

ESMA Market Report

EU Securities Financing Transactions markets 2024



ESMA Market Report on EU Securities Financing Transactions 2024

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The Authority shall include in its assessments an economic analysis of the markets in which financial market participants operate, and an assessment of the impact of potential market developments on such financial market participants. This report contributes to ESMA's risk assessment activities. The report and its contents do not prejudice or impair ESMA's regulatory, supervisory or convergence activities, or the obligations of market participants thereunder. Charts and analyses in this report are based on data provided by national competent authorities to ESMA under the European Money Market Funds Regulation (MMFR). ESMA uses these data in good faith and does not take responsibility for their accuracy or completeness. ESMA is committed to constantly improving its data sources and reserves the right to alter data sources at any time.

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Editorial

Dear Reader –

With this edition, the European Securities and Markets Authority presents its first market report on EU Securities Financing Transactions. Securities Financing Transactions (SFTs) are secured transactions in which assets are exchanged for cash. In addition to providing secured funding, SFTs also enable market participants to source specific securities. They represent a crucial link between financial intermediaries by providing short-term funding, facilitating hedging and supporting secondary market liquidity and price discovery. In economic terms, SFTs represent a loan which is collateralised by one or multiple securities.

The 2007-2008 Global Financial Crisis highlighted the systemic dimension of securities financing, as they could exacerbate funding strains in times of market stress. As part of the crisis regulatory follow-up, regulation of the activity has significantly evolved. The primary policy recommendation of the Financial Stability Board when identifying the financial stability issues in securities lending and repurchase agreements (repo) markets, was to augment transparency and regulatory oversight within these markets, calling for the systematic collection of comprehensive and detailed data on SFT exposures. In the EU, the Securities Financing Transactions Regulation (SFTR) created a Union-wide framework under which details of SFTs can be efficiently reported, responding to the need to enhance the transparency of securities financing markets. Based on Article 4 of the SFTR, National Competent Authorities and ESMA now collect an unprecedented level of detailed information on the characteristics of SFTs, allowing authorities to inform their supervisory activity.

This report provides, for the first time, a comprehensive market-level view of the EU repo market, based on the information reported by market participants. Its primary objective is to contribute to our supervisory and systemic risk assessment work at ESMA, including on financial stability and other areas, supplementing the twice-yearly ESMA Report on Trends, Risks and Vulnerabilities.

The report is organised as follows. The first chapter of the market monitoring section provides an overview of the regulatory definitions and coverage, as well as the overall structure of the European SFT markets. The second chapter is dedicated to the analysis of repo activities and trends, presenting the main characteristics of the market and its participants. The third chapter presents an in-depth analysis of the collateral practices employed in repo transactions, including the characteristics of the assets employed, the rates and haircuts. Finally, the section on data reporting gives an overview of the reporting framework and provides insights over the statistical work done by ESMA to ensure the accuracy of the statistics presented in the document and in further analysis.

With this first edition of the report, we are still at an early point in exploring, analysing and displaying key statistics on EEA SFT markets. SFTR data offer unprecedented reach and detail on securities lending transactions and exposures, the largest part of which remains to be developed for risk monitoring statistics. This first edition of the SFT Market Report focuses on repo transactions, which make up the largest share of SFTs. In future editions, we will aim to include other securities financing types, as well as more risk indicators, but also possible revisions of data and methods. To help us improve our reporting, we would be grateful if readers could send any feedback or suggestions on this report to risk.analysis@esma.europa.eu.

Operationalising the use of data collection and use of SFT data has been – and will continue to be – a challenging task for IT experts, statisticians and economist across numerous institutions involved in securities financing markets oversight in Europe and around the world. We thank all colleagues in our community, especially at the European Systemic Risk Board, European Central Bank and in National Authorities, for their invaluable advice on our reporting so far, as well as ESMA staff for their dedicated work. We at ESMA are pleased to share this part of our work with a wider audience, and we hope that our report will contribute to the understanding of the risks related to EU SFTs.

Executive Summary

SFT markets overview: The Securities Financing Transactions Regulation (SFTR) created a framework in the European Union under which details of SFTs have to be reported by market participants. The SFTR framework is part of the regulatory response to the global financial crisis and has significantly enhanced the transparency of securities financing markets.

The total outstanding exposure of SFTs is EUR 9.8tn, as of September 2023. Repos account for EUR 6.7tn or 68% of the total, securities lending for EUR 2.3tn (23%), buy-sell back for EUR 743bn (8%), and margin lending for EUR 124bn (1%).

In terms of on exchange transactions, 43% of repo and 28% of buy-sell back principal amounts are concluded on exchange, while this is the case for only 8% of securities lending transactions. In terms of market structure, repo markets are mostly interbank transactions, with a majority of professional intermediaries (95%). On the contrary, securities lending transactions usually connect non-financial participants with banks and other intermediaries.

Repo markets overview: Repo principal amounts, or the cash value that is settled at the onset of the transaction, increased in 2023 to EUR 6.7tn (+11% compared to 2022). The non-cleared segment accounted for 61% of the repo amounts, with the majority processed bilaterally and only 6% managed with a third-party. Banks are the major participants in repo markets with 52% of principal amounts.

Repos are to a large extent of very short-term maturity. 21% and 19% of repo principal amounts respectively mature on the reporting date or the day after (T or T+1).

41% of the repo amounts observed are between EEA counterparties. Links with the UK are strong, with EEA repo borrowing from the UK amounting to 12% of repo principal amounts, and EEA lending to the UK to 9%. The European counterparties of repo are domiciled principally in few Member States, with FR, DE and IT representing 79% of EEA borrowing and 77% of EEA lending in 2023.

Repo collateral use: When a seller and a buyer agree in advance on a specific instrument to be delivered as collateral, the repo is called 'specific'. When the collateral provider, after agreeing to the terms of the repo, can choose the security to pledge among a range of instruments, the repo is termed 'generic'. Specific collateral trades accounted on average for 84% of repo outstanding principal amounts in 2023, potentially highlighting the function of collateral provision played by the European repo markets.

Government bonds are the main collateral employed (87% of overall collateral). The cleared segment predominantly makes use of EEA sovereign bonds (88% of collateral), while the non-cleared segment features more collateral heterogeneity (79% of sovereign bonds as collateral).

