



**EUROPEAN CENTRAL BANK**

BANKING SUPERVISION

# **COVID-19 Vulnerability Analysis**

## **Results overview**

**28 July 2020**

## Agenda

### 1 Key takeaways from the vulnerability analysis

2 Scenario and methodology

3 Horizontal overview of the results

4 Impact of relief measures

5 Integration into SREP

6 Conclusion

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## 2020 vulnerability analysis successfully completed

✓ April – July 2020: 86 banks were tested to assess the impact of the coronavirus pandemic on their financial and prudential positions.

✓ Three scenarios were tested. EBA 2020 stress test baseline scenario to serve as benchmark of impact of coronavirus crisis. Two scenarios anchored to Eurosystem staff projections about the impact of the pandemic on the economy.

✓ Based on the central scenario, the most likely to materialise according to Eurosystem staff, the euro area banking sector is resilient enough and continues to fulfill its role of lending to the economy.

✓ In the severe scenario, several banks would need to take action to maintain compliance with their minimum capital requirements, but the overall shortfall would remain contained.

✓ Overall, the banking sector is well capitalised to withstand the pandemic-induced stress, but if the situation worsens and the severe scenario materialises, authorities must stand ready to implement further measures.

## Executive Summary (1/2)

- The **vulnerability analysis assessed the impact of the economic shock caused by the coronavirus (COVID-19) outbreak** on 86 euro area banks and aimed to **identify potential vulnerabilities within the banking sector at an early stage**.
- The exercise **tested three scenarios**, two of which are anchored to the June 2020 **Eurosystem staff Macroeconomic Projection exercise**.
  - The **2020 EBA EU-wide stress test baseline scenario** was defined before the coronavirus outbreak and provides a benchmark to assess the impact of the pandemic on banks.
  - The COVID-19 **central scenario** reflects the ECB's baseline projections and is the **most likely scenario to materialise** according to Eurosystem staff.
  - The COVID-19 **severe scenario** assumes a **deeper recession** leading to **a slower economic recovery**.
- The **EBA stress test methodology was used as a starting point** including the assumption of a **static balance sheet but was tailored to the needs of the vulnerability analysis**.
- The methodology as well as the central and severe scenarios incorporate to a large extent the impact of the unprecedented **COVID-19 monetary, supervisory and fiscal relief measures**.

## Executive Summary (2/2)

- The **central scenario results in a CET1 ratio depletion of -1.9pp** on a transitional basis to 12.6% in 2022.
  - The banking sector is **currently sufficiently capitalized to withstand a short-lived deep recession** while continuing to fulfil its functions, in particular to meet the demand for lending to the economy.
- However, a **delay in the economic recovery** as projected by the **severe scenario** would **result in a CET1 ratio depletion of -5.7pp** to 8.8% in 2022 on a transitional basis.
  - Compared to the central scenario, a number of banks would need to take action to maintain compliance with their minimum capital requirements.
  - It should be, however, noted that these **results do not take into account potential additional support measures** which could be triggered in such a scenario before the system would start deleveraging.
  - Moreover, in the severe scenario, the overall shortfall would remain contained, showing that the **banking sector as a whole is sufficiently capitalised**, especially considering that these **results do not account for mitigating management actions**.

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## Overview of topics covered / not covered in this document



- Overview on **scenarios and methodology** used for the analysis.
- **Aggregate results**, in particular on the impact on banks' capital positions.
- **Integration** of vulnerability analysis results **into the SREP**.



- **Individual bank results and indication of their specific performance.**

## The ECB conducted a vulnerability analysis to assess the impact of the COVID-19 pandemic

### COVID-19 vulnerability analysis 2020

- Sample covers **86\* significant institutions** directly supervised by the SSM.
- Exercise conducted **between April and July 2020**.
- **Publication** of aggregated results.
- To relieve banks operationally, **ECB conducted the exercise without interaction with banks and relied on already available information**, for example from the regular supervisory reporting.
- **EBA stress test methodology was used as a starting point** including the assumption of a **static balance sheet**.

### Objectives

- **Assess the impact of the COVID-19 pandemic** on the financial and prudential position of banks in the Euro area.
- **Identify potential vulnerabilities** at an early stage.

\* The VA sample is based on the list of all Significant Institutions supervised by the SSM as of April 2020. It excludes

- 1) subsidiaries of SIs headquartered in the euro area, as these will be covered via their parent entities;
- 2) subsidiaries of parent institutions headquartered outside the euro area, considering that the VA methodology is designed for the highest level of consolidation;
- 3) banks that were foreseen to participate in the Comprehensive Assessment are not included in this publication;
- 4) banks that became less significant after April 2020.



## Analysis based on EBA methodology, but tailored to meet COVID-19 crisis specific challenges

- The **methodology** of the vulnerability analysis used as a starting point the **2020 EBA EU-wide Stress Test methodology**.
  - Same comprehensive coverage of risk areas.
  - Static balance sheet assumption.
- The **methodology was tailored to the needs of the vulnerability analysis in the following ways:**
  - It was conducted using **existing supervisory data and expertise without the interaction with banks**.
  - Results were generated using **ECB top-down models**.

**Results are reliable at an aggregate level. However, before deriving any bank specific action, it would be necessary to interact with banks.**

