



# Unrealised losses in banks' bond portfolios measured at amortised cost<sup>1</sup>

28 July 2023

**The ECB has collected data on the unrealised losses of significant institutions under its direct supervision with a view to enhancing the assessment of risk in the held-to-maturity portfolios of euro area banks and to furthering its monitoring of interest rate risk and liquidity risk.** The ECB, together with the EBA, initiated an ad hoc data collection covering banks' bond portfolios measured at amortised cost and at fair value through other comprehensive income, and the associated hedges. The data collected include information on the carrying amounts and fair values of these bonds, the associated hedges<sup>2</sup> and indicators used to capture the sensitivity of these positions to changes in interest rates and credit spreads.

**The quantification of unrealised losses should be considered in the broader context of banks' business models and funding strategies.** Banks are expected to hold bonds in the amortised cost portfolio until maturity, which allows them to reduce the sensitivity of their accounting P&L to changes in interest rates and credit spreads. Therefore, the quantification of unrealised losses should be interpreted in a wider context that considers banks' balance sheet conditions from a holistic perspective. Specifically, the unrealised losses measure a downside risk for the banks, should they be forced to liquidate their held-to-maturity bond holdings. Even in distressed market conditions, banks are unlikely to sell their securities outright but would rather raise liquidity via, for instance, repo transactions with other banks or a central bank, using their pools of unencumbered assets.

**It is important to note that this standalone exercise and its results are not part of the EBA/SSM EU-wide stress test.** This additional analysis should be seen as a prudent supervisory effort to better understand the potential for unrealised losses on bond holdings for euro area banks. It measures the hypothetical downside risk to banks should they, contrary to expectations, be forced to liquidate their bond holdings and hence realise the unrealised accounting losses. It is important to note

---

<sup>1</sup> The EBA published a report on the results of the data collection on the amortised-cost bond portfolios for the EBA stress test sample of banks, discussing caveats and main limitations of the exercise.

<sup>2</sup> Only micro fair value hedges have been considered when calculating the net unrealised losses, in line with the IFRS 9 definition of the carrying amount of bonds at amortised cost. As such, macro fair value hedge and cash flow hedge strategies have not been included in the calculation of net unrealised losses.

that the analysis cannot be used on its own or in conjunction with the EU-wide stress test to assess the liquidity or solvency situation of a given bank.<sup>3</sup>

**Unrealised losses can be gauged by comparing the carrying amounts and fair values of bond portfolios at a given date.** The net unrealised loss is the difference between the carrying amounts and fair values at a given date. Net unrealised losses also incorporate the adjustments due to the mark-to-market change of derivatives booked in a hedge accounting relationship.<sup>4</sup> By contrast, gross unrealised losses assume that no derivatives are in place for these positions in a hedge accounting relationship. The presence of hedges, typically on interest rate risk, can thus mitigate the gross unrealised losses and the held-to-maturity portfolios can in some cases act as a natural hedge. Although they do not directly affect capital, gross and net unrealised losses may have an impact on the present value of the bank's equity from an economic viewpoint (economic value of equity or EVE).

**Unrealised losses represent only a partial assessment of a bank's economic value of equity, as changes in interest rates affect the bank's entire balance sheet.** Accordingly, the unrealised losses on the bond portfolio measured at amortised cost provide only an incomplete view of banks' economic value of equity. This can be complemented with the Pillar 3 disclosures<sup>5</sup>, for instance, to evaluate the overall exposure to interest rate risk.

**As of February 2023, system-level net unrealised losses for significant institutions directly supervised by the ECB totalled €73 billion<sup>6</sup>.** As a consequence of rising interest rates, significant institutions' gross unrealised losses increased significantly after 2021, reaching a peak of €124 billion in December 2022 and standing at €116 billion in February 2023 (Chart A, panel a). Over the same period, banks made increasing use of micro fair value hedges to partially offset these gross unrealised losses. Overall, this implied that net unrealised losses were approximately €40 billion below gross unrealised losses as of February 2023.

---

<sup>3</sup> For several reasons, aggregating the capital impact of unrealised losses and the stress test capital depletion would be misleading. First, the static balance sheet assumption of the stress test does not allow for mitigating actions, such as repo transactions, that banks would normally take to avoid liquidating bonds in the held-to-maturity portfolio. Second, the stress test methodology is consistent with prudential and accounting standards, which means that unrealised gains and losses on bonds measured at amortised cost are not considered.

