: the fiscal position/stance (annual change in the structural deficit-to-GDP ratio expressed in percentage points)
 - The two approaches may be combined for cross-checking

Evaluation of real effects of fiscal policy

Bottom-up approach

- The sum of impacts of **individual fiscal measures**
- Key for the forecast (ex ante)
- Governmental sources of information (e.g.: explanatory reports for laws and regulations, Ministry of Finances' Fiscal Outlook) and expert assessment
- Revenue measures tend to be well documented, expenditure discretion usually needs to be approximated (by the deviations from long-term trends)
- Budgetary impacts of individual fiscal measures are multiplied by partial fiscal multipliers ~ to obtain the estimated impact on the GDP growth (so-called **fiscal impulse**)
- **Partial fiscal multipliers**
 - uses different fiscal multipliers for different revenue and expenditure categories,
 - taking into account the structure of fiscal measures,
 - support in literature and theory,
 - the use of "in-house" research on the impact of fiscal instruments on the real economy

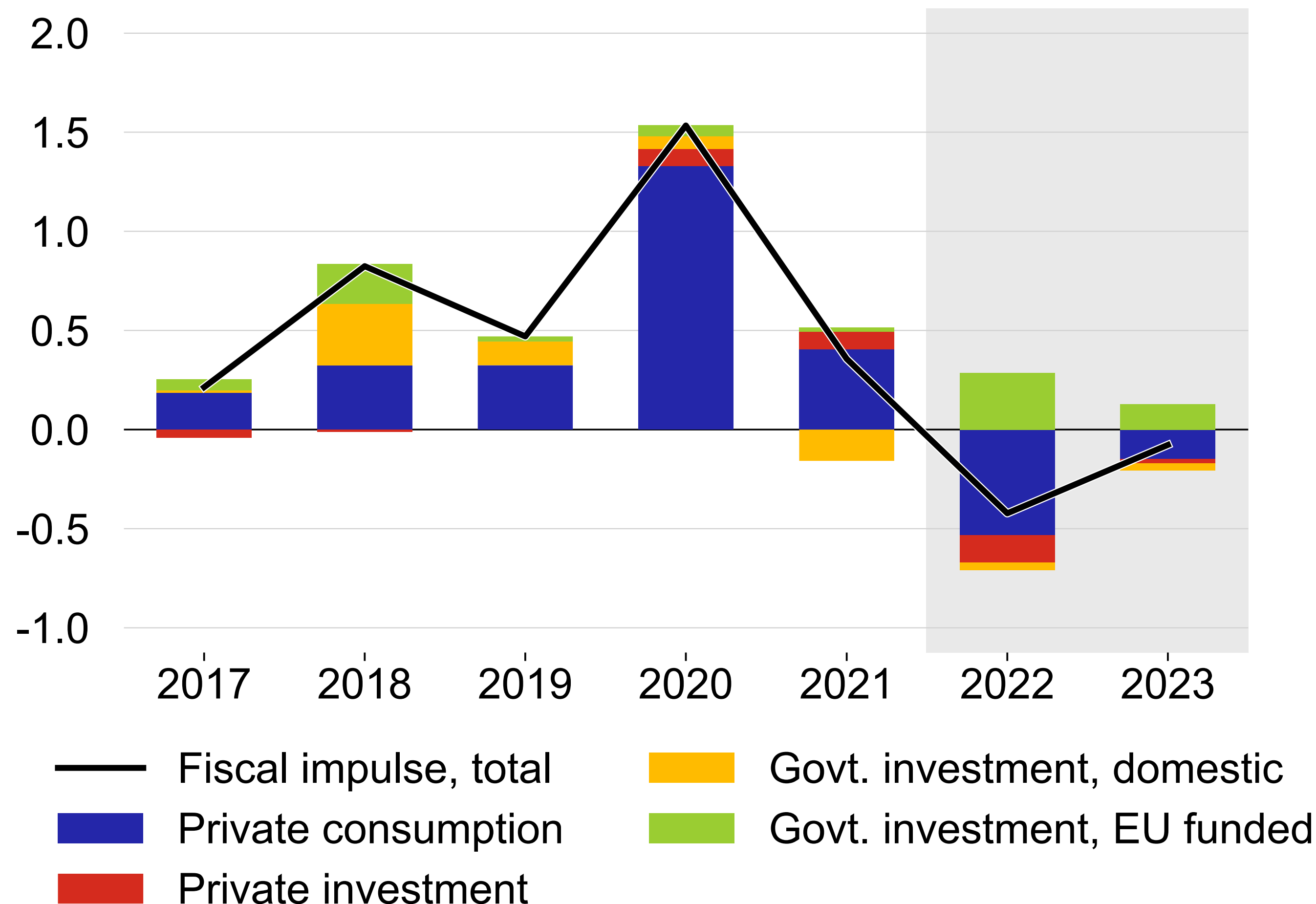
Partial fiscal multipliers for fiscal impulse

	IMF	OECD	Ambriško	CNB
Expenditures				
Government consumption	0.4	0.3	0.6	0.6
Government investment	0.4	0.7	0.5	0.7
Other expenses			0.2	0.5
Taxes				
Consumption taxation	0.1	0.1	0.3	0.3
Labor taxation	0.1	0.2	0.3	0.3
Social contributions (paid by the employer)	-	-	0.4	0.4
Capital taxation			0.1	0.1

- The setting of **partial fiscal multipliers** is based on empirical estimates and theory-based expert judgement
- Within **government expenditure**, the assumption that government investment has the highest multiplier (0.7), followed by government consumption (0.6) and other expenditure (0.5).
- For **taxes**, we assume the highest multiplier effect for social insurance paid by the employer (0.4), followed by consumption and labor taxation (both equal to 0.3) and capital taxation (0.1)

Note: IMF's GIMF model (results from 2011), OECD's INTERLINK macroeconomic model (results from 2009), CNB satellite fiscal DSGE model for the Czech Republic (Ambriško, 2016).

