EUROPEAN CENTRAL BANK

BANKING SUPERVISION

Counterparty credit risk exploratory scenario exercise

Final results

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Contents

1 Introduction

Counterparty credit risk (CCR) is a risk stemming from banks' intermediation activities in financial markets. CCR is related to uncertainty that amounts due in derivatives transactions may not be paid at the time of settlement. This risk is especially pronounced when trades are not adequately collateralised. As at June 2024 CCR accounted for around €340 billion, or approximately 4%, of significant institutions' risk-weighted assets (and around 50 basis points of their Common Equity Tier 1 ratio).[1] Its materiality varies greatly across banks, with CCR concentrated in a few larger banks and specialised institutions.[2]

The materialisation of counterparty credit risk is very sensitive to market conditions, such as periods of high volatility or scarce market liquidity. As an example, a counterparty may fail to meet margin calls after sharp declines in the prices of certain securities to which it is exposed. This may have adverse repercussions across the banking system owing to interlinkages through exposures to counterparties with similar risk profiles.[3]

Recent events have shown that when CCR is associated with non-bank financial institutions (NBFIs), it poses a significant threat to banks through multiple amplification channels. The NBFI sector is sizeable and still growing, increasing banks' exposure to less regulated segments of the financial system[4]. A recent example of an NBFI propagating CCR losses was the failure of the family office investment firm Archegos in March 2021. Its counterparties were put under significant stress owing to the firm's inability to meet margin calls on heavily leveraged trades. The estimated aggregate losses incurred by global banks, and amplified by asset fire sales, amounted to USD 10 billion.

Counterparty credit risk has been a focus area for European banking supervision over the past few years. In a targeted review of CCR[5], the ECB identified and qualitatively assessed some material deficiencies in how banks manage this risk. Fostering and strengthening sound CCR management practices, including stress-testing capabilities, were highlighted as key supervisory activities.[6]

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1 Barbieri, C., Grodzicki, M., Grzegorz, H. and Pizzeghello, R., "System-wide implications of counterparty credit risk", *Macroprudential Bulletin*, No 26, ECB, January 2025.

2 For example, CCR exposures account for over 6% of the risk-weighted assets of investment banks and corporate and wholesale lenders but only 0.2% of the risk-weighted assets of universal and diversified banks.

3 Barbieri, C. et al., op. cit.

4 According to the Financial Stability Board (FSB), the NBFI sector expanded by 8.5% in 2023, more than double the 3.3% growth in banking assets, bringing its share of global financial assets to 49.1%. The "narrow measure" (which includes entities involved in credit intermediation activities and posing bank-like vulnerabilities) increased 9.8% to reach USD 70.2 trillion, the highest level on record (see FSB, "Global Monitoring Report on Non-Bank Financial Intermediation", December 2024).

5 ECB, "Sound practices in counterparty credit risk governance and management", October 2023.

6 McCaul, E., "Supervising counterparty credit risk – a European perspective", keynote speech at the industry outreach conference on counterparty credit risk management, organised by the Federal Reserve Bank of New York in collaboration with the Basel Committee on Banking Supervision, New York, 28 February 2024.

To further investigate NBFI-related vulnerabilities and banks' stress-testing capabilities in this area, the ECB conducted an exploratory scenario analysis on counterparty credit risk. The exercise was run in parallel to the 2025 EBA EU-wide stress test and sought to (i) strengthen the microprudential assessment of significant institutions' ability to model CCR under diverse stress conditions and (ii) provide a better understanding of the vulnerabilities stemming from interlinkages with NBFIs.

This exploratory analysis is separate from the 2025 EU-wide stress test coordinated by the European Banking Authority (EBA) and investigates additional hypothetical adverse scenarios relevant for CCR. The CCR exploratory scenario (CCR-ES) exercise complements other European banking supervision data collection exercises. It focuses on stressed exposure data under multiple adverse scenarios built around the EBA's 2025 EU-wide stress test adverse scenario (hereinafter the "EBA scenario"). Multiple-scenario stress testing is useful, as the current highly uncertain market environment could give rise to sudden and significant changes in policy interventions and the economic outlook. Moreover, the data collection and the analysis add value by looking at distinct features of CCR, like leverage and specific wrong-way risk, to assess banks' vulnerabilities and modelling approaches to CCR in stressful market conditions.

In contrast to the EBA stress test methodology, the exploratory exercise does not have any capital implications. The exercise will not lead to the calculation of a capital depletion for participating banks. However, the qualitative outcomes of the exercise will be considered in the context of the Supervisory Review and Evaluation Process. More specifically, those observations will inform the supervisory dialogue with the participating institutions.

2 Scenarios and methodology

2.1 Scenarios

The exploratory exercise considers three scenarios. Two additional scenarios are considered alongside the market risk scenario from the EBA's 2025 EU-wide stress test. These scenarios allow for a meaningful sensitivity analysis around the EBA scenario to account for the potential materialisation of CCR. They do so by introducing additional shocks to various components of the market risk scenario while keeping shocks to all other variables constant.

Alternative scenario 1 considers a decline in interest rates. Heightened uncertainty about trade policy leads to a further decline in global demand. This slowdown amplifies the disinflationary elements of this scenario, driving down swap rates across different economic regions (**Chart 1**, panel a). More significant shocks are observed in longer-term tenors owing to the anticipated persistence of the adverse shocks. The shocks are comparable to the movements in market rates observed between the fourth quarter of 2008 and the first quarter of 2009.

