

---

# COVID-19 and the Czech National Bank's Prudent Risk-Management Approach to Policy

**Tomáš Holub**

CNB Board Member

The Better Policy Project Seminar

17 February 2021



---

## Outline

- Monetary policy under uncertainty
- Developments prior to the Covid shock
- Adverse effects of the Covid shock
- The CNB's policy response to the Covid shock





# Monetary policy under uncertainty



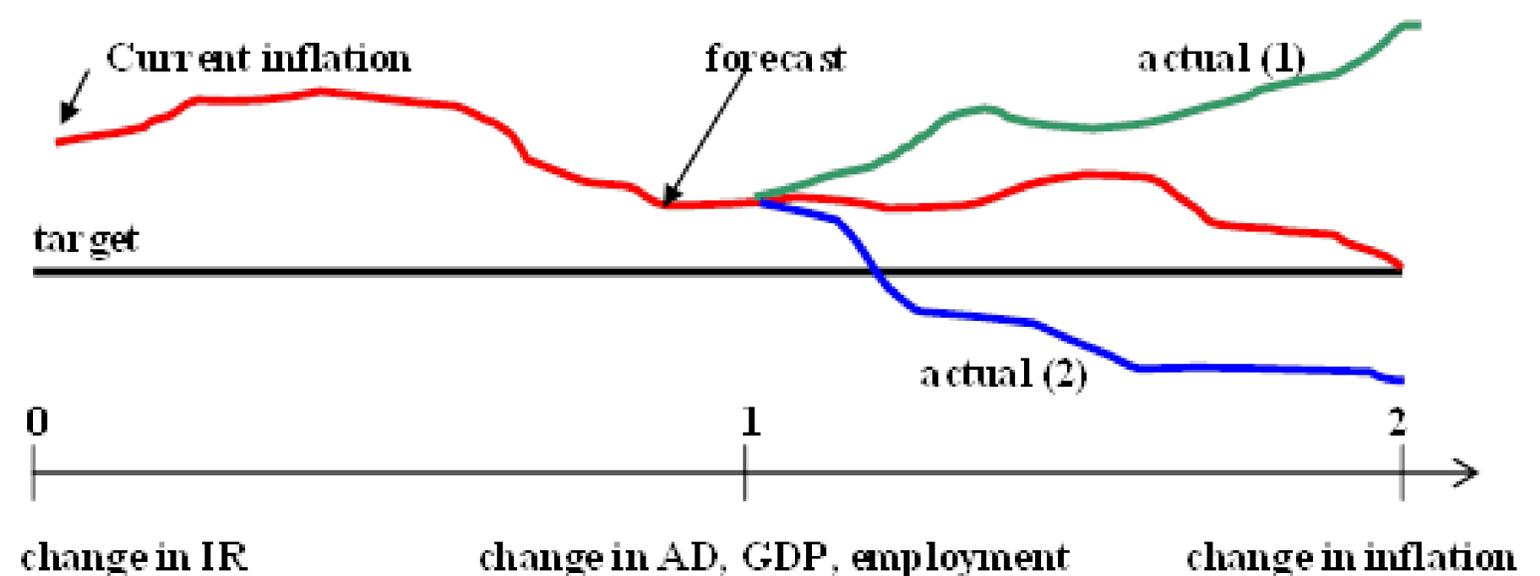
## Inflation-forecast targeting in theory

$$\pi_{t+1} = \pi_t + dy_t + \varepsilon_{t+1}$$

$$y_{t+1} = by_t - c(R_t - \pi_t) + \eta_{t+1}$$

$$L(\pi_t) = \frac{1}{2}(\pi_t - \pi^*)^2 \quad \min_{R_t} E_t \delta^2 L(\pi_{t+2})$$

$$R_t = \pi_t + \frac{1}{dc}(\pi_t - \pi^*) + \frac{d + db}{dc}y_t$$



- The inflation-forecast-targeting theory assumes additive, normally distributed shocks, in a known NK model of the economy.
- The optimal policy (for strict inflation targeting) is then to set the nominal interest rate in each period at the level that equates the mean forecast of inflation at the relevant policy horizon with the target.
- The optimal policy is identical to the certainty benchmark. Unforeseen shocks lead to deviations from the target, creating communication challenges and implying a need to reset policy accordingly in each period.

# Optimal policy with more complex uncertainty

Uncertainty	Example	Complexity increase	Implication for policy relative to certainty case
<b>Additive Linear</b>	<ul style="list-style-type: none"> <li>Equation error in linear model</li> <li>Uncertain time lag in linear model</li> </ul>		<ul style="list-style-type: none"> <li>None</li> <li>None</li> </ul>
<b>Multiplicative Non-linear</b>	<ul style="list-style-type: none"> <li>Uncertain coefficient(s)</li> <li>Uncertain functional form of Phillips curve</li> </ul>		<ul style="list-style-type: none"> <li>More aggressive or cautious (depends on study)</li> <li>More cautious</li> </ul>
<b>Model/ Knightian</b>	<ul style="list-style-type: none"> <li>Model uncertainty</li> <li>Equation uncertain</li> <li>Noise in data</li> </ul>		<ul style="list-style-type: none"> <li>More aggressive or cautious (depends on study)</li> <li>More aggressive or cautious (depends on model)</li> <li>More cautious</li> </ul>

- Already the intermediate forms of uncertainty imply a different optimal policy from pure IFT (Brainard vs. Leiderman principle).
- Moreover, the Covid shock is a clear example of Knightian uncertainty.
- This type of uncertainty was also present for other key monetary policy decisions in the last decade.
- The main objective with this type of uncertainty is to “avoid the dark corners”, i.e. to eliminate the worst possible outcomes.

## Example: Policy dilemma upon entry into ER commitment

		Monetary policy	
		Passive	Active
Shocks to inflation	Upwards	"Lucky fool"	Fast exit
	Downwards	Deflation trap	Delayed exit

- The “lucky fool” outcome would have been the ideal one but was beyond the central bank’s control.
- A fast exit would have had costs in terms of reputation, but with a robust departure from the ZLB.
- The deflation trap was seen as very risky (and more probable than the CNB’s model simulations were suggesting).
- A delayed exit would have confirmed that MP easing was needed even more than originally thought (this is what happened in reality).

## Example 2: Dilemma upon exit from ER commitment

		Exit	
		Sooner	Later
Shocks to inflation	Upside	"Lucky fool"	Overdue exit
	Downside	Premature exit	Thoughtful exit

- Similar to the entry decision.
- But in this case, the “mini-max” decision-making rule called for a more careful approach rather than an aggressive policy response.
- Some people criticised the CNB for an overdue exit ex post, but this was in fact the rational choice ex ante.

## Covid policy dilemma

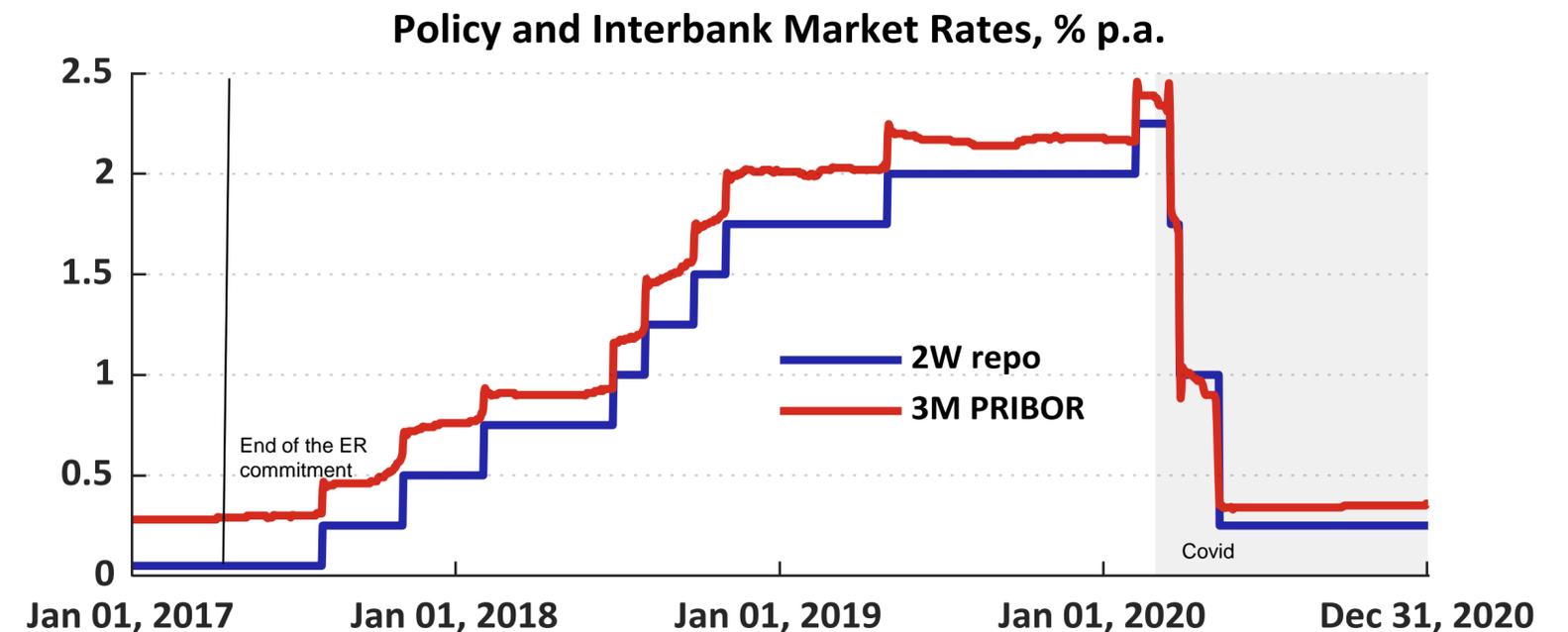
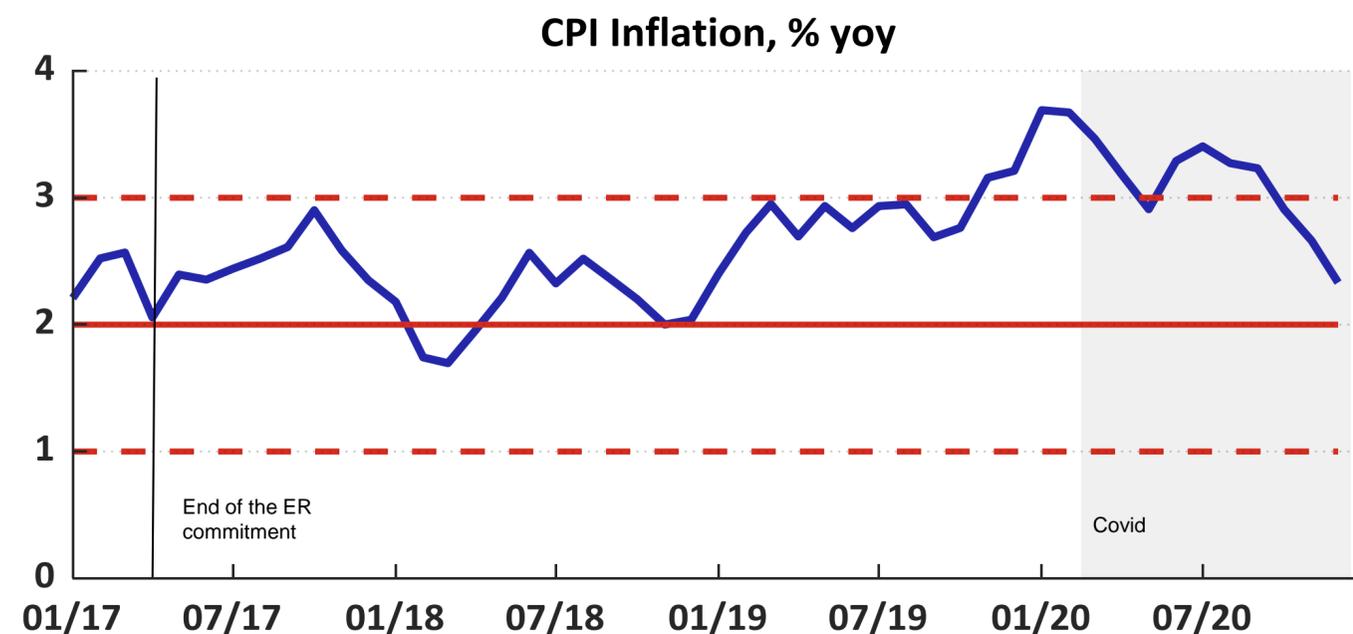
		MP easing	
		Slow	Fast
Covid shock	Not so bad	“Lucky fool”	Fast MP normalisation
	Very bad	Deep recession, deflation risk	Proper anti-cyclical MP

- Similar type of situation to the debate about the ER commitment.
- With the very high uncertainty brought about by this unprecedented type of shock, monetary policy cannot mechanically follow the median forecast.
- Instead, you focus on avoiding the “dark corners”, i.e. the worst possible outcomes.
- In this situation, this type of “mini-max” decision-making rule justified fast easing of monetary policy (simultaneously with easing of macroprudential tools).