Fiscal impulse in our outlook



- Fiscal impulse is expertly allocated into the **transmission channels**: private consumption (e.g. affected by changes in consumption taxes or social benefits), private investment and government investment - domestic and EU funded (e.g. NGEU fund).
- **Fiscal policy** will dampen GDP growth slightly this year as Covid programmes are phased out; expenditure linked with the arrival of Ukrainian refugees will have the opposite effect

Evaluation of real effects of fiscal policy

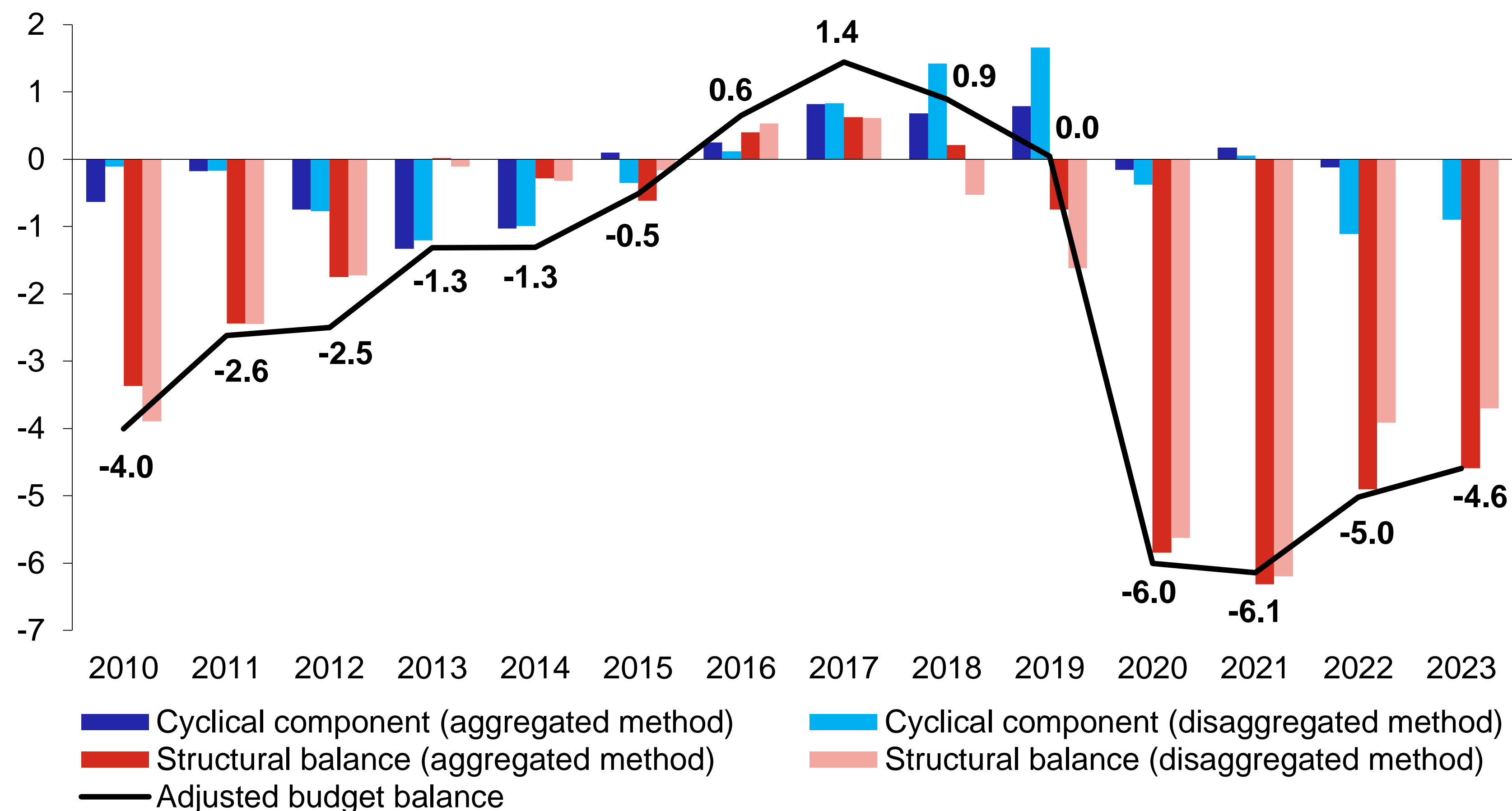
Top-down approach

- Fiscal stance – a measure of fiscal restriction/expansion:
 - positive figure ~ fiscal restriction
 - negative figure ~ fiscal expansion.
- Measured as the annual change in the **general government structural balance** :
 - General government structural balance is adjusted for the effects of the economic cycle and for extraordinary one-off measures. It captures the structural configuration of fiscal policy.
- Fiscal stance multiplied by aggregate fiscal multiplier (0.6) ~ to obtain the estimated impact on the GDP growth
- This approach provides a retrospective (ex-post) assessment of the actual performance of the fiscal policy.
- The Law on Budget Responsibility implies that the government has to set the expenditure limits based on the desirable development of the structural balance.

- Estimates of cyclically adjusted budget balances (CAB) routinely used by
 - the European Commission (EC), the European System of Central Banks (ESCB), IMF, OECD and other institutions
- CNB regularly estimates CAB using two alternative methods
 - the aggregated method (published) and the disaggregated method (devised by the ESCB and used for internal purposes only)
- **Aggregated method** is based on output gap calculations and a budget balance **semi-elasticity**. This budget semi-elasticity estimates the size of automatic stabilizers, i.e. the part of the budget balance that adjusts to the business cycle. For the Czech Republic, the value of budget semi-elasticity relative to the output gap is approximately 0.4.
- **Disaggregated method** accounts for the composition effects of the differences in the cyclical behavior of the main revenue and expenditure categories.