Alternative scenario 2 considers a depreciation of euro exchange rates. Increasing geopolitical and trade tensions lead to a further economic slowdown and mounting pressure on sovereign finances. This is heightened in the euro area owing to a significant increase in defence needs. As the potential inflationary effects from trade disruptions are tempered by the EU's delayed tariff retaliation compared with other economic areas, the scenario results in a depreciation of the euro against three major currencies (US dollar, pound sterling and Japanese yen) (**Chart 1**, panel b). The initial shocks to the three currencies are calibrated based on the tenth percentile of the historical distribution of the yearly change in the exchange rates. The shocks to exchange rates also extend to the forward curves, the slopes of which are in line with the interest rate parity.[7]

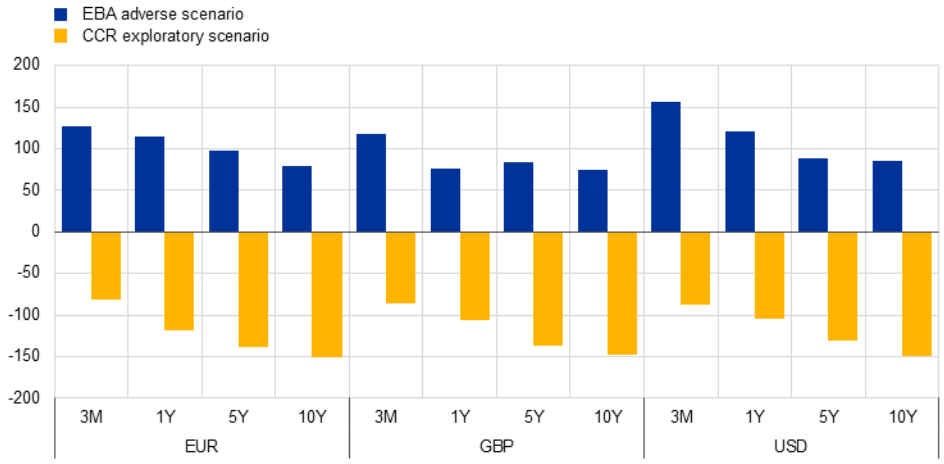
[7] Namely, owing to no-arbitrage, the negative differential between the euro swap rates and the US dollar (pound sterling) swap rates of the EBA adverse scenario implies a positive slope of the forward curve for the EUR/USD (GBP) exchange rate, i.e. an appreciation of the euro vis-à-vis the US dollar (pound sterling). Instead, as the differential between the EUR swap rates and the JPY swap rates is positive in the scenario, the forward curve for the EUR/JPY has a negative slope, i.e. in line with a future depreciation of the euro with respect to the Japanese yen.

Chart 1

The two alternative scenarios used in the CCR exploratory scenario exercise, built around the EBA 2025 EU-wide stress test scenario

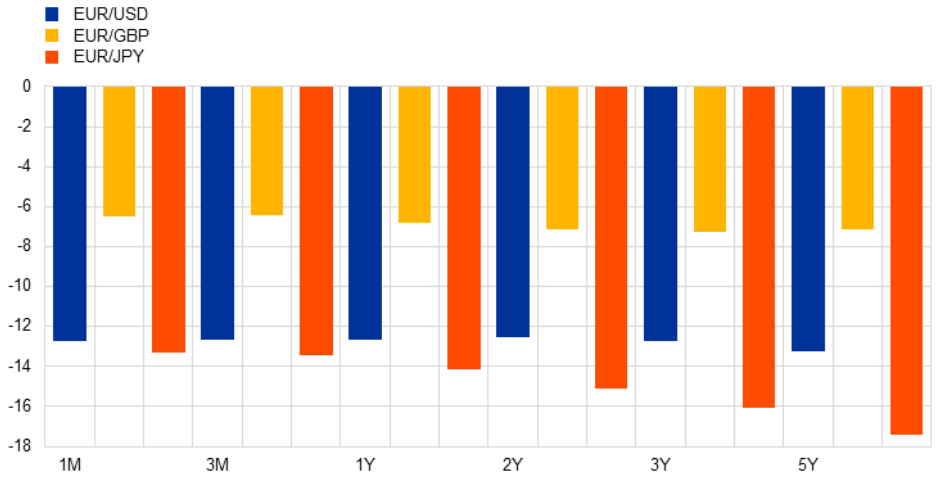
a) Swap rate shocks in the EBA adverse scenario and in alternative scenario 1

(basis point change from the starting point)



b) Shocks on FX forward curve of the EUR exchange rate vis-à-vis US dollar, pound sterling and Japanese yen in alternative scenario 2

(relative percentage change)



Source: Banks' submissions in the CCR-ES exercise..
Notes: Panel a: the swap rate shocks are in line with an additional negative and persistent slowdown on the demand side, triggered by heightened uncertainty about trade policy, and are comparable with the movements in market rates observed between the fourth quarter of 2008 and the first quarter of 2009. Panel b: the initial shocks are calibrated based on the tenth percentile of the historical distribution of the yearly change in the exchange rates. Shocks to forward curves are in line with the interest rate parity.

2.2 Methodology

For proportionality reasons, only banks with material CCR exposures were invited to participate in the exercise. The 15 participating banks were selected based on quantitative criteria derived from the 2023 EBA stress test and on supervisory judgement. Participants were global systemically important banks (G-SIBs), banks for which more than 50% of their CCR exposure was towards NBFI sectors, or banks with a Common Equity Tier 1 depletion of more than 100 basis

points following a hypothetical scenario involving the default of their four most vulnerable counterparties. Banks for which more than 75% of their CCR exposure was towards the non-financial corporate sector were also included.

The exercise relied on a targeted data collection of the banks' stressed exposures to the most vulnerable counterparties at sectoral level. To assess the CCR exposure under the two alternative stress scenarios, banks participating in the exercise were asked to apply a similar methodology to that in the 2025 EU-wide stress test, but with a higher granularity of exposures, and to report a richer set of portfolio characteristics. Within each category of counterparty, banks had to report on the ten largest ones in terms of stressed CCR exposures. Unlike in the EBA stress test methodology, banks reported exposures at individual counterparty level rather than at counterparty group level so that they could more accurately identify NBFI counterparties.