# The Czech economy prior to the Covid shock



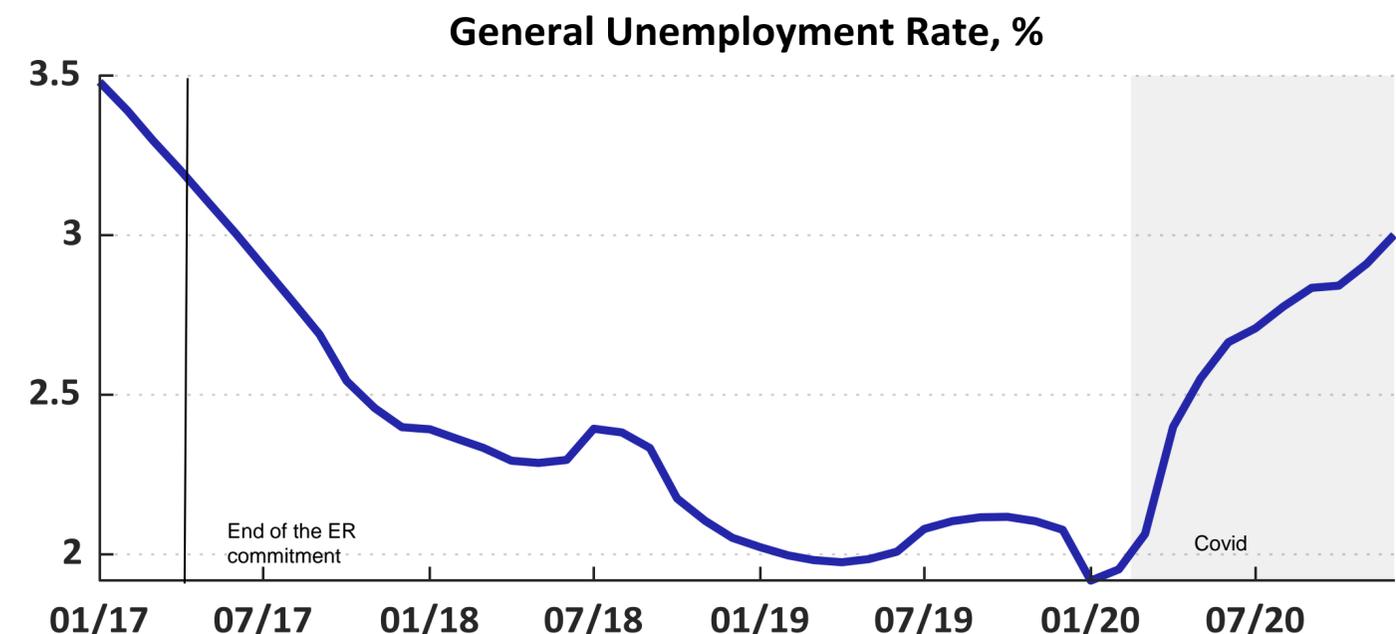
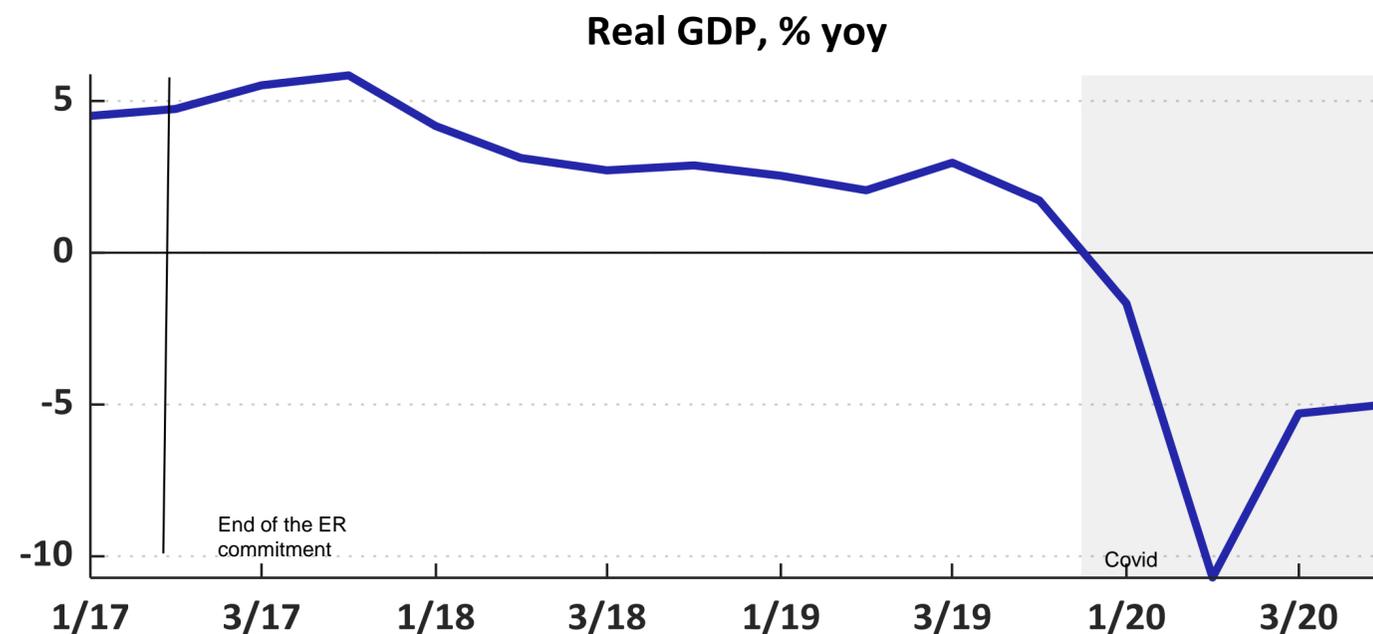
## Inflation and monetary policy



### Inflation somewhat above the target and gradual normalisation of monetary policy

- Inflation was mostly above the target after the exit from the ER commitment, exceeding the upper boundary of the tolerance band in early 2020 (driven primarily by high food and administrative prices, but also by core inflation).
- Accommodative monetary policy was gradually removed, creating space for an effective monetary policy response using the conventional instrument, i.e. policy interest rates, in the event of adverse shocks.

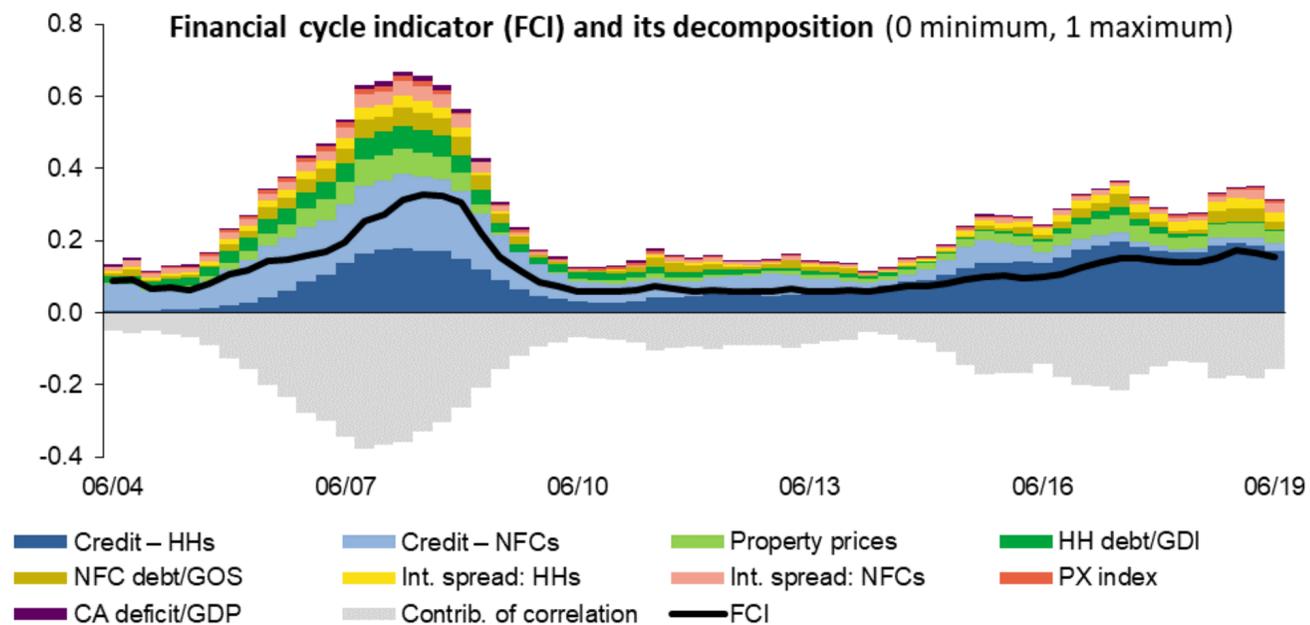
## Real economy



### Favourable real economic developments and an overheating labour market

- Despite gradually decelerating real GDP growth, a positive output gap opened at the end of 2019, indicating inflationary pressures.
- The unemployment rate and the share of unemployed persons remained close to historical lows, being the lowest in the EU.
- The exceptional labour market tightness was also mirrored in the number of vacancies, which was significantly higher than the number of registered unemployed persons.

# Financial cycle

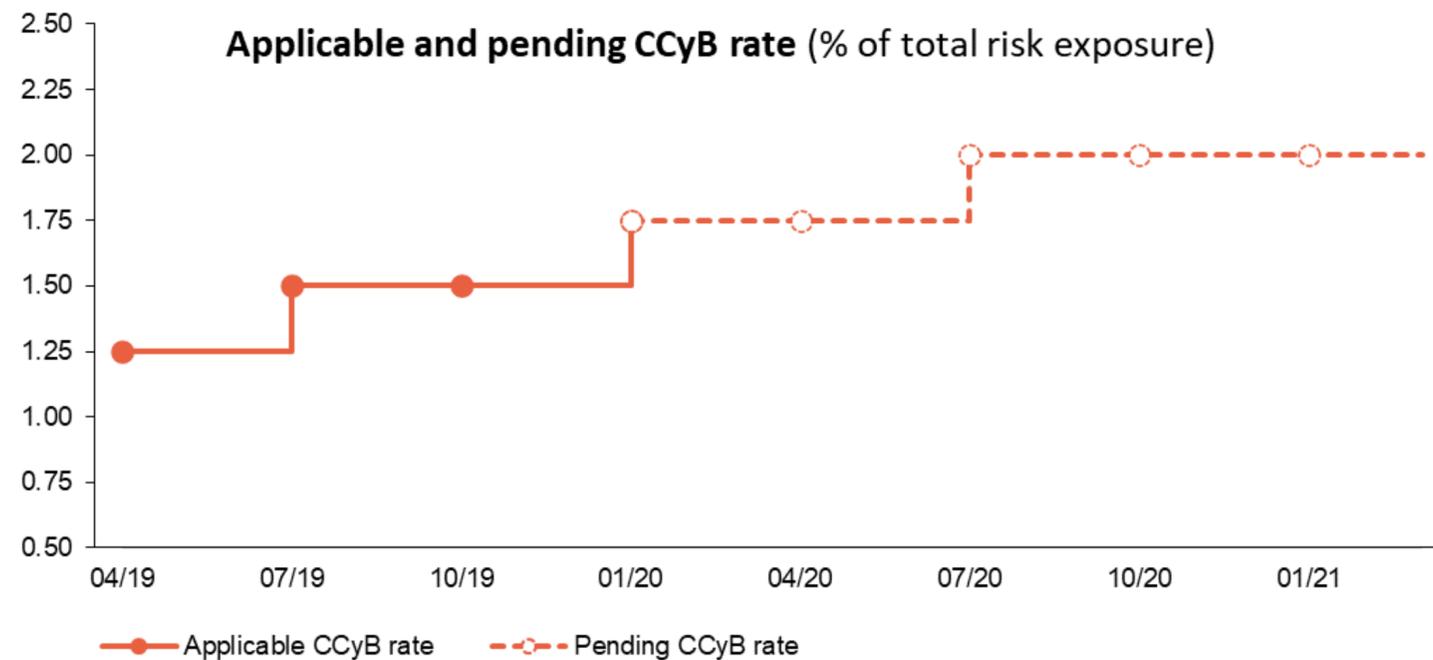


Source: [CNB](#)

## Peak of the financial cycle and booming house prices and mortgages

- Low default rates, declining risk weights in the banking sector, and booming mortgages.
- Overvaluation of house prices estimated at about 20% by the CNB.
- Financial stability measures – regulation of the LTV, DTI and DSTI ratios was gradually introduced and tightened over time to reduce the build-up of financial vulnerabilities.

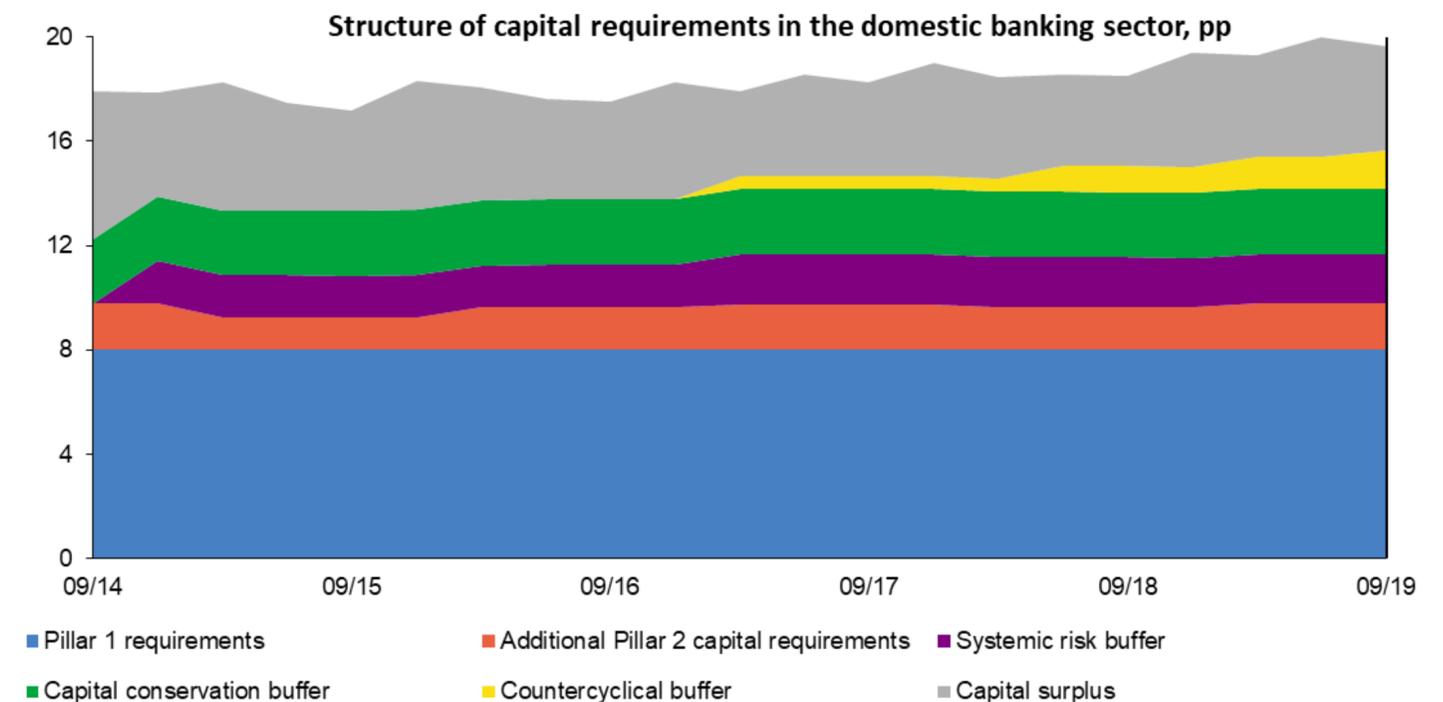
# Macroprudential policy



Source: Risks to Financial Stability and their Indicators 2019

## Increasing countercyclical capital buffer

- During 2019, the pending CCyB rate was to continue increasing to 2% in mid-2020 (while the “policy-neutral” CCyB rate for covering the usual level of cyclical risks was 1%).
- Resilient banks with high ROA and ROE and a capital surplus providing space for further growth of commercial banks’ balance sheets.