Evaluation of real effects of fiscal policy

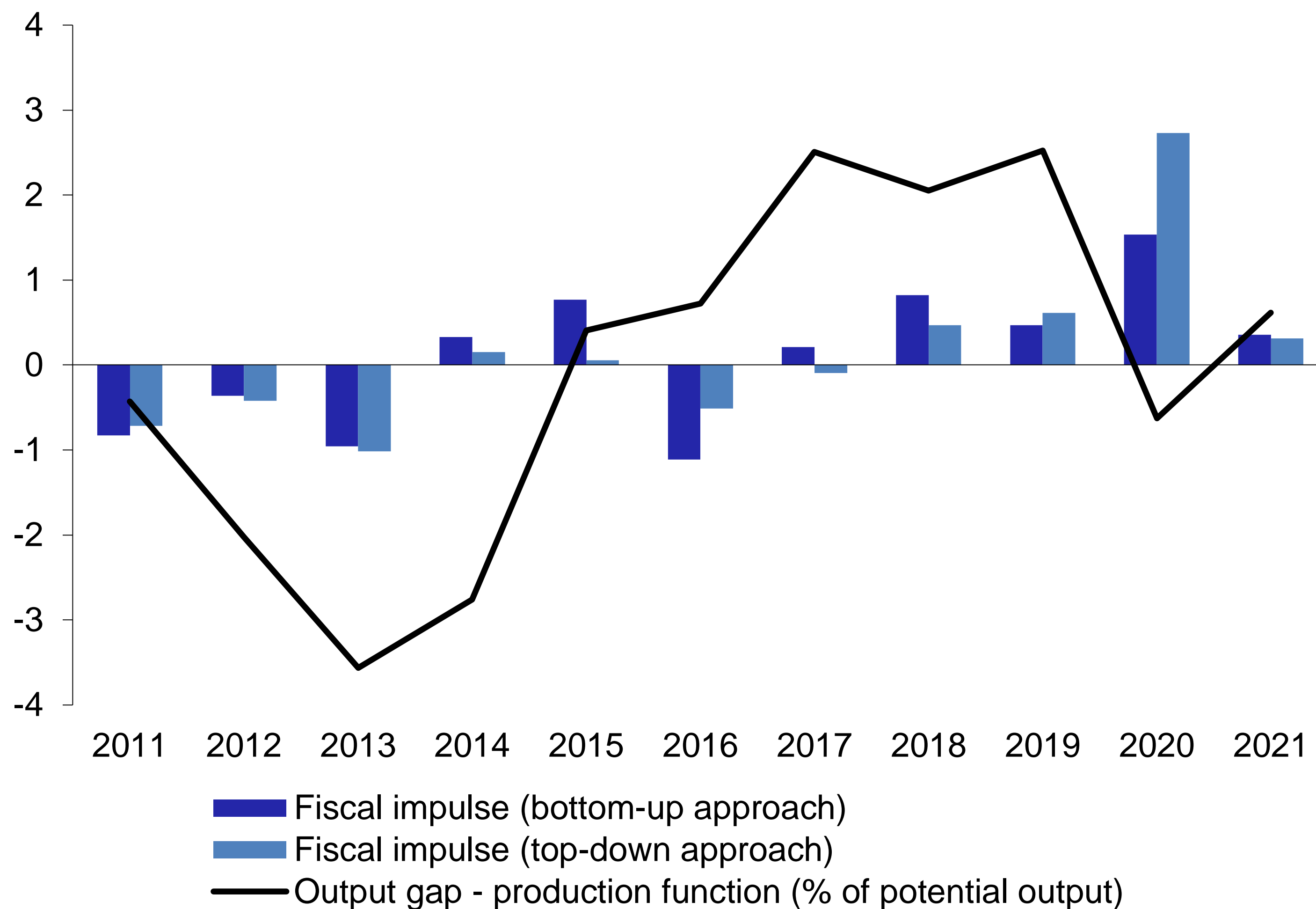
Cyclical decomposition of general government balance in the Czech Republic (in % of GDP)



- Czech government budget deficits are often **persistent** and have predominantly **structural** character

Note: Budget balance is adjusted for one-off measures.

Fiscal policy and business cycle



- There is no obvious link between discretionary fiscal discretion and business cycle in recent decade.
- Significant real impacts of discretionary measures (especially in 2020).
- Czech fiscal policy has been most of the time **pro-cyclical** (2011-2013, 2015, 2018-2019, 2021), sometimes **counter-cyclical** (2014, 2016, 2020).

Notes: Fiscal impulse means estimated contributions to real GDP growth in pp.
Fiscal impulse by „top-down“ approach assumes aggregated fiscal multiplier of 0.6.

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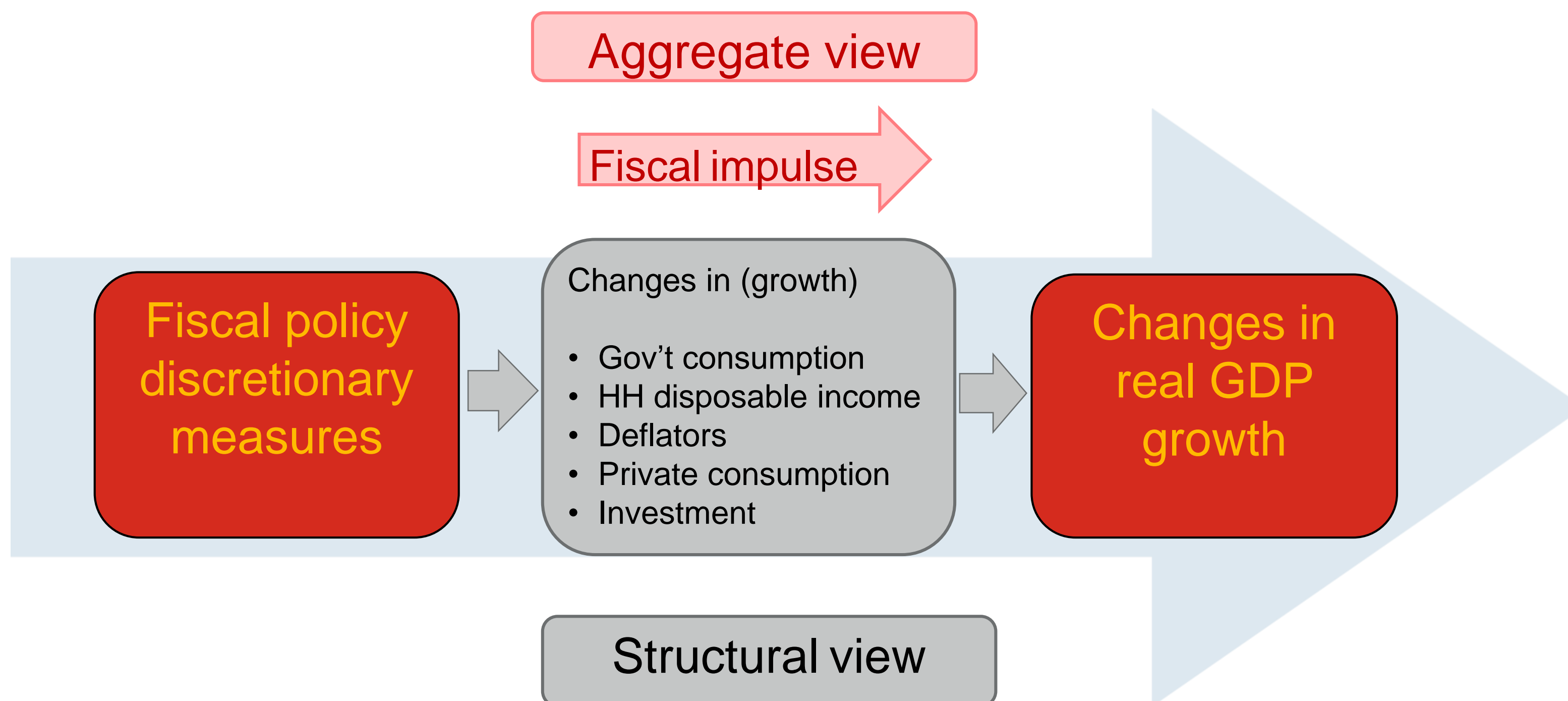
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Fiscal policy in forecasting process