The exercise entailed a deep dive into CCR exposures to NBFIs. The methodology specifies eight categories of counterparties: money market funds (MMF), non-MMF investment funds, real estate funds, private equity and private credit funds, hedge funds, insurance and pension funds, other financial institutions, and family offices. In addition, for completeness, banks were also asked to provide information on credit institutions and non-financial corporations. For these counterparties, banks calculated stressed CCR exposures, considering collateral revaluation. Banks reported the credit valuation adjustment[8] and CCR-related projected losses, including a jump-to-default[9] measure, and also provided information on the impact of the SWWR[10].

Banks were also asked to provide detailed information on the characteristics of their counterparties. They reported default probabilities and leverage metrics so that the quality of the CCR portfolios could be assessed. In particular, the leverage metrics provide an insight into how banks define leverage depending on the type of counterparty.[11]

Banks' CCR stress-testing capabilities were a key focus area in the exploratory scenario exercise. Quantitative information was supplemented with the banks' descriptions of modelling approaches and the key assumptions underlying the submitted results. These appeared in the explanatory notes to the banks' submissions.

ECB Banking Supervision conducted a thorough quality assurance process. This ensured consistency with the methodology, and banks' submissions were also subject to peer benchmarking. However, because of the exploratory nature of the

8 A credit valuation adjustment is an adjustment to the mid-market valuation of the portfolio of transactions with a counterparty, as per Article 381 of the Capital Requirements Regulation (Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and amending Regulation (EU) No 648/2012 (OJ L 176, 27.6.2013, p. 1)).

9 Jump-to-default is defined as the net additional loss resulting from an issuer's instantaneous default.

10 SWWR is the risk that arises when the potential exposure on a transaction with a counterparty is highly correlated with the probability of default of that counterparty.

11 The methodology was not prescriptive about the definitions and conventions to be used to report leverage metrics, which encouraged banks to report information as it is used in their internal systems.

exercise, banks were encouraged to report information in line with their internal processes and models. This was prioritised over consistency in the peer benchmarking, as it helped to shed light on banks' own practices for modelling CCR.

3 Main results

3.1 Overview of CCR exposures

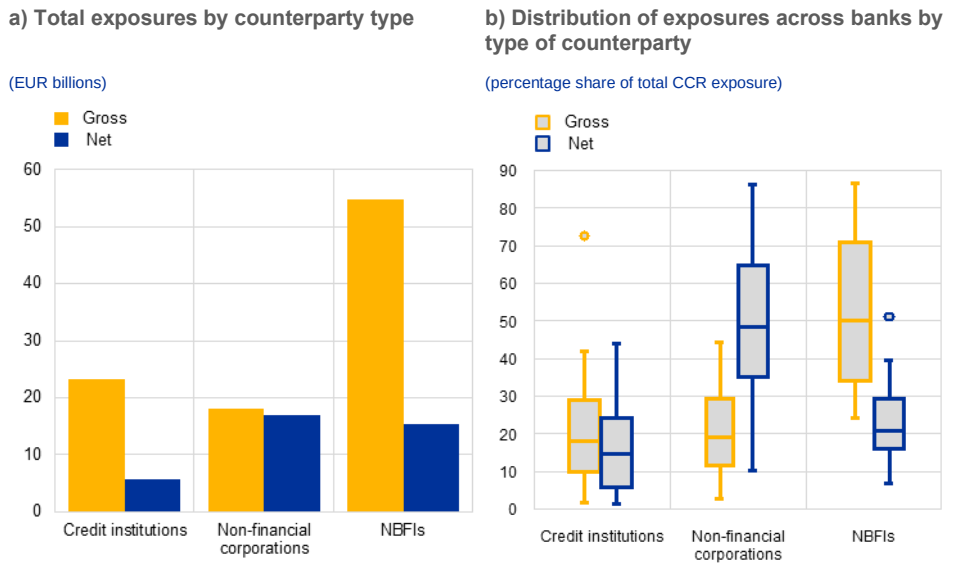
The total current exposure reported by the 15 banks involved in the exploratory exercise varies significantly in terms of net exposure and the level of collateralisation. For each category of counterparty, the banks reported exposures to counterparties towards which they have the largest exposures under the EBA stress scenario. The total gross exposure for the sample stands at €96 billion, ranging from €1 billion to around €15 billion per participating bank. The total net exposure stands at €38 billion, with the level of collateralisation ranging from 9% to 95% across the sample. The level of collateralisation does not correlate with the CCR exposure or the size of the bank.

Monitoring gross exposures remains essential for a comprehensive view of underlying risk. While the analysis focuses primarily on exposures net of collateral, information on gross exposures can provide a valuable perspective on CCR. Collateralisation plays a key role in mitigating CCR, but its effectiveness ultimately depends on the stability and valuation of the collateral itself. In a crisis, the value of collateral can deteriorate (owing to market volatility or liquidity stress, for example), potentially reducing its protective effect and leaving banks more exposed than the net figures suggest.

Banks' gross CCR exposures are predominantly concentrated in NBFIs. Gross exposures to NBFIs amount to €55 billion, which is more than twice the amount of exposures to credit institutions (€23 billion) and non-financial corporations (€18 billion) respectively (**Chart 2**). There is wide variation in the share of gross exposures to NBFIs across banks, ranging from 40% to over 80% of total CCR exposures. Within the NBFI segment, most exposures are to insurance companies and pension funds.

Chart 2

Current exposures (gross and net of collateral) by counterparty type



Source: Banks' submissions in the CCR-ES exercise.

