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# EBA response to the European Commission's consultation on macroprudential policy for Non-bank Financial Intermediaries (NBFIs)

EBA response to selected questions raised in the Commission's consultation

## Introduction

1. This document is the EBA response to the European Commission Targeted Consultation to assess the adequacy of macroprudential policy for Non-bank Financial Intermediation.
2. This response to the consultation is focused on selected questions related to the activities under the mandate of the EBA. The Annex lists the questions EBA has selected to cover under the consultation of the European Commission. For these specific topics, the EBA provides EU-wide analysis, proposes policy actions and identifies areas where action is needed.

# Section 1: Monitoring interconnectedness and risks to the EU banking sector stemming from NBFIs

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3. The potential risks arising from the bank-NBFI nexus have become a topic of primary importance.<sup>1</sup> However, in this context it is important to acknowledge that by construction, NBFIs can be seen as a very heterogeneous group of institutions, with both large country-level differences in activities and varying degrees of regulation. Banks and NBFIs can often be closely intertwined, with NBFIs typically relying on banks for funding and liquidity support. A closer examination of the links in the bank-NBFI nexus shows that banks are mainly linked to NBFIs through assets and liabilities in the form of loans and deposits, while NBFIs have considerable holdings of bank-issued debt securities on their asset side. As of December 2023<sup>2</sup> (Figure 1), NBFI holdings account for more than a quarter of total bank-issued debt in the euro area, of which the other financial intermediaries<sup>3</sup> (OFI) sector and the non-MMF investment funds<sup>4</sup> (IF) sector each holding around 12% of all bank-issued short and long-term debt securities, respectively. From a holistic perspective, the OFI sector (whose total assets are almost 1.4 and 2.6 times larger than those of IF and insurance corporations (IC)) is linked to banks through deposits, bank-issued short-term debt securities and bank-extended short-term loans. However, it is also noteworthy that the banks hold relevant shares of OFI-issued short (20%) and long-term (25%) debt securities. IF and IC are mainly interconnected through their holdings of bank-issued long-term debt securities.
4. The significant growth in NBFI activity over the last decade is in part due to banks optimising their business models in response to factors such as regulatory

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<sup>1</sup> In the first part of the EBA response to monitoring interconnectedness and risks to the EU banking sector stemming from NBFI, we rely on sectoral accounts data and divide the NBFI sector into other financial intermediaries (OFI), non-MMF investment funds (IF), insurance corporations (IC), and pension funds (PF), while in the second part we rely on supervisory data that do not allow for a separation of the individual sectors and consequently present the NBFI sector as a whole, including ICs and PFs.

<sup>2</sup> Figures are based on information from the quarterly sectoral accounts—“who-to-whom” data—published jointly by the ECB and Eurostat. Who-to-whom data tracks the flows between different sectors of an economy (i.e., here the euro area) and covers the balance sheets on an unconsolidated basis. For the methodological framework of this data and a detailed description of all sectors, please refer to the European System of Accounts (2010), published by [Eurostat \(2013\)](#).

<sup>3</sup> “The other financial intermediaries, except insurance corporations and pension funds [...] consists of all financial corporations and quasi-corporations which are principally engaged in financial intermediation by incurring liabilities in forms other than currency, deposits, or investment fund shares, or in relation to insurance, pension and standardised guarantee schemes from institutional units” ([Eurostat 2013](#)). This includes, inter alia, financial vehicle corporations engaged in securitisation transactions, security and derivative dealers, financial corporations engaged in lending, specialised financial corporations, financial auxiliaries, and captive financial institutions and money lenders.

<sup>4</sup> These include, inter alia, open-ended and closed-ended investment funds, real estate investment funds, investment funds investing in other funds (“funds of funds”), and hedge funds covering a range of collective investment schemes.

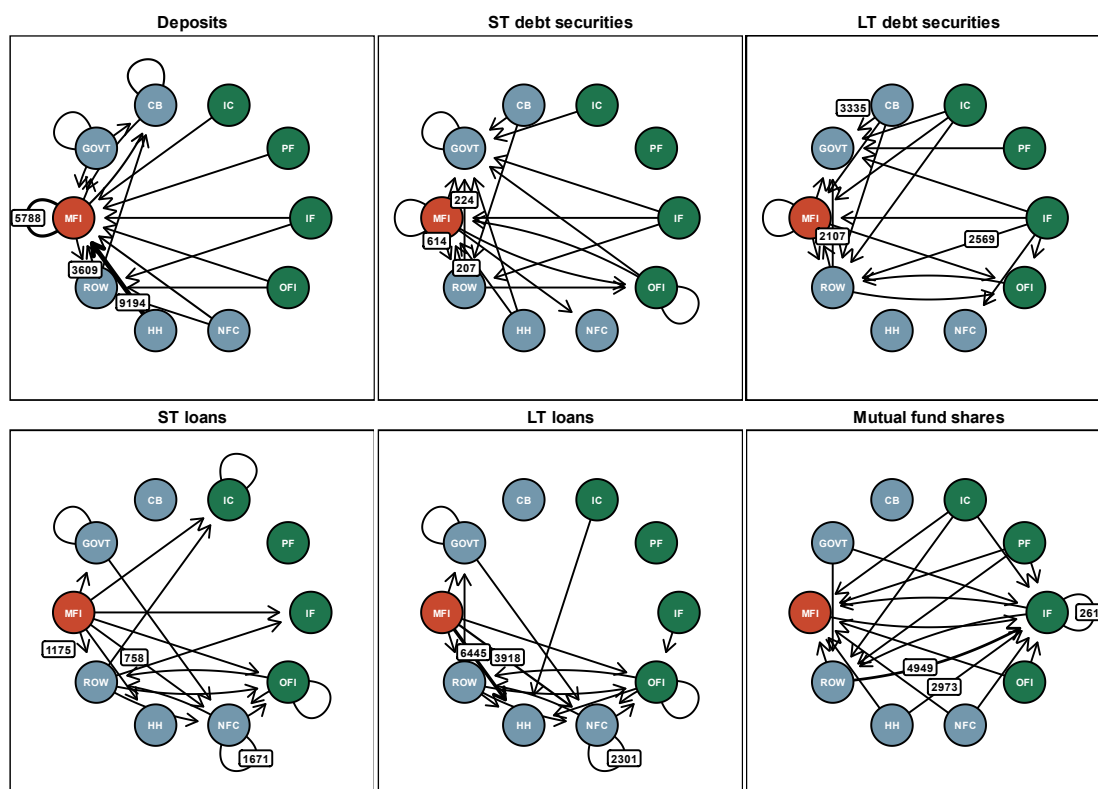
developments (e.g. CRR3/CRD6), rather than banks withdrawing from lending and risky activities and being replaced by NBFIs. In particular, institutions within the OFI sector lend extensively to households (HH), non-financial corporations (NFC) and foreign residents (ROW) (Figure 1). Therefore, in some cases, these providers of “private credit” could have become alternatives for banks in lending in areas such as consumer credit, SMEs, and infrastructure projects. This suggests that NBFIs (especially OFIs) tend to cover more niche markets, but depending on the country, the activities of NBFIs may also largely overlap with those of the banking sector and the boundaries between NBFIs and traditional banking services are hardly recognisable. While improved access to credit as such undoubtedly improves welfare and new types of lenders may cover parts of the market that are no longer attractive to banks, concerns have been raised. The reason for this is that lending standards may not always be commensurate with those applied by more regulated financial institutions. The potentially reduced capacity of less-regulated lenders to absorb credit losses and/or their unwillingness or inability to remain in the market during economic downturns could pose risks of a credit crunch for borrowers with limited access to other sources of financing (e.g. HH and unlisted NFC). Even if the volume of NBFI lending in the EU remains moderate and as such is probably not yet of immediate systemic relevance, hidden risks may have been created that need to be carefully identified.