## Vulnerability analysis considered three scenarios

### EBA 2020 ST baseline scenario

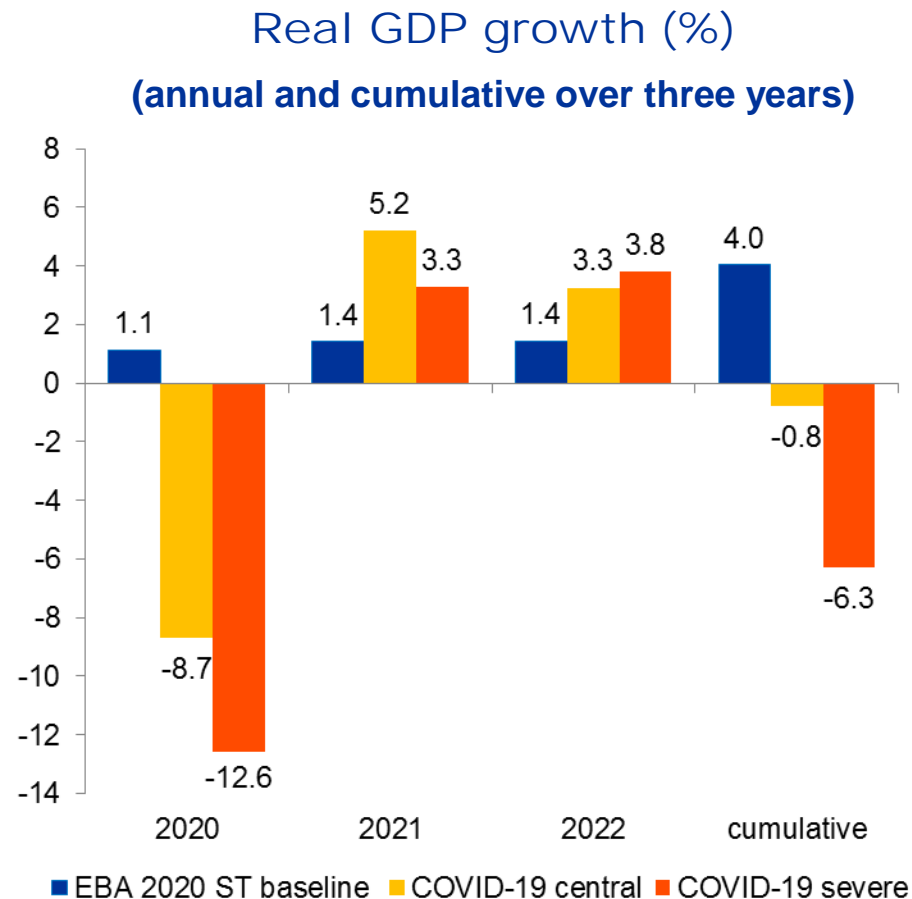
Scenario before the outbreak of COVID-19. Based on [December 2019 Eurosystem staff projections](#).

### COVID-19 central scenario

Expected evolution of the economy after the coronavirus outbreak. Based on [June 2020 \(baseline\) Eurosystem staff projections](#).

### COVID-19 severe scenario

Represents a more adverse, but still plausible development of the crisis. Based on the severe scenario from the [June 2020 Eurosystem staff projections](#).

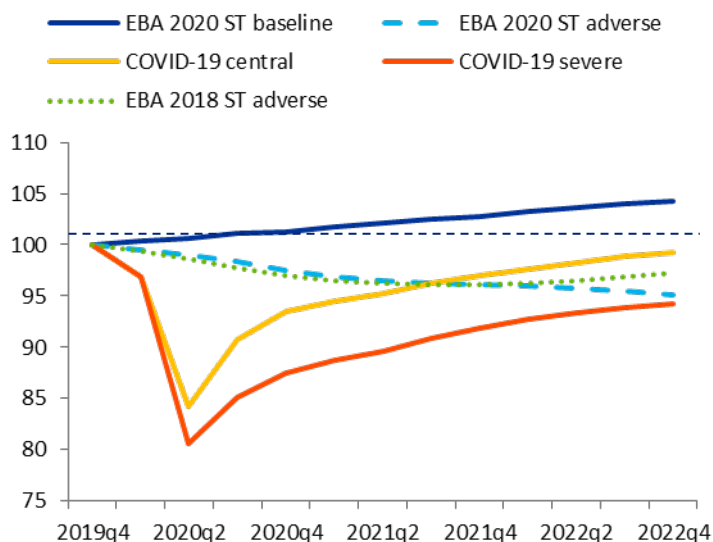


**For comparison, cumulated euro area GDP growth in the postponed EBA 2020 ST adverse scenario was -4.2%.**

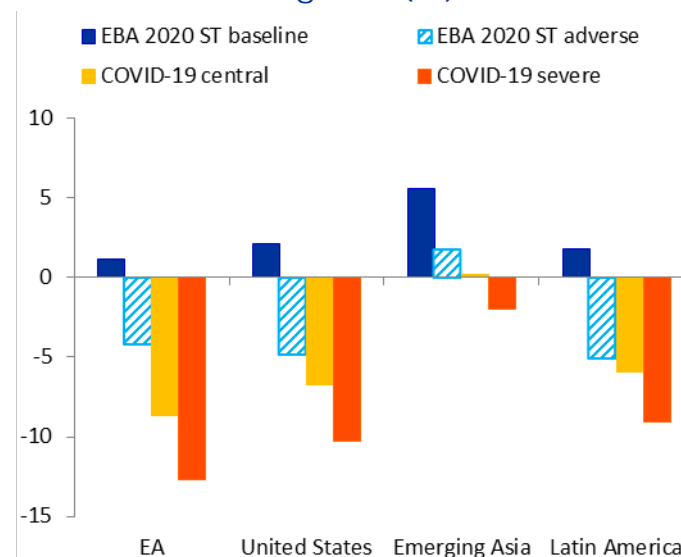
## Compared to the EBA ST adverse scenarios, the COVID-19 scenarios assume a harsher recession

- COVID-19 scenarios assume a **deeper GDP recession in the first year than the global financial crisis, but a less protracted downturn.**
- Real GDP decline of the severe scenario is significantly stronger than the largest decline observed since 1995 over maximum of a three year horizon.

Real GDP: Euro area level (2019 = 100)



Real GDP: Maximum decline across regions (%)



**Notes:** Euro area countries: The EBA 2020 ST baseline refers to the December 2019 Eurosystem staff projections ; the COVID-19 central scenario refers to the June 2020 Eurosystem staff projections (baseline) and the COVID-19 severe scenario refers to the severe scenario of the same projection exercise  
 Non-EU countries: The EBA 2020 ST baseline is based on the October 2019 IMF WEO projections. For the COVID-19 central and COVID-19 severe scenarios a common approach was used in order to calibrate all countries in a consistent way. Estimates rely on the April 2020 WEO projections rescaled to be in line with the EU scenarios. For non-EU countries for which June 2020 Eurosystem staff projections baseline assumptions were available, a full alignment was ensured with the COVID-19 central scenario.