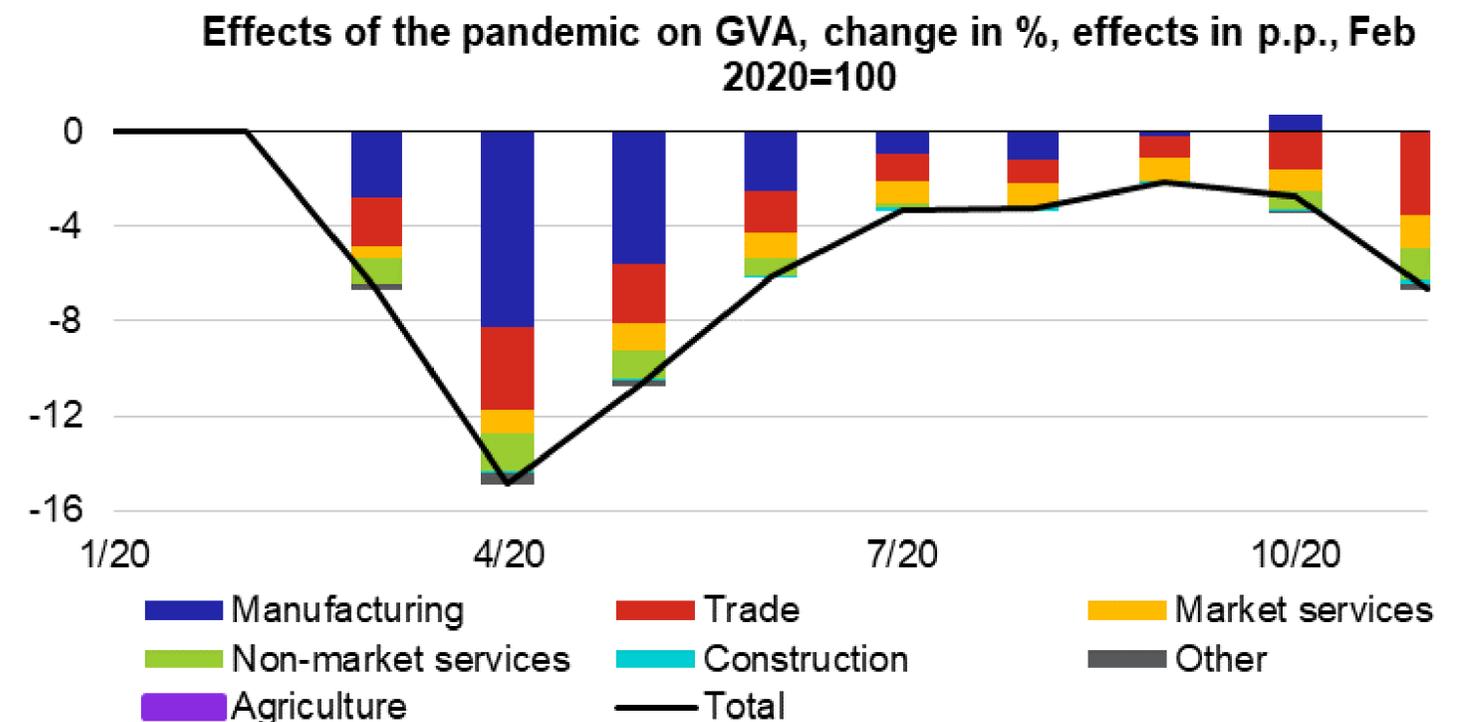
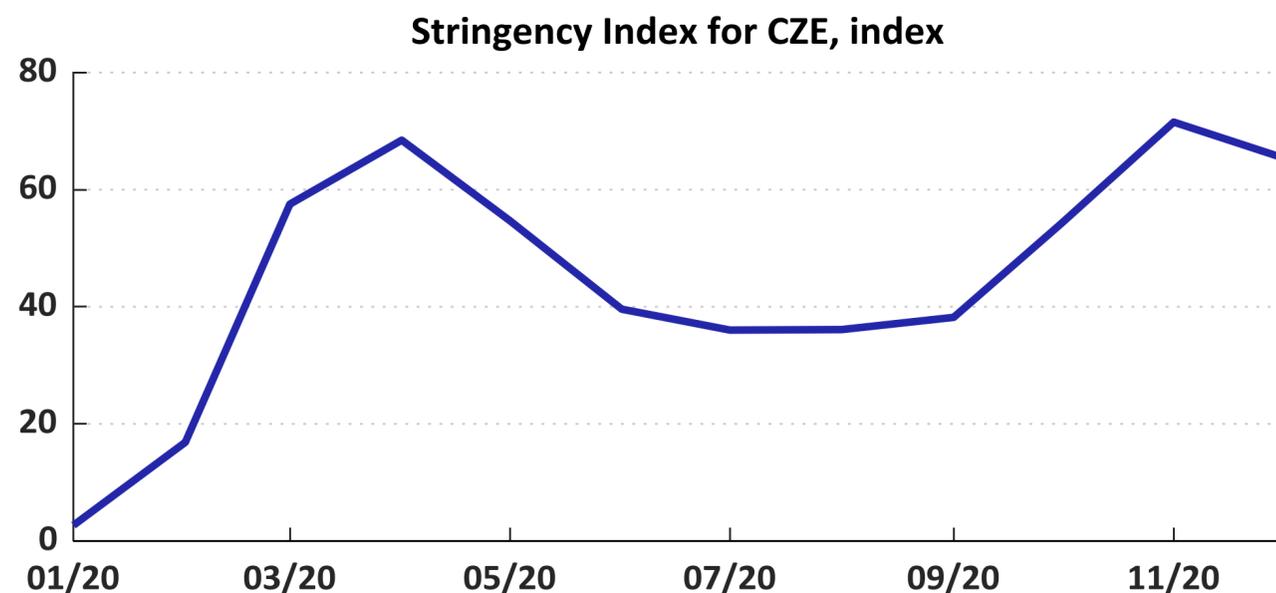




# The Czech economy and the Covid shock



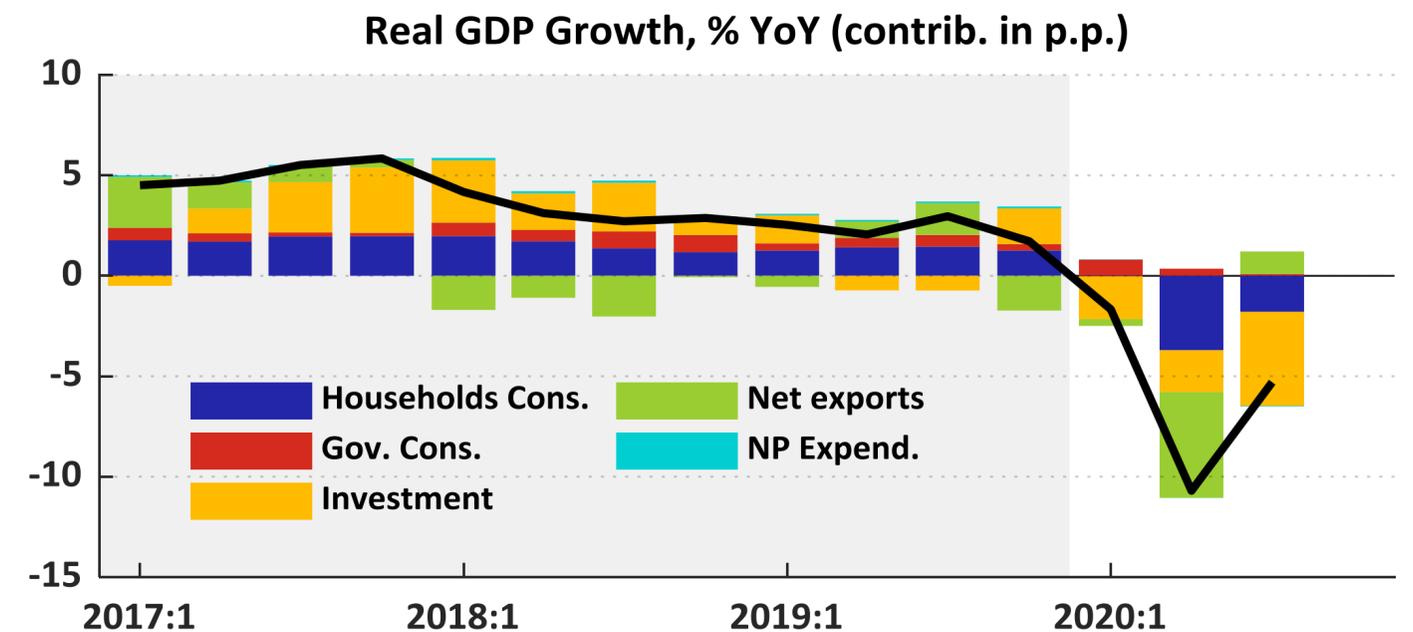
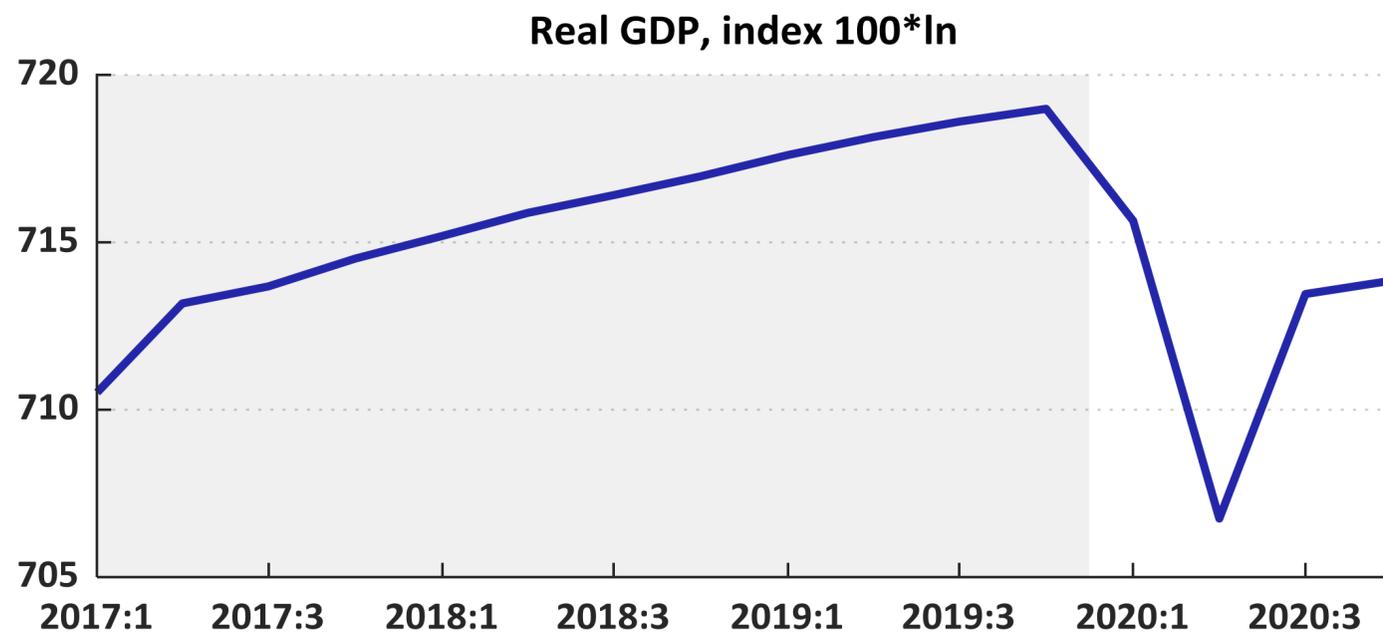
## Lockdowns and the supply side



### Services and trade hit heavily by lockdowns

- Two peaks of restrictive measures as indicated by the stringency index – March/April and November 2020.
- Adverse effects on trade and services, while manufacturing has remained resilient during the second wave compared to March/April 2020, benefiting mainly from its export orientation and no significant disruptions to international trade.

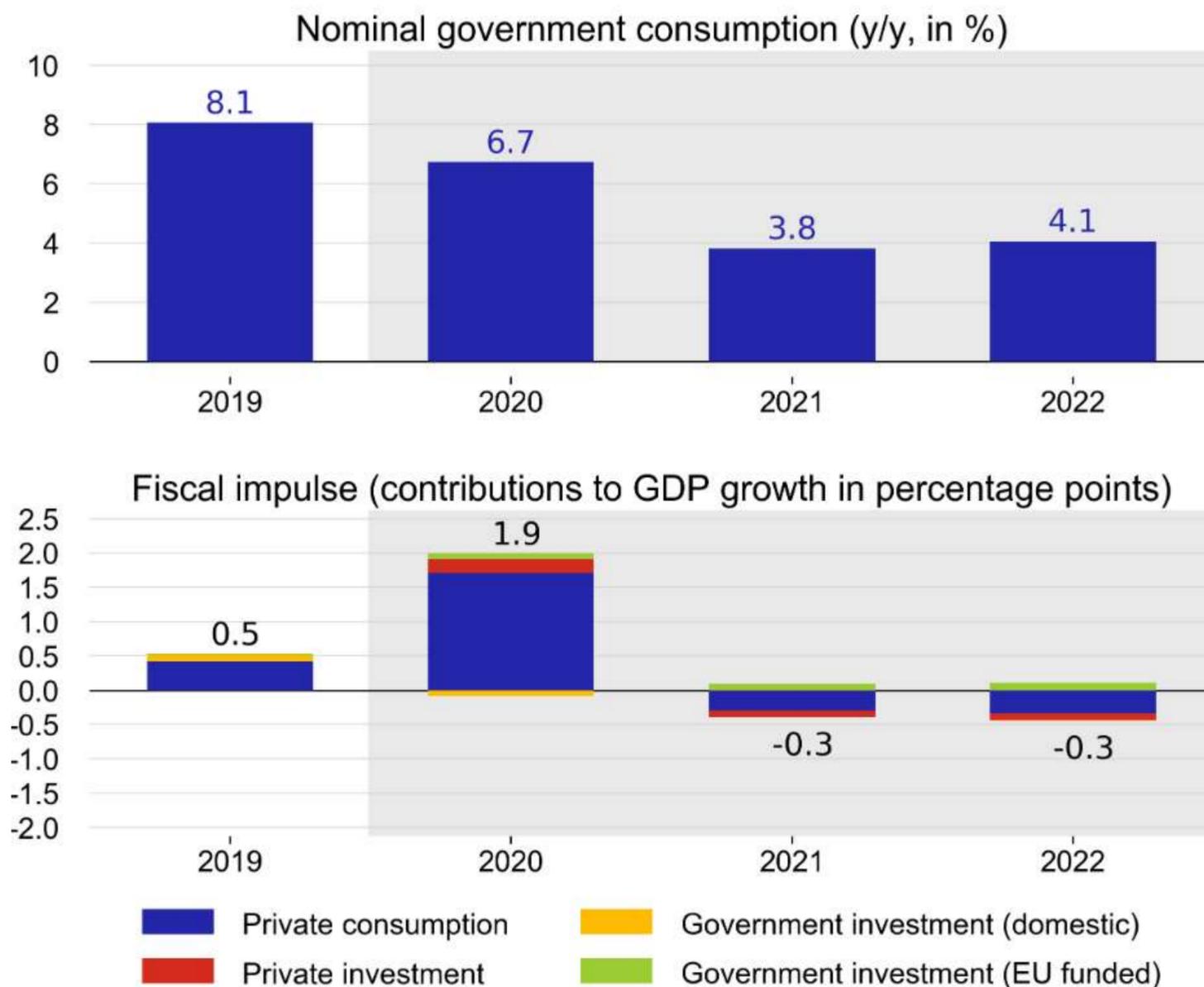
## Lockdowns and demand side



### Private consumption and investment have declined

- The real GDP contraction bottomed out in 2020Q2 and a negative output gap opened as potential output dropped (owing to shutdowns of sectors). Only a partial rebound in 2020H2.
- Real GDP declined by 5.6% in 2020 compared to 2019.
- Consumption and investment have continued to decline, while net exports have recovered.