5. The nature of NBFIs’ market funding sources entails liquidity and funding risks that require stable short-term funding to address these vulnerabilities. Banks play a crucial role in providing this short-term liquidity (in the form of short-term loans, such as repos) to NBFIs and to the financial system more broadly (Figure 1). While loans to NBFIs account for only about 11% of all loans granted by banks, the importance of short-term loans, such as repos, to NBFIs is disproportionately higher at around 22% of all short-term loans, of which more than two-thirds (i.e. 16%) are granted to OFIs alone. In relation to NBFIs, banks are typically seen as more stable intermediaries as they have a sizeable deposit base (accounting for over 70% of total bank liabilities as of December 2023) and access to safety nets—either explicitly through deposit guarantee schemes and central bank lender-of-last-resort facilities or implicitly through the Banking Union’s common backstop, which guarantees the Single Resolution Mechanism’s credibility. Although NBFIs appear to absorb transferred risks under normal market conditions, the system can become disproportionately vulnerable to financial and economic instability when aggregate tail risks arise. During periods of heightened market stress, including the 2007-08 global financial crisis and COVID-19 pandemic, increased liquidity demands from NBFIs have built up in banks and subsequently in the public sector. This interdependence between banks and NBFIs could effectively turn into potent channels for shock transmission and amplification, forcing large-scale interventions by public authorities.
6. The IF sector also has significant exposures to the rest of the world (ROW) sector (i.e. foreign residents), suggesting that IFs are an important vehicle for EU residents to access debt and equity markets outside the EU. Investment firms are covered by the

new Investment Firms Directive (IFR/IFD), with the largest ones being classified as credit institutions. However, recent episodes of market turmoil have nonetheless revealed that important channels of propagation and contagion (e.g. redemptions or asset fire sales) remain, requiring ongoing vigilance and information sharing between global regulatory and supervisory bodies. Thereby, given the cross-border nature of the IF sector, their incentives to move to different jurisdictions to utilize more favourable regulations (i.e. regulatory arbitrage) should also be monitored. The main holders of IF shares are foreign residents, households, and insurance corporations, creating further shock transmission and amplification channels through the financial system and the real economy.

7. The bank-NBFI nexus can also be jeopardised by indirect risks arising from common asset holdings. As NBFIs—in particular OFIs (e.g. financial leasing)—increasingly perform similar intermediation functions to those of banks, their asset compositions are becoming more and more similar to that of banks; particularly as both banks and NBFIs may have exposures to the same issuers or groups of issuers (“portfolio overlap”) or the distribution of securities in their portfolios may be very similar (“portfolio correlation”). This growing similarity in assets could prove to be an important source of market disruption if NBFIs in need of liquidity are forced to sell assets at fire-sale conditions. These asset sales can trigger dislocations in asset prices that negatively impact banks holding similar assets. More importantly, the entire financial intermediation system becomes potentially more vulnerable due to these linkages and commonalities. For instance, if banks become distressed due to asset losses triggered by NBFI fire-sales, this could in turn limit their capacity to provide funding and liquidity support to NBFIs, creating a feedback loop to NBFIs and the broader economy. Given the increasing overlap in asset holdings, the potential scale of these market disruptions could be substantial.

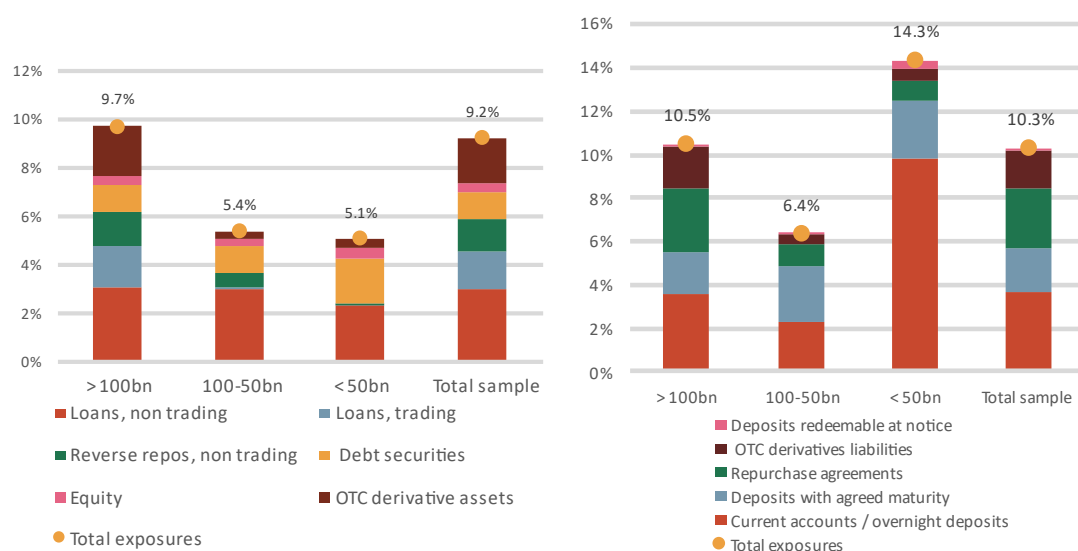
Figure 1: Network of the euro area financial system comprising links between the banking sector (MFI) and other sectors of the economy, December 2023 (the values of the three largest exposures are shown next to the respective arrow in each of the charts) (EUR bn)



Source: ECB/Eurostat and EBA calculations. Arrows run from assets to liabilities. Data reflects euro area 20 exposures. Only the 20 (3) largest links are shown (highlighted) in each chart, respectively. Charts are represented on a common scale, with thicker arrows indicating higher exposures. MFI: Monetary financial institutions (excl. central bank); GOVT: General government; CB: Central bank; IC: Insurance corporations; PF: Pension funds; IF: Non-MMF investment funds; OFI: Other financial intermediaries; HH: Households incl. non-profit institutions serving households; ROW: Rest of the world.

8. Supervisory data at individual institution level provides further details about the links between banks and NBFIs.<sup>5</sup> EU/EEA banks' exposures to NBFIs amount to 9.2% of consolidated bank assets as of December 2023 (Figure 2). Large banks are generally more connected to the non-bank sector, with exposures amounting to 9.7% of total consolidated assets, followed by medium-sized banks (5.4% of total assets), and small banks (5.1% of total assets).<sup>6</sup> Exposures to NBFIs show an increasing trend since the end of the pandemic. Among individual asset categories, OTC derivatives have seen the highest growth rates with rather substantial fluctuations in volumes. However, those changes in respective exposures are not necessarily driven by rising OTC derivatives business between banks and NBFIs, but also, for instance, valuation effects. Exposures in trading loans also showed major volatility between 2021 and 2023 (which might equally be explained by valuation effects) whereas other loans (i.e. those not classified as trading) rose in the past and then showed a more stable trend (Figure 3). Going forward, banks indicate that they plan to increase lending to other financial institutions by ca. 2% annually in 2024-2026 (see on EU/EEA banks' asset growth plans Chapter **Error! Reference source not found.**, including **Error! Reference source not found.** with a breakdown of banks' forecasts).

Figure 2: EU/EEA banks' asset exposures to the non-bank sector, as share of total assets, December 2023 (left); EU/EEA banks' liability to the non-bank sector (excluding market-based funding), as share of total assets, December 2023 (right)