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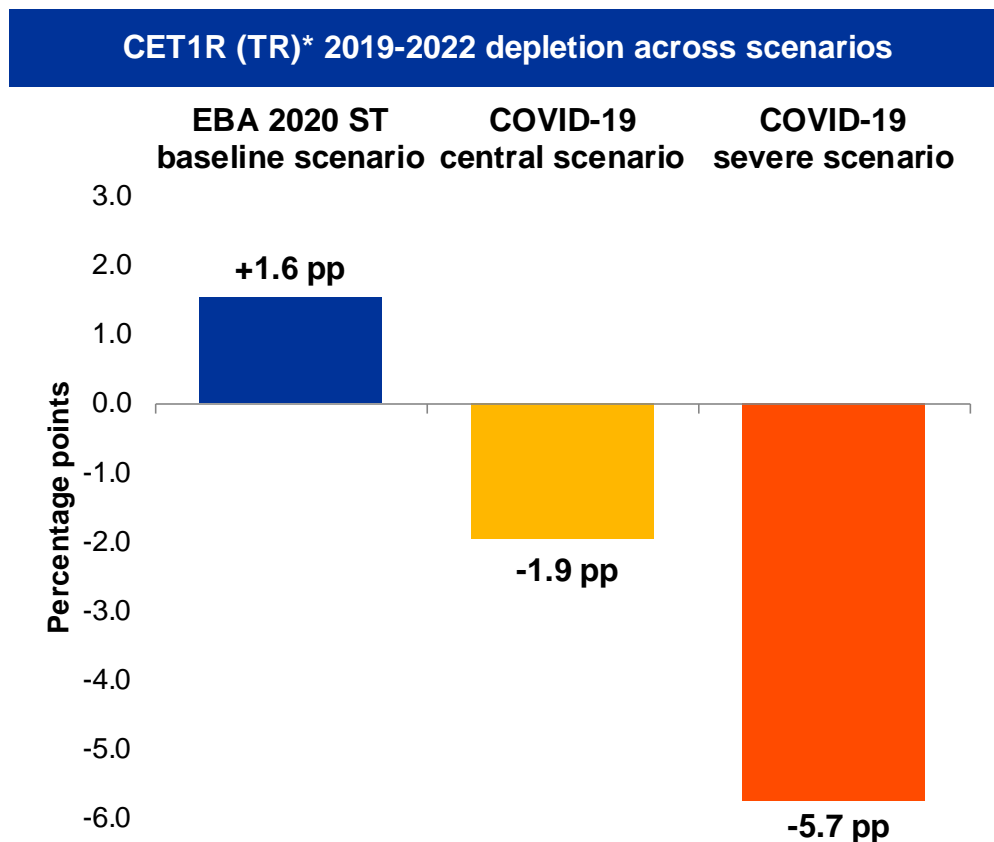
5 Integration into SREP

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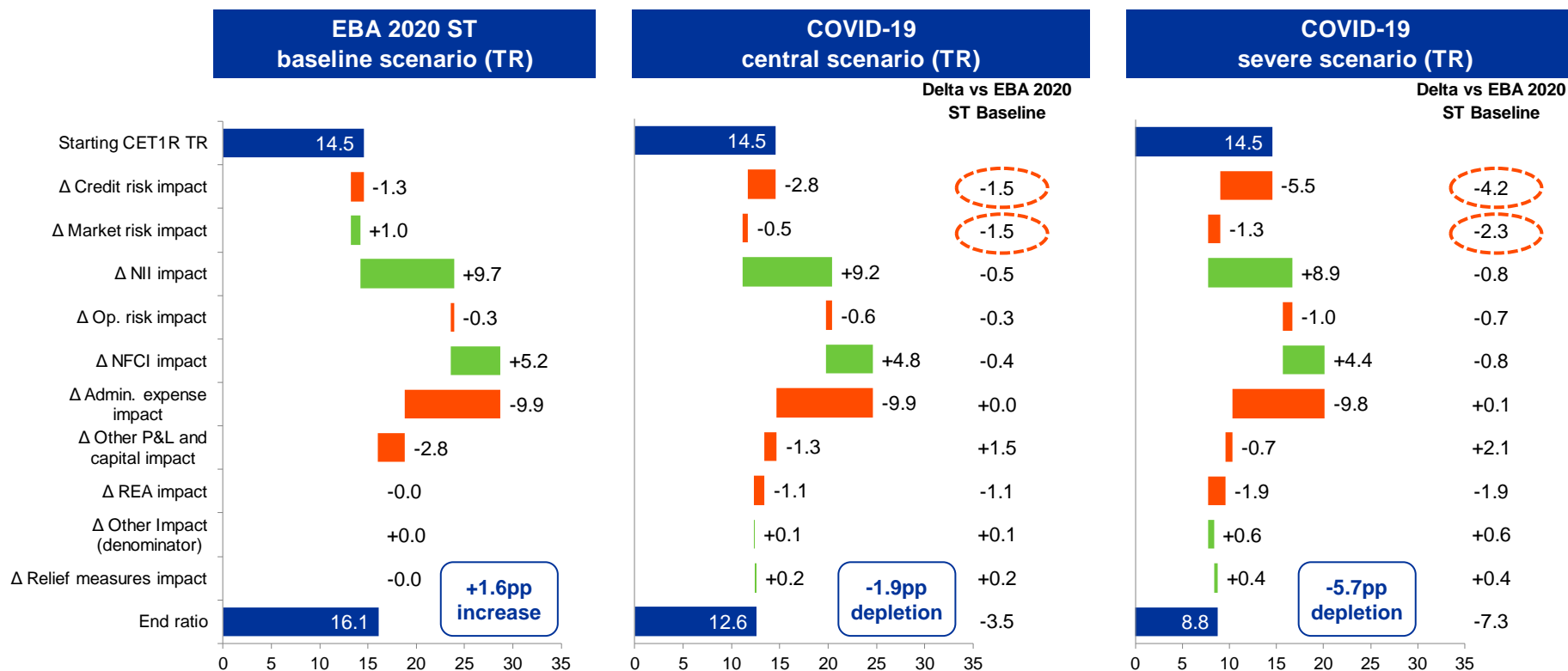
## Sector wide capital depletion levels are estimated to be -1.9 pp in the central scenario

- Slight improvement of the CET1 ratio in the EBA 2020 ST Baseline scenario as well as the gap with the central and severe scenarios are **close to what was observed in the 2018 EBA stress test**.
- Based on the **central scenario**, banks are found to be resilient with a depletion of 1.9pp.
- The **severe scenario** assumes a **slower recovery** leading to a capital depletion of 5.7pp.



**Note:** TR refers to the transitional arrangements, as defined in Part Ten Title I Transitional Provisions of CRR, Article 473a of CRR and CRR 2 Fix.