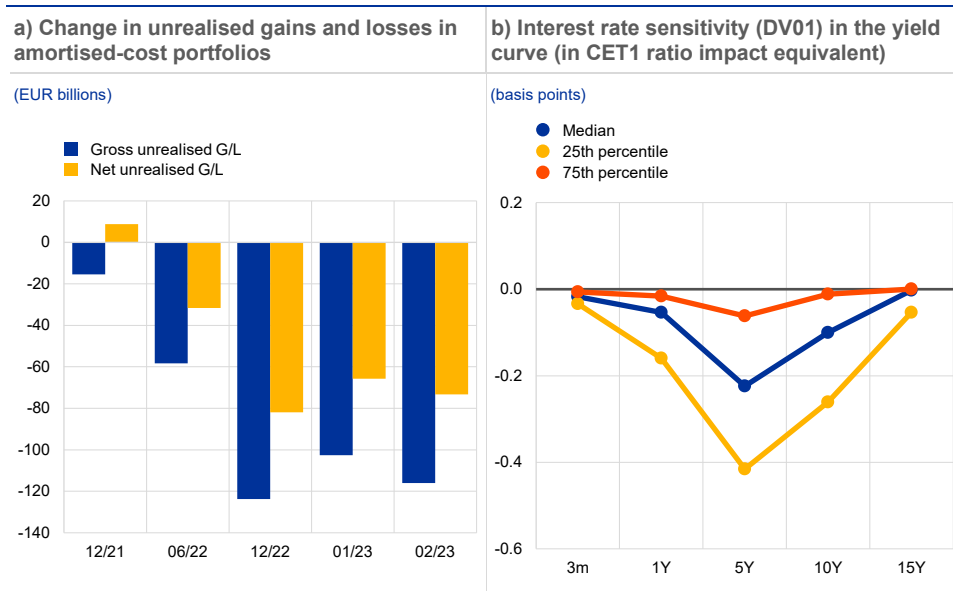
<sup>4</sup> Hedge accounting is a form of accounting treatment aimed at managing the exposure to certain risks that could affect the P&L or other comprehensive income (OCI).

<sup>5</sup> The implementing technical standards (ITS) on Pillar 3 require institutions to disclose their exposure to interest rate risk on positions not held in the trading book. Article 448 of Regulation (EU) No 575/2013 (CRR) requires institutions to disclose, as from 28 June 2021, quantitative and qualitative information on the risks arising from potential changes in interest rates that affect both the economic value of equity and the net interest income of their non-trading book activities referred to in Article 84 and Article 98(5) of Directive 2013/36/EU (CRD).

<sup>6</sup> DZ Bank AG Deutsche Zentral-Genossenschaftsbank and Groupe Cr dit Agricole did not report the carrying amounts and fair values of their bond portfolios measured at amortised cost as of February 2023. The December 2022 amounts were used in the analysis instead. A small number of other banks revised their data late in the process and therefore those revisions are not incorporated in the aggregate analysis presented here. These late revisions, however, do not change the overall conclusions.

## Chart A

### Unrealised losses and interest rate risk in the amortised-cost portfolio



Sources: EU-wide stress test submissions, COREP 34.02 December 22 Submission and ECB calculations.

Notes: Panel a: net unrealised G/L calculated as the difference between the fair value and carrying amount in the amortised-cost portfolio. Gross unrealised G/L calculated as the net unrealised losses plus the hedge adjustment for fair value hedging. Net unrealised G/L cash flow hedge calculated as gross unrealised G/L plus the fair value of cash flow hedging. Data as at February 2023. The initial unrealised losses are calculated as the difference between the carrying amount and the fair value of bonds measured at amortised cost as at February 2023. Panel b: 25th, 50th and 75th percentile of the banks' net DV01 in the yield curve. The DV01 is rebased on the risk exposure amount and defines the CET1 ratio impact for 1 basis point upward movement in the curve.

**The aggregate level of interest rate risk exposure from bonds, after taking into account partial hedges, appears relatively contained, albeit negative.** This translates into potential additional losses should interest rates increase further. As shown in Chart A, panel b, on average euro area banks are negatively exposed to rising interest rates at the medium end of the yield curve, while the sensitivity in the short and longer ends of the curve is more limited.

## Chart B

### Counterparties of bonds measured at amortised cost

#### Share of general government and other bonds in total amortised-cost bond portfolios



Sources: EU-wide stress test submissions and ECB calculations.