The repo haircut is a relevant risk control measure for uncleared transactions, expressed as a percentage, that represents the difference between the market value of the collateral and the cash loan amount obtained by pledging said collateral. Since CCPs mostly collect margin at the portfolio level using proprietary risk models, consequently cleared repos often report zero haircuts at the transaction level. This contrasts with higher haircuts in non-cleared transactions that involve a more diverse pool of asset classes. Non-cleared repos backed by government bonds often display no haircut.

Repo rates display notable variation based on the country of issuance of the collateral; with the median rate for EEA instruments below the ECB Deposit Facility Rate.

Essential statistics

Repo and buy-sell back markets

	September 2022			September 2023		
	Cleared	Non-cleared	Total	Cleared	Non-cleared	Total
Size						
Outstanding number of transactions (thousand)	89	266	356	106	233	340
Share of repo (%)	89.9	92.3	91.7	90.2	90.5	90.4
Share of buy-sell back (%)	10.1	7.7	8.3	9.8	9.5	9.6
Principal amount (PA) (EUR tn)	2.5	3.8	6.3	2.8	4.5	7.3
Share of repo (%)	91.5	88.2	89.5	92.5	88.4	90
Share of buy-sell back (%)	8.5	11.8	10.5	7.5	11.6	10
Execution and currency						
OTC (% of PA)	18.6	90	61.5	17.8	84.2	58.6
On venue (%)	81.4	10	38.5	82.2	15.8	41.4
EUR denominated (%)	90.1	40.1	60	89.2	42.7	60.6
Other currencies (%)	9.9	59.9	40	10.8	57.3	39.4
Contract type						
Share of Generic Collateral (% of PA)	9.4	24.8	18.7	10	17.9	14.9
Share of Specific Collateral (%)	90.5	75.1	81.2	89.9	82	85
Participants						
Number of reporting counterparties	210	2,909	2,955	206	3,061	3,107
Banks	113	551	567	114	576	591
Other Non-Bank Finance (including CCPs)	29	383	389	30	378	387
Investment funds	68	1,413	1,437	62	1,266	1,288
Non-financial corporations	0	562	562	0	841	841
Exposure						
By reporting counterparty (% of PA)						
Banks	33.6	69.5	55.2	32.7	68.9	55
Other Non-Bank Finance (including CCPs)	66.2	18.6	37.6	67.2	21.9	39.3
Investment funds	<1	8.6	5.2	<1	7.1	4.4
Non-financial corporations	0	3.3	2	0	2.2	1.4
By domicile of other counterparty						
Share of EEA (% of PA)	65.5	27.6	42.7	64.3	26.1	40.8
Share of non-EEA (% of PA)	34.4	72.3	57.2	35.6	73.8	59.1
Concentration						
Top-5 entities excluding CCPs (% of PA)	39.4	48.1	45.9	45.1	49.7	48.7
Top-10 entities excluding CCPs (% of PA)	56.8	61.2	59.3	62.2	65	63.8
Maturity at inception						
Fixed maturity (% of PA)						
Overnight	69.8	29.1	46.1	71.1	26.1	46.6
T+2 to 1 month	9.7	31	22.1	11.4	26.6	19.7
Other	20.3	39.8	31.6	17.4	47.2	33.6
Open-term (% of PA)	<1	21.3	13	<1	13.3	8.3
Collateral						
Collateral market value (EUR tn)						
Sovereign bonds (% of collateral value)	98	79.8	87.2	98.2	78.9	86.4
EEA sov. bonds (% of collateral value)	88	34.8	56.3	86.7	35.1	55.1
EEA sovereign bonds (EUR tn)						
IT (% of collateral value)	31.3	17.7	26.3	32.5	22.3	28.5
FR (% of collateral value)	23.3	27.8	25	22.8	24.5	23.5
DE (% of collateral value)	23.2	23	23.1	22.2	21	21.7
ES (% of collateral value)	8.8	10.4	9.3	9.1	10.5	9.6
BE (% of collateral value)	5	5.5	5.2	4.9	4.9	4.9
Median repo rates for EEA sovereign bonds (%)	0.34	0.12	0.3	3.73	3.67	3.7

Note: All values refer to the reporting of repurchase agreement and buy-sell back transactions under SFTR, as of the 21 September 2022 and the 20 September 2023. 'Other Non-Bank Finance' classification includes insurance and reinsurance undertakings, investment firms, pension funds, central securities depositories and CCPs.

Source: SFTR, GLEIF, ESMA.

Market monitoring

SFT markets overview

Summary

The Securities Financing Transactions Regulation (SFTR) created a framework in the European Union under which details of SFTs are reported. The SFTR framework is part of the regulatory response to the global financial crisis and has significantly enhanced the transparency of securities financing markets.

As of September 2023, the total outstanding exposure of SFT in the SFTR dataset is EUR 9.8tn. Repos account for EUR 6.7tn or 68% of the total, securities lending for EUR 2.3tn (23%), buy-sell back for EUR 743bn (8%), and margin lending for EUR 124bn (1%).

In terms of on exchange transactions, 43% of repo and 28% of buy-sell back principal amounts are concluded on exchange, while this is the case for only 8% of securities lending transactions. In terms of market structure, repo markets are mostly interbank transactions, with most professional intermediaries (95%). On the contrary, securities lending transactions usually connect non-financial participants with banks and other intermediaries.

Context

Securities financing transactions (SFTs) are secured transactions in which assets are exchanged for cash. In economic terms, SFTs represent a loan which is collateralised by one or multiple securities (e.g. bonds or shares). SFTs encompass a wide range of financial activities by providing secured funding, liquidity management and opportunities for returns, supporting short-term financing needs and facilitating collateral transformation. These transactions play a crucial role in the functioning of financial markets¹, as well as for monetary policy operations. SFTs encompass four different transaction types: repurchase agreements (repos), securities lending, buy-sell back transactions and margin lending.

Before the global financial crisis, broker-dealers and investment banks were key to provide funding for different market participants, and most of their short-term funding took the form of repurchase agreements backed by securitized mortgages as collateral, also enabling significant leverage. During the global financial crisis risks related to these market practices materialised.