- CNB's fiscal forecast is an integral part of the CNB's quarterly macroeconomic forecast
- But not yet part of the core DSGE prediction model
- Main fiscal inputs for the core model
 - Outlook for government consumption
 - **Fiscal impulse** = a summary measure of the real effects of government discretionary measures (expressed in p.p. contribution to yearly economic growth)
 - Inflationary effects of indirect tax changes (anticipated primary effects of indirect tax changes on inflation)
- Iterative process to complete the macroeconomic forecast and the fiscal outlook

Fiscal policy in forecasting process



- **Fiscal impulse** utilizes the partial fiscal multipliers, which are configured for the individual government revenue and expenditure categories (based on available empirical estimates for the Czech Republic and theory-based expert judgement).
- Fiscal impulse influences **core model mechanisms**: private consumption, investments, exchange rate, productivities and technologies.

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Fiscal and monetary policy interaction

- There is **no explicit coordination** between monetary policy and government economic policy.
- Fiscal policy is carried out by the government.
- Monetary policy is led independently by CNB.
 - Monetary policy (CNB) takes account of fiscal developments (government fiscal discretion) and their impact on real economy.
 - Fiscal measures are exogenous input into CNB's macroeconomic forecast. The CNB's macroeconomic forecast then finally includes also outlook for general government variables.
- The CNB (with other state institutions) takes a **stance to selected proposed laws** by the government.
- So far there have not been significant **profit transfers** from the CNB to the government (happened only once in 1993 in minor amount).
- **Communication** between CNB and the government:
 - smooth exchange of information and views on various economic policy topics