## Impact from credit risk is the key driver of the increased capital depletion in the severe scenario

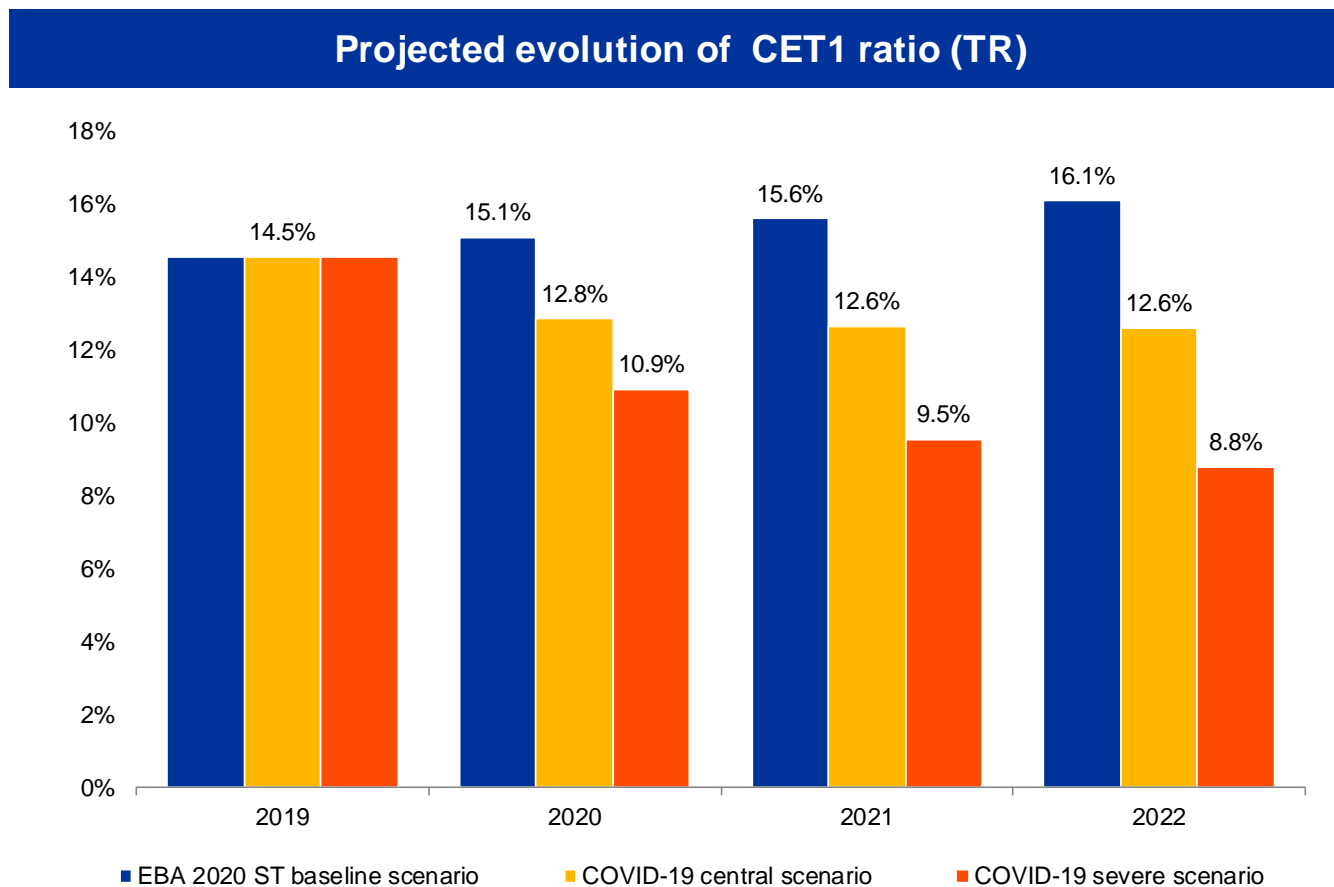


REA (TR) 2019 Actual	REA (TR) 2022 projection		
	EBA 2020 ST baseline scenario	COVID-19 central scenario	COVID-19 severe scenario
€7,797 billion	€7,797 billion (=)	€8,445 billion (+8.3%)	€8,964 billion (+15.0%)

**Notes:**

- Administrative expenses do not change materially across scenarios. The numbers circled in red are the two main contributors to the capital depletion under the two COVID-19 scenarios.
- Projected REA in the EBA 2020 ST baseline scenario remains constant due to methodological floors, i.e. projected REA cannot fall below the starting point levels.

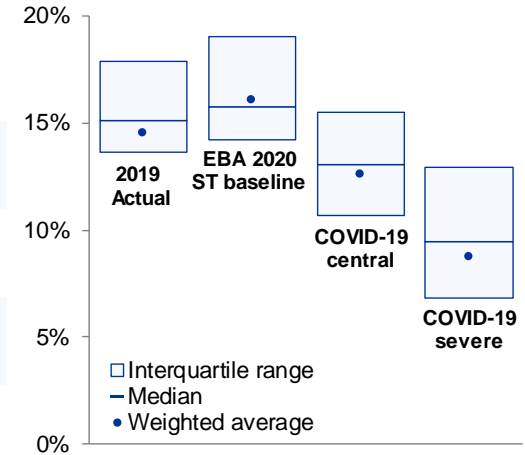
A projected CET1 ratio of 12.6% is reached in the central scenario in 2022



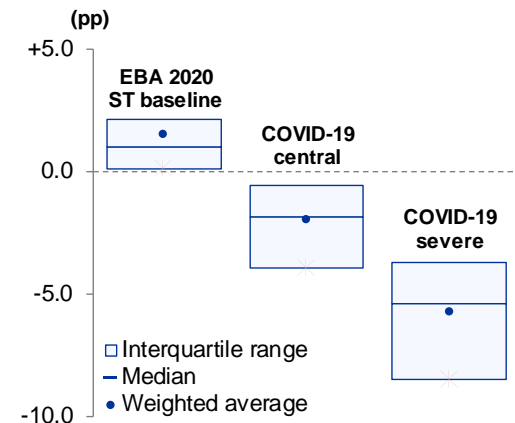
**Note:** Average CET1R (TR) is calculated by weighting bank level data by total risk exposure amount as of 2019 actual.

## Dispersion of CET1 ratios and capital depletion increases with the severity of the scenarios

CET1 ratio (TR)	2019 Actual	2022 Projection		
		EBA 2020 ST baseline	COVID-19 central	COVID-19 severe
25th percentile	13.6%	14.2%	10.7%	6.8%
Median	15.1%	15.8%	13.1%	9.4%
Weighted average	14.5%	16.1%	12.6%	8.8%
75th percentile	17.9%	19.0%	15.5%	12.9%








CET1 ratio depletion 2019-2022 (TR)	EBA 2020 ST baseline	COVID-19 central	COVID-19 severe
25th percentile	+0.1pp	-4.0pp	-8.5pp
Median	+1.0pp	-1.9pp	-5.4pp
Weighted average	+1.6pp	-1.9pp	-5.7pp
75th percentile	+2.2pp	-0.6pp	-3.7pp





## Impact on capital from the crisis is heterogeneous across the different business models

- The **impact of loan losses is strongest for diversified lenders**, resulting in relatively high CET1 ratio depletion.
- **G-SIBs and universal banks** partially offset their loan losses by **higher-than-average operating income** (both NII and NFCI)
- While the average loan loss impact of small domestic and retail lenders is similar to G-SIBs and universal banks, **small domestic and retail lenders have below-average NII and NFCI**, making them unable to compensate these losses.