# Fiscal policy

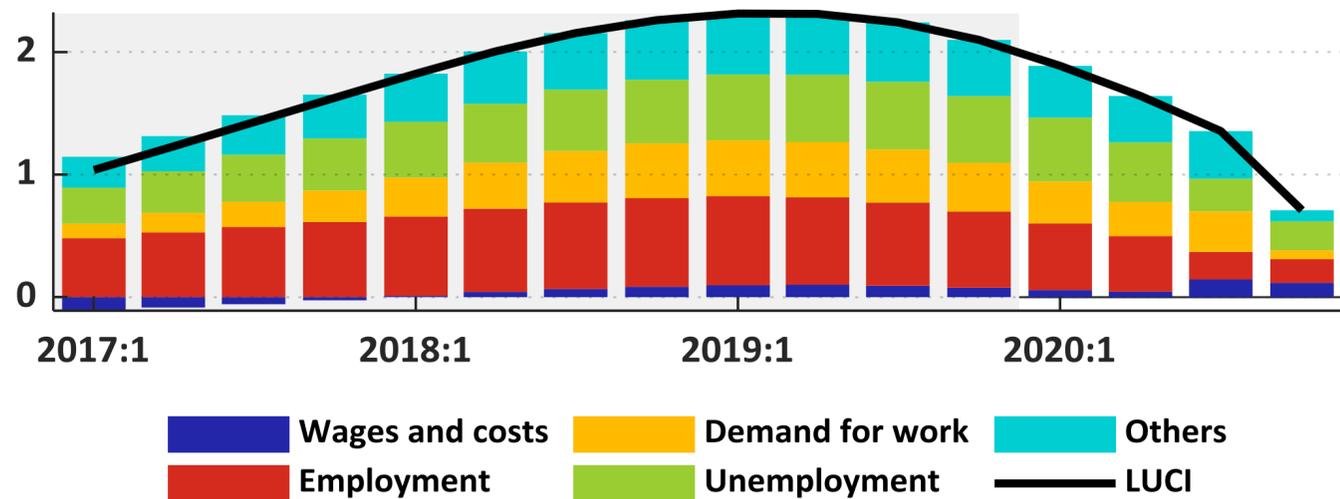


## Countercyclical fiscal response

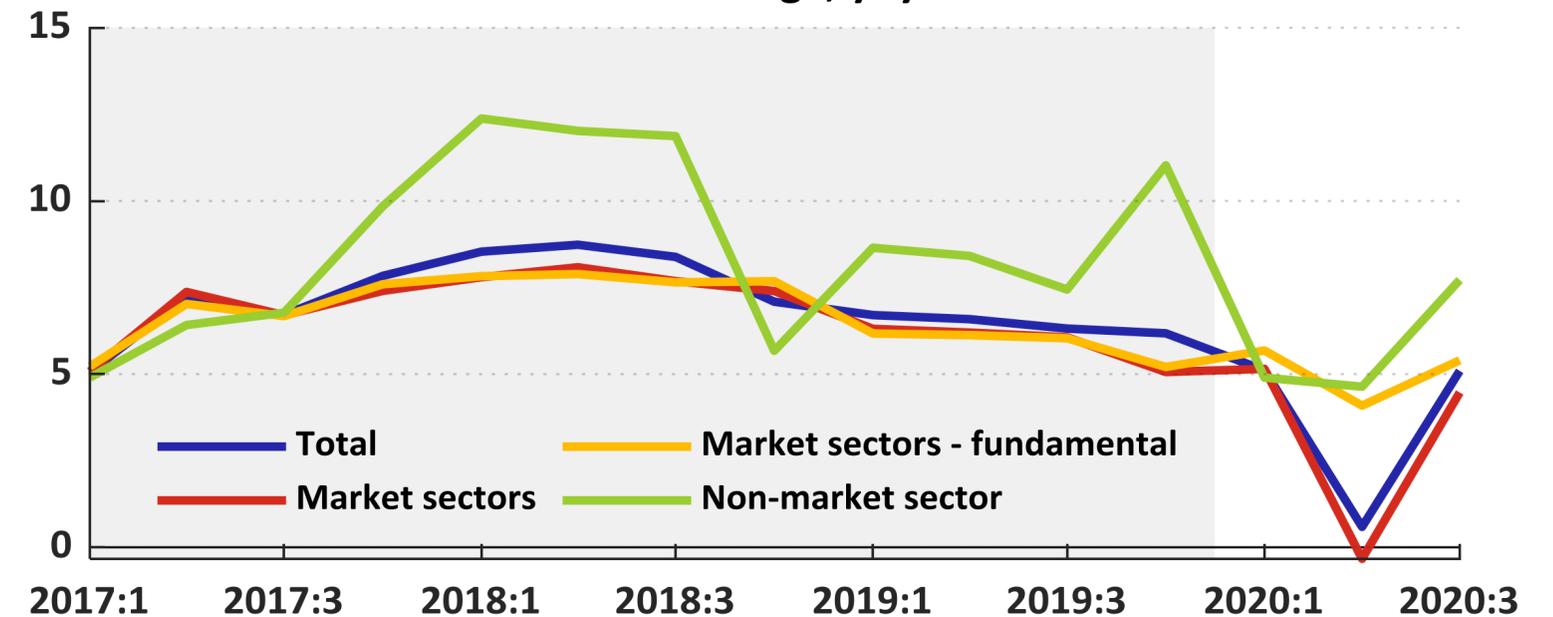
- Fiscal support programmes:
  - *Employment-related measures* – anti-virus programmes (similar to “Kurzarbeit”) helping to protect jobs and compensating employers.
  - *Economic stimulus measures* – Covid loan guarantees and rent support in sectors affected by lockdowns (entrepreneurs, tourism, gastro and culture), compensation bonuses for self-employed and small limited liability companies, and support for parents.
- Private consumption will be partially boosted this year by a cut in wage taxation, mitigating the negative fiscal impulse this year.

# Labour market

LUCI (Labour Utilization Composite Index), index with stds on vertical axis



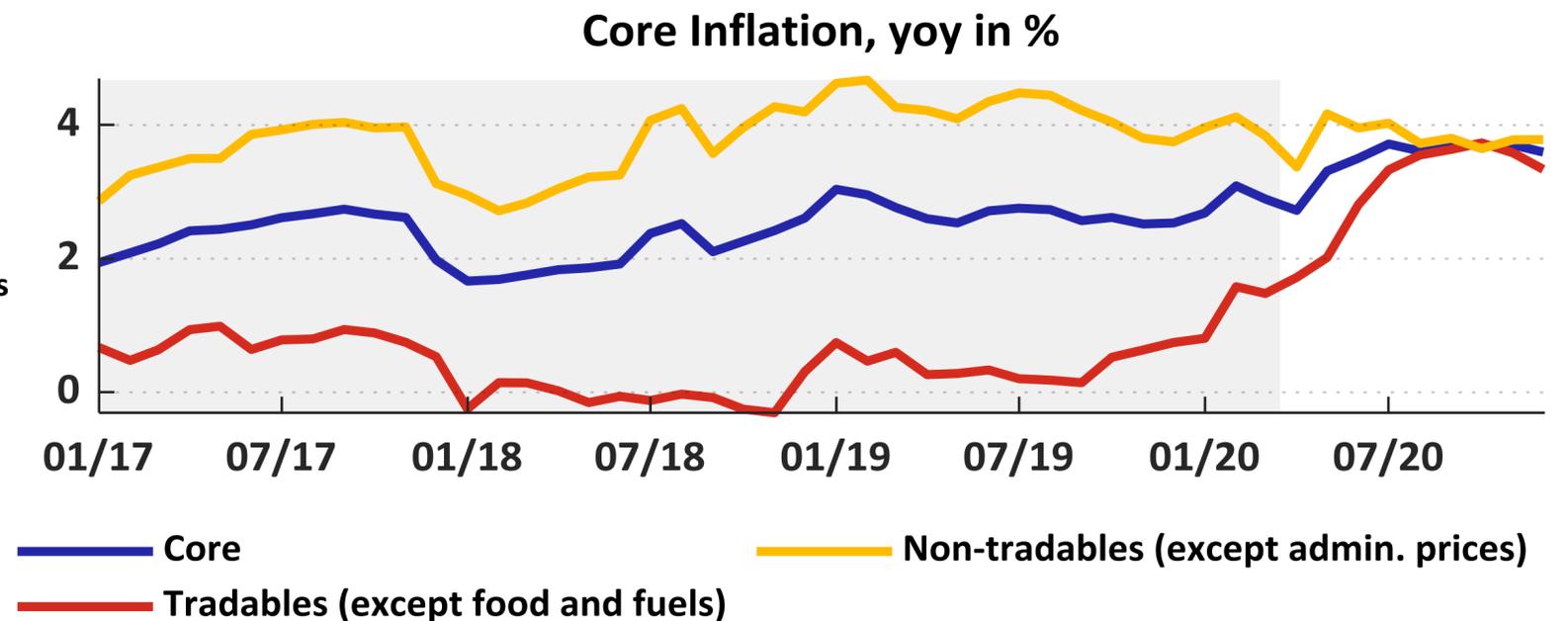
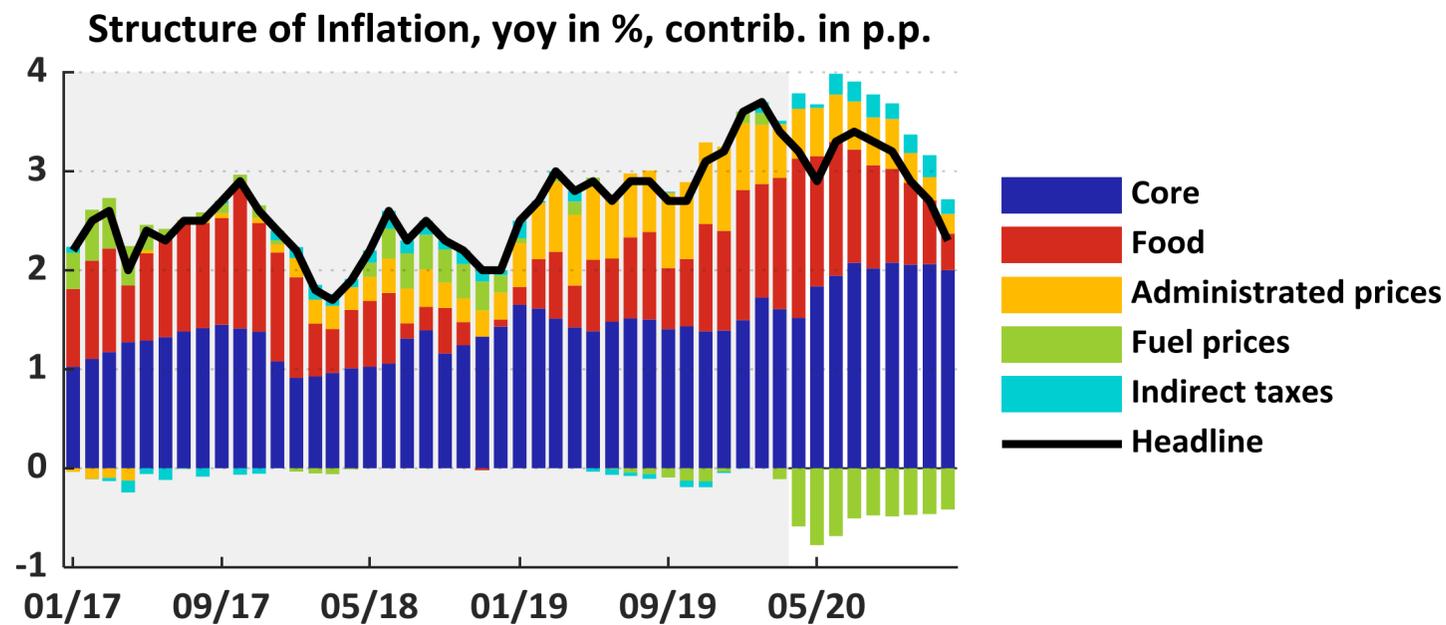
Nominal Wage, yoy in %



## The labour market has cooled on the back of the pandemic

- Despite the countercyclical government measures, employment has continued to decline and unemployment has increased (the general unemployment rate went up from about 2% in 2019 to about 3% by the end of 2020).
- Wage growth is slowing due to the pandemic and its adverse effects on the real economy (with a lot of volatility in the published and expected data due to one-off effects).

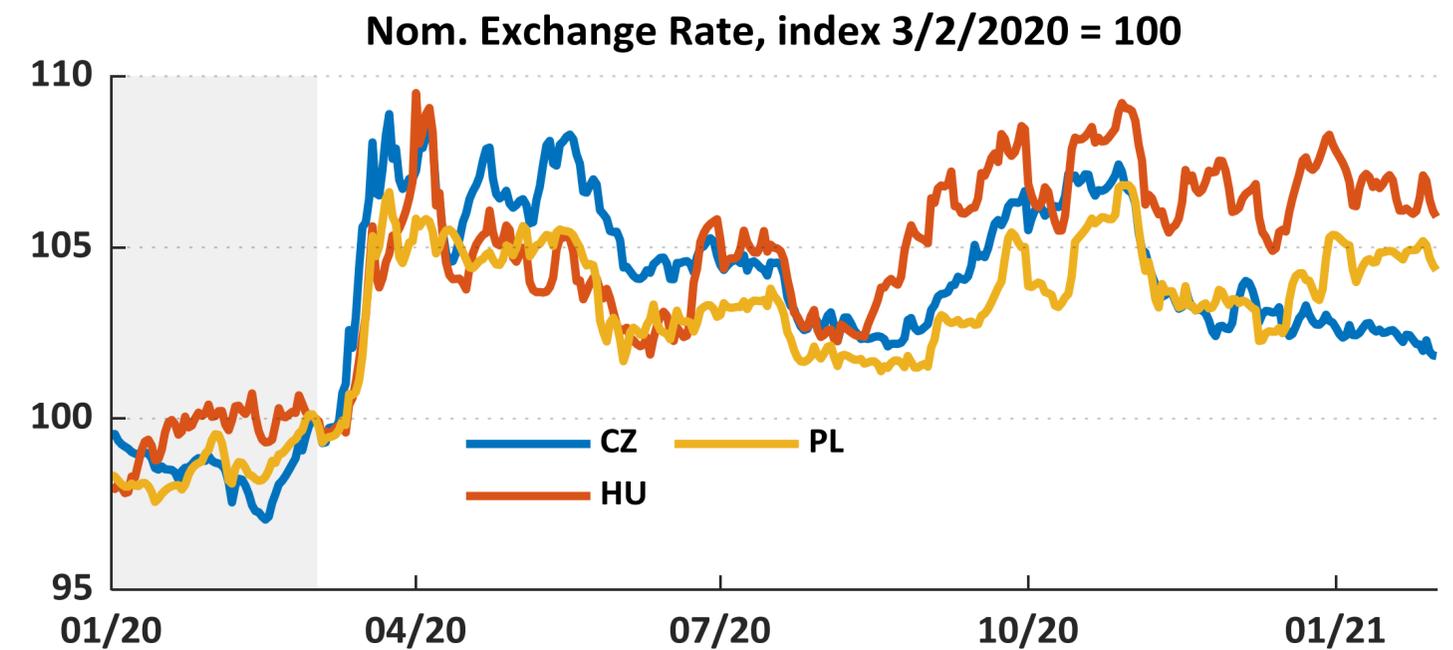
# Inflation



## Decelerating inflation

- Food price inflation decelerated sharply at the end of last year, along with a fall in fuel prices.
- Elevated core inflation is still the biggest contributor to price growth.
- The core inflation dynamics have reflected accelerating growth in goods prices (koruna depreciation), while growth in prices of services has also remained elevated.