Exposures to non-financial corporations remain elevated after accounting for collateral, suggesting that there is lower collateral coverage for derivative transactions with the corporate sector. Net of collateral, CCR exposures to non-financial corporations are of a similar magnitude to NBFI exposures. Once collateral is considered, net exposures to both NBFIs and credit institutions drop significantly, indicating a high degree of collateralisation. However, there is some heterogeneity when considering net-of-collateral exposure, with some banks particularly exposed to non-financial corporations and others predominantly exposed to diverse NBFI counterparties. Overall, this highlights the importance of collateral practices for managing CCR concentration and vulnerabilities to financial shocks.

3.2 Key risks from CCR exposures

A number of aspects are considered when assessing the main risk drivers in the CCR portfolios. Key risk metrics in the exploratory scenario exercise include the default probabilities of counterparties, the concentration of CCR exposures and the sensitivity of CCR to various risk factors. Moreover, the exercise is designed to shed light on banks' CCR exposure to leveraged counterparties and their resilience to liquidity shocks. Finally, having combined data on CCR exposures from a representative sample of euro area banks makes it possible to assess the potential indirect impact of CCR losses on banks owing to the structural features of the interconnected CCR system.

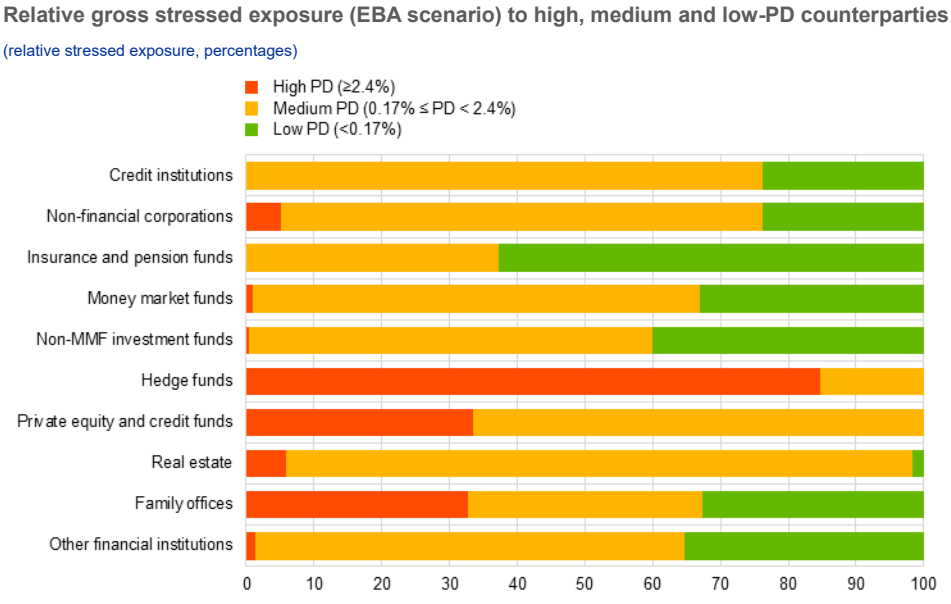
3.2.1 Probability of default

Counterparty probability of default (PD) is a critical measure of credit quality that indicates the likelihood that a counterparty will fail to meet its obligations. Analysing exposures by PD level makes it possible to identify concentrations in non-investment grade segments, which are more likely to amplify losses under stress. This is especially relevant for NBFIs given their varied and sometimes opaque risk profiles.

The probability of default of CCR exposures varies widely across the different counterparts.[12] The distribution of high, medium and low-PD gross exposures depends greatly on the type of counterparty (**Chart 3**). At one end of the spectrum, the exposure to insurance and pension funds, the highest of the NBFI exposures in volume terms, is mainly towards low-PD counterparties. By contrast, hedge funds and private equity and credit funds stand out as the riskiest counterparties. Their portfolios consist entirely of medium and high-PD exposures. High-PD exposures, which represent non-investment-grade counterparties, accounted for around 85% of total exposures for hedge funds and around 30% for private equity and credit funds and family offices.

Chart 3

Probability of default by type of counterparty



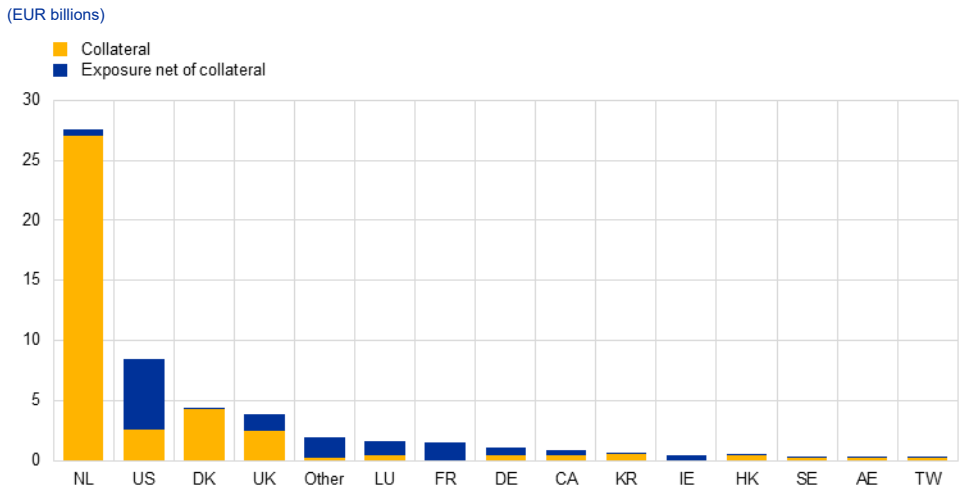
Source: Banks' submissions in the CCR-ES exercise.
Note: Low PD = CQS1, medium PD = CQS2 and CQS3, and high PD = CQS4, CQS5 and CQS6.