Business model	2019-2022 CET1 ratio (TR) depletion <i>(weighted average, percentage points)</i>	Number of banks <sup>1</sup>	Credit risk impact <sup>2</sup> <i>(weighted average, percentage points)</i>	
			Central	Severe
G-SIBs and universal banks	-1.6  -5.4	20	-2.8	-5.2
Diversified lenders	-2.7  -7.0	31	-3.5	-7.6
Corporate, wholesale and sectoral lenders	-3.6  -6.4	17	-1.7	-3.1
Small domestic and retail lenders	-2.4  -6.2	15	-2.4	-5.3
<b>Total</b>	<b>-1.9</b>  <b>-5.7</b>	<b>86</b>	<b>-2.8</b>	<b>-5.5</b>



**Notes:**

<sup>1</sup> The table does not include the asset manager and custodian business model as the sample of banks in this category is deemed too small (3 institutions).

<sup>2</sup> Weighted average credit risk impact does not account for the application of bank-specific relief measures. However, the total depletion does account for the impact of the bank-specific relief measures.

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## Results reflect relief measures to a large extent in the COVID-19 scenarios and the methodology

- The central and severe scenarios include, to a certain extent, the impact of the monetary, supervisory and fiscal relief measures taken in response to the COVID-19 crisis via:
  - **the design of the macro scenarios;** and
  - **the methodology** to take into account bank-specific impacts.
- **Measures have been included based on the following conditions:**
  - **availability of reliable information** on particular measures;
  - **effect on solvency** taking into account the applied **EBA methodology**.

	Scenario	Bank-specific
State guarantees <sup>1</sup>	✓	✓
Provisions/IFRS9 new transitional arrangements	✗	✓
Macroeconomic measures related to monetary, fiscal and labour market policies	✓	✗
Moratoria <sup>2</sup>	✗	✗

1. Although the total envelope of loan guarantee schemes amounts to about 20% of real GDP, only a small part of it is assumed to be taken up in the scenarios. The effect of state guarantees on loan losses is reflected in the VA, REA effects are not included (cf. separate page).

2. Moratoria are not explicitly modelled in the VA, since the methodology (static balance sheet, etc.) would not show a capital relief for banks if measured over the whole 3-year time horizon

# State guarantees absorb EUR 42 billion of provisions under the severe scenario

## Modelling assumptions

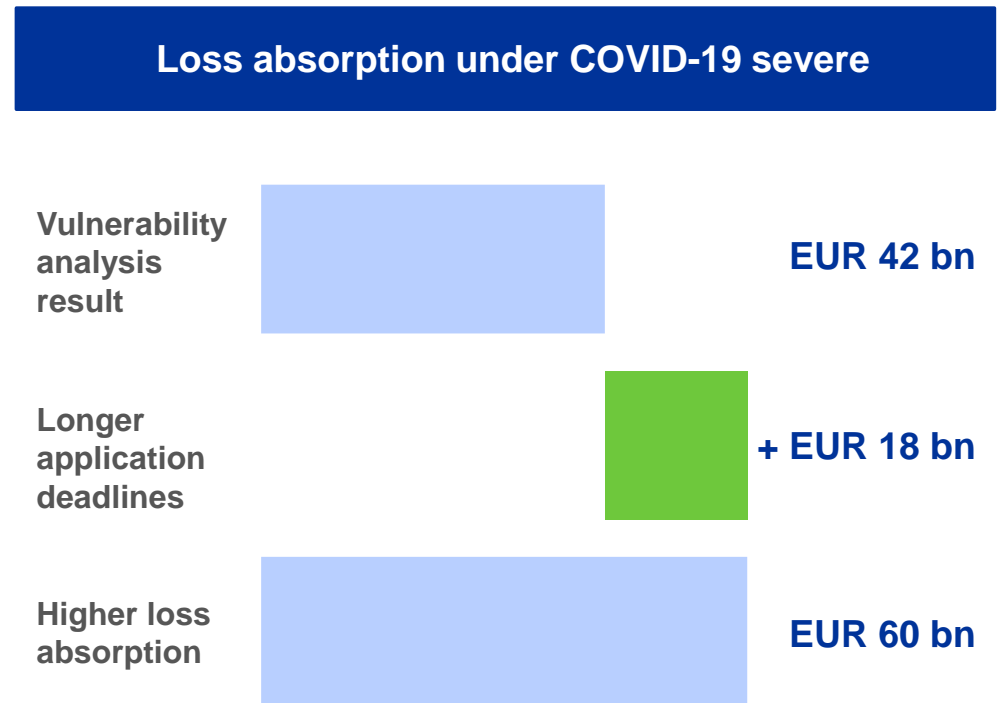
- Calculation of the impact in line with static balance sheet constraint:
  - **new loans are generated** only to replace maturing ones at equal volume and maturity;
  - **credit quality of new loans** is equal to that of the maturing loans.
- Guarantees only assigned to **new exposures replacing those maturing by end of 2020** (application deadline of most schemes).
- **Uniform, proportionate allocation** of guarantees to eligible portfolios and uniform absorption of losses.
- **Initial stock of NPEs as of year end 2019 are not eligible** for guarantees.

## Results and key figures

- Current overall envelope of state guarantees initiated by SSM member states is **EUR 1.8 trillion**.
  - Distributing based on bank assets equals **EUR 1.4 trillion** for the 86 banks in the VA sample;
  - Thereof, **EUR 0.7 trillion** projected to be used by banks for eligible loans by the end 2020.
  - This represents a take-up rate of 51%.
- The VA projects **EUR 72 billion of guaranteed loans will default** under the three years of the COVID-19 severe scenario.
- The state guarantees absorb impairments of **EUR 42 billion under the COVID-19 severe scenario** (COVID-19 central: EUR 21 billion).

## Longer application deadlines for guarantees would lead to a significantly higher loss absorption

- **The loss absorption impact of state guarantees is re-calculated assuming that application deadlines were extended until June 2021** (compared to end of year 31/12/2020).
- The loss absorption increases by EUR 18 bn, which shows the sensitivity of the VA result but also that national guarantees could have an additional relief impact if the schemes were extended.



## Effects of guarantees on REA and TLTRO substitution effect not reflected in the VA

- The effect of some relief measures is not modelled in the results:

REA relief of State guarantees	TLTRO substitution effect
While the <b>effect of public guarantee schemes on loan losses is reflected</b> in the results, a potential <b>additional REA relief is not included</b> due to the complexity and uncertainty about the prudential treatment of some schemes.	Whereas the <b>impact of the TLTRO III</b> (and other monetary policy measures) <b>on lending rates is embedded in the scenarios</b> , the potential funding cost relief from the <b>substitution of more costly types of funding by TLTRO III borrowing is not explicitly modelled</b> in the VA due to the static balance sheet assumption.