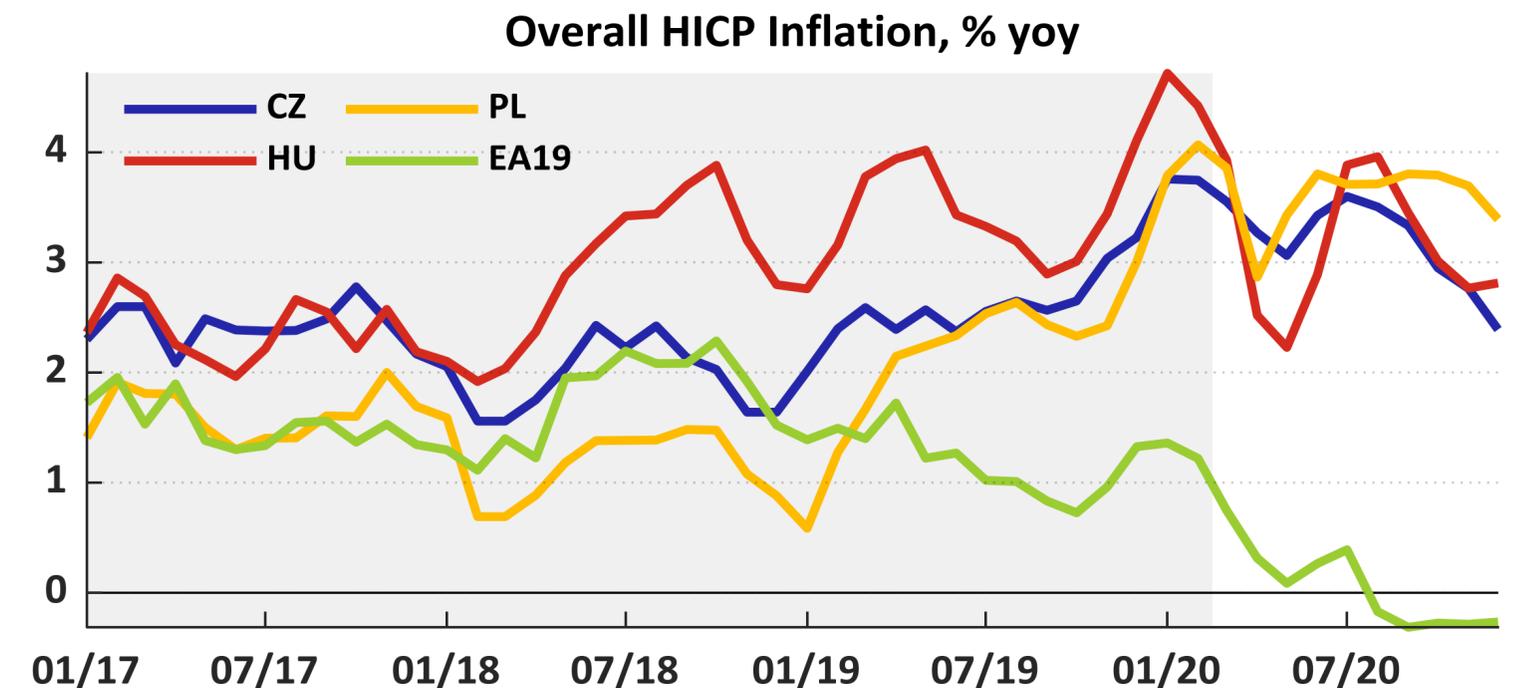
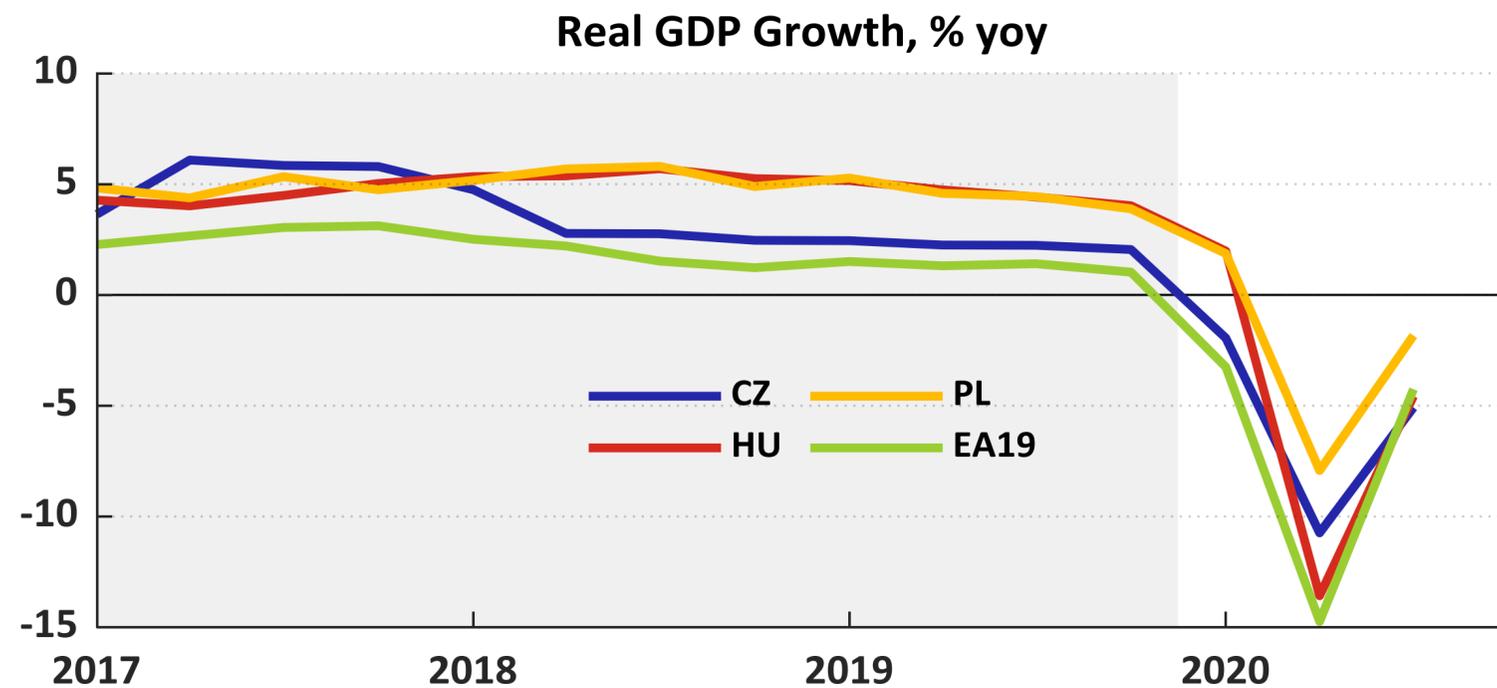
## Czech koruna



### The initial nominal depreciation of the koruna is fading out

- The koruna depreciated during the outbreak of the pandemic, before returning to appreciation. The recent appreciation has been driven partly by the CNB's new forecast and its communication.
- Initial depreciation comparable with regional peers.

## Comparison with peers



### Comparable economic developments across country peers

- Czech real GDP decline smaller than in EA and HU.
- HICP only slowly decelerating in CZ, HU and PL, while negative in EA at end of last year.

## The CNB's response to the Covid shock

---

## The CNB's response to the Covid shock

Monetary policy

Macroprudential  
policy

### The mandate of the Czech National Bank

- » to maintain price stability,
- » to maintain financial stability and see to the sound operation of the financial system in the Czech Republic,
- » to issue banknotes and coins, manage the circulation of currency and administer clearing between banks,
- » to supervise the entities operating on the financial market.



# The CNB's response to the Covid shock

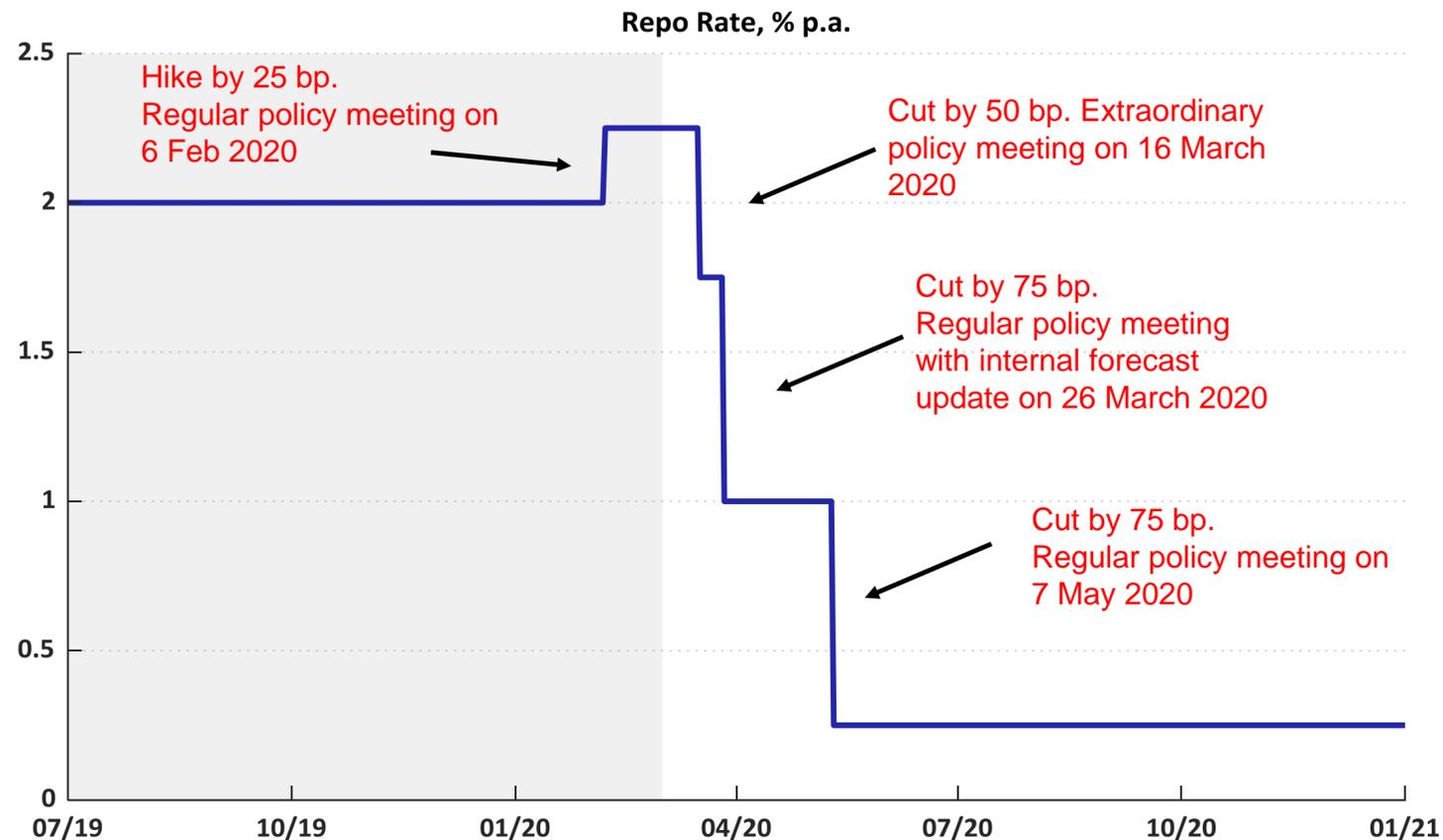
Monetary policy

Macroprudential policy

**Actions of both polices swift and not conflicting, aimed at preserving price stability and financial stability**

		Economic Expansion		Economic Recession	
		Inflationary Pressures	Disinflationary Pressures	Inflationary Pressures	Disinflationary Pressures
<b>Credit Boom</b>	Monetary MacroPru	Tightening > IT Tightening	Easing < IT Tightening	Tightening Tightening	Easing Tightening
<b>Credit Bust</b>	Monetary MacroPru	Tightening Easing	Easing Easing	Tightening < IT Easing	Easing > IT Easing