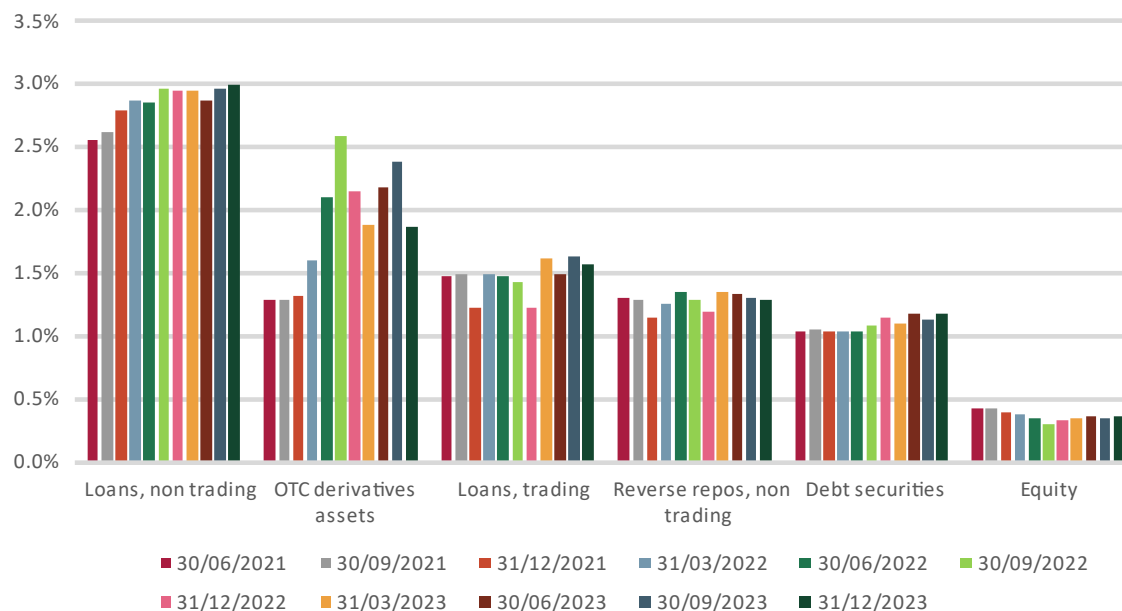


Source: EBA supervisory reporting data

<sup>5</sup> To provide further details on the interconnections between EU/EEA banks and NBFIs, bank-level consolidated data from FINREP is used. This data provides a more granular breakdown in terms of financial instruments, but treats the NBFIs as one aggregate sector, including insurance, pension funds, other financials and investment firms. More detailed breakdown in terms of counterparty sectors can be obtained from alternative data sources, but the coverage in terms of instruments and number of banks would be inferior.

<sup>6</sup> The asset exposures are concentrated in loans classified in non-trading portfolios (3% of total assets), followed by OTC derivative assets (1.9% of total assets), loans for trading activities (1.6% of total assets), reverse repos (1.3% of total assets), debt securities (1.2% of total assets) and equity exposures (0.4% of total assets).

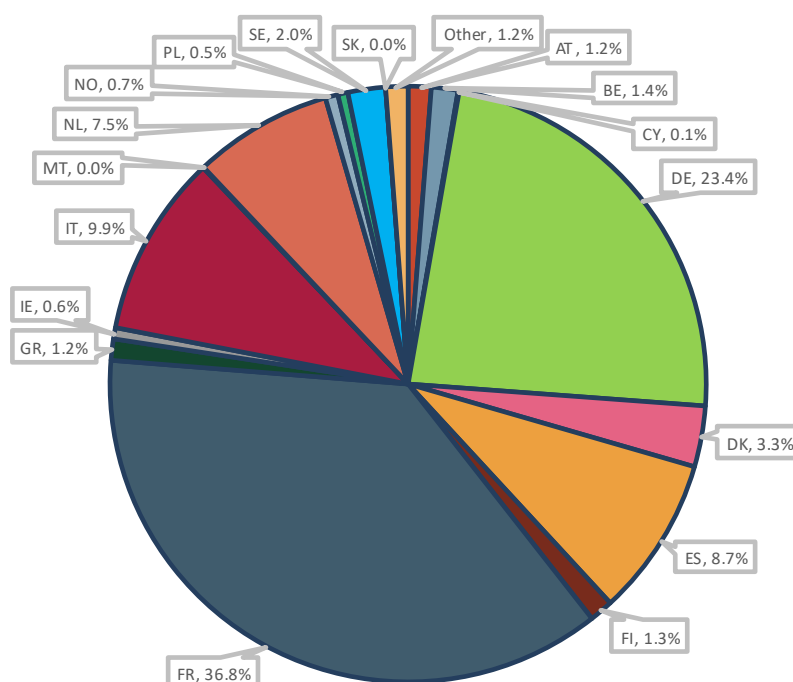
Figure 3: Evolution of EU/EEA banks' asset exposures to the non-bank sector, as share of total assets, June 2021 to December 2023



Source: EBA supervisory reporting data

9. EU/EEA banks' exposures to NBFIs amount to EUR 2.5 trillion, mainly concentrated in France (EUR 925 billion) and Germany (EUR 588 billion). The two countries represent 60% of EU/EEA banks' asset exposures to NBFIs (Figure 4). The level of exposures to NBFIs is much lower in Italy (EUR 248 billion), Spain (EUR 217 billion) and Netherlands (EUR 189 billion).
10. The exposures to NBFIs are highly concentrated in a few countries, evidenced by the fact that the five countries with the largest exposures to NBFIs (France, Germany, Italy, Spain and Netherlands) represent 86.4% of the total EU/EEA banks' exposures to NBFIs. The exposures to NBFIs of the other 22 countries are below EUR 100 billion individually and represent altogether 13.6% of the total EU/EEA banks' exposures to NBFIs.

Figure 4: Country distribution of EU/EEA banks' exposures to NBFIs, December 2023



Source: EBA supervisory reporting data. The category of "other" includes exposures of IS, HU, LT, LU, LV, LI, PT, SI, EE and RO.

11. Supervisory data at country level provides further details of the magnitude of the exposures to NBFIs relative to the total assets of each country. While the previous paragraph investigates on the absolute amount by country of exposures to NBFIs, this paragraph shows the country exposures to NBFIs in percentage of total consolidated assets. This magnitude is useful to know the countries with highest risk of contagion to the banking sector in the event of distress in the non-bank sector. However, the magnitude of banks' NBFi exposures does not provide a comprehensive picture of the contagion risk as liquidity mismatches or/and potential excessive leverage of the funds the banks are investing in are also elements to take onboard.
12. As of December 2023, the highest exposures, those that are above EU/EEA average, are observed for banks from DE (15.1% of total assets), LI (12.1% of total assets), LU (11.5% of total assets), DK (10.8% of total assets), FR (10.3% of total assets), IT (9.7% of total assets) and GR (9.6% of total assets), Figure 5. For most of these countries, the most relevant exposure are traditional loans (DE, LI, LU, IT, GR), while DK banks are highly exposed via reverse repos and FR banks are highly exposed via trading loans. For DE and DK, OTC derivative assets represent the second most important type of exposure of banks to NBFIs.
13. For most countries that present exposures to NBFIs below the average, traditional loans are the main exposure (NL, ES, MT, SE, BE, AT, FI, HU, PT, IS, EE, LV, LT, SI), while



others the most relevant exposure type is debt securities (PL, CY, RO) and OTC derivative assets (NO, IE).

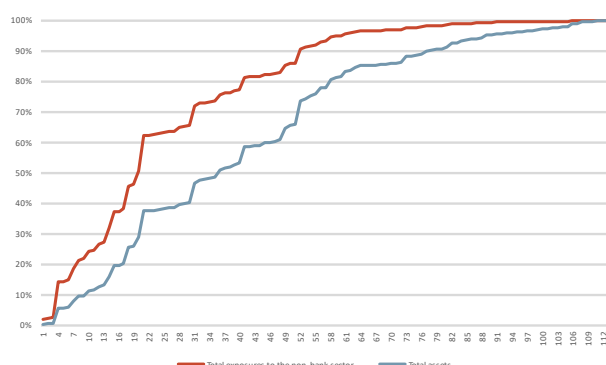
Figure 5: EU/EEA banks' asset exposures to the non-bank sector, as share of total assets, breakdown by country, December 2023



Source: EBA supervisory reporting data. The figure only shows the level of banks' exposure to NBFIs. For this reason, some countries which may have significant stand-alone NBFI sectors appear to have values that are below the EU average. Furthermore, due to data limitations, it does not provide precise information on the countries where NBFI vulnerabilities (i.e. liquidity mismatches and excessive leverage) may be particularly pronounced.

14. A closer look at the distribution of banks' non-bank exposures reveals that asset linkages are concentrated in few institutions with specialised business models: twenty banks which represent 38% of the total assets of the sample cover 62% of the exposure to the NBFI sector. Although the amount of the exposures towards the non-bank sector is concentrated in these few banks, their individual exposures relative to their balance sheet sizes are not amongst the biggest of the sample. Banks with outsized exposures to NBFIs are medium-sized institutions with specialised business models, such as investment banking, market making and (reverse) repo lending, whilst the largest banks report exposures that are closer to the EU/EEA average (Figure 6).