Concerns about the quality of collateral and liquidity in the underlying markets led to increases in repo haircuts. Rising collateral calls eventually forced the rapid unwinding of leveraged positions and triggered sharp declines in underlying asset values, which also put significant pressure on financial intermediaries' solvency, leading to bank failures or mergers.² The "run on repo"³ led to a significant decline in repo activity.⁴

More recently, the stress related to liability-driven investment (LDIs) strategies investing in sterling government bonds exemplifies how an increase in sovereign yields can lead to liquidity pressure on leveraged funds. Leveraged funds may use derivatives and repo borrowings to reduce the duration and return mismatch of their fund.⁵

As part of the regulatory response to the global financial crisis, the Financial Stability Board (FSB) and the European Systemic Risk Board (ESRB) recognized the risks associated with SFTs. To mitigate these risks, the FSB outlined recommendations aimed at reducing the inherent "*procyclical risks arising from repo and securities lending transactions*".⁶ The primary objective was

¹ See Singh M. (2011), "Velocity of pledged collateral: analysis and implications", International Monetary Fund, Issue 256.

² See FSB (2017), "Assessment of shadow banking activities, risks and the adequacy of post-crisis policy tools to address financial stability concerns".

³ See Gorton, G. and Metrick, A. (2010), "[Securitized Banking and the Run on Repo](#)", Yale ICF Working Paper No. 09-14.

⁴ See Copeland, A. and Martin A. (2021), "[Repo over the Financial Crisis](#)", Federal Reserve Bank of New York Staff Reports, no. 996.

⁵ See ESMA (2023), [TRV Risk Monitor 1-2023](#), February, and FSB (2023), [The Financial Stability Implications of Leverage in Non-Bank Financial Intermediation](#), September.

⁶ See FSB (2013), "[Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos](#)".

to increase transparency and regulatory oversight within these markets, calling for the systematic collection of comprehensive and detailed data on securities lending and repo exposures. The aim was to improve market transparency by regularly gathering granular information on SFT transactions.

Further recommendations included policy measures, such as guidelines regarding cash collateral reinvestment rules, re-hypothecation requirements, standards for collateral valuation and management, as along with guidelines for calculating haircuts and recommendations on minimum haircuts for certain transactions.

Following the FSB Policy Framework, the Securities Financing Transactions Regulation (SFTR)⁷ created a framework in the European Union under which details of SFTs are reported. The Regulation was adopted on 25 November 2015, and the entry into force of the provisions relating to reporting transactions took place in three stages, starting in:

- July 2020 for financial counterparties such as investment and credit institutions, central counterparties (CCPs) and central securities depositories (CSDs);
- October 2020 for insurance companies, Undertakings for Collective Investments in Transferable Securities (UCITS) and Alternative Investment Funds (AIF) managers and institutions for occupational retirement provision;
- January 2021 for eligible non-financial counterparties.

In addition to laying down rules on the transparency of SFTs and on the operation of trade repositories (TRs), the SFTR also introduces new rules on the transparency of collective investment undertakings towards investors in periodical reports and pre-contractual documents.

ESMA regulates securities financing activities by setting out rules on reporting requirements, data access, collection, verification, aggregation, comparison and publication of data on SFTs by

TRs.⁸ To fulfil this mandate, ESMA has developed detailed rules and guidance on reporting, registering, and accessing data.⁹ ESMA has also monitored the SFT market in the past, using commercial data.¹⁰

SFTR reporting complements other data sources on the European SFT market such as the ECB money market statistical reporting dataset and the International Capital Market Association semi-annual Repo Survey.¹¹ Some National Competent Authorities (NCA) have already made use of the SFTR dataset for financial stability and general risk monitoring purposes.¹²

Definition of SFTs

The SFTR encompasses four main types of securities financing transactions (SFTs):

- **Repurchase Transactions (repo):** In a repo transaction, one counterparty transfers securities or commodities (the collateral) to the lender with a commitment to repurchase them or similar assets at a predetermined price on a future date. Conversely, the borrowing party engages in a reverse repo. These agreements are governed by specific terms and usually involve recognised exchanges holding rights to the securities or commodities;
- **Securities or Commodities Lending and Borrowing (SLEB):** A transaction involving the transfer of securities or commodities, accompanied by an agreement ensuring the return of equivalent securities or commodities at a later date. For the party transferring these assets, it is considered lending, while for the receiving party, it is considered borrowing;
- **Buy-Sell Back or Sell-Buy Back Transaction (SBSC):** A transaction by which a counterparty buys or sells securities or commodities with an agreement to repurchase or resell them at an agreed-upon price on a specified future date. It is termed a buy-sell back transaction for the buyer and a

⁷ Regulation ((EU) 2015/2365

⁸ See ESMA's dedicated page on [SFTR Reporting](#).

⁹ See [Regulatory technical standards, Implementing technical standards](#) as well as [Guidelines on reporting under SFTR](#) and [Q&As on SFTR Reporting](#).

¹⁰ See ESMA (2016), "[Report on securities financing transactions and leverage in the EU](#)", October and Ferrari, Guagliano and Mazzacurati (2017),

"[Collateral scarcity premia in Euro area repo markets](#)", WP 12017.

¹¹ See ECB (2023), [Euro money market study 2022](#), and International Capital Market Association (2022), [Repo Survey](#).

¹² See for instance AMF (2021), [Initial analysis of SFTR reporting data](#), June and AFM (2023), [State of the Capital Market](#), October.

sell-buy back transaction for the seller. These transactions are close to repurchase agreements;

- **Margin Lending Transactions (MGLD):** This transaction type involves extending credit connected to the purchase, sale, or trading of securities, but not including other loans secured by securities as collateral.

The different types of SFTs have similar economic effects despite some specificities. However, they differ in many aspects, including the size of these markets, the purpose of the transactions, the nature of collateral exchanged, the type of market participants, and existing market practices.

Scope of the Report

The statistics presented in this report use SFTR data and provide, for the first time, a comprehensive overview of the European Economic Area (EEA) repo markets.