# The CNB's monetary policy response

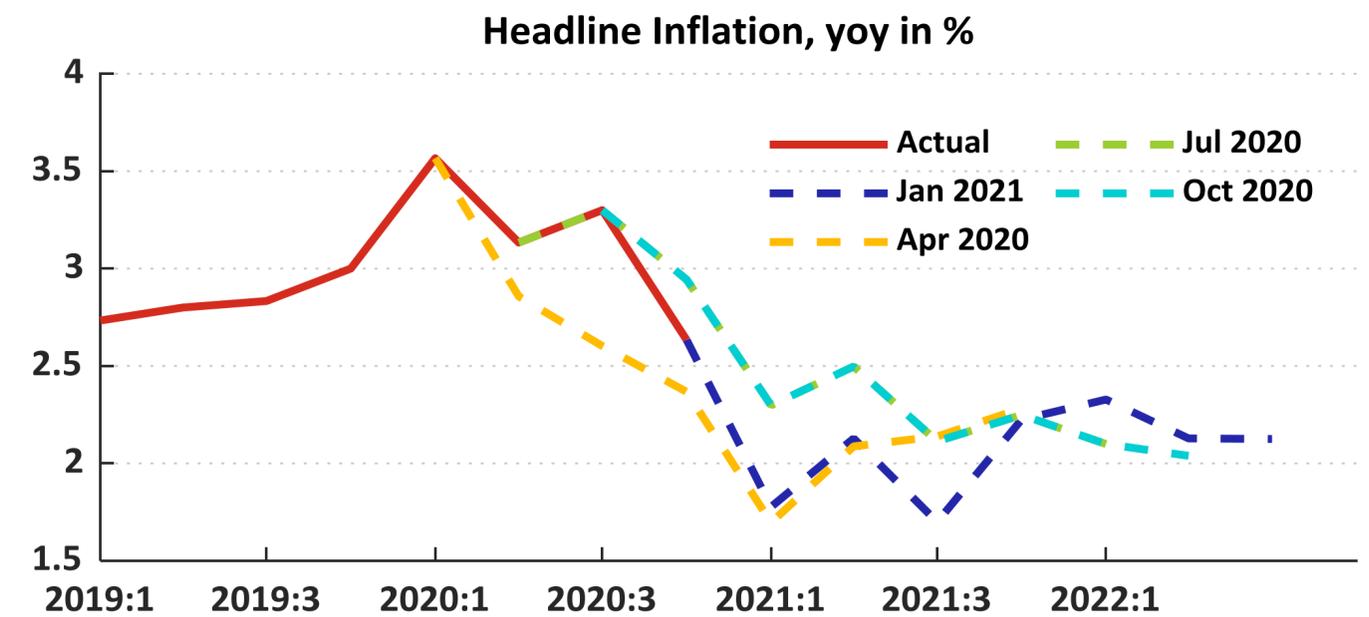
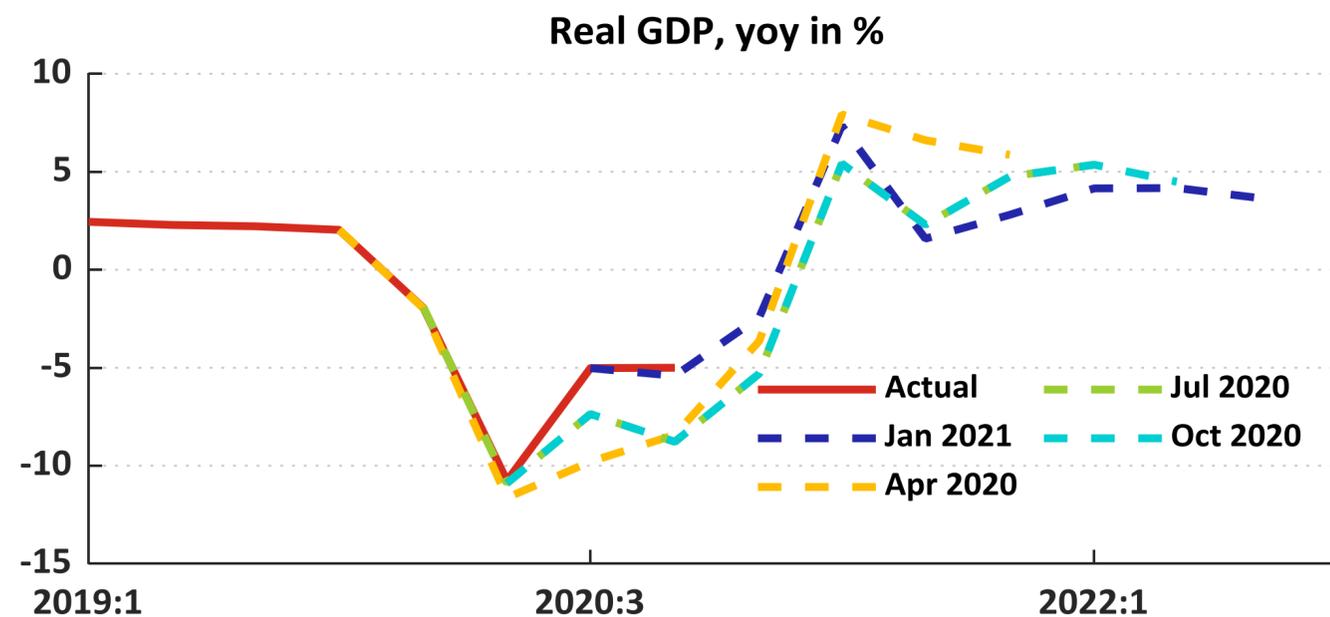


## Monetary policy rate cuts

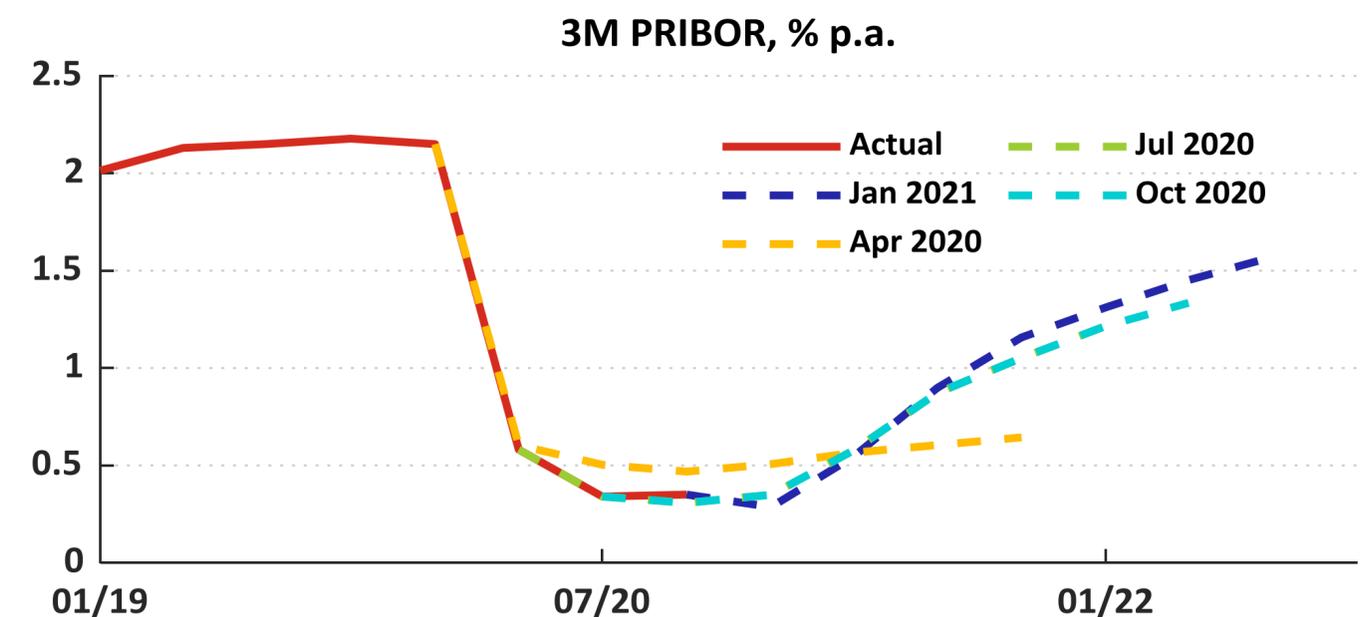
- Extraordinary CNB board meeting early on 16 March 2020 – **cut in response to risks of economic slump and its implications for inflation.**
- The regular meeting on 26 March 2020 was planned originally without a new forecast. However, an extraordinary internal update of the outlook was provided as a basis for the decision-making.
- At the regular meeting on 7 May 2020 a new macroeconomic forecast (a fully fledged forecast round) was provided.

**Monetary policy under flexible IT has responded to both the adverse outlooks and downward risks.**

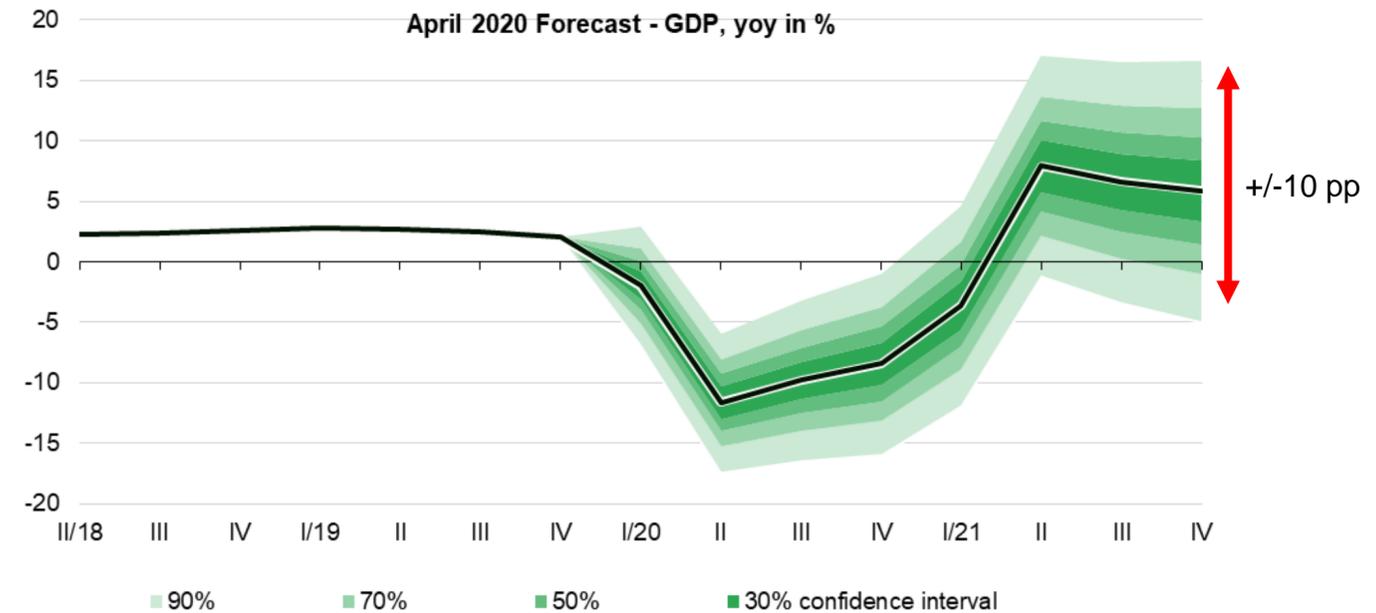
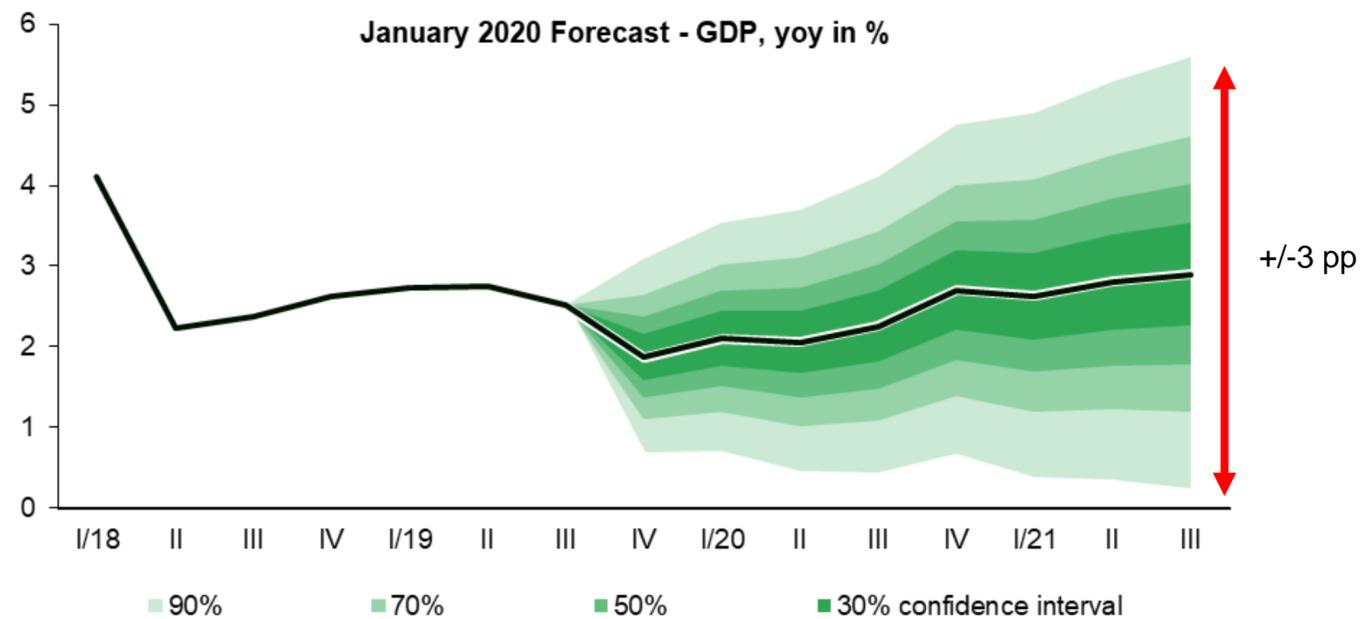
# The CNB's forecasts



- The forecasts were suggesting disinflationary pressures on the back of a drop in real economic activity.
- In line with the price stability objective, an easing of monetary policy was consistent with the forecasts.
- In reality, inflation has remained more persistent than originally expected.

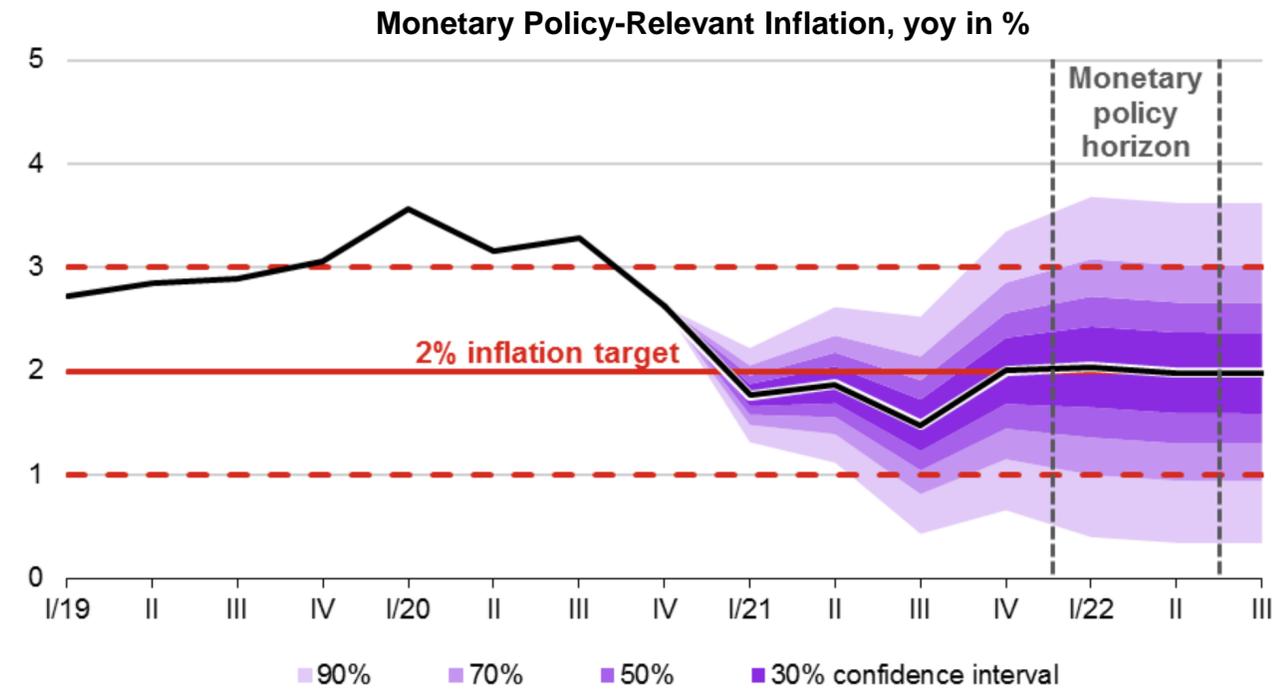
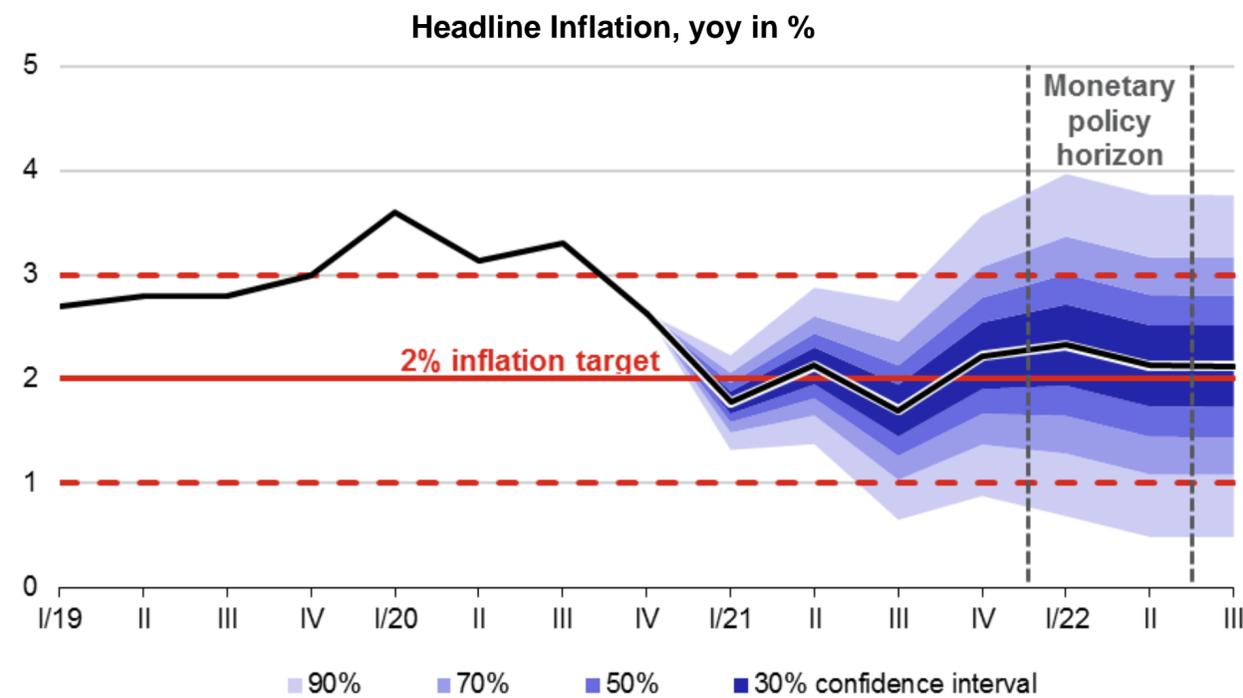