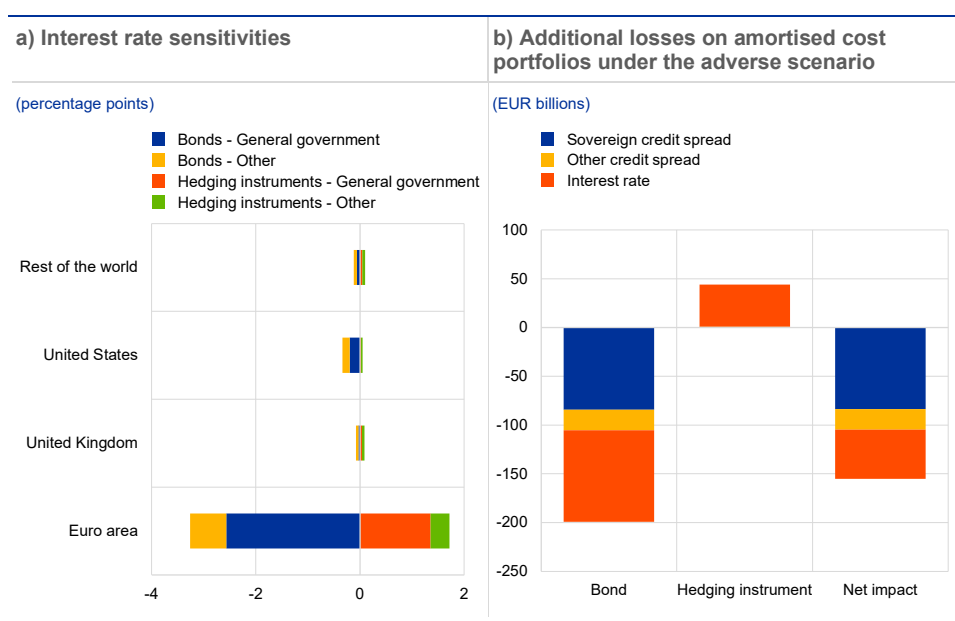
Note: Shares are based on the carrying amount of bonds measured at amortised cost as at February 2023.

**Unencumbered bonds in the amortised-cost portfolio are significantly higher than current unrealised losses.** These bonds can be used as collateral to raise liquidity before any outright sale is required. Moreover, as shown in Chart B, most of the bonds are issued by governments and therefore have higher market liquidity.

**Part of the risk in banks' bond portfolios measured at amortised cost is related to the variability of euro area interest rates.** Granular interest rate sensitivities reported in the ad hoc data collection make it possible to assess potential risk drivers in amortised-cost bond portfolios. Chart C, panel a) shows a distribution of interest rate risk aggregated by main risk drivers related to interest rates in different jurisdictions, separately for bonds and for related hedging instruments. The highest sensitivities are observed for euro area yield curve shifts, although about 60% of this risk is hedged.

### Chart C

#### Interest rate sensitivities and additional losses under the adverse scenario



Sources: EU-wide stress test submissions and ECB calculations.

Notes: Data as at February 2023. Panel a: sensitivities have been aggregated at bank-portfolio-region level, divided by the respective portfolio fair value and then aggregated by average country risk factor. Delta sensitivities calculated as the change in the price of the items in the bond or hedging portfolios in response to a 1 percentage point shift in the risk factor (risk-free or credit spread curve). Panel b: the additional, scenario-driven losses take into account the market risk scenario of the 2023 EU-wide stress test as an adverse scenario.

**Interest rate and credit spread sensitivities can be used to understand how the fair value of the bond portfolio can change under stressed market conditions.**