Coverage: The reporting of SFTs applies to a counterparty to an SFT that is established i) in the Union, including all their branches irrespective of where they are located; and ii) in a third country, if the SFT is concluded in the course of the operations of a branch in the Union of that counterparty.

Similarly, a counterparty engaging in reuse has to report when it is established: (i) in the Union, including all its branches irrespective of where they are located; ii) in a third country, where either the reuse is effected in the course of the operations of a branch in the Union of that counterparty, or the reuse concerns financial instruments provided under a collateral arrangement by a counterparty established in the Union or a branch in the Union of a counterparty established in a non-EU country.¹³

Since the SFTR has a EEA relevance, all SFTs involving at least one counterparty established in the EEA or with an EEA branch in the course of an SFT are covered. Therefore, the statistic in this report provides data and risk indicators for repo markets at the EEA level.¹⁴

In the following sub-section, an overview of all SFT markets is presented. However, for most of the content of the report, the statistics focus on repo and buy-sell back transactions. In future editions of the market report, the coverage shall be extended to cover additional SFT types, as well as proposing new indicators.

Measurement: All statistics are based on SFTR trade-state data, i.e. data including all outstanding transactions at the end of the reference day, based on the state of each transaction along the securities financing life cycle.¹⁵ Statistics are presented as the number of transactions outstanding¹⁶, or the principal amounts of contracts outstanding,¹⁷ providing a snapshot of transactions that have not yet matured as of the reporting date, regardless of the date of execution (i.e. a 'stock' measure of repo amounts).

Reporting period and periodicity: This report presents most of the indicators through weekly time series. The reporting period begins with the commencement of the full SFTR reporting at the end of January 2021 and concludes in October 2023. Additionally, specific snapshots are included as of 19 April 2023 and 20 September 2023.¹⁸

Data quality: A presentation of the procedures used to prepare the indicators introduced in this report is provided in the "SFTR data reporting" in the Statistical methods section, such as the enrichment of data, detection of outliers and cleaning and filtering methods used to improve data quality and data usability.

¹³ Transactions with members of the European System of Central Banks (ESCB) are exempted from the obligation to report SFTs to TRs, as well as other EU public bodies intervening in the management of the public debt or the Bank for International Settlements.

¹⁴ The EEA comprises the European Union plus Iceland, Lichtenstein and Norway. Unless stated otherwise, all data presented in the report refers to the EEA level.

¹⁵ See the section 'SFTR data reporting' for a detailed description of the data used for the report.

¹⁶ Transactions outstanding are defined as SFT trades that have been executed and have not yet

matured at the reporting date (e.g. in the case of repo, this implies that the return leg of the repo has not been settled).

¹⁷ Principal amounts outstanding are defined as the principal amount as of the value date of all transactions concluded and not yet settled at the reporting date. Thus, all repos with opening leg in the past but still outstanding are included. All figures are presented as gross values, without any form of netting.

¹⁸ These dates were chosen due to the availability of data and to avoid end of quarter or end of year effects.

Repos: Main SFT type

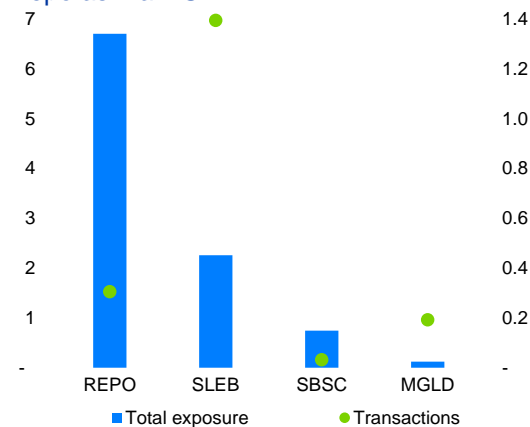
As of September 2023, the total SFT market as in the SFTR dataset is EUR 9.8tn in terms of value with 1.9mn outstanding transactions (MR-SFT.1).

The EUR 9.8tn total exposure is composed of EUR 6.7tn in repo (68%), EUR 2.3tn in securities lending exposures (SLEB, 23%), EUR 743bn in buy-sell back exposures (SBSC, 8%), and EUR 124bn in margin lending (MGLD, 1%).

In terms of outstanding transactions, securities lending represents the majority of transactions, with 1.4mn outstanding transaction at the end of September 2023 (72%). Repo transactions amount to 305k (16%) of outstanding transactions, margin lending for 10% of transactions (193k) and buy-sell back for 2% (32k).¹⁹

MR-SFT.1

All SFT exposure and transactions
Repo as main SFT



Note: Total exposure (lhs, EUR tn) and transactions (rhs, in mn), by SFT type. Data as of 20 September 2023.
Sources: SFTR, ESMA.

In terms of outstanding transactions, securities lending represents the majority of transactions, with 1.4mn outstanding transaction at the end of September 2023 (72%). Repo transactions amount to 305k (16%) of outstanding transactions, margin lending for 10% of

transactions (193k) and buy-sell back for 2% (32k).²⁰

Repo participants: Limited number

Repo markets are mostly interbank transactions, with professional intermediaries. This is reflected in the low number of transactions but also in the low number of entities (4k), with 95% of legal entities (MR-SFT.S.2).

On the contrary, securities lending transactions usually connect non-financial participants with banks and other intermediaries (especially in the cover of short sales), as observed in the large number of client accounts (61k), but also of legal entities (11k).²¹ A similar share of client account is observed in margin lending transactions, with 10k legal entities and 101k client accounts (91%), reflecting the large number of financial intermediaries, such as prime brokers, and the large number of client accounts. For buy-sell back, 2k legal entities participate to the transactions in September 2023, with less than 3k client accounts.

Trading: Repo mainly OTC

43% of repo and 28% of buy-sell back principal amounts are concluded on exchange, allowing for transparency obligations both pre- and post-trade. Trading on exchange offers the advantage of standardization, liquidity and best execution requirements – which is especially useful in regular, short-term repos with liquid securities.

Over-the-counter (OTC) transactions continue to play a significant role, offering flexibility and customisation in terms of terms, collateral, and counterparties. Securities lending transactions, which usually involves specific securities and longer maturities, are only marginally concluded

¹⁹ In terms of data quality, implausibly high values have been identified for some loan values reported for securities lending transactions since 2021. The corrections of those records are still being implemented and thus, some caution is warranted regarding the overall numbers for securities lending transactions. See ESMA (2022), [2022 Report on Quality and Use of Transaction Data](#), April, for further details.