## Elevated risks and uncertainties



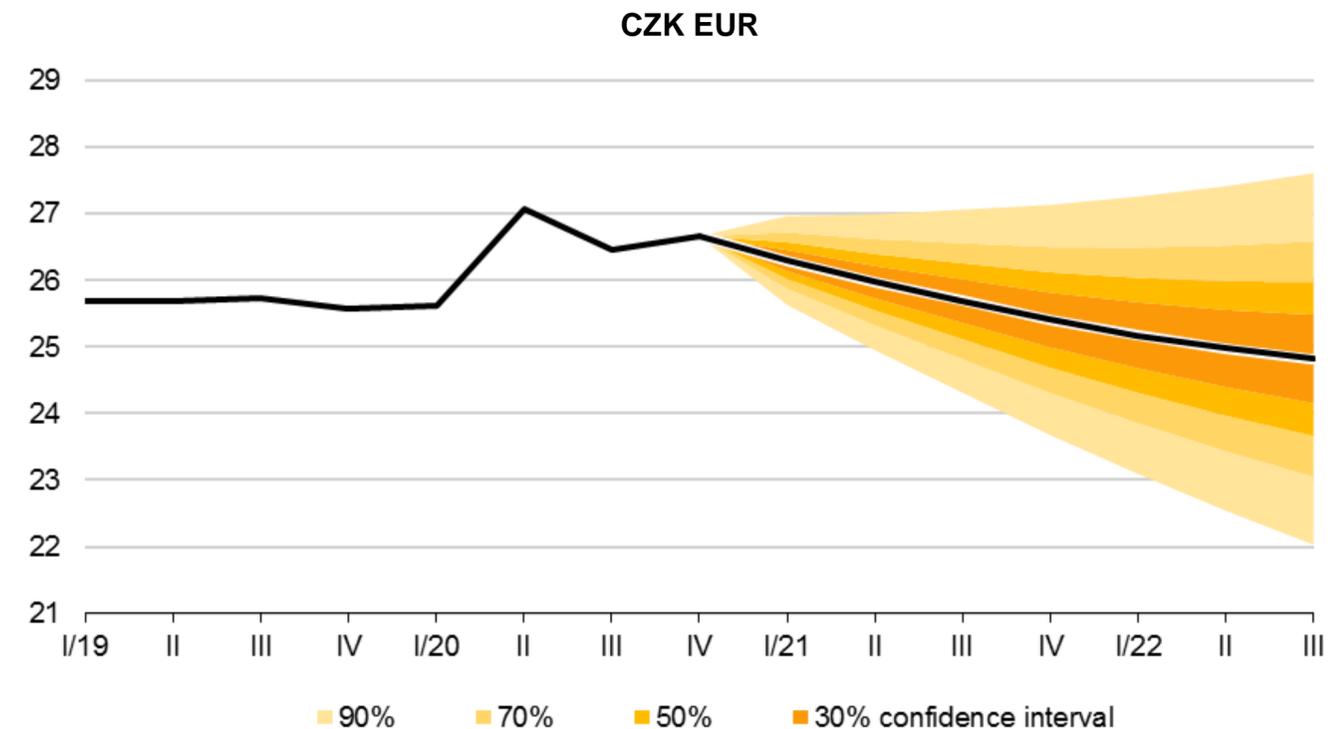
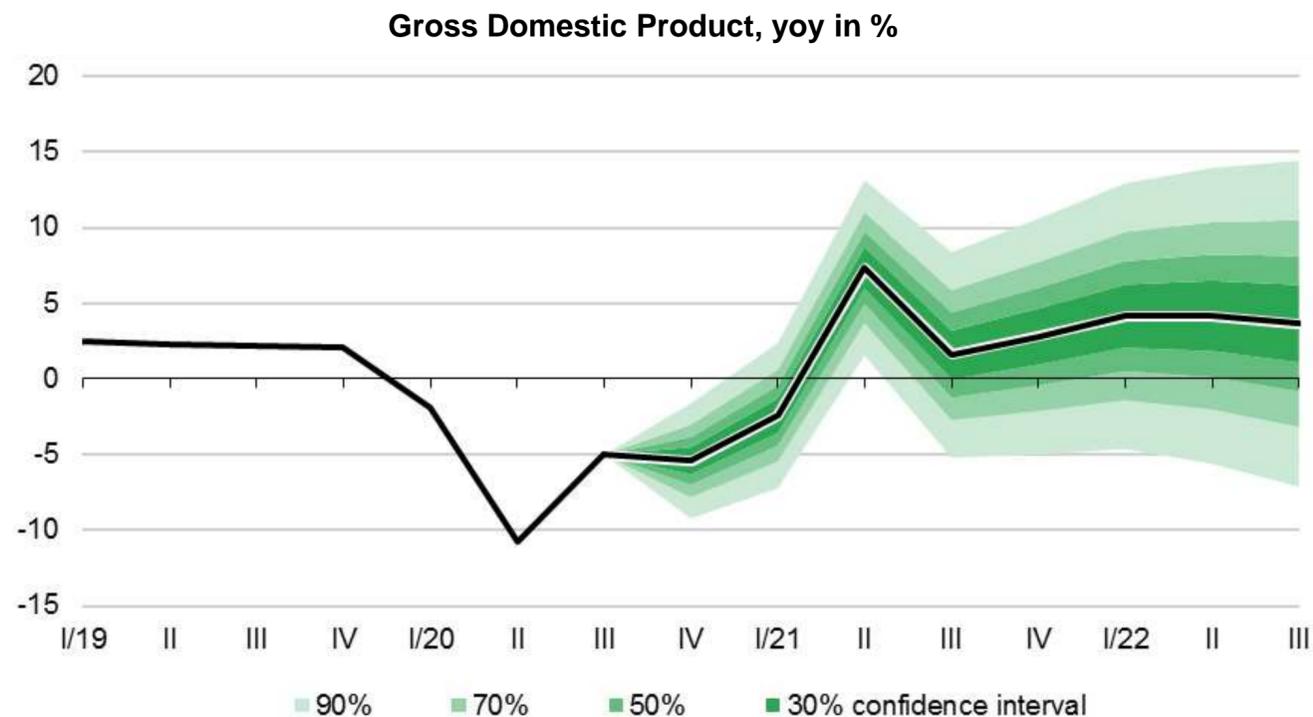
- Increasing uncertainty – widening of confidence bands.
- Risks also elevated; GDP at risk in particular, with clear economic motivation captured by alternative scenarios:
  - April 2020: (i) Longer-lasting pandemic scenario and (ii) pandemic resurgence scenario
  - July 2020: Lower global productivity scenario
  - October 2020: Worse pandemic scenario
  - January 2021: Longer-lasting pandemic-induced downturn scenario
- Internal discussions on unconventional monetary policy measures have started – the current forecast does not indicate a need, but the future outlook is uncertain and luck favours the prepared.

# January 2021 forecast



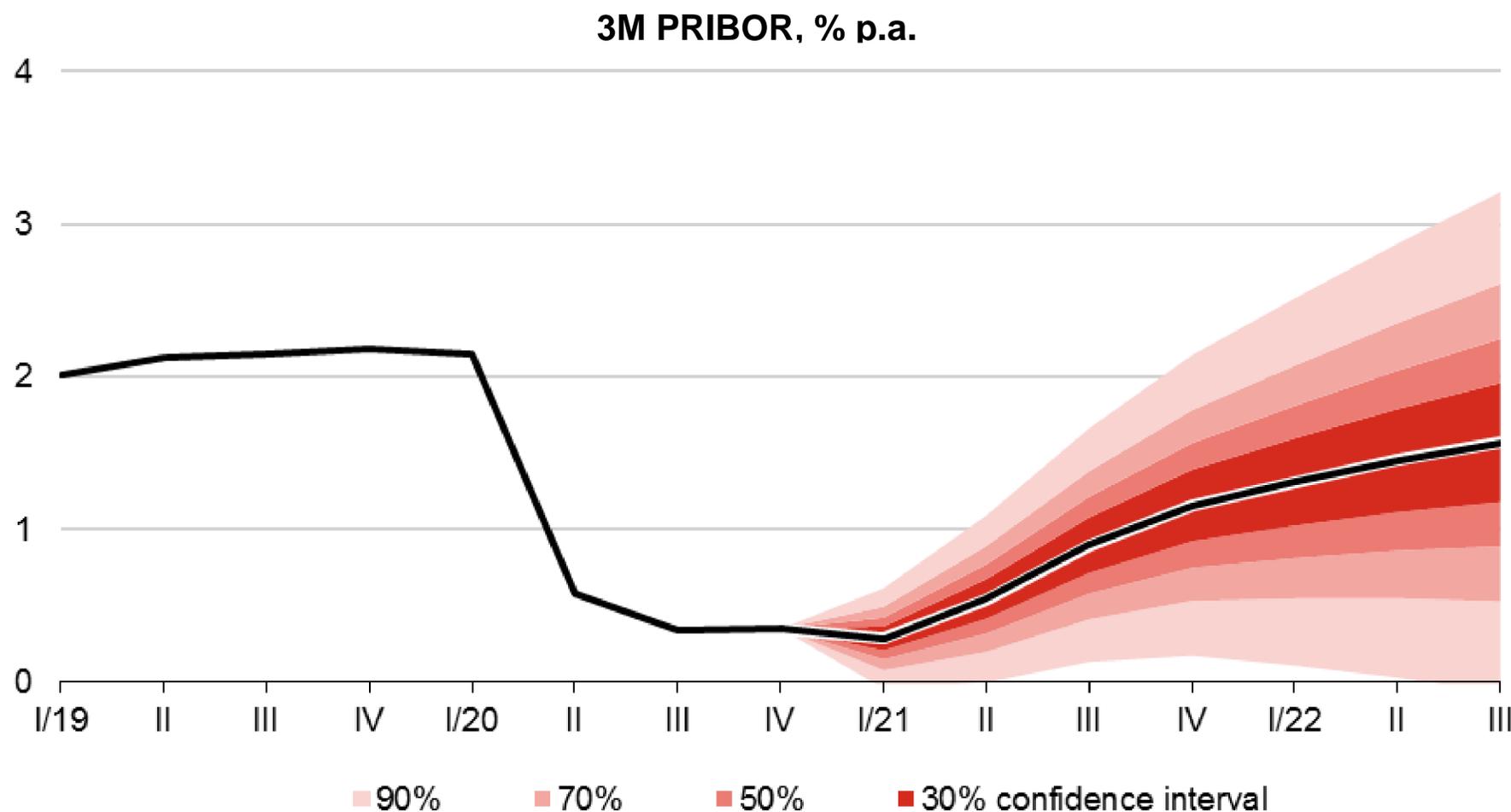
- Headline inflation will fluctuate around the target this year and move slightly above it next year on the back of an increase in excise duties.
- The recent strong growth in prices will fade away early this year, given slower growth of food and regulated prices. Core inflation will also fall markedly during the year, owing, among other factors, to the pandemic and koruna appreciation.
- Monetary policy-relevant inflation will lie slightly below headline inflation, due to the positive first-round effects of changes to excise duties.

# January 2021 forecast



- The real economy will grow by more than 2% overall this year, and pick up further next year, leading to a return of domestic economic activity to the pre-pandemic level on the back of net exports and later household consumption.
- The koruna will continue to appreciate as the economy reopens, financial market sentiment improves and the positive interest rate differential vis-à-vis the EA gradually widens.