Fiscal and monetary policy interaction

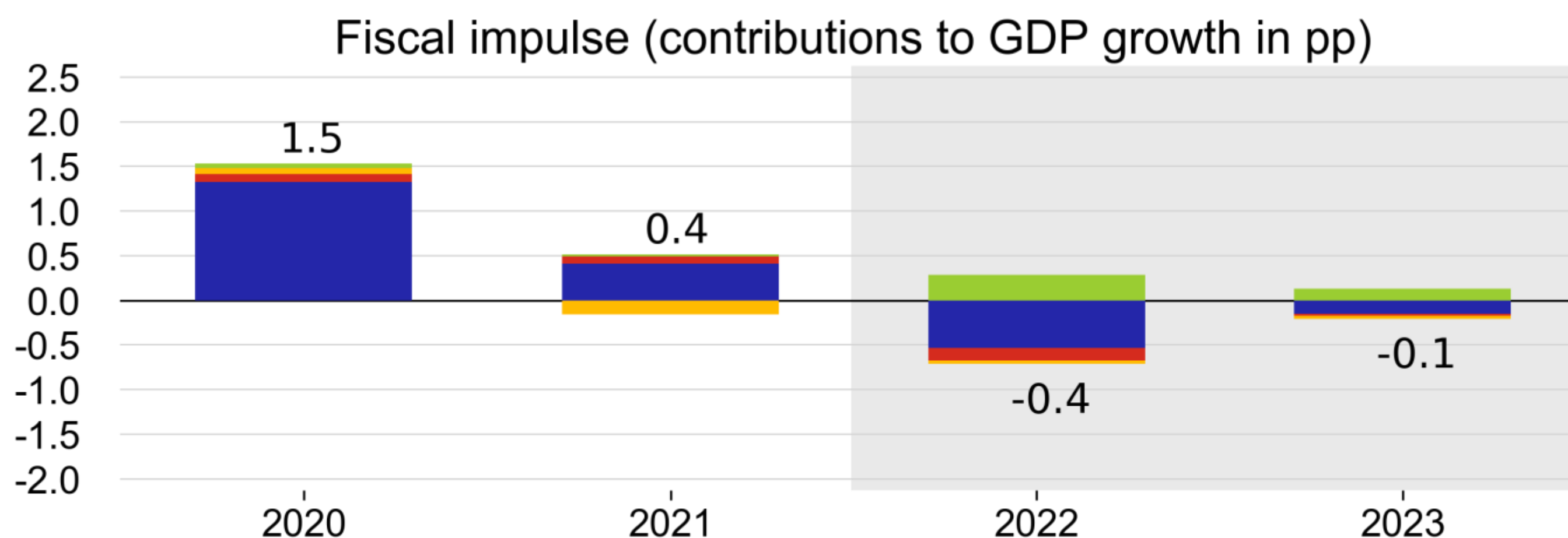
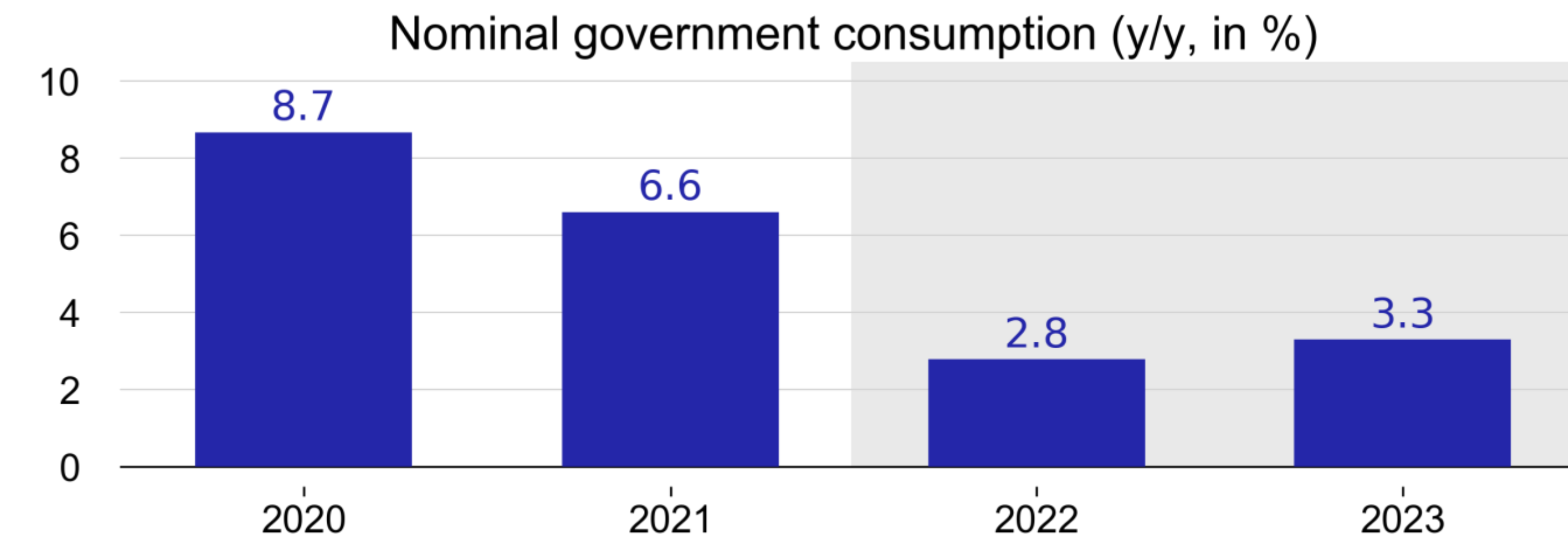
- In principle the **CNB abstains from intervention or normative comments** on concrete fiscal and structural measures of the government.
- The Government and the CNB regularly jointly assess whether the Czech Republic is ready for **euro adoption**. For this purpose, CNB performs detailed analyses once a year, which it publishes in the “Analyses of the Czech Republic’s Current Economic Alignment with the Euro Area”.
- Regarding fiscal policy – the CNB has been consistently reminding (the general public) of
 - the desirability of long-term sustainability of public finances
 - fiscally sound and growth-friendly policies not distorting market mechanisms, and preferably of an anti-cyclical character
 - international commitments and the EU legislation.
- Relevant role: in suggesting one candidate as a member of the Czech Fiscal Council
- BUT: preserving **independence and reputation**
- **Current issue: expansionary fiscal policy** is adding to inflationary pressures, which has to be tackled by the CNB.

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Fiscal policy assumptions in CNB's Spring 2022 outlook



- **Nominal government consumption** is expected to grow moderately this year, mainly due to high spending in the previous year.
- The **fiscal impulse** will dampen GDP growth slightly this year. However, the restrictive impact associated with the ending of support programmes this year, which helped economic activity recover, will be partly offset by other measures, such as:
 - increase in the taxpayer discount for the personal income tax
 - above-standard indexation of pension
 - expenditure on aid to refugees from Ukraine

CNB's Spring fiscal outlook

	2020	2021	2022	2023
Government revenue	41.6	40.5	40.7	40.2
Government expenditure	47.3	46.4	45.9	44.7
GOVERN. BUDGET BALANCE	-5.8	-5.9	-5.2	-4.5
of which: primary balance ^{a)}	-5.0	-5.1	-4.1	-3.4
ADJUSTED BUDGET BALANCE ^{b)}	-6.0	-6.1	-5.0	-4.6
Cyclical component ^{c)}	-0.2	0.2	-0.1	0.0
Structural balance ^{c)}	-5.8	-6.3	-4.9	-4.6
Fiscal stance in pp ^{d)}	-5.1	-0.5	1.4	0.3
GOVERNMENT DEBT	37.7	41.9	44.2	46.0

a) government budget balance minus interest payments

b) CNB estimate, balance adjusted for extraordinary one-off operations (revenues from the sale of emission permits, expenditures on the (new) Green Savings Programme, realised guarantees and revenues from the sale of frequency bands to mobile operators, etc.).

c) CNB estimate based on an aggregate method that defines the position of the cycle based on the output gap

d) year-on-year change in structural balance

- The general government deficit will slightly reduce **this year**, mainly due to the unwinding of most of the temporary support measures taken because of the coronavirus pandemic, despite increased spending on aid to refugees from Ukraine.
- **Next year**, we then expect most of the refugee support to also unwind, contributing to a further reduction in the general government deficit.
- These developments will be reflected in a gradual increase in **government debt**.

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Summary and conclusions

“Fiscal considerations“ of monetary policy:

- Effect of fiscal policy on short-term economic growth are taken into account when the CNB’s macroeconomic forecasts are prepared.
- Government bond market can potentially influence monetary policy transmission in the Czech Republic.
- No explicit co-ordination of monetary policy and fiscal policy, each policy knows about the other.
- The interactions between the monetary policy and fiscal policy authorities are respectful – keeping polite distance.