²⁰ In terms of data quality, implausibly high values have been identified for some loan values reported

for securities lending transactions since 2021. The corrections of those records are still being implemented and thus, some caution is warranted regarding the overall numbers for securities lending transactions. See ESMA (2022), [2022 Report on Quality and Use of Transaction Data](#), April, for further details.

²¹ Legal entities are identified through their Legal Entity Identifiers (LEI), but in the case of a private individual, a client code shall be specified in a consistent manner.

on exchange (8% of securities lending exposures in 2023).

Notably, an important portion of repo and buy-sell back transactions on trading venues are centrally cleared (76% and 91% respectively of each principal amounts in September 2023), meaning that when repo transactions occur on an exchange, the clearing process is usually easily accessible. Conversely, only a marginal share of over-the-counter transactions are cleared (13 and 5% respectively). Securities lending transactions are almost never cleared.²²

²² Regarding margin lending, both the clearing and venue fields are not populated because they are not relevant to this SFT type.

Repo markets

Summary

Repo principal amounts, or the cash value that is settled at the onset of the transaction, increased in 2023 (+11% compared to 2022). The non-cleared segment accounted for 61% of the repo amounts, with the majority processed bilaterally and only 6% managed with a third-party. Banks are the major participants in repo markets with 52% of principal amounts.

Repos are to a large extent of very short-term maturity. 21% and 19% of repo outstanding respectively mature on the reporting date or the day after (T or T+1).

41% of the repo amounts observed are between EEA counterparties. Links with the UK are strong, with EEA repo borrowing from the UK amounting to 12% of repo principal amounts, and EEA lending to the UK to 9%. The European counterparties of repo are domiciled principally in few Member States, with FR, DE and IT representing 79% of EEA borrowing and 77% of EEA lending in 2023.

Repo: Mostly uncleared

A repurchase agreement or “repo” is effectively a collateralized loan, usually a short-term financing arrangement, where securities are exchanged for cash at a predetermined rate (repo rate). Buy-sell back and sell-buy back transactions (SBSC) share similarities with repo transactions, involving a cash buy-sell and a forward reverse transaction. SBSC transactions are different from repo because they lack initial margin or margin calls, they do not allow for substitutions of securities, and they entail the buyer paying coupons to the seller upon maturity. Since repo and SBSC are so similar in nature, we present them together in this section and the following (all indicators and analysis).

The repo market can be divided into four major segments, depending on two factors: (i) whether the trades are centrally cleared through a central counterparty (CCP) and (ii) whether the trades are settled bilaterally or through a tri-party custodian.

In bilateral repos, the exchange of collateral and cash is done between both counterparties at the onset and the maturity of the transaction. In tri-party repos, both counterparties externalise the post-trade management of the repo transaction to a third-party (usually a central securities depository (CSD) or a bank), which tackles the processing of the transaction in terms of clearing,

settlement, and the management of the collateral throughout the duration of the operation.

Bilateral repos offer flexibility and cost-efficiency, whereas tri-party repos provide risk reduction and operational efficiency. While the bilateral repo market is essentially interdealer, tri-party repos usually take place between dealers and customers. The relatively low utilization of tri-party settlement in the EEA can be attributed to the fact that large banks usually manage their settlement processes internally.

The benefits of the CCP use are well established (FSB 2014)²³, allowing for balance sheet netting that lowers capital requirements, and for more robust collateral and an enhanced default management process. In a centrally cleared market, participants have exposures to a CCP instead of direct exposures to each other, which reduces the interconnectedness of the financial system through multilateral netting.

However, for participants outside of intra-dealer transactions, such as non-financial corporations or asset managers, the potential for netting can be limited as transactions are more often “one-way”, and clearing can be costly. Similarly, for repos of less liquid securities, central clearing can be costly and/or difficult since CCPs may not be able to properly value or manage the collateral, as there may be less demand. Hence the FSB recommendations proposed, while strengthening

to address shadow banking risks in relation to securities financing transactions.

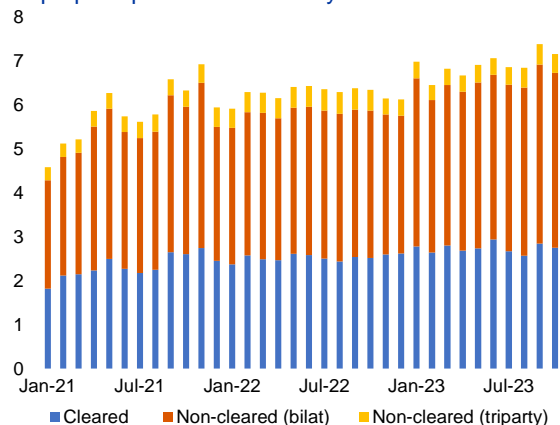
²³ See FSB (2014), [Regulatory Framework for Haircuts on Non-Centrally Cleared Securities Financing Transactions](#), October. This Framework is a key part of the [FSB's policy recommendations](#)

clearing as a regulatory objective (especially for inter-dealer repos against safe collateral), that “authorities should consider the pros and cons of broadening [CCP] participation” (FSB 2014).

Overall, the amounts observed through the SFTR dataset were EUR 6.9tn on average in the first ten months of 2023²⁴, a 10.5% increase compared to 2022. The average number of outstanding transactions was 329k in 2023, marking a 9% decrease from 2022.

MR-SFT.2

Repo principal amount by clearing and settlement type



Note: Principal amount in outstanding repo transactions by cleared, non-cleared bilateral and non-cleared triparty flag, in EUR tn. Last data point: Oct 2023.

Sources: SFTR, ESMA.