Figure 6: Concentration of EU/EEA banks' asset exposures to the non-bank sector, December 2023



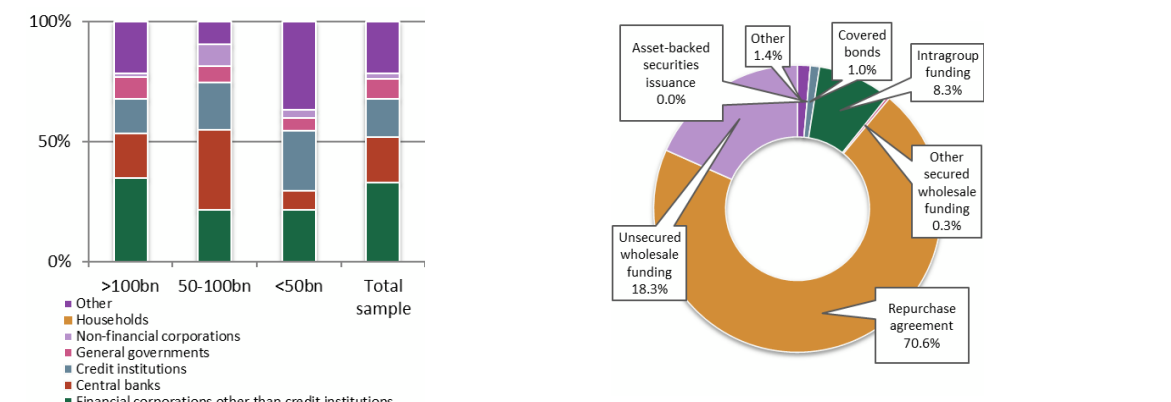
Source: EBA supervisory reporting data

15. On the liability side, NBFi funding for EU/EEA banks – excluding wholesale market-based funding, such as through debt securities issued – amounts to 10.3% of total assets (Figure 2). However, this figure does not include debt securities issued because the breakdown by counterparty of this liability item is not available in EBA supervisory reporting. For large banks, these links are mostly repo funding, whereas for small and medium-sized banks they are mostly through term deposits. Unlike the asset exposures, EU/EEA banks' respective liabilities to NBFIs have remained broadly stable on aggregate, as the drop in current account deposits has been offset by a moderate upward trend in other liability items (Figure 2). In terms of wholesale market-based funding, NBFIs are also amongst EU/EEA banks' main funding counterparties.<sup>7</sup> Based on the reporting on main funding counterparties, repurchase agreements represent 67.7% of the total funding received from NBFIs classified as main funding counterparties, followed by unsecured wholesale funding (20.8%) and intragroup funding (8.6%) (Figure 7).<sup>8</sup>

<sup>7</sup> The main funding counterparties cover the top ten counterparties where the funding obtained from each counterparty or group of connected clients exceeds a threshold of 1% of total liabilities. The funding provided by the main funding counterparties represents 6.1% of consolidated bank assets.

<sup>8</sup> Unsecured wholesale funding includes debt securities issued, but also loans and deposits received.

Figure 7: Composition of main funding counterparties, December 2023 (left)<sup>9</sup>; Funding from NBFIs main funding counterparties by product type, December 2023 (right)

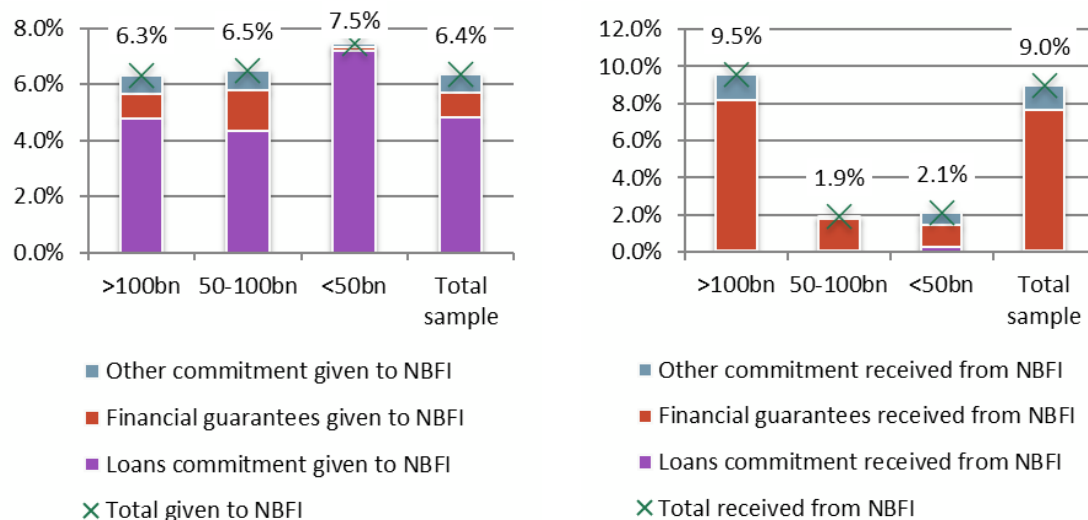


Source: EBA supervisory reporting data

16. EU/EEA banks also have important links to NBFIs via off-balance-sheet exposures. As of December 2023, undrawn loan commitments, financial guarantees and other commitments extended to NBFIs amounted to 6.4% of all off-balance-sheet items (Figure 8). The share of off-balance-sheet exposures to NBFIs is higher and less diversified in type for smaller banks compared to medium-sized and larger banks. At the same time, the NBFIs sector is an important provider of financial guarantees to EU/EEA banks. The share of undrawn loan commitments, financial guarantees and other commitments received from NBFIs amounted to 9.0% of EU/EEA banks' total off-balance-sheet items as of December 2023 (Figure 8). Large banks are more frequent users of financial guarantees and other off-balance-sheet commitments from non-banks (9.5% of total off-balance-sheet items), while medium-sized and smaller banks receive only a small share of their total off-balance-sheet items from NBFIs (1.9% and 2.1%, respectively).

<sup>9</sup> The group of 'other' funding counterparties includes those items for which banks did not report any specific counterparty classification.

Figure 8: Share of loan commitments, financial guarantees and other commitments given to NBFIs, December 2023 (left); Loan commitments, financial guarantees and other commitments received from NBFIs, December 2023 (right)



Source: EBA supervisory reporting data. Denominator: Total loan commitments, financial guarantees and other commitments provided and received; December 2023.

17. Off-balance-sheet exposures could become a channel of contagion from non-banks to banks if credit lines were drawn simultaneously by several large NBFi counterparties. In the event of liquidity squeeze in markets, NBFIs can make use of contingent funding from banks, they may have an incentive to access support indirectly via off-balance-sheet links to regulated credit institutions which are covered by public safety nets, such as deposit guarantee schemes and central bank liquidity facilities.

## Section 2: The market of crypto-assets: Excessive leverage and systemic risks and vulnerabilities

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18. In the advice provided to the Commission in 2022 on the review of the macroprudential framework<sup>10</sup>, the EBA stated that crypto-asset activities (including those within the EU) did not pose a threat to financial stability. Despite the limited available data still as of 2024 and considering the assessment of the ECB and of international organisations such as the Financial Stability Board (FSB) and the International Monetary Fund (IMF), the EBA believes that financial stability risks of crypto-assets are of limited nature.
19. Regardless, excessive leverage can also be observed in crypto-asset markets. Even if leverage appears to be currently limited at an aggregate level, any concentration of high leverage in a few key market participants may still prompt stress, and some estimates suggest there has been a slight increase in crypto-asset leverage in recent years<sup>11</sup>.
20. Leverage can build up in crypto-asset markets due to several factors. On the one hand, crypto-asset service providers (e.g. exchanges) often offer trading tools (e.g. margin trading in spot markets) that allow investors to borrow funds to trade crypto-assets, requiring crypto-assets (typically unbacked crypto-assets with limited or no intrinsic value) as collateral. Collateral assets thus tend to be highly volatile and can depreciate rapidly. As explained by the ESRB<sup>12</sup>, while price volatility in the crypto-asset market appears common across instruments (bitcoin and ether show similar patterns), it tends to be substantially higher than that of real assets (oil and gold) or European equities. The creation of 'collateral chains' facilitates intra-crypto markets leverage<sup>13</sup> and heightens the risk of a cascading failure if crypto-asset prices decline sharply, contributing to liquidation risks. Some exchanges offer leverage of up to hundred times