- Estimates of the **combined impact of REA relief from public guarantee schemes and lower cost of funding due to the TLTRO III amount to an increase of up to 100 bps in the CET1 ratio** under the severe scenario.

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## The vulnerability analysis results will inform supervisors' risk assessment

- Supervisors will use the vulnerability analysis results as an additional **source to identify potential vulnerabilities** in line with the 2020 SSM pragmatic approach to SREP\*, taking into account bank-specificities.
- The results of the vulnerability analysis will help supervisors to **challenge banks' financial and capital projection frameworks**, in a forward looking manner, in particular the **credibility of the mid-term capital plans**.
- The COVID-19 scenarios provide the basis to **challenge the severity of banks' own COVID-19 macroeconomic scenarios**.
- **Supervisors will incorporate the VA results in their risk assessment as part of the SREP in a qualitative manner. There will be no automatic supervisory actions solely based on VA results.**

**Only the aggregated results of the vulnerability analysis will be shared with banks – individual results will not be discussed with all banks.**

\* [https://www.bankingsupervision.europa.eu/press/publications/newsletter/2020/html/ssm.nl200513\\_2.en.html](https://www.bankingsupervision.europa.eu/press/publications/newsletter/2020/html/ssm.nl200513_2.en.html)



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Overall, the results show that the banking sector is well positioned to take on the pandemic-induced stress impact, but capital depletion in the severe scenario could be material.



The results of the vulnerability analysis provide valuable insights into banks' risks under adverse economic conditions and will be an input into the SREP.

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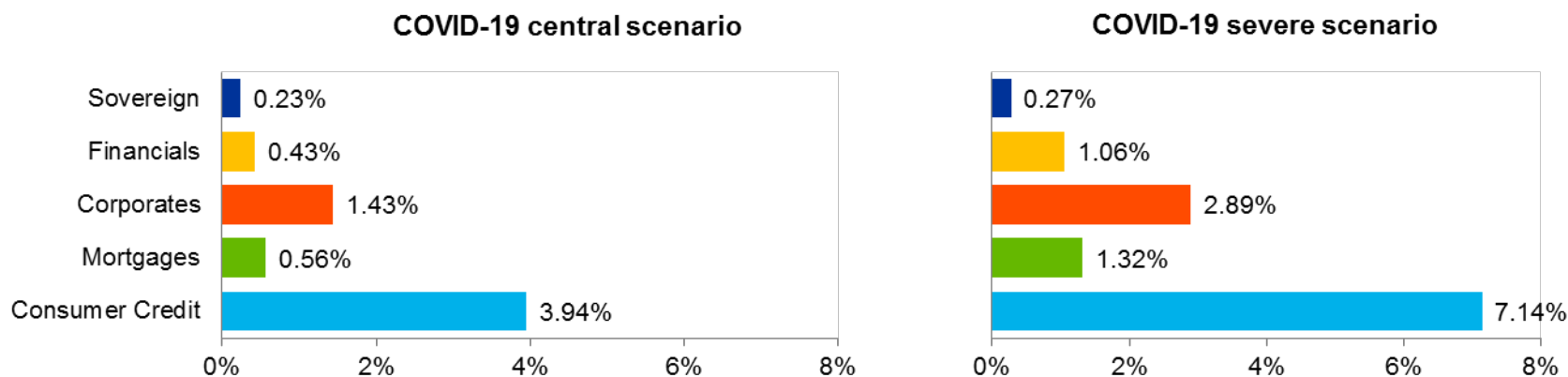
## Impact of risk drivers on overall CET1R depletion of -1.9pp in the COVID-19 central scenario

<p><b>Credit Risk</b> (-2.6pp)*</p>	<ul style="list-style-type: none"> <li>• Macro shocks on <b>GDP, unemployment and residential real estate</b> are highly associated with credit losses.</li> <li>• The asset classes <b>corporate and consumer credit</b> drive the majority of the impairments (43% and 39%, respectively) while the latter only accounts for 12% of the exposures.</li> <li>• The <b>accumulated impairments</b> would increase by 10% if relief measures were not taken into account.</li> <li>• <b>High NPE banks face a higher increase in both the NPE ratio</b> (median 4.0%) <b>and impairment ratio</b> (median 1.5%) compared to other banks (median 2.1% and 0.6%, respectively), i.e. a lower overall loan portfolio quality translates into higher default risks and higher losses for high NPE banks over the horizon.</li> </ul>
<p><b>Market Risk</b> (-0.5pp)</p>	<ul style="list-style-type: none"> <li>• The <b>main drivers</b> of market risk losses are the <b>gross OCI impact (-0.6pp)</b> followed by the <b>CCR losses (-0.2pp)</b> which are partially offset by the positive <b>NTI impact</b> which contributes <b>0.3pp</b>.</li> <li>• For the NTI impact, the negative effects from full revaluation losses (-0.1pp) and liquidity reserve (-0.3pp) are more than compensated by the positive NTI projection (based on historical FINREP data) of +0.7pp.</li> </ul>
<p><b>NII</b> (+9.2pp)</p>	<ul style="list-style-type: none"> <li>• The <b>decrease in interest income is explained by the low/negative market interest rates</b> which more than offset the positive effect of the higher sovereign spread.</li> <li>• The <b>increase in interest expenses is explained by the more risky environment which increases the 'premium'</b> required by debtholders leading to an increase in the cost of funding.</li> </ul>
<p><b>Operational Risk</b> (-0.6pp)</p>	<ul style="list-style-type: none"> <li>• <b>Conduct risk losses</b> constitute almost half <b>(-0.28pp)</b> of the operational risk projections while the remaining part originates from <b>other operational risks (-0.36pp)</b>.</li> </ul>
<p><b>Other P&amp;L, Capital, REA</b> (-7.4pp)</p>	<ul style="list-style-type: none"> <li>• The <b>decrease in NFCI (-0.4pp)</b> and <b>REA impact (-1.1pp)</b> can be compensated by the positive contribution from <b>other P&amp;L and capital effects (e.g. from taxes) (+1.5pp)</b> while the effect of <b>administrative expenses is constant</b>.</li> <li>• <b>Overall, banks with higher profitability in 2019 tend to project lower depletion.</b></li> </ul>

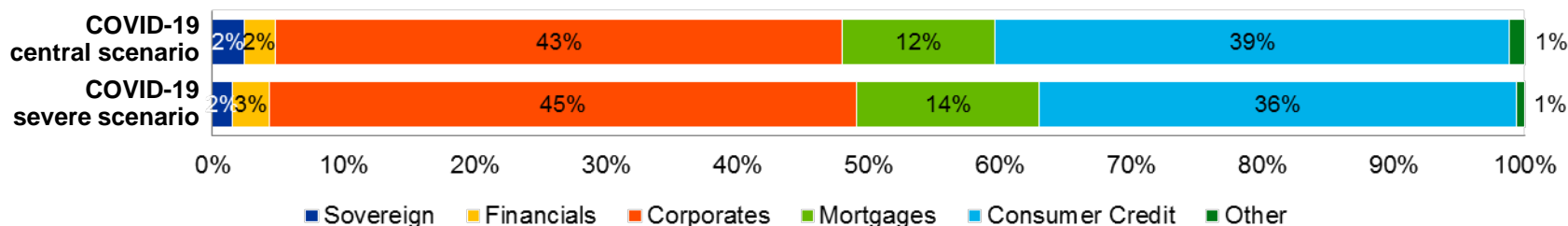
\*Note: The credit risk impact includes the impact of relief measures of +0.2pp.