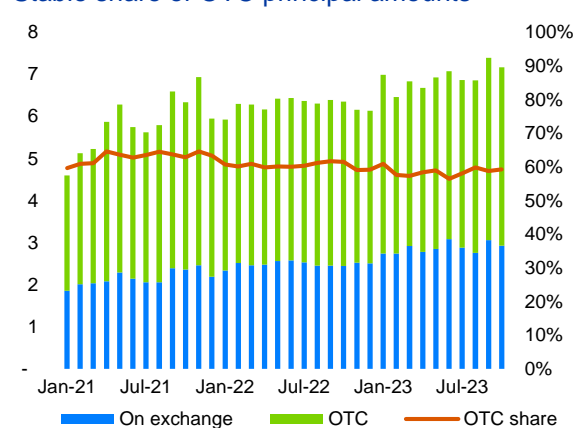
An average of 40% or EUR 2.7tn of those repo principal amounts was cleared in 2023 in the EEA. Non-cleared principal amounts accounted for 61% or EUR 4.2tn in 2023, with 55% processed bilaterally and 6% managed with a third-party. In total, transactions processed without an external agent represent the vast majority of repo trades, with 93% of the principal amounts in 2023 or 80% of transactions.²⁵ This distribution of principal amounts was similar in 2022, with 40% of principal amounts from cleared repo and 91% from transactions settled bilaterally. In terms of outstanding transactions,

the uncleared segment amounted to 69% of repo transactions on average in 2023 (74% in 2022), with bilateral settlement in 94% of transactions (80% in 2022).

These numbers contrast with commonly reported numbers on the clearing rate of European repo markets. For example, estimates from the ECB’s MMSR database²⁶ indicate a 70% share of cleared repo in the EU in 2022. However, this report focuses on outstanding principal amounts, providing a snapshot of transactions that have not yet matured as of the reporting date, regardless of the date of execution (i.e. a ‘stock’ measure of repo amounts).²⁷ Conversely, commonly reported figures refer to volumes executed and traded at daily frequency. Thus, the prevalence of short maturity (mostly overnight) repos in the cleared segment may contribute to the discrepancy in numbers, on top of the perimeter of the SFTR dataset.²⁸

MR-SFT.3

Repo principal amount by execution type



Note: Principal amount in outstanding repo transactions by execution type, in EUR tn. OTC share of the total amounts on the rhs. Last data point: Oct 2023.

Sources: SFTR, ESMA.

In terms of execution, repo transactions can be executed on a trading venue²⁹ or OTC. On average in 2023, 59% of repo principal amounts were concluded OTC (60% in 2022), with a

²⁴ In the rest of the report, when the “2023 average” is presented, similarly it means that the average for the first ten months of 2023 is presented.

²⁵ The total principal amounts include both cleared and non-cleared repo transactions. A “bilateral” transaction means here that the post-trade processing was not outsourced to an external agent; it includes in the case of cleared transactions the intermediation of the CCP.

²⁶ See ECB (2022), [Euro money market study 2022](#).

²⁷ Trade-state data represents a stock measure since it includes all executed transactions that have not yet matured as of the date of reporting, regardless

of when they were executed. Thus, repos with opening leg in the past but still outstanding are included.

²⁸ Among possible differences, SFTR covers a wider net of reporting counterparties and also encompasses non-EUR denominated repos.

²⁹ Trading venues are defined under MiFID II as Regulated Markets (RM), Multilateral Trading Facilities (MTF) or Organized Trading Facilities (OTF).

similar share for OTC transactions (63% on average in 2023). The share of OTC principal amounts remained broadly stable since 2021 (MR-SFT.3), while the share of transactions slightly declined.

Maturity of trades: Principally overnight

The dataset includes repo trades of all maturities, including repo transactions that have not yet been contractually initiated (forward repos). This inclusive coverage offers a comprehensive perspective on the term structure of repos, enabling a thorough understanding of both their duration characteristics and the associated risk exposures of the trades. However, estimates of outstanding principal amounts computed including all repo transactions, irrespective of their term structure, would be biased upwards, as it would count the repos with a forward opening leg. In this sub-section the overall maturity structure is presented.

The repo maturity can be looked at through the maturity at the inception of the transaction decided by both parties, or by calculating the remaining time between the maturity date and the chosen date of analysis in which the trade is still outstanding (i.e. residual maturity at the time of the snapshot). Except for open term repo, the end date of the transaction is the date contractually agreed between the counterparties for the exchange of cash versus collateral for the closing leg. The maturity at inception indicates the initial agreed-upon term of the transaction.

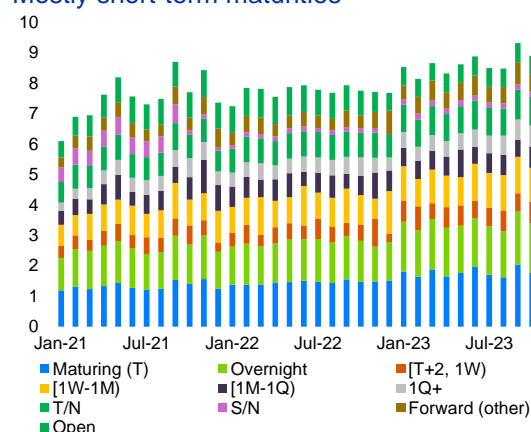
On average in 2023, 47% of repo principal amounts were initially agreed to have an overnight maturity, i.e. a transaction concluded on date T with a maturity date of T+1, while the remaining sums were allocated among longer maturities or were structured with an open term (7%, MR-SFT.S.12).

Residual maturity provides a dynamic measure accounting for the remaining time until the conclusion of the repo agreement at a given point in time. In particular, residual maturity accounts

for potential extensions or early terminations that may have occurred during the course of the agreement, offering a more accurate representation of the transaction's present status. Through this measure, it is possible to analyse the maturity spectrum of outstanding repo transactions, regardless of when their opening leg took place. In addition, since a lot of repo transactions appear to be rolled over daily, residual maturity enables a more accurate assessment of the market's outstanding exposures.

MR-SFT.4

Repo principal amount by residual maturity Mostly short-term maturities



Note: Principal amount in outstanding repo transactions by residual maturity, in EUR tn, weekly. Last data point: Oct 2023.
Sources: SFTR, ESMA.

On average in 2022, trades maturing on the reporting date or the day after (T or T+1) represent the large majority of repo outstanding amounts (21 and 19% respectively, MR-SFT.4), followed by residual maturities of less than a month (21%), and longer maturities (14%). On average, 7% of repo outstanding amounts are open term, a stable share since 2021.