[12] PDs were reported by counterparty and have been classified as high, medium and low according to the credit quality steps (CQS) defined in Annex III of Commission Implementing Regulation (EU) 2016/1799 of 7 October 2016 laying down implementing technical standards with regard to the mapping of credit assessments of external credit assessment institutions for credit risk in accordance with Articles 136(1) and 136(3) of Regulation (EU) No 575/2013 of the European Parliament and of the Council.

3.2.2 Country dimension

The counterparties reported in the data collection are domiciled in a rather diverse range of countries but are highly concentrated in a few jurisdictions. As **Chart 4** shows, most of the aggregated gross exposure is towards NBFI counterparties located in the Netherlands. These are mainly insurance and pension funds and non-MMF investment funds. By contrast, when considering net-of-collateral exposure, NBFI counterparties based in the United States are preponderant, with MMFs accounting for almost half of the exposure. There is also significant concentration across banks. The three banks that are most exposed to US counterparties account for 78% of the total net exposure.

Chart 4
Gross exposure and collateralisation level by country of counterparty



Source: Banks' submissions in the CCR-ES exercise.
Note: The category "Other" comprises counterparties residing in Bermuda, the Channel Islands, the Cayman Islands, the British Virgin Islands and Cyprus.

3.2.3 Impact of the 2025 EBA stress test and the alternative stress scenarios

Banks reported their CCR exposures and revalued collateral based on the shocks in the EBA market risk scenario and separately for the two alternative scenarios. The two alternative scenarios are modifications of the 2025 EBA stress test scenario and assume different interest rate and exchange rate trajectories (Section 2.1).

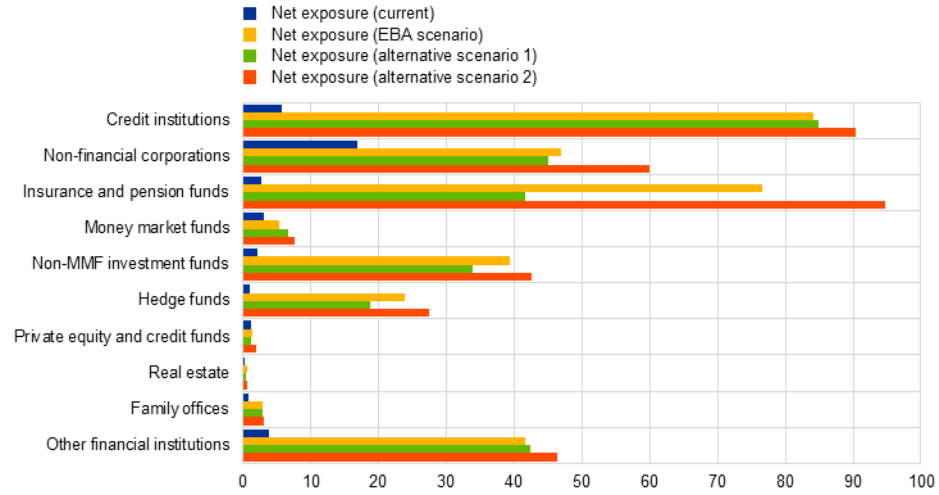
As Chart 5 shows, vulnerability to financial shocks varies across counterparty types, confirming the importance of considering multiple scenarios when conducting stress tests. Using multiple scenarios can expose vulnerabilities that would otherwise not appear under a single scenario approach. This is evident when different scenarios lead to significantly different outcomes at bank and system level.

Chart 5

Impact of scenarios on net exposure by counterparty type

Net exposure under EBA scenario, alternative stress scenario 1 and alternative stress scenario 2

(EUR billions)



Source: Banks' submissions in the CCR-ES exercise.

Alternative scenario 2 (FX devaluation shock) results in the most pronounced impact for all counterparty types. The depreciation of the euro against major currencies (US dollar, pound sterling and Japanese yen) increases banks' CCR exposures by raising the replacement cost of foreign currency derivatives. As the euro weakens, contracts denominated in stronger currencies become more valuable in euro terms, increasing the amount a bank would lose if the counterparty defaulted. At aggregate level, the increase in net exposure is mainly driven by an increase in gross exposure, while there is a minimal impact on collateral. This suggests that banks manage their collateral in such a way that the impact of the direction of the shocks is limited.

For some types of counterparty, alternative scenario 1 (interest rate decline) leads to a smaller exposure than under the EBA scenario. Insurance and pension funds, followed by non-MMF investment funds and hedge funds, exhibit a smaller increase in exposure under alternative scenario 1 than under the EBA scenario. This can be explained by the direction of the positions taken against the interest rate.