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<sup>10</sup> [https://www.eba.europa.eu/sites/default/files/document\\_library/Publications/Other%20publications/2022/1031866/EBA%20advice%20on%20the%20review%20of%20the%20macroprudential%20framework.pdf](https://www.eba.europa.eu/sites/default/files/document_library/Publications/Other%20publications/2022/1031866/EBA%20advice%20on%20the%20review%20of%20the%20macroprudential%20framework.pdf)

<sup>11</sup> See the ECB's Article on 'Decrypting financial stability risks in crypto-asset markets', published as part of the Financial Stability Review, May 2022: [https://www.ecb.europa.eu/press/financial-stability-publications/fsr/special/html/ecb.fsrart202205\\_02~1cc6b111b4.en.html](https://www.ecb.europa.eu/press/financial-stability-publications/fsr/special/html/ecb.fsrart202205_02~1cc6b111b4.en.html) and more recent assessments by the ESRB, such as [https://www.esrb.europa.eu/pub/pdf/reports/nbfi\\_monitor/esrb.nbfi202406~2e211b2f80.en.pdf](https://www.esrb.europa.eu/pub/pdf/reports/nbfi_monitor/esrb.nbfi202406~2e211b2f80.en.pdf)

<sup>12</sup> See the ESRB Report on crypto-assets and decentralized finance (DeFi), from May 2023: <https://www.esrb.europa.eu/pub/pdf/reports/esrb.cryptoassetsanddecentralisedfinance202305~9792140acd.en.pdf?853d899dcd41541010cd3543aa42d37>

<sup>13</sup> See <https://www.bundesbank.de/en/press/speeches/are-crypto-assets-a-threat-to-financial-stability--908084>, which explains how borrowed funds are often reused as collateral for other loans, giving rise to "collateral loans".

the collateral value, significantly increasing exposure and excessive leverage risks<sup>14</sup>. The existence of crypto derivatives, such as futures and options, further amplifies these risks by enabling investors to take on large positions on crypto-assets with relatively small amounts of capital. In cases of adverse price movements in underlying assets, the existence of significant long positions in futures products on crypto-assets can provoke that crypto markets respond with significant volumes of liquidations, particularly with automatic ones (i.e. smart contract-based automated decision-making), causing further declines in prices. Such cases of leverage build-up can contribute to volatility in crypto-asset markets.

21. Regarding the NBFI sectors that are particularly susceptible to the risks posed by excessive leverage, crypto-asset exchange services providers, crypto trading platforms and crypto lending services providers, along with hedge funds and investment firms specialized in crypto are some of the most relevant. Additionally, the EBA would like to highlight the role of 'crypto-asset conglomerates' or 'multifunction crypto intermediaries' (MCIs), as defined by the FSB<sup>15</sup>, in crypto-asset markets. MCIs engaging in proprietary trading or market making on their own trading platforms, or MCIs issuing, distributing, trading and borrowing against their proprietary crypto-assets may, as identified by the FSB, particularly contribute to the build-up of leverage. Additionally, MCIs providing lending and borrowing services facilitates risk-taking behaviour in crypto markets, and considering that volumes of activities and risks associated to these activities are not disclosed or reported to relevant supervisors, this could facilitate the build-up of leverage. MiCAR imposes governance requirements for activities within the same entity providing crypto-asset services, but does not stipulate any prohibitions, restrictions or other measures for combinations of services within the same entity or group.
22. In addition, excessive leverage can build up in relation to so-called DeFi. DeFi markets are still limited in size at a macro level, as analysed by ESMA<sup>16</sup>, with TVL - i.e. the sum of the value of all assets deposited in a DeFi product -, the most widely used metric to measure DeFi market size despite its limitations, fluctuating around USD 70-80bn (or USD 40-50bn discounting for double counting). DeFi accounts for a small portion of crypto markets (about 6% of the total crypto-asset market capitalisation), but a few DeFi protocols rival their centralised finance equivalents in terms of usage or size<sup>17</sup>. In particular, DeFi protocols that facilitate lending and borrowing represent around a quarter of the DeFi market, with the sector concentrated among a small number of protocols and large players. In those protocols, no intermediary has responsibility for

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<sup>14</sup> Idem

<sup>15</sup> <https://www.fsb.org/2023/11/the-financial-stability-implications-of-multifunction-crypto-asset-intermediaries/>

<sup>16</sup> See the ESMA TRV paper on Decentralised Finance in the EU: developments and risks, October 2023: [https://www.esma.europa.eu/sites/default/files/2023-10/ESMA50-2085271018-3349\\_TRV\\_Article\\_Decentralised\\_Finance\\_in\\_the\\_EU\\_Developments\\_and\\_Risks.pdf](https://www.esma.europa.eu/sites/default/files/2023-10/ESMA50-2085271018-3349_TRV_Article_Decentralised_Finance_in_the_EU_Developments_and_Risks.pdf)

<sup>17</sup> Idem

performing traditional creditworthiness checks. Instead, to mitigate risks, reliance is often placed on overcollateralization by borrowers. Consequently, the potential risks of excessive leverage may be exacerbated by DeFi settings, further amplified due to the automaticity of liquidation systems.

23. The growth of crypto-asset markets and the increasing participation of institutional investors and investment firms (mainly, exposures to asset management companies, investment funds, hedge funds and payment institutions and fintechs), albeit still from a very low base, have heightened concerns about systemic risks and vulnerabilities. With ETPs and other tokenized assets and funds being issued by financial institutions in the U.S., generally the participation of institutional investors in crypto-asset markets appears to start growing in relevance. However, at EU level, according to EBA data based on semi-annual Risk Assessment Questionnaires (RAQ)<sup>18</sup>, most European banks currently do not engage and are not expecting to engage in crypto-asset issuance activities or in the provision of related services within the next two years or more. But, a third of European banks are already engaging with crypto-asset issuance of service provision, with this proportion expected to grow, albeit in a limited degree, in a two-year time horizon. Moreover, recent ESMA analysis identified that in the EEA, while investment products providing exposure to crypto-assets remain small in size, there are already 77 EEA investment funds providing exposure to crypto-assets, which, combined, had a NAV estimated at EUR 2bn to EUR 4bn. Finally, ESMA identified more than hundred ETPs with crypto-assets as underlying assets listed in the EEA, although these products are relatively small as well, with a combined value of around EUR 8bn.
24. As recently concluded by the ECB<sup>19</sup>, based on the developments observed to date, should crypto-asset markets grow, they exhibit all the signs of an emerging financial stability risk. Similarly, the ESRB<sup>20</sup> concluded that crypto-assets could pose a systemic risk if their interconnectedness with the traditional financial system increases over time, their connections to the traditional financial system are not identified before they cause problems, and technologies underlying crypto-assets and tokenization (e.g. DLT, smart contracts) are adopted in traditional finance. The FSB also pointed to the lack of evidence, based on currently available information, that crypto platforms' connections with banks and other financial institutions is concentrated in more than a limited number of financial institutions, although existing relationships are opaque, fluid and could grow over time.
25. The EBA observes three key sources of potential systemic risks emerging from crypto-asset markets: leverage and market volatility, interconnectedness between crypto

<sup>18</sup> <https://www.eba.europa.eu/risk-and-data-analysis/risk-analysis/risk-monitoring/risk-dashboard>

<sup>19</sup> [https://www.ecb.europa.eu/press/financial-stability-publications/fsr/special/html/ecb.fsrart202205\\_02~1cc6b111b4.en.html](https://www.ecb.europa.eu/press/financial-stability-publications/fsr/special/html/ecb.fsrart202205_02~1cc6b111b4.en.html)

<sup>20</sup> <https://www.esrb.europa.eu/pub/pdf/reports/esrb.cryptoassetsanddecentralisedfinance202305~9792140acd.en.pdf>

markets and traditional financial markets, and the complexity and opacity of crypto market structures.