Additionally, there are 19% on average of forward transactions, i.e. repurchase agreements with value date in the future, where the first leg of the trade has not been settled yet. They can be further separated into tomorrow next (11%) and spot next transactions (2%) - i.e. transactions with an overnight maturity that will be open either the day after the reporting date (T+1) or the day after that (T+2) - as well as other transactions with an opening date in the future (7%).³⁰

³⁰ While this sub-section presents the overall maturity structure of EU repos, in other parts of the current analysis intraday and forward repos were removed, and only transactions that have been opened have been kept. This decision is motivated by the lack of available information on collateral for those

transactions, as well as the will to represent the outstanding amounts of repos (see SFTR data reporting sub-section for further information). However, these transactions are useful for observing future exposures and can be

Geographical distribution: Concentrated

By incorporating transactions of EEA entities conducted through their branches located outside of the EEA, the SFTR dataset allows the interconnectedness of the region with foreign counterparties to be assessed.

MR-SFT.5

Repo borrowing and lending by jurisdiction domicile Intra-EEA repo trading not the majority

Borrower/ Lender	EEA	UK	US	Other	Total
EEA	41%	12%	7%	12%	72%
UK	9%	-	-	-	9%
US	5%	-	-	-	5%
Other	15%	-	-	-	15%
Total	69%	12%	7%	12%	100%

Note: Cross-regional principal amounts between EEA and non-EEA counterparties, as a percentage of the total. Rows represent cash borrowers and columns cash lenders. Empty cases are either zeros or lower than 0.1% of the total. Date: 20 September 2023. Source: SFTR, GLEIF, ESMA.

Only 41% of the repo amounts observed are between EEA counterparties (MR-SFT.5). Strong links with the UK are seen through the share of EEA repo borrowing from the UK (12% of repo principal amounts in September 2023) and lending to the UK (9%). The US is the third region with interconnectedness to the EEA counterparties, with 7% of repo amounts borrowed from and 5% lent to the US. Other countries amount to 12% of the repo borrowing and 15% of the lending.³¹

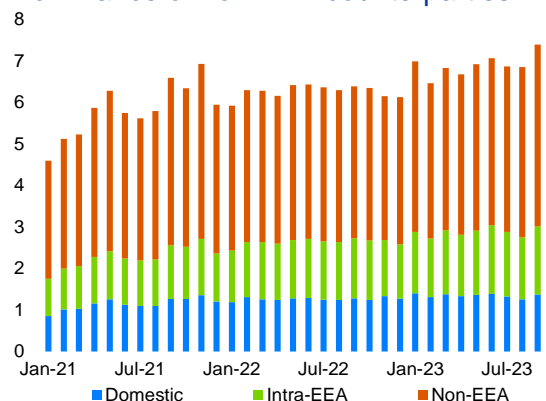
In September 2023 EEA counterparties were borrowing EUR 5.3tn and lending EUR 5.1tn, in a position of net borrowers. UK and US counterparties observed in SFTR were net lenders, while other foreign counterparties were net borrowers on average (MR-SFT.S.20).

Looking at the domicile of the other repo counterparty (MR-SFT.6), the main share is non-EEA counterparties (58% of repo principal amounts on average in 2023 and 2022), with other EEA counterparties amounting to 22% and

domestic counterparties to 19%. This distribution is driven by the uncleared segment, in which the majority of other counterparties are outside of the EEA (74% of uncleared repo principal amounts in 2023 on average, MR-SFT.S.23). In the cleared segment (MR-SFT.S.22), the domicile of other counterparties is close to equally distributed between non-EEA counterparties (35% of cleared repo principal amounts in 2023), domestic (33%) and other EEA counterparties (32%).

MR-SFT.6

Principal amount by jurisdiction of other counterparty Dominance of non-EEA counterparties



Note: Principal amount in outstanding repo transactions by jurisdiction of the other counterparty, in EUR tn. 'domestic': the (EEA) reporting counterparty is domiciled in the same country of its counterparty. Last data point: Oct 2023. Sources: SFTR, ESMA.

Euro-denominated transactions are the largest part of the euro area repo market, comprising 62% of exposures on average in 2023 (64% of trades, MR-SFT.S.8 and MR-SFT.S.9). Although the share of principal amounts in euro activity remained stable when compared to 2022 (61%), its proportion in the number of transactions increased (from 53% in 2022). The USD share is important, amounting to 24% of repo amounts in 2023 (36% of trades), and the GBP accounts for 7% of repo amounts, indicating a possible use of EUR in repo activity with UK counterparties. The distribution of repo activity by currency remains stable over time.

Repo transactions are predominantly concentrated in a few EEA jurisdictions, with France as the primary domicile holding 55/53% of EEA borrowing/lending in September 2023 (MR-SFT.S.18 and MR-SFT.S.19). Other main EEA

incorporated in other analyses or supervisory settings.

³¹ In the SFTR the counterparty side is defined as collateral lender (cash borrower) or collateral

borrower (cash lender). In this analysis we use the terms repo borrower and repo lender that reflect the repo buyer and repo seller.

counterparties include DE (17/19%), IT (7/5%) and IE (5/6%).

The top 3 countries collectively represent 79% of EEA borrowing and 77% of EEA lending in 2023. This concentration remains broadly unchanged from 2022, when their borrowing/lending stood at 77% and 78% respectively. This distribution can be explained by the central role of CCPs and banks that are domiciled in those countries, as financial institutions concentrate their exposures in jurisdictions where CCPs operate for more efficient risk management and clearing.

Asymmetric patterns in exposures across EEA countries include instances of heavy non-EEA borrowing and lending, illustrated by IE and DE (64 and 58% of their borrowing respectively and 54 and 47% of their lending respectively on average in 2023). Other jurisdictions conclude repo transactions with other EEA countries, such as ES or NL (58 and 60% of their borrowing respectively and 61 and 59% of their lending respectively). IT predominantly partakes in domestic repo borrowing and lending activities (62% borrowing and 93% lending).