## January 2021 forecast

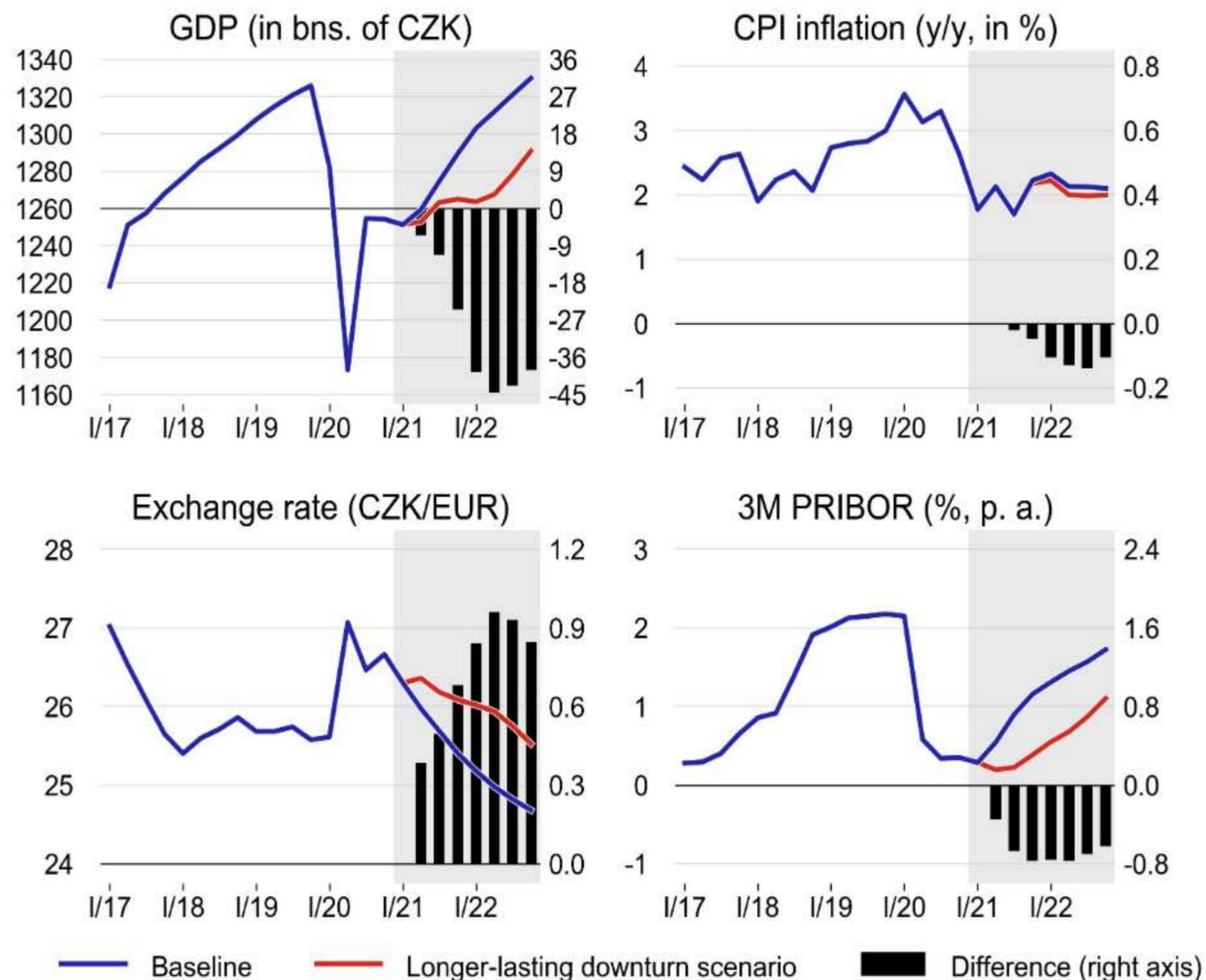


- Consistent with the forecast is stability of market interest rates initially, followed by a gradual rise in rates from roughly the middle of this year onwards.

**The Bank Board assessed the uncertainties and risks of the forecast as being substantial and tilted to a longer-lasting pandemic than assumed by the forecast.**

Main risk: longer lockdowns at home and abroad and an ensuing deterioration in the financial situation and sentiment of businesses and households, leading to a lengthier cyclical downturn of the economy

## Longer-lasting downturn scenario: Domestic economy



- Worsening of sentiment of firms and income situation of households along with negative consumer appetite would cause investment to freeze and would also lead to lower household consumption.
- The lower demand for domestic production and slower wage growth would create disinflationary pressures.
- The adverse cyclical developments abroad would weaken demand for Czech exports and act against appreciation of the koruna.
- The longer-lasting economic downturn would imply a need for monetary policy staying very accommodative for longer relative to the baseline scenario.

---

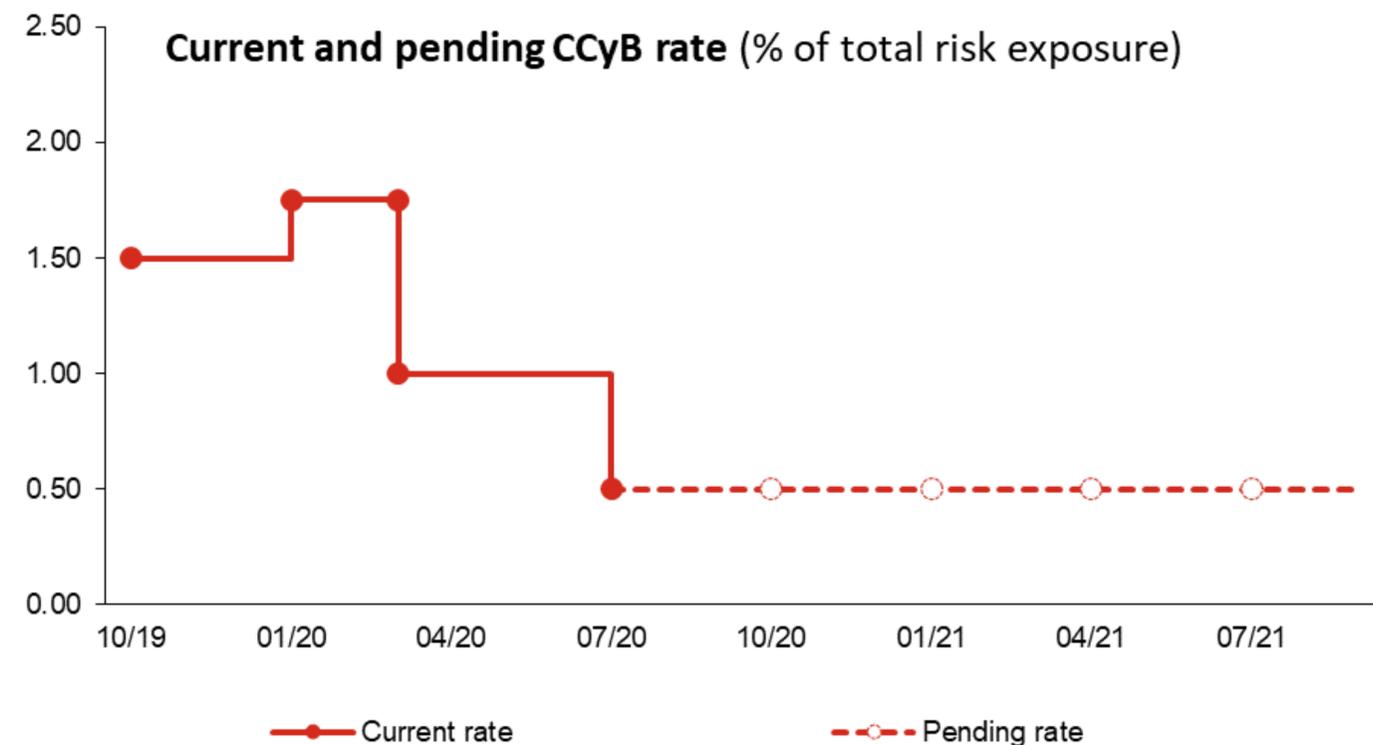
## Other policy-related CNB measures

### **Liquidity support (as a kind of “insurance” policy)**

No liquidity shortage but...

- Liquidity-providing repo operations announced three times a week instead of the previous weekly frequency,
- Full allotment of auctions at 2-week repo rate with a zero spread,
- Liquidity-providing operations with three-month maturity introduced,
- Non-bank financial institutions (insurance, pension management and management companies) may enter auctions (since May 2020), and
- The range of eligible collateral accepted from credit institutions (banks, foreign bank branches and credit unions) has been broadened to include mortgage-backed securities.

## Macprudential policy



Source: Financial Stability Report 2019/2020

Countercyclical capital buffer (CCyB) lowered to support banks' ability to finance the real economy without interruption and cover potential credit risks.

- In March 2020, the CNB Bank Board cancelled its previous year's decision to raise the CCyB rate to 2% and left it at 1.75%.
- CCyB lowered to 1% with effect from 1 April 2020 and 0.5% with effect from 1 July 2020.
- The CNB also called on banks and insurance companies to refrain from making dividend payouts (the same call was then made on the EU level).

## Other financial stability measures

### Loan moratorium

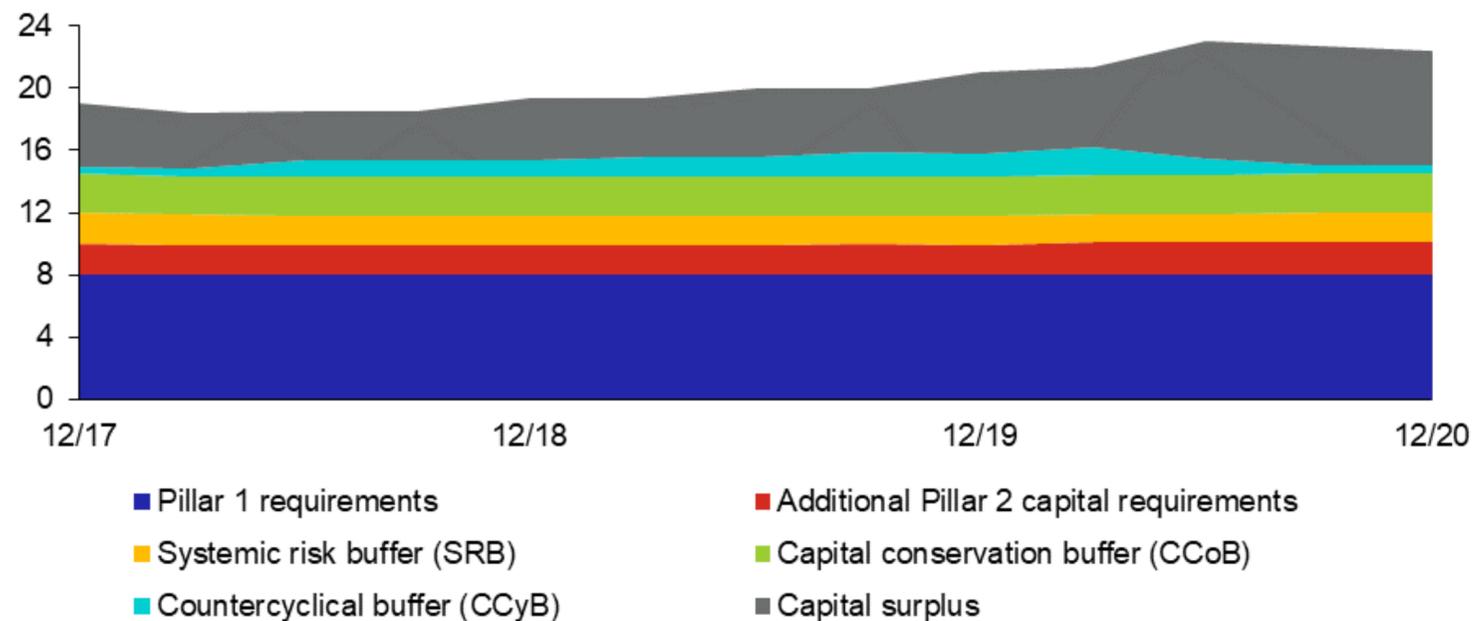
- Firms, the self-employed and households suffering negative economic impacts from the Covid-19 pandemic can stop repaying for three or six months.

### Mortgage limits relaxed

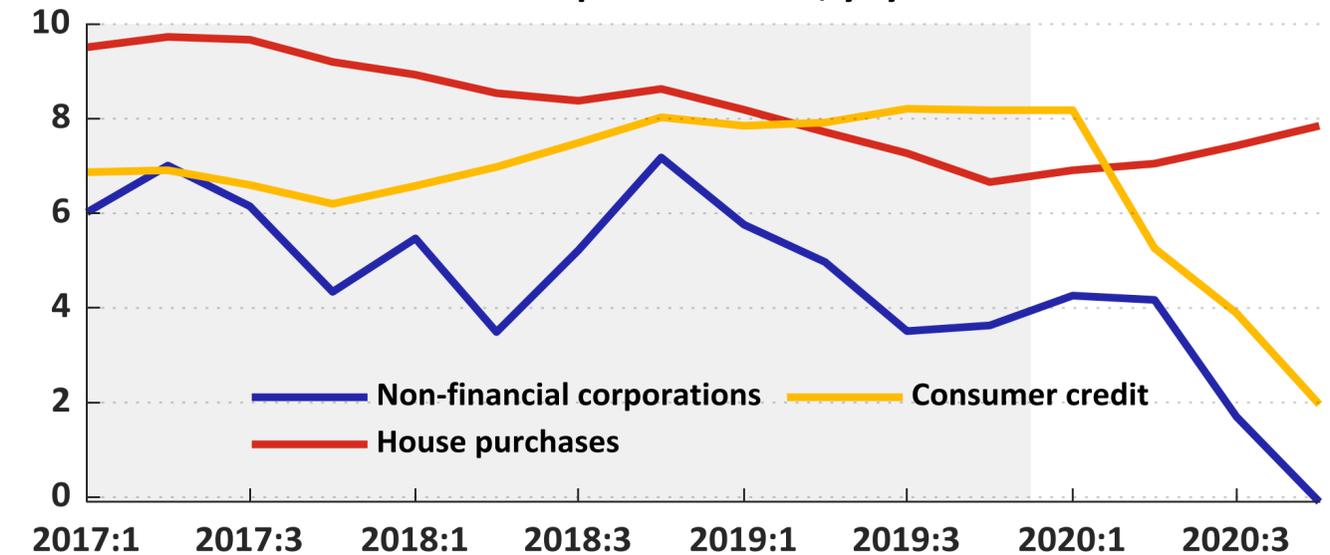
	to 1 April 2020	from 1 April 2020	from 18 June 2020
<b>LTV</b> (loan-to-value) Ratio of loan to value of collateral	80%	90%	90%
<b>DTI</b> (debt-to-income) Ratio of loan applicant's total debt to net annual income	eightfold	no limit	no limit
<b>DSTI</b> (debt-service-to-income) Ratio of loan applicant's monthly debt repayments to net monthly income	45%	50%	no limit

# Banking sector and credit growth

Structure of capital requirements in the domestic banking sector, pp



Loans to private sector, yoy in %



- The CNB's actions have supported the banking sector's capacity to absorb losses and lend to the real economy – the capital surplus has been boosted by the decrease in the CCyB rate and by the profit distribution recommendations.
- Despite all the measures, the decline in economic activity is being reflected in slower growth in loans to corporations and loans to households for consumption.
- But mortgage lending has remained strong, and no broad-based credit crunch has been observed.

---

## Summary and conclusions

- The Covid shock has generated fundamental uncertainty for policy makers.
- Fast monetary policy easing has been the appropriate policy response in this situation.
- This is true in spite of the fact that inflation has so far remained more resilient than originally expected.
- Future monetary policy normalisation will also have to weigh the risk of a premature move against the risk of falling a bit behind the curve.
- Recent policy communication: *“The Board assessed the uncertainties and risks of the forecast as being substantial and tilted to a longer-lasting pandemic than assumed by the forecast...This could lead to a lengthier cyclical downturn of the Czech economy and hence to a need to keep monetary conditions accommodative for longer than in the forecast.”*

---

Thank you for your attention

**Tomáš Holub**

CNB Board Member

[tomas.holub@cnb.cz](mailto:tomas.holub@cnb.cz)