26. First, as explained in response to Q5, the EBA notes that crypto intermediaries may offer leverage through margin trading and derivatives, as well as with products such as leveraged tokens, enabling investors to take large positions with minimal capital and to synthetically increase their exposure to crypto-assets. This leverage can amplify market volatility and can lead to rapid price swings. For example, during adverse price movements, the liquidation of leveraged positions can exacerbate price declines, creating a vicious cycle.
27. Second, the EBA notes that although crypto-asset markets do not appear to be yet deeply integrated with traditional financial markets <sup>21</sup>, the degree of interconnectedness may grow partly driven by client demand, especially in non-EU jurisdictions, facilitated by recent court rulings<sup>22</sup> and regulatory stances in non-EU jurisdictions. Such growth can be transmitted to EU financial markets thanks to increased regulatory clarity in EU jurisdictions (notably brought about by MiCAR). If banks and other financial institutions were to increase their (i) currently very low, direct and indirect exposures to crypto-assets and/or (ii) provision of traditional banking/investment/insurance services to crypto-asset service providers, this would contribute to the growth of the degree of interconnectedness, and ultimately raise the potential for contagion channels. In view of this possibility, the EBA regularly monitors EU banking sector engagement in the crypto-asset sector, and highlights that the BCBS standard on the prudential treatment of banks' exposures to crypto-assets is being implemented by the new CRD/CRR framework, which ensures a prudent treatment of banks' exposures to crypto-assets.
28. And third, the EBA observes that the complexity and opacity of the crypto-asset ecosystem makes it challenging to monitor and mitigate risks arising from intra-sector risks. The interconnectedness of various market participants, including exchanges, lending platforms, and DeFi protocols, creates a set of financial dependencies that can be difficult to identify and measure. This opacity can mask the true extent of leverage and degree of interconnectedness, making the market vulnerable to unexpected shocks.
29. One potential channel of interconnectedness arises from the reserve assets that EMT and ART issuers are required to hold under MiCAR. To ensure effective visibility over such interconnections (direct and indirect), and wider interconnections between ART

<sup>21</sup> See <https://www.bis.org/publ/bppdf/bispap138.pdf> or <https://www.bundesbank.de/en/press/speeches/are-crypto-assets-a-threat-to-financial-stability--908084>

<sup>22</sup> For instance, the US Court of Appeals for the District of Columbia Circuit, in response to the challenge of Grayscale to an US SEC Decision to reject the application for a spot bitcoin ETF, concluded that the SEC failed to provide a "coherent explanation" as to why it approved bitcoin futures ETFs, but not the proposed bitcoin spot ETF. Such a conclusion from the Court facilitated the ulterior approval of spot bitcoin and ether ETFs by the SEC. See: [https://www.cadc.uscourts.gov/internet/opinions.nsf/32C91E3A96E9442285258A1A004FD576/\\$file/22-1142-2014527.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/32C91E3A96E9442285258A1A004FD576/$file/22-1142-2014527.pdf)



and EMT issuers and crypto-asset service providers, the EBA has developed own initiative Guidelines to address reporting gaps<sup>23</sup> that complement those set out in the ITS developed by the EBA pursuant to Article 22 MiCAR<sup>24</sup>. Such reporting gaps had been identified, in part, in the EBA's response<sup>25</sup> to the Commission's Call for Advice on significance criteria (regarding ARTs and EMTs) under MiCAR. This own initiative work also responds to the report of the ESRB<sup>26</sup>, which also highlighted potential risks arising from opacity.

30. Overall, while regulatory and supervisory frameworks such as those introduced by MiCAR in the EU should help address vulnerabilities, some gaps remain. In particular, crypto-asset lending is not a regulated activity under MiCAR, and the application of MiCAR to DeFi products and services may need further clarifications in the future. In an upcoming joint report on developments in crypto-assets, developed on the basis of the European Commission's mandate under Article 142 of MiCAR, the EBA and ESMA plan to assess the risks associated to crypto lending and borrowing activities, as well as to DeFi products and services. Such an analysis should provide insights into the areas that may merit further regulatory and supervisory actions, in addition to those already contemplated in MiCAR, and other existing regulations, such as DORA or the AML/CFT framework.
31. Additionally, so-called DeFi platforms claim to operate without intermediaries, or do so without traditional intermediaries, relying on smart contracts and automated decision-making processes to facilitate transactions between crypto market participants. This introduces unique vulnerabilities into crypto markets. To name a few: the rigidity of smart contracts, the challenges posed by distributed governance arrangements and related conflicts of interest, or the limited tools in the hands of supervisors to monitor and oversight DeFi markets. Those unique features of DeFi, complemented by the high degree of leverage of interconnectedness within DeFi, could contribute to vulnerabilities in crypto markets.
32. Furthermore, since MCIs engage in a range of activities, including trading, lending, and market making, the failure of a major MCI could have severe repercussions in crypto markets in the EU, due to their central role and interconnectedness, adding to systemic vulnerabilities.

<sup>23</sup> <https://www.eba.europa.eu/publications-and-media/press-releases/eba-consults-guidelines-reporting-data-assist-authorities-their-supervisory-duties-and-significance>

<sup>24</sup> <https://www.eba.europa.eu/activities/single-rulebook/regulatory-activities/asset-referenced-and-e-money-tokens-micar/implementing-technical-standards-reporting-arts-and-emts-denominated-non-eu-currency-under-micar>

<sup>25</sup> <https://www.eba.europa.eu/publications-and-media/press-releases/eba-responds-european-commissions-call-advice-significance>

<sup>26</sup>

<https://www.esrb.europa.eu/pub/pdf/reports/esrb.cryptoassetsanddecentralisedfinance202305~9792140acd.en.pdf>

## Section 3: EU system-wide stress test across NBFIs and banking sectors

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33. The banking EU-wide stress test is part of the supervisory toolkit used by Competent Authorities (CAs) to assess the resilience of EU banks to severe shocks, identify residual areas of uncertainties, as well as feed into the supervisory decision-making process (SREP – supervisory review and evaluation process) to determine appropriate mitigation actions. This can also affect Pillar 2 Requirements by receiving assessment of the stress testing programme and its execution (qualitative assessment) as part of the assessment of risk controls and risk management practices in the SREP. The stress test also allows CAs to assess if the capital banks have accumulated in recent years, is sufficient to cover losses and support the economy in stressed times. For participating banks, the latter in most cases determines Pillar 2 Guidance (including P2G LR), a bank-specific recommendation indicating the level of capital the CAs expects banks to maintain in addition to their binding capital requirements for ensuring they can absorb potential losses resulting from adverse macro-financial developments (quantitative assessment). Moreover, the stress test fosters market discipline through the publication of consistent and granular data on a bank-by-bank level, as it shows how banks are affected by common shocks.
34. Conducting an EU system-wide stress test, including banks and non-banking financial institutions (NBFIs) would help to measure contagion risks between banks and non-banks, as exemplified by the Bank of England System-wide exploratory scenario exercise that started in June 2023.<sup>27</sup> Similarly, the Federal Reserve added to the 2024 stress test scenario four separate hypothetical elements that will assess the resilience of the banking system to a wider range of risks connected to NBFIs. Two of them hypothesize the failure of five large hedge funds, with each under a different set of financial market conditions<sup>28,29</sup>. Additionally, this type of stress test can promote enhanced transparency by publishing banks' exposures to the non-bank sector, thereby providing valuable data on potential channels of contagion and enabling more informed regulatory responses. Also, the EU system-wide stress test across NBFIs and the banking sector can serve to evaluate the resilience of all the subsectors of NBFIs under different sets of economic conditions, such a severe global recession with high and persistent inflation and rising interest rates.
35. Stress tests could also inform supervisors about the data that could help supervisors to design indicators to monitor NBFIs risks and vulnerabilities. The stress testing

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<sup>27</sup> <https://www.bankofengland.co.uk/financial-stability/boe-system-wide-exploratory-scenario-exercise>

<sup>28</sup> <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20240215a.htm>

<sup>29</sup> <https://www.federalreserve.gov/publications/files/exploratory-analysis-of-risks-to-the-banking-system-20240215.pdf>

templates could serve as a basis for a regular reporting framework applied to NBFIs, similar to the ones applied to banks. The regular reporting requirements can, in turn, serve as an input to create dashboards for the purposes of risk monitoring by the three European Supervisory Authorities (ESAs) – the EBA, EIOPA and ESMA – as well as the ESRB. In addition, providing further sub-sector breakdowns within the FINREP NBFIs sector would allow for more detailed analysis of banks' exposures to specific parts of NBFIs. It is however important to keep in mind that work is already under way to implement reporting requirements on investment firms in the context of IFD/IFR, and that the largest of such institutions will be subject to the same reporting requirements as credit institutions.