## The impact from the COVID-19 crisis has a heterogeneous impact across asset classes

### Cumulative impairment rates by portfolio (% of exposure)



### Distribution of impairments across portfolios



**Notes:**

- The cumulative impairments are computed as the sum of the three year horizon impairments over the starting point exposures.
- For impairment of sovereigns under amortised cost accounting the VA methodology applies the approach used in previous EBA EU-wide stress tests exercises.

## Evolution of aggregate income statement and risk exposure amount in the COVID-19 central scenario

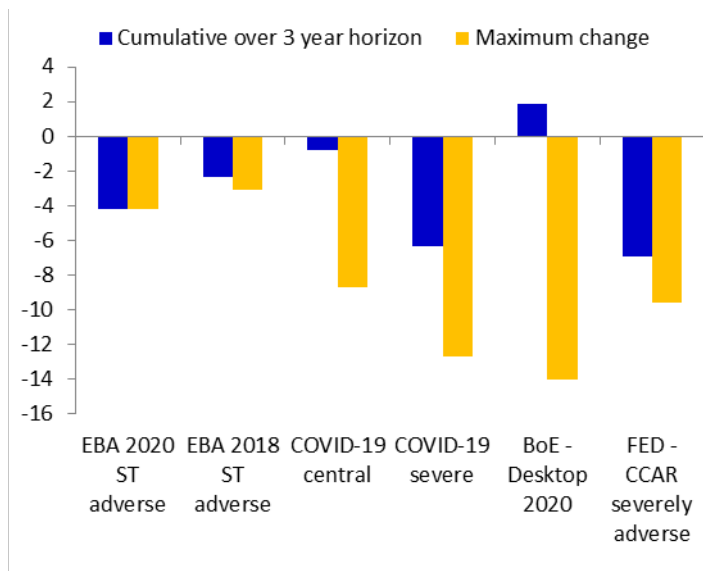
<b>Aggregate income statement</b> (€ billion)	2019A	2020E	2021E	2022E
Net interest income	263	242	240	235
Dividend income	5	3	3	3
Net fee and commission income	137	120	127	130
Gains or (-) losses on financial assets and liabilities held for trading and trading financial assets and trading financial liabilities	38	-14	19	19
Other operating income	1	4	4	4
<b>TOTAL OPERATING INCOME, NET</b>	<b>444</b>	<b>356</b>	<b>393</b>	<b>392</b>
Administrative expenses	-263	-258	-258	-258
Depreciation	-28	-22	-22	-22
Impairment or reversal of impairment on financial assets not measured at fair value through profit or loss	-44	-119	-43	-36
Other impairment and provisions or reversal of impairment and provisions	-19	-27	-9	-9
Losses arising from operational risk	-9	-17	-17	-17
Other net income from continuing operations	16	11	11	11
<b>Profit or (-) loss before tax from continuing operations</b>	<b>98</b>	<b>-75</b>	<b>55</b>	<b>61</b>
<b>Tax expenses (-) or income (+) related to profit or loss from continuing operations</b>	<b>-31</b>	<b>23</b>	<b>-17</b>	<b>-18</b>
<b>Profit or (-) loss for the year</b>	<b>67</b>	<b>-53</b>	<b>39</b>	<b>43</b>

<b>Risk exposure amount (TR)</b> (€ billion)	2019A	2020E	2021E	2022E
<b>Total Risk exposure amount</b>	<b>7,797</b>	<b>8,248</b>	<b>8,371</b>	<b>8,445</b>
Of which: Risk exposure amount for credit risk exposures	6,343	6,734	6,857	6,930

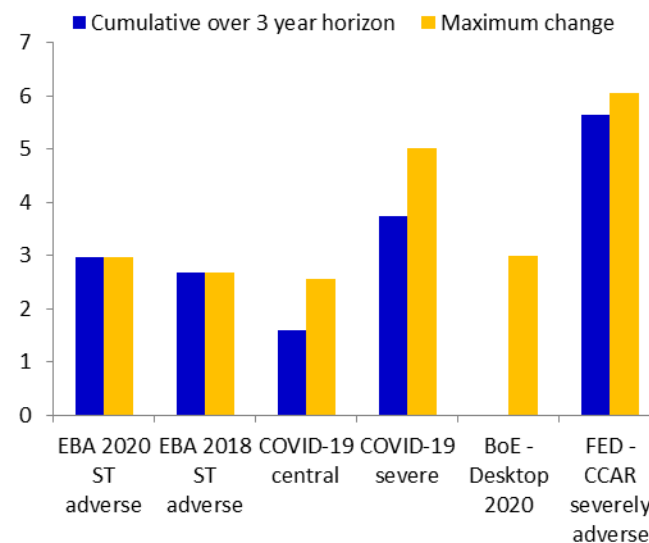
## Cumulative real GDP depletion of -0.8% and -6.3% in COVID-19 central and severe scenario

- COVID-19 scenarios present a strong recession in 2020 but also a strong rebound in 2021 / 2022.
- V-shape even stronger in BoE Desktop exercise: rebound in 2021 / 2022 however outweighs the initial shock resulting in positive cumulative GDP growth.