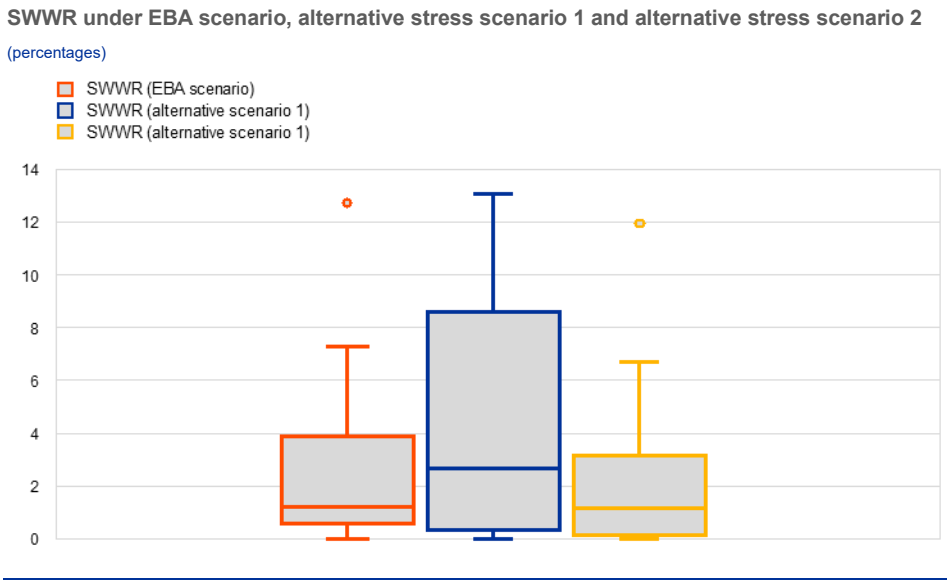
3.2.4 Wrong-way risk

Specific wrong-way risk (SWWR) in counterparty credit risk occurs when the exposure to a counterparty increases alongside the probability of that counterparty defaulting, owing to the nature of the underlying transactions. The CCR-ES exercise sheds light on the materiality of this risk in the CCR portfolios and on banks' modelling practices for CCR stress testing. Interestingly, the collected data show that SWWR contributes only marginally to CCR, accounting for less than

4% of gross CCR exposures on average. Nevertheless, exposures subject to SWWR should still be subject to sound risk management practices that consider the specific sensitivity of these exposures to different financial shocks.

Chart 6

Specific wrong-way risk as a percentage of current gross exposure



Source: Banks' submissions in the CCR-ES exercise.

3.2.5 Leverage

Banks were asked to indicate the leverage level of each of their counterparties. Based on this information, leverage has been classified into high, medium and low buckets.To define these buckets, ESMA estimates[13] of the average leverage across types of investment fund were used to classify counterparties as medium (below-average) or high (above-average) leverage. Within the medium category, low leverage counterparties were defined as those with a leverage metric below 1.[14] Notably, given that the methodology allowed the banks to decide on the metrics and reporting conventions, the mapping of the reported metrics into the three buckets required a certain degree of expert judgement.

[13] European Securities and Markets Authority, "EU Alternative Investment Funds 2023", *ESMA Market Report*, January 2024.

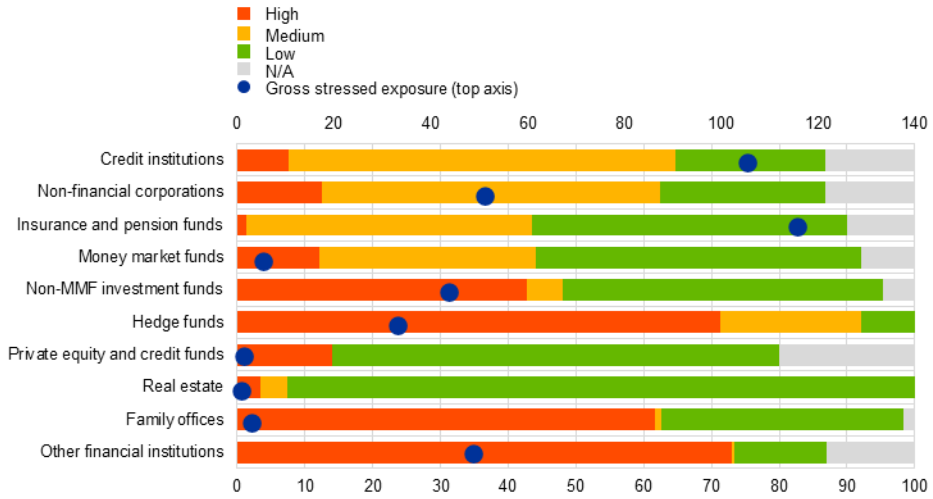
[14] Credit institutions calculated leverage following the usual convention of capital to total assets. In this exercise, low leverage was defined as a ratio above 8%.

Chart 7

Leverage by counterparty type

Relative gross stressed exposure (EBA scenario) to high, medium, and low leverage counterparties

(lower axis: structure of exposures in percentages, upper axis: gross stressed exposure in EUR billions)



Source: Banks' submissions in the CCR-ES exercise.
Note: N/A indicates that (i) banks did not report leverage metrics owing to a lack of information or (ii) there is no relevant metric for the specific type of exposure.

As shown in Chart 7, the highest number of leveraged counterparties are hedge funds, other financial institutions and family offices. Hedge funds' business models often rely on significant leverage to increase investment gains.[15] However, banks have relatively low net exposures to these counterparties (**Chart 5**), suggesting that banks do consider leverage when managing their counterparty credit risk. In addition to banks, counterparties from more sizeable segments of the financial system, such as MMFs and insurance and pensions funds, have much lower leverage, which is typically associated with lower counterparty default risk.

3.2.6 Liquidity

When the net exposure increases under stress, it can be assumed that it translates into margin calls. Relatedly, the increase in net exposure can be used to ascertain a bank's capacity to absorb liquidity shocks. More specifically, the additional margin induced by the market stress prescribed in the scenarios is calculated by comparing the difference between stressed gross exposure and stressed net expose and current gross exposure and current net exposure.