36. Lastly, the EU system-wide stress test would introduce simultaneously methodological aspects applicable to all sectors of the EU financial system. These methodological aspects may assess the impact of adverse market conditions on different sectors of the EU financial system. Nowadays, a vulnerability identified in one of the sectors of the EU financial system is not automatically introduced in the stress test methodology of the other sectors of the EU financial system. For example, in the CCP stress test, ESMA testing for simultaneous clearing members defaults, as simultaneous defaults could pose systemic risk to a CCP<sup>30</sup>. Therefore, the CCP stress test should assess if CCPs have enough resources to face simultaneous defaults of clearing members. Similarly, the stress tests methodologies of the other ESAs could reflect the capacity of the clearing members to post margin calls under severe market conditions in which their collateral loses value. In this sense, EIOPA's 2024 stress test includes a liquidity component that also captures margin calls. However, this aspect has not yet been implemented in other stress tests applicable to other entities of the EU financial sector.
37. The EBA acknowledges the indispensable role of regular, sector-specific EU-wide stress tests in evaluating risks and vulnerabilities within particular financial domains. As mentioned, these exercises are especially crucial in the banking sector, to assess the risks and vulnerabilities of the banking sector and also as results feed directly into the SREP. The distinct nature of these assessments underlines the importance of not considering system-wide stress tests across sectors as replacements for the regular sector-targeted ones, but rather as complementary tools that enhance supervisory assessments.
38. The EBA recognises the value in efficient data sharing between authorities but emphasises the critical need for robust data governance to avoid duplicative reporting. It is also clear that commitment and resources are imperative. Our collaborative experience in cross-sectoral projects, such as the Fit-for-55 initiative, demonstrates that while these projects can be managed successfully, they demand considerable coordination and resources.

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<sup>30</sup> [ESMA CCP Stress test, July 2024](#)

39. The EBA supports such wide cross-sectoral stress-tests to be part of the supervisory toolkit. At the same time, in light of the substantial efforts and resources required to conduct such comprehensive exercises, the EBA suggests that while occasional system-wide stress tests are beneficial for capturing macroeconomic impacts and inter-sectoral dynamics, they should not become a regular yearly exercise. Instead, the focus should remain on the nuanced, sector-specific stress tests that provide a more detailed and entity-level view of resilience, tailored to the unique characteristics of each sector. In addition, occasional cross-sectoral stress test could be conducted. The occasional nature comes from the fact that carrying out a stress test with both banks and NBFIs will likely be much more complex and time-consuming. Such stress tests must be accompanied by an appropriate resource allocation among the institutions involved. The design of the exercise should consider how possible it is to design and run something that is useful, what additional resources would be needed and what other work would need to be stopped as a result.
40. Currently, stress tests are conducted by the EBA for the banking sector, by ESMA for MMFs and CCPs, and by EIOPA for insurers and IORPs. Therefore, the three ESAs, together with the ESRB could coordinate to elaborate a cross sectoral system-wide stress test. Recent initiatives have been developed under the coordination of the three ESAs, the ECB and the ESRB, like the one-off fit-for-55 climate risk scenario analysis.
41. This exercise represents a significant advancement in the field of climate stress testing, particularly with respect to its complexity and the integration of interconnected elements. The exercise aims to maintain consistency across sectors to the greatest extent possible, both in scope and methodology.
42. In responding to the European Commission's request, the ESAs and the ECB have benefited in several ways from this climate scenario analysis. Firstly, the results provided valuable insights into key vulnerabilities, their concentration, and potential contagion effects. Secondly, the exercise offered a crucial learning opportunity for all participating institutions, requiring them to consolidate, enhance, and compare their respective modelling frameworks to fulfil the mandate. Thirdly, it facilitated the exchange of ideas, data, and analysis across institutions, helping to establish a common understanding of the findings. However, given the involvement of multiple institutions, coordinating efforts across different governance processes have proved challenging. As an alternative to this approach, due to the diverse nature of NBFIs and insufficient data on cross-sector linkages, another approach would be to run the usual banks' stress test adding specific shocks for counterparty credit risk or specific counterparties.
43. In conclusion, the EBA view is that EU-wide specific (banking) system stress tests and sectorial stress tests serve different yet complementary purposes. While system-wide exercises across sectors are beneficial for analysing macro-level impacts and subsequent effects, they lack the granularity necessary to address the intricacies of individual sectors and to gauge impacts at the micro level. Moreover, the

organisational, operational, and governance aspects of system-wide exercises are challenging, requiring expertise from each sector and presenting administrative and resource constraints. The governance processes involving multiple authorities add an additional layer of complexity. Therefore, the EBA believes that the primary focus on the detailed, sector-specific stress tests that are critical to our supervisory framework should be maintained, while system wide tests will offer valuable and complementary insights. For the latter, however, substantial additional resources need to be ensured, which should also take into account the planned frequency.

## Section 4: Supervisory coordination and consistency at EU level

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44. Concerning asset management companies, the European legislations already cover the three main categories of undertakings: investment firms, UCITS management companies and AIF management companies. Note that in the regulations, the term ‘asset management companies’ usually does not include MiFID authorised investment firms.

### Existing European Union regulations and directives

#### Investment firms

45. The Investment Firms Regulation (IFR) and the Investment Firms Directive (IFD) are two new pieces of legislation that aim to create a more proportionate and risk-sensitive regulatory framework for investment firms in the European Union (EU). The IFR and the IFD entered into force on 26 June 2019 and is applicable from 26 June 2021. They introduce a new categorisation of investment firms based on their size, activities, and risks, and tailor the prudential requirements and supervisory arrangements accordingly. One of the key features of the new framework is the enhanced role of supervisory colleges, which are platforms for cooperation and information exchange among the competent authorities of different member states that are responsible for the supervision of investment firms with a cross-border presence. This document provides a brief overview of the main features and challenges of the new framework for investment firms in the EU, with a focus on the role of supervisory colleges.
46. The IFD/R introduces all the following elements regarding prudential requirements:
47. A new categorisation of investment firms: The IFR and the IFD introduce three classes of investment firms, depending on their size, activities, and risks. Class 1 firms are the largest and most systemic investment firms that provide bank-like services, such as underwriting or dealing on own account. These firms will remain subject to the same prudential rules and supervision as credit institutions under the Capital Requirements Regulation (CRR) and the Capital Requirements Directive (CRD). Furthermore, the regulation envisages the possibility for investment firms that are interconnected to be required to apply the CRR (and certain parts of the CRD) even without the obligation to apply for a credit institution authorisation (so called Class “1 minus”).
48. Class 2 firms are the medium-sized and non-systemic investment firms that pose significant risks to their clients, markets, or themselves. These firms will be subject to a new set of prudential rules and supervision under the IFR and the IFD, which are more proportionate and risk-sensitive than the CRR and the CRD. Class 3 firms are the

smallest and least risky investment firms that provide simple services, such as investment advice or portfolio management. These firms will benefit from a simplified and lighter prudential regime under the IFR and the IFD.

49. The IFR and the IFD introduce a new prudential regime for class 2 and class 3 firms, which consists of the following main new or revised elements: A new capital framework, a liquidity framework, an internal governance framework, a new remuneration framework, reporting and disclosure framework, a revised supervisory framework.
50. The IFR and the IFD require the competent authorities to conduct a regular supervisory review and evaluation of the prudential situation, the risk profile, and the governance and risk management arrangements of the firms under their supervision (SREP). The SREP may result in the imposition of additional capital, liquidity, or governance requirements on the firms, as well as other supervisory measures, such as restrictions, sanctions, or remedial actions.
51. The IFR and the IFD enhance the role of supervisory colleges, which are platforms for cooperation and information exchange among the competent authorities of different member states that are responsible for the supervision of investment firms with a cross-border presence. The supervisory colleges are established and coordinated by the consolidating supervisor, which is the competent authority of the member state where the parent undertaking of the investment firm group is established.
52. Furthermore, the supervisory colleges have the tasks of facilitating the exchange of information and views among the competent authorities on the prudential situation, the risk profile, and the governance and risk management arrangements of the investment firm group and its subsidiaries. To facilitate the joint decision-making process among the competent authorities on the prudential requirements and supervisory measures applied to the investment firm group and its subsidiaries, such as the capital and liquidity requirements, the leverage ratio, the concentration risk limits, the internal governance and remuneration requirements, and the recovery and resolution plans.