Real GDP growth (%)



Unemployment rate (pp)

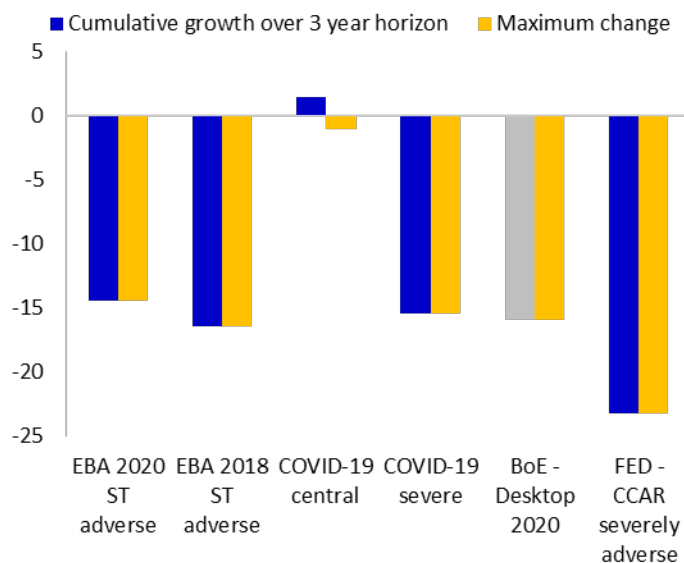


Notes: Annual averages. COVID-19 central and COVID-19 severe from the June 2020 Eurosystem staff projections for the euro area; BoE Desktop 2020 from Bank of England Interim Financial stability report, May 2020; and FED-CCAR from the Federal Reserve Comprehensive Capital Analysis and Review (CCAR) and own estimates. BoE Desktop 2020 is for the UK, FED-CCAR severely for the US.

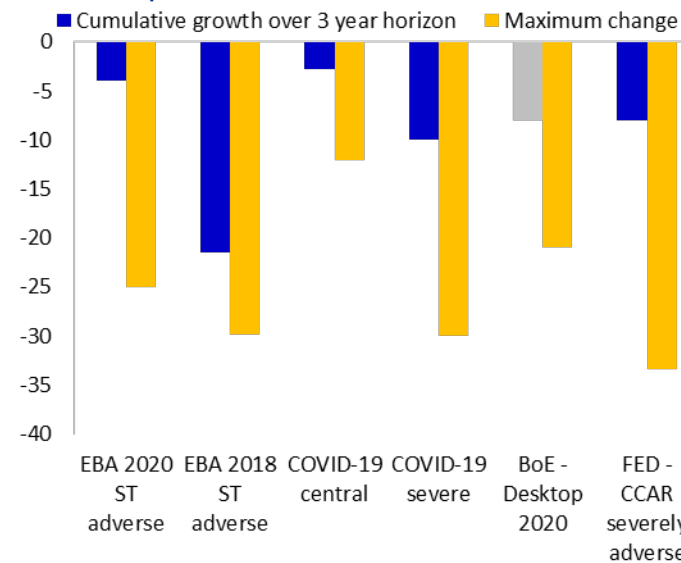
## Small positive and large negative cumulative real estate price effect in central and severe scenario

- COVID-19 central scenario shows small impact on house prices while the severe scenario takes on board stronger and protracted valuation effects.
- Maximum effect of severe scenario similar to previous EBA ST scenarios.

### Residential real estate (%)



### Stock prices (%)



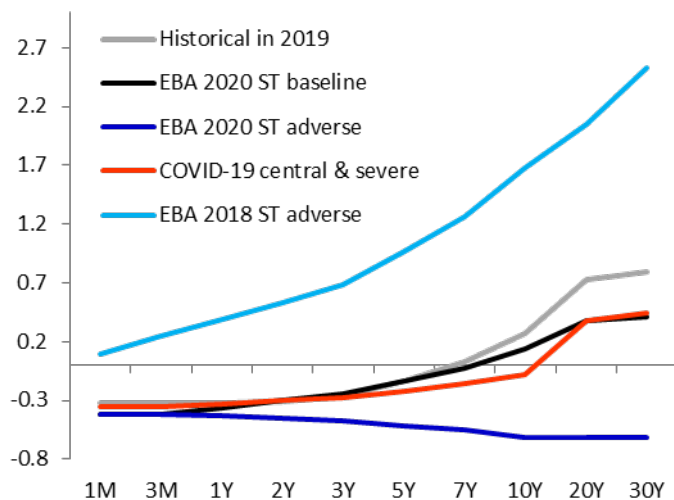
Notes: Annual averages. Residential real estate prices: The COVID-19 central scenario relies on the June 2020 Eurosystem staff projections (baseline), the COVID-19 severe scenario relies on ECB estimates based on the ESRB [scenario calibration methodology](#) used in the EBA EU-wide stress test exercises. Stock prices: based on the assumptions for the June 2020 Eurosystem staff projections for the EURO STOXX. The COVID-19 severe scenario follows the EBA 2020 scenario methodology. BoE Desktop 2020 from Bank of England Interim Financial stability report, May 2020; and FED-CCAR from the Federal Reserve Comprehensive Capital Analysis and Review (CCAR) and own estimates.; BoE Desktop 2020 is for the UK, FED-CCAR severely for the US. The grey bars indicate that the value is not available.



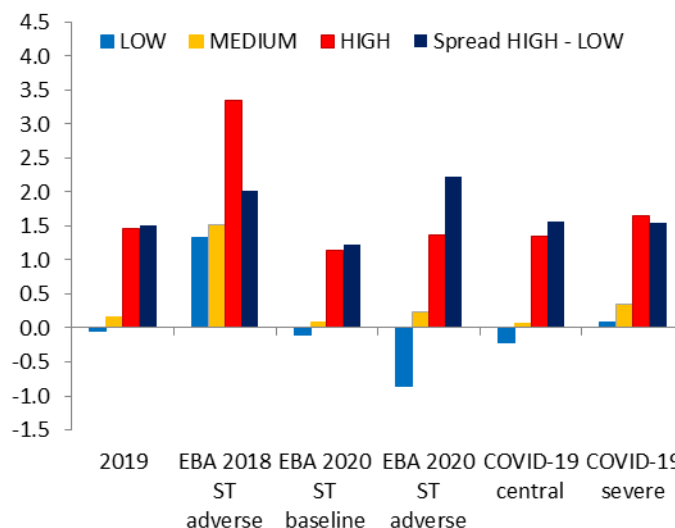
## Increase in long-term rates similar in both COVID-19 scenarios

- Risk free swap rates follow market expectations and are the same in COVID-19 central and severe scenarios.
- In the COVID-19 scenarios long term sovereign rates increase less than in the EBA 2018 ST and 2020 ST adverse scenarios.

### EUR swap rates (%)



### Long-term government bond yields (%)



Notes: Swap rates: 3M projections rely on projections for the short-term interest rates (Libor rates), 10Y projections rely on long-term interest rate projections. Other maturities are interpolated/extrapolated. EBA 2020 ST baseline scenario based on market expectations as of the fourth quarter of 2019. For the COVID-19 central and severe scenarios, projections for the EUR swap rates are based on market expectations as of the second quarter of 2020. Government bond yields: are based on the June 2020 Eurosystem staff projections (baseline and severe).