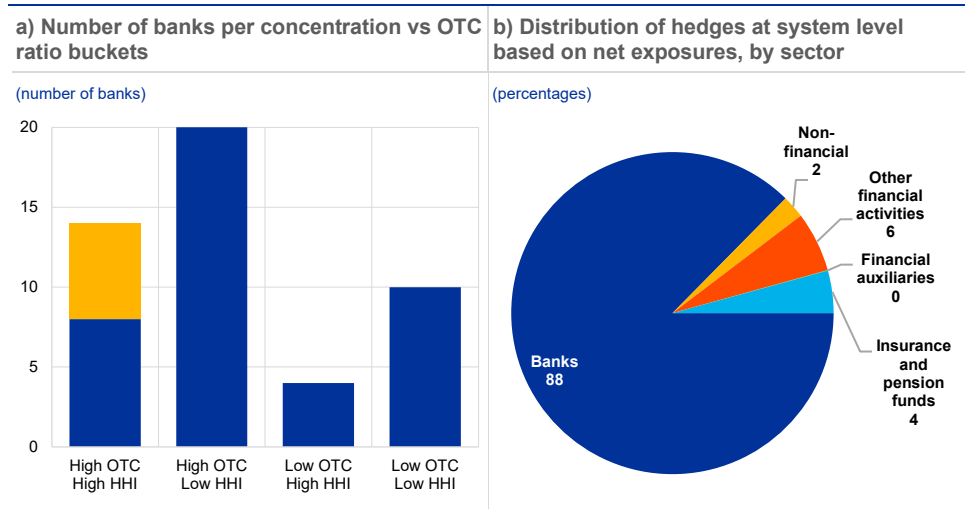
Chart C, panel b) shows the additional system-wide unrealised losses that could occur in the amortised-cost portfolio under the adverse market risk scenario used in the 2023 EU-wide stress test. Interest rate hedges partially offset the impact of the scenario, reducing the potential losses on the bond portfolio by 22%. At the system level, the additional losses net of hedges projected under the scenario amount to €155 billion. This should be regarded as an unlikely hypothetical outcome, as banks' amortised-cost portfolios are designed to be held to maturity and – as mentioned above – banks would typically turn to repo transactions and other mitigating actions before liquidating their bond positions.

**The main driver of the impact is the sensitivity to widening sovereign credit spreads in the scenario.** Unlike interest rate risk, credit spread risk is predominantly unhedged, meaning that there is a smaller offsetting effect. The large impact also reflects the severity of the credit spread shocks in the market risk scenario. As mentioned above, it is important to remember that the scenario-based unrealised losses reported here should not be seen in conjunction with the EU-wide solvency stress test results as the two exercises rely on different, incompatible methodologies. Moreover, the estimates should be interpreted with prudence, since they rely on the reported sensitivities of the bonds measured at amortised cost to interest rate and credit spread shocks that are an approximation of how the fair value of those bonds and hedges can change under stressed market conditions.

**Adverse scenario impacts vary across banks.** However, smaller banks (measured by total assets) tend to see a larger increase of unrealised losses in terms of CET1 ratio impact. The adverse scenario loss distribution ranges from €144 million at the 25th percentile to €2.5 billion at the 75th percentile, with the median bank experiencing an increase of €707 million in unrealised losses.

### Chart D

Hedging of amortised-cost portfolios limits counterparty credit risk, with banks as main hedging counterparties



Sources: EU-wide stress test submissions, RIAD database and ECB calculations.  
 Notes: Data as at February 2023. Panel a: HHI calculated as  $\sum_{cp} \left( \frac{\text{Net Exp. floored at 0}}{\text{Tot Net Exposures}} \right)^2$  for each bank. The OTC ratio is calculated on the basis of COREP 34.02 as the ratio of total CCR exposures (excluding those cleared via CCPs) to total CCR exposures (all portfolios). "High" means values above the 50th percentile, "low" means values below the 50th percentile. The yellow bar shows the number of banks with larger exposure to CCR, i.e. with a ratio of CCR exposure to total risk exposure amount greater than 5 basis points. OTC stands for over-the-counter; HHI stands for Herfindahl-Hirschman Index. Panel b: aggregate sectors based on NACE codes.

**The data collection covers the largest counterparties providing hedging which is not centrally cleared and allows for counterparty concentration risk to be assessed.** This perspective is particularly relevant because hedging can be more costly, and consequently less effective, when banks rely on a few counterparties. Many banks rely entirely on central clearing counterparties (CCPs) when hedging, thus minimising their counterparty credit risk (CCR). Counterparty concentration is generally limited for uncleared transactions. However, some banks do not centrally clear a substantial share of hedges and rely on a few counterparties, leaving them

potentially exposed to elevated concentration risk (Chart D, panel a). Nonetheless, the uncleared hedging portfolio is often small compared with the size of their balance sheets, suggesting that the concentration risk is not material. Most of the uncleared hedges are provided by other banks which, while noting the limited materiality of this counterparty risk across most banks in the sample, could act as a potential contagion channel in times of financial distress (Chart D, panel b).

© European Central Bank, 2023

Postal address 60640 Frankfurt am Main, Germany

Telephone +49 69 1344 0

Website [www.ecb.europa.eu](http://www.ecb.europa.eu)

All rights reserved. Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

For specific terminology please refer to the [ECB glossary](#) (available in English only).