### **Investment funds**

53. The regulatory framework for investment funds is different. UCITS (Undertakings for Collective Investment in Transferable Securities) is a type of investment fund that can be sold to retail investors across the European Union (EU) and other countries that have adopted the UCITS directive. UCITS funds are subject to harmonised rules and standards under the UCITS Directive that aim to ensure investor protection, transparency, and market efficiency.
54. The AIFM Directive (Alternative Investment Fund Managers Directive) is a European Union regulation that aims to provide a harmonised framework for the management

and marketing of alternative investment funds (AIFs) in the EU. AIFs are collective investment schemes that are not regulated by the UCITS Directive, such as hedge funds, private equity funds, real estate funds, and infrastructure funds.

55. These two directives do have framework comparable to the one described above for the identification of systemically important investment firms. Therefore, in considering on how to reinforce the supervision of large NBFIs as improve the coordination among competent authorities, it could be recommended that the new supervisory framework for investment firms is considered as reference.

### **Policy consideration for supervising NBFIs**

56. The more coordinated supervision on NBFIs can be ensured by implementing an EU-wide supervisory framework based on a methodology for the identification of asset management companies that could give rise to systemic risk concerns. It may be helpful to take into account certain elements of the methodology currently applicable under the IFD/R and CRD to identify Class 1 investment firms as well as Class “1 minus” investment firms. The rules or the categorisation of such firms are detailed in the relevant EBA technical standards.<sup>31,32</sup> However, it should be noted that IFD/R may not be applicable to all types of investment vehicles, and alternative approaches and/or proportionality could be envisaged. At the minimum, the specific variables and thresholds would have to be adapted to an asset management context.
57. The supervisory coordination over large asset management companies can be improved by taking into account the practices for the supervisory review process<sup>33</sup> as well as the framework for the functioning of colleges<sup>34</sup> laid out under the IFD, as these are suitable to assess risks not covered or not completely covered by the regulations and might give valuable hints on systemic risks as well.
58. Priority should be given to actions aimed at strengthening the supervisory coordination from a clear macroprudential perspective. From a microprudential perspective, the specificities of asset managers’ business models should be duly considered and a mechanistic transposition of approaches that could entail the application of a bank-like prudential supervisory framework to asset managers should be avoided. The most appropriate model for the supervision coordination of large cross-border asset managers should be chosen taking into consideration the actual scope of such

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<sup>31</sup> Commission Delegated Regulation (EU) 2021/2153 specifying the criteria for subjecting certain investment firms to the requirements of Regulation (EU) No 575/2013 ([link](#)).

<sup>32</sup> Draft Regulatory Technical Standards on the reclassification of investment firms as credit institutions in accordance with Article 8a (6)(b) of Directive 2013/36/EU ([link](#)).

<sup>33</sup> Guidelines on common procedures and methodologies for the supervisory review and evaluation process (SREP) under the Investment Firms Directive ([link](#)).

<sup>34</sup> Commission Delegated Regulation (EU) 2023/1118 specifying the conditions under which colleges of supervisors exercise their tasks ([link](#)).



supervision (solo vs consolidated; prudential vs conduct rules). The choice could include, among other arrangements, the establishment of supervisory colleges.

59. From a macroprudential perspective, priority should be given to a decision-making approach focused on jurisdictional or sectoral levels. This approach should ideally be based on common rules and standards across the EU, supplemented by coordinated supervisory actions at the EU level. In this context, two elements could be considered: i) an effective reciprocity framework requiring ESAs to assess whether a national measure proposed by one Member State should also be applied across the EU; and ii) Top-up powers for ESAs to address systemic risks throughout the EU. This type of power is particularly relevant for Non-Bank Financial Institutions (NBFIs) due to the significant cross-border footprint of the sector's activities.
60. Finally, regarding large cross-border NBFI entities, including asset managers, their systemic importance should be assessed based on criteria that focus on their market footprint and the externalities arising from their combined market strategies, having due regard to the risks they pose.

### Potential impact on banks from macroprudential measures on NBFIs

61. When considering the impact on banks from macroprudential measures on NBFIs, it is relevant to consider mainly entity-based measures (EBMs) imposed on NBFIs as activity-based measures (ABMs) would apply also to banks who are engaged in similar businesses. Activity-based measures, while potentially useful in certain circumstances, should be seen as complementary rather than substituting measures to entity-based measures. NBFI risks that could be addressed by EBMs can be divided in four broad categories: (i) excessive credit growth and interconnectedness / counterparty risks, (ii) large exposure / concentration risks, (iii) excessive leverage, and (iv) liquidity / maturity mismatch risks. The specific measures to address these risks would be qualitatively akin to those imposed on credit institutions, however the calibration and scope of application could differ owing to the specificities and prevailing business models of the particular NBFI sector.
62. The way banks could be directly impacted by EBMs applied to NBFIs can be gauged by looking at the interconnectedness charts presented in the first part of this note. On their asset side, banks are significant providers of funding to NBFIs mostly via short-term loans and short-term debt securities, including repo financing. Leverage and short-term liquidity limits on NBFIs could adversely affect banks' fees and commission income reaped from these activities, while concentration limits could force NBFIs to diversify their banking counterparties in key activities such as prime brokerage and market making. On the liability side, banks rely on NBFI sectors – especially investment funds and OFIs – for deposit and bond funding, and EBMs targeted on these NBFI activities could restrict a key source of market-based funding for the banks. All of these

impacts could have the effect of potentially reducing the banks' ability to extend credit to non-financial sectors.

63. At the same time, indirectly and on a more long-term basis, there are positive implications for the banks from imposing EBM on non-banks. Similar regulation for similar activity would restore level playing field in the markets where banks compete with NBFIs. Also, with the NBFIs sector becoming more robust to liquidity and solvency shocks, financial stability is enhanced and the risk of contagion and shock propagation from NBFIs to banks would be reduced. Ultimately however, the trade-off between the pros and cons of imposing macroprudential measures on NBFIs should be considered from the perspective of the financial system as a whole, so that financial innovation and access to credit by households and firms would not be jeopardised.

# Annex

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Q2: What are the most significant risks for credit institutions stemming from their exposures to NBFIs that you are currently observing? Please provide concrete examples.

Q3: To what extent could the failure of an NBFI affect the provision of critical functions to the real economy or the financial system that cannot easily be replaced? Please explain in particular to which NBFI sector, part of the financial system and critical function you refer to, and if and how you believe such knock-on effect could be mitigated.

Q4: Where in the NBFI sectors could systemic liquidity risk most likely materialise and how? Which specific transmission channels of liquidity risk would be most relevant for NBFI? Please provide concrete examples.

Q5: Where in the NBFI sectors do you see build-up of excessive leverage, and why? Which NBFIs could be most vulnerable? Please provide concrete examples.

Q6: Systemic risks and vulnerabilities emerging from crypto assets trading and intermediaries in the EU

Q52: The quantitative analysis of the interconnectedness between banks and non-banks, with breakdowns by country.

Q53a: Benefits and costs of a regular EU system-wide stress test across NBFI and banking sectors

Q53b: Are current reporting and data sharing arrangements sufficient to perform this task? Would it be possible to combine available NBFI data with banking data?

Q54: Need for arrangements between NBFI supervisors and bank supervisors to ensure timely and comprehensive sharing of data for the conduct of an EU-wide financial system stress tests

Q57: How can we ensure a more coordinated and effective macroprudential supervision of NBFIs and markets? How could the role of EU bodies (including ESAs, ESRB, ESAs Joint Committee) be enhanced, if at all? Please explain.

Q62: What are the benefits and costs of improving supervisory coordination over large (to be defined) asset management companies to address systemic risk and coordination issues among national supervisors? What could be ESMA's role in ensuring coordination and guidance, including with daily supervision at fund level?