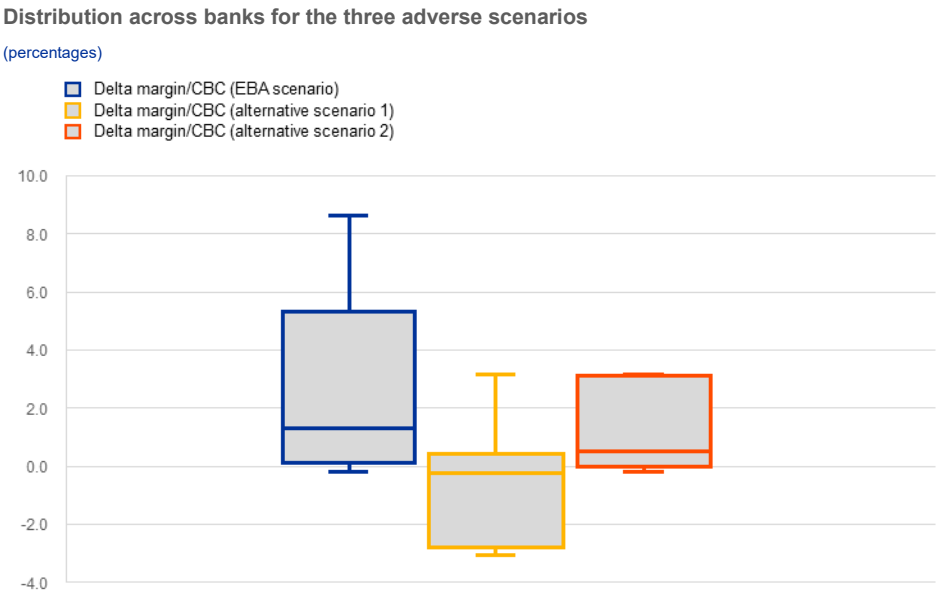
As illustrated in Chart 8, for some banks the additional margin implied by the three scenarios can account for a significant fraction of their liquidity portfolios. The outcome differs depending on the scenario used to calculate the margins. Specifically, the EBA scenario implies the greatest additional margin under stress. Owing to falling interest rates, alternative scenario 1 may even lead to a

[15] European Securities and Markets Authority, "Annual risk assessment of leveraged AIFs in the EU – 2024", *ESMA Report on Trends, Risks and Vulnerabilities Risk Analysis*, April 2025.

decline the posted margin compared with margins related to current CCR exposures. Margin estimates under the additional FX shock are, on average, similar to those under the EBA scenario but with a different distribution across banks. Consequently, in terms of the ratio to the liquidity portfolios, alternative scenario 2 has a milder impact than the EBA scenario. Although the estimated additional margins related to the shocks in the EBA scenario are, on average, a rather small fraction of banks' liquidity portfolios, for some banks it may be a significant drain on liquidity. The outcomes of the simulations highlight the need to consider multiple scenarios for a robust assessment of CCR.

Chart 8

Ratio of increase in the net exposure under the stress scenarios to reported counterbalancing capacity



Source: Banks' submissions in the CCR-ES exercise.
Note: The chart shows the ratio between the increase in exposure under the EBA stress scenario and the counterbalancing capacity for the banks participating in the exercise.

3.2.7 Interconnectedness

Exposures with CCR create a complex structure of interconnections that can lead to CCR losses indirectly affecting other banks in the system.[16] Therefore, it is important to monitor the structure of exposures in order to identify which banks might be adversely affected by their direct counterparties as well as counterparties of their counterparties.

To measure the potential vulnerability of individual banks to counterparties that are more significant in the system, a fragility indicator was calculated. For a particular bank, it measures how many other banks are exposed to the counterparties of that bank, assigning a greater weighting to those counterparties to

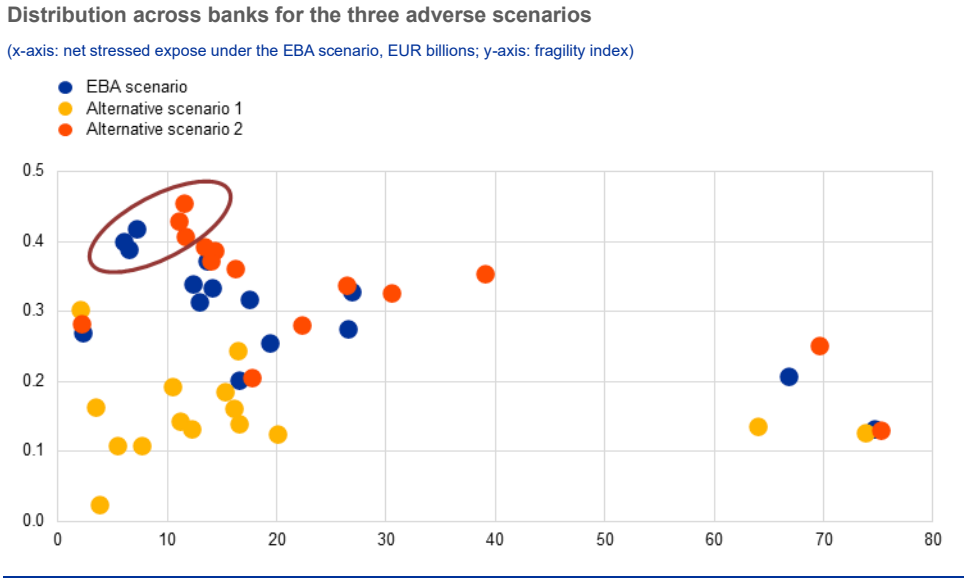
[16] Barbieri, C. et al., op. cit.

which banks at system level have a higher gross exposure.[17] Banks that are exposed to more common counterparties might be more prone to shocks spreading in the interconnected system of CCR exposures, for example following the default of a counterparty in some adverse market conditions.

Banks with the most sizeable CCR exposures may not necessarily be the most vulnerable to the indirect impact of shocks in the interconnected system of CCR exposures. Chart 9 shows that the size of the stressed CCR exposure may not be an accurate indicator of whether a bank is exposed to the default risk of indirect counterparties. Specifically, banks with the highest fragility index in the sample also happen to be the banks with the lowest stress exposure under the EBA scenario, for instance (see the dots in the top-left corner of Chart 9). The level of fragility may depend on the prescribed stress conditions. For example, under alternative scenario 1, banks with the lowest stressed CCR exposures may not be as materially exposed to the risk related to CCR interconnectedness.