Thank you for your attention



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Back-up slides

- **There is no consensus in the literature on the size of individual fiscal multipliers**; the prevailing conclusion is that expenditure multipliers are higher than tax multipliers. Estimates for tax multipliers are around 0.2, expenditure multipliers most often in the range of 0.4-0.7, but there are also estimates of negative multipliers or multipliers greater than 1.
- Selected **estimates for the Czech Republic**:

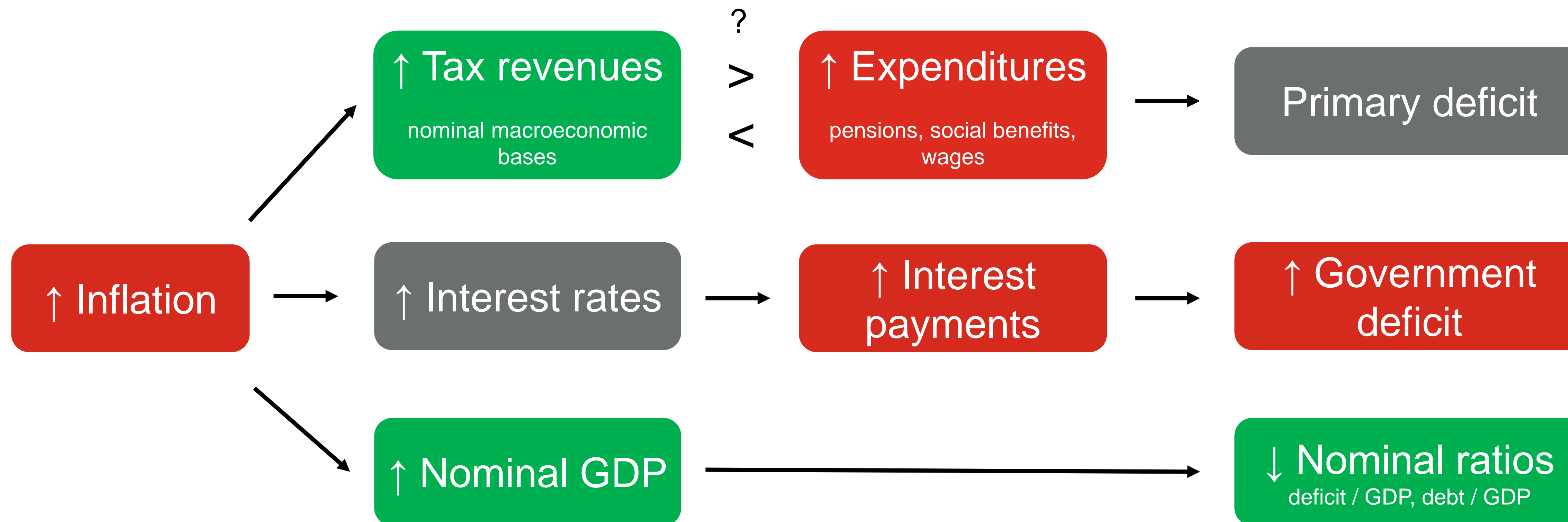
	IMF	OECD	ČNB	Ambriško	Pikhart	Gawthorpe
Expenditures						
Government consumption	0.4	0.3	0.6	0.6	0.1	0.2
Government investment	0.4	0.7	0.5	0.5	-	0.5
Taxes						
Consumption taxation	0.1	0.1	0.2	0.3	0.1	0.4
Labor taxation	0.1	0.2	0.2	0.3	0.3	0.5
Social contributions (paid by the employer)	-	-	0.6	0.4	0.3	0.5
Capital taxation			0.1	0.1	-	-

Note: IMF's GIMF model (results from 2011), OECD's INTERLINK macroeconomic model (results from 2009), CNB satellite fiscal DSGE model for the Czech Republic (Ambriško, Babecký, Ryšánek, Valenta, 2015; Ambriško, 2016), VAR model (Pikhart 2019), Gawthorpe (2021).

- Other estimates, e.g. Prušvic (2011): an aggregate expenditure multiplier of 0.47 and an revenue multiplier of 0.25.
- The **value of the multiplier of 0.6** used in the past, regardless of the structure of discretionary measures, is based on the study by Král, Říkovský, and Hřebíček (2005). The result is based on a simulation with an econometric (error-correction) model.

The impact of high inflation on fiscal policy

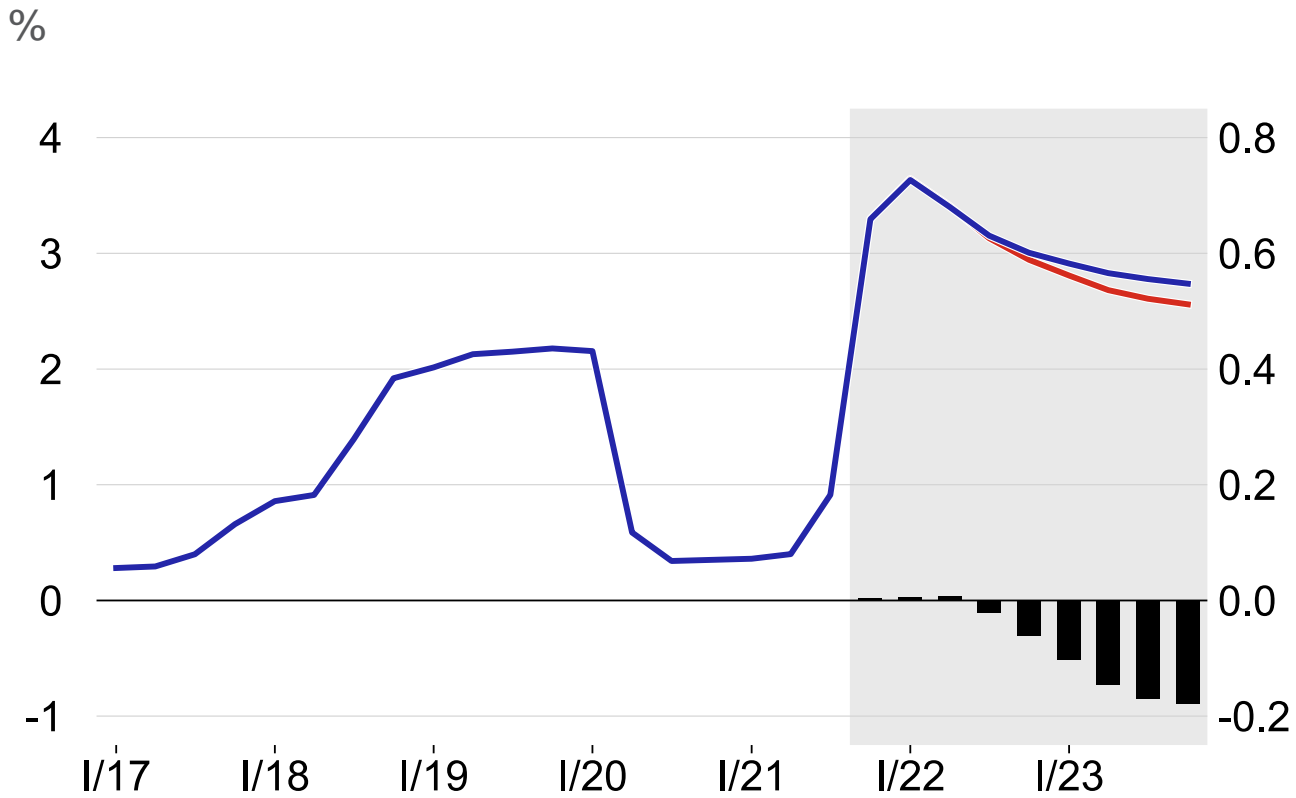
Relevant partial channels:



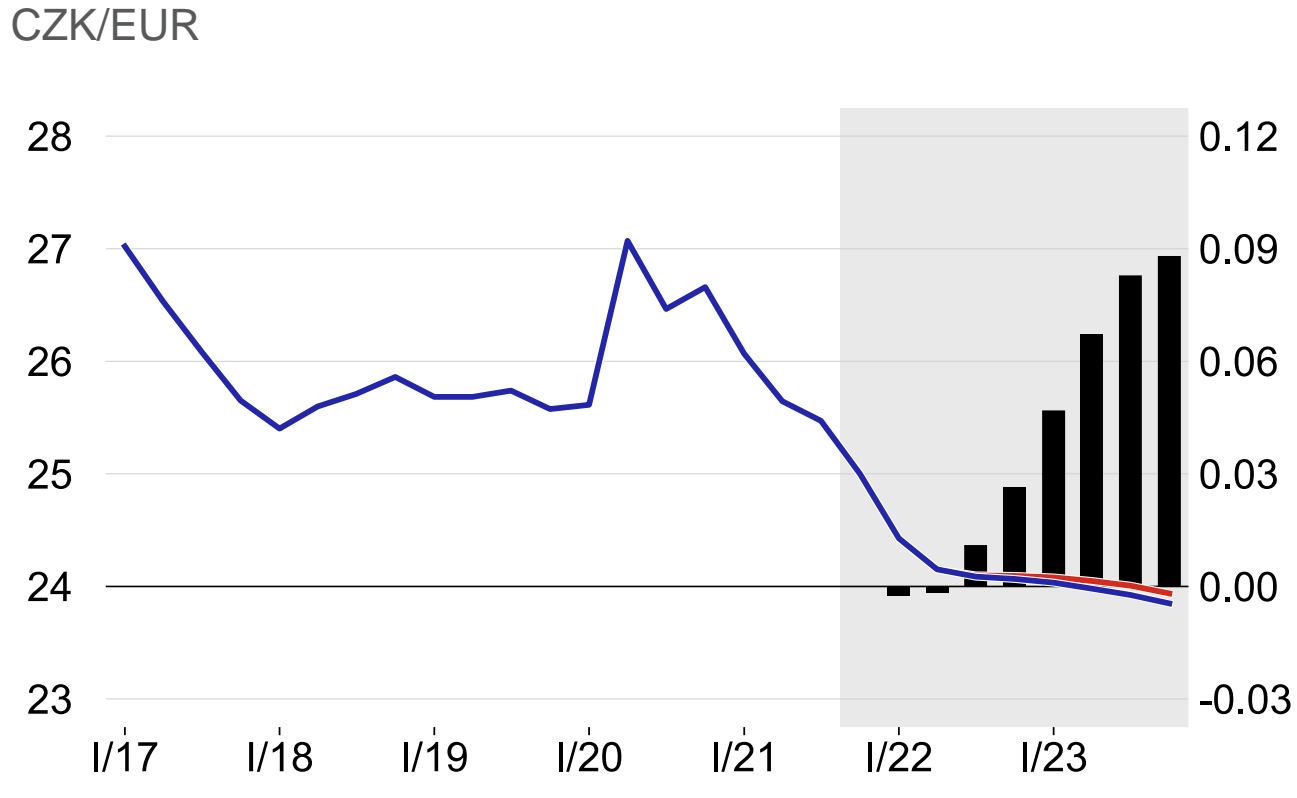
- The impact of high inflation on government budget balance is ambiguous, depending whether better tax collection (thanks to higher nominal bases) is able to cover expanded government spending.

Scenario of fiscal restriction in 2023 (MPR Autumn 2021)