Chart 9

Fragility index across scenarios



Source: Banks' submissions in the CCR-ES exercise.

3.3 Modelling practices

Banks' explanatory notes describe various aspects of the modelling used to carry out the CCR-ES exercise. In general, they show that banks made an effort to ensure their submissions complied with the methodology. The notes cover a diverse range of topics, as there was no prescribed structure. Banks could elaborate on the

[17] The calculation has two steps. First, each counterparty identified in the dataset is assigned an indicator representing the number of banks exposed to it, weighted by the gross exposure of all banks to this counterparty over all reported gross CCR exposures. The fragility index is then found by applying the sum of the indictors across all the bank's counterparties. A more precise description of the index can be found in the Annex.

aspects of the CCR stress test modelling that they considered to be most important in relation to their internal practices.

Collateralisation levels vary significantly across counterparty types. Credit institutions and NBFIs are generally the most collateralised, with riskier counterparties, such as hedge funds, often required to post substantial initial margins to ensure overcollateralisation. By contrast, non-financial corporations are rarely collateralised. A few banks gave specific reasons for this, such as issues with liquidity or operational management flows or the fact that corporates primarily engage in hedging activities and tend to have lower collateral requirements. Moreover, some banks noted that collateralisation also depends on factors such as regulatory requirements, the type of instrument and whether transactions are cleared or over the counter.

Regarding parameter modelling, most banks reported minimal use of expert judgement, with only a few exceptions. Methodologies for estimating PD and loss given default (LGD) were generally consistent with the 2025 EBA stress test templates. For LGD, most banks assumed a constant value across scenarios. A few institutions provided additional details, such as calculating LGD using the Basel value, in the absence of SWWR, and applying a weighted average of the Basel LGD and a stressed SWWR LGD when SWWR is present. Limited information was provided on the calculation of jump-to-default exposures.

Reported SWWR exposures are either zero or marginal across the sample, averaging around 4% of gross exposures. These figures were confirmed by banks during the quality assurance phase. However, approaches to identifying SWWR vary across institutions. Some banks apply a narrow interpretation aligned with the definition in Article 291 of the Capital Requirements Regulation, while others employ more comprehensive methodologies. These can include identifying transactions with a legal link between the counterparty and the issuer of the underlying or cases where the collateral consists of securities issued by the counterparty or a related entity, often supported by regular monitoring processes to ensure proper classification. Computation methods also differ, with some banks applying conservative assumptions (e.g. 100% of notional or full jump-to-default with 100% LGD) and others adjusting the approach based on the instrument type.

There was also notable divergence in the leverage metrics reported across banks. In addition, in many cases, the rationale for selecting one metric over another depending on counterparty type does not seem to be straightforward.

Finally, for risk management practices, most banks indicated that they do not apply specific risk limits or stress-testing frameworks tailored to NBFIs. NBFIs are typically treated as a standard category of counterparty, although a few institutions reported more differentiated approaches, including targeted stress testing and dedicated risk limits for hedge fund exposures.

4 Conclusions

Detailed bank-specific outcomes of the analysis, including benchmarking across participating institutions, will be used in the subsequent supervisory dialogue. The Joint Supervisory Teams will follow up with the participating banks to discuss the observations and potentially seek clarification on matters that were not sufficiently covered in the explanatory notes accompanying the quantitative submissions.

In summary, the exercise shed some light on the concentration of exposures across various types of counterparties and on the sensitivity of these exposures to diverse adverse market conditions. Specifically, some additional FX shocks to the main currency pairs may have a significant impact on the stressed CCR exposure. In terms of risk concentration, the highest share of sub-investment-grade counterparties can be found among hedge funds and private equity. Moreover, exposures to non-financial corporations are relatively less collateralised. Notably, the exercise revealed a rather low materiality of specific wrong-way risk in the CCR portfolios.

Annex: Fragility index

The fragility index assigns a score to each counterparty, assigning a weighting to both the connections and the banks' exposure to that counterparty so that the higher the score, the higher the "fragility". The fragility index referred to in Section 3.2.7 is defined as follows:

$$F_b = \sum_{c \in C_b} \left(\frac{n_c}{N} * \frac{E_c}{\sum_{i \in C} E_i} \right)$$

Where:

- C_b is the set of counterparties of a bank, and C is the sum of all sets C_b
- n_c is the number of banks that reported c as a counterparty
- N is the total number of banks
- E_c is the sum of the stressed exposures net of collateral of all banks toward counterparty c

The formula can be simplified as $F_b = \sum_{c \in C_b} f_c$ where f_c is computed for each counterparty and depends on two elements: the relative importance/centrality of counterparty as indicated by the number of banks that share the counterparty and the relative importance of the counterparty measured by the relative exposure of all banks to that counterparty. The index F_b is computed for each bank by simply summing up the coefficient for all the counterparties reported by the bank. The higher the index, the higher the bank's "CCR fragility".

To make the fragility index comparable across banks, the coefficient is subsequently normalised between 0 and 1. As $F_b \in (0; C_b]$ and has no predefined scale, we normalise the coefficients between $[0; 1]$ to make it more comparable across banks:

F_b^{norm} =[(F_b - MIN(F_b) / (MAX(F_b) - MIN(F_b))]

As the index approaches 0, the bank is more exposed to counterparties that are less common and for a lower exposure. As the index approaches one, the fragility increases because of two interacting effects: having counterparties that are more common to other banks as well or because the exposure to a particular counterparty is sizeable relative to the total CCR exposure in the system (here the system refers to the 15 banks in the CCR-ES sample).

Postal address 60640 Frankfurt am Main, Germany
Telephone +49 69 1344 0
Website www.bankingsupervision.europa.eu

For specific terminology please refer to the SSM glossary (available in English only).

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