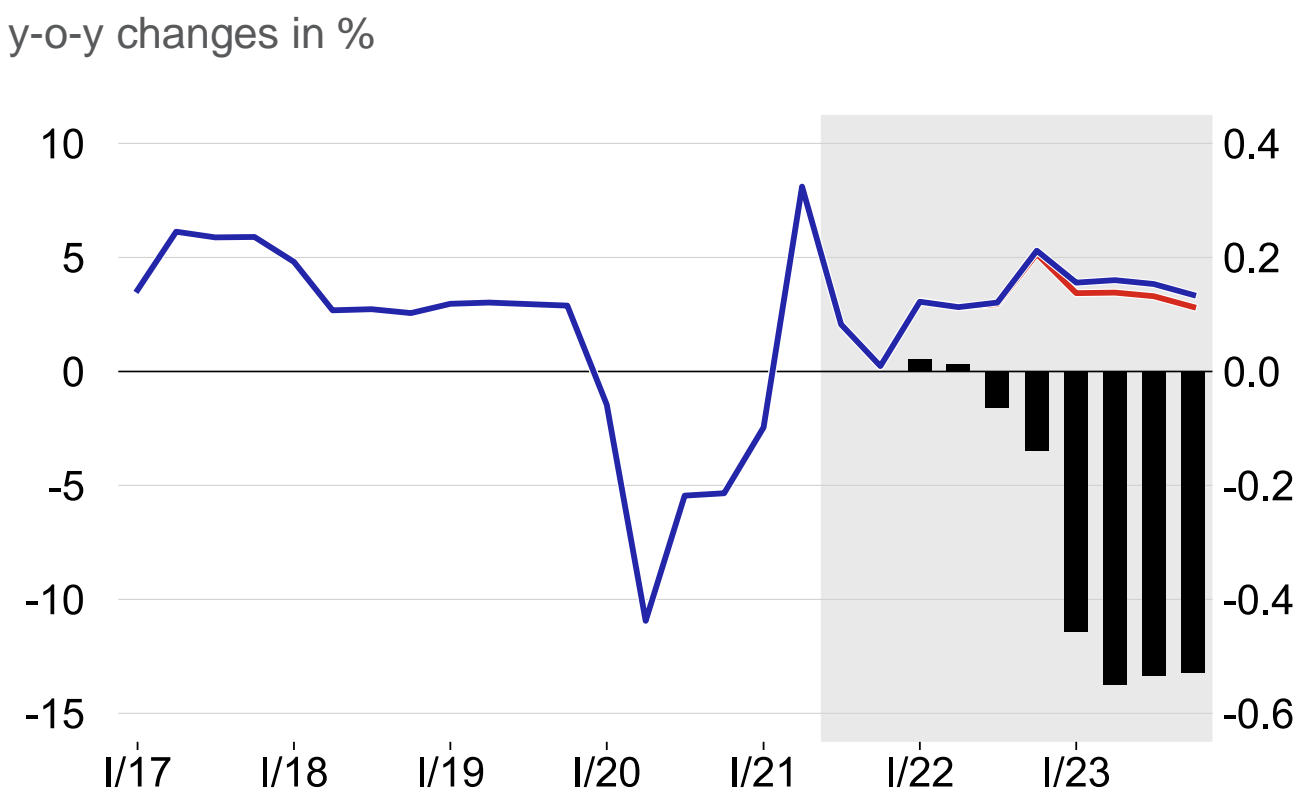
3M PRIBOR



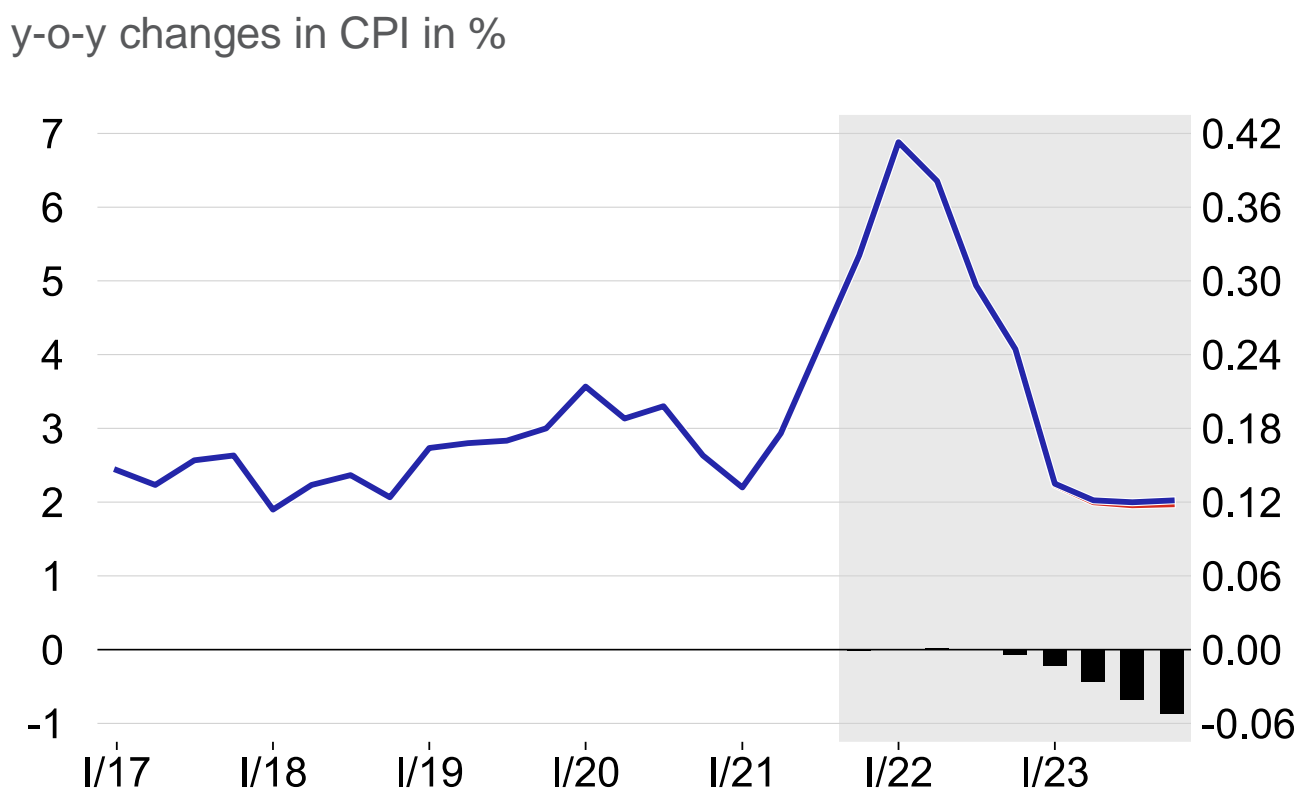
Nominal exchange rate



Real GDP growth



Inflation



— Baseline
— Scenario of fiscal restriction in 2023
█ Difference (rhs)

- The **fiscal scenario** assumed a public finance consolidation of 1% of GDP in 2023, combining hypothetical measures on both the general government expenditure and revenue sides.
- This scenario implied lower GDP growth, marginally lower interest rates in the second year and a slightly weaker exchange rate.