Additionally, several EEA countries appear to abstain from participating in repo markets, as evidenced by 12 countries with lower than EUR 10bn in notional amounts in 2023 and no or a very limited number of participants. These countries may opt for alternative financial instruments to manage their liquidity needs, or go through foreign intermediaries, suggesting a wide range of strategies within the EEA.

Main participants: Banks and CCPs

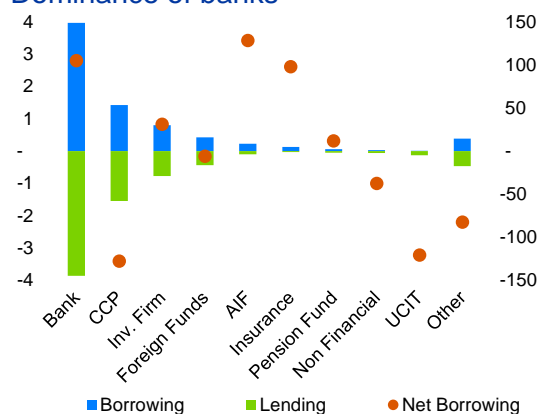
Repo markets feature a total of 4k legal entities, among which banks, CCPs and investment firms are the primary participants. Banks concentrate the majority of exposure, with 52% of total exposures in September 2023. Investment firms account for 11% of exposures. Foreign funds, including sovereign funds and other non-EEA-based funds, account for 6% of principal amounts, while EEA funds overall contribute to

approximately 3% of total borrowing and lending activities.

CCPs contribute to 20% of repo lending/borrowing. However, it's worth noting that these figures may be perceived as duplicating existing exposures, as they include both CCPs' exposures in their role as intermediaries and their cash reinvestment activity. To mitigate potential inflation, there is a consideration for treating CCPs exposures differently in other analysis.³²

MR-SFT.7

Repo borrowing and lending by counterparty sector Dominance of banks



Note: Repo borrowing and lending by counterparty sector in EUR bn, on lhs. Net repo borrowing, in EUR bn, on rhs.
Sources: SFTR, ESMA.

Within EEA entities, banks mainly function as net borrowers, with EEA banks concentrating 56% of borrowing and 54% of lending activities on average in 2023. The second largest entity is CCPs, with 29% and 33% in borrowing and lending. As expected, and in line with the relevant regulations, while UCITS serve as net lenders, AIFs emerge as net borrowers, both primarily engaged in bilateral repo transactions.

The concentration of European repo markets is important when observing the exposures of the top entities, as the first five entities alone accounted for a substantial 49% of the total repo exposures in September 2023, and the first ten entities for 64%. This concentration has slightly increased since September 2022, where the first five entities amounted to 46% and the first ten to 59% of repo exposures respectively. The concentration level is higher for the uncleared segment.

³² One way to treat CCPs differently would be to match the observed cleared transactions and recover the "original" bilateral trade, to disentangle between the role of CCP as entities and as

intermediaries. Similarly, analysing further the role of sponsored repo activity between foreign CCPs and EEA entities will be left for future analysis.

Concentration can also be visualized through network charts, which depict two different pictures of the principal segments of the European repo markets. By design, the centrally cleared network displays a star-shaped pattern - or rather, multiple star-shaped patterns around multiple CCPs, with significant exposures flowing through one CCP in particular, and a few large clearing members. Additionally, several counterparties act as clearing members to multiple CCPs and represent indirect connection links between them (MR-SFT.7).³³

Conversely, the non-centrally cleared market is significantly more interconnected and involves counterparties from heterogeneous sectors. The core-periphery structure illustrates the intermediation role of large banks, which are

connected between themselves at the core, and through which a variety of counterparties belonging to different sectors access the repo market (MR-SFT.8).

³³ Inter-CCP records relative to interoperability links have been excluded from the analysis due to confidentiality.

Repo collateral use

Summary

When a seller and a buyer agree in advance on a specific instrument to be delivered as collateral, the repo is called 'specific'. When the collateral provider, after agreeing to the terms of the repo, can choose the security to pledge among a range of instruments, the repo is termed 'generic'. Specific collateral trades accounted on average for 84% of repo outstanding principal amounts in 2023, potentially highlighting the function of collateral provision played by the European repo markets.

Government bonds are the main collateral employed (87% of overall collateral). The cleared segment predominantly makes use of EEA sovereign bonds (88% of collateral), while the non-cleared segment features more collateral heterogeneity (79% of sovereign bonds as collateral).

The repo haircut is a relevant risk control measure for uncleared transactions, expressed as a percentage, that represents the difference between the market value of the collateral and the cash loan amount obtained by pledging said collateral. Since CCPs mostly collect margin at the portfolio level using proprietary risk models, consequently cleared repos often report zero haircuts at the transaction level. This contrasts with higher haircuts in non-cleared transactions that involve a more diverse pool of asset classes. Non-cleared repos backed by government bonds often display no haircut.

Repo rates display notable variation based on the country of issuance of the collateral; with the median rate for EEA instruments below the ECB Deposit Facility Rate.

Collateral information in SFTR

SFTR data contains a variety of information on the assets employed as collateral in repurchase agreements. Based on the collateralisation arrangements, collateral reporting can be divided into two separate sections: trade-specific collateral and net exposure collateral. Trade-specific collateral refers to the assets being pledged as collateral to a specific transaction. For net exposure collateral the two parties agree to collateralise on a net basis a set of transactions concluded under the same master agreement type, on top of eventual trade-specific collateral.

Regardless of the collateralisation arrangements, the same type of information on the pledged assets is reported. However, the distinction between the collateralisation arrangements is relevant insofar as the determination of the

counterparty side is different.³⁴ For trades reported to be collateralised on a net exposure basis, the attribution of the net exposure collateral can only be carried out at the counterparty pair level.

In the following analysis, we focus on the collateral reported at the transaction level, which contains securities for the vast majority of cases.³⁵

Information to be reported includes³⁶:

- the type of collateral employed (cash, commodities or securities);
- for securities, the identifiers of the instruments pledged (i.e. International Securities Identification Number (ISIN), information on these instruments (i.e. Classification of Financial Instruments code, asset class and quality), as well as the price and quantity³⁷;

³⁴ In the case of trade-level collateral, the direction of collateral flow is specified by the side of the reporting counterparty (e.g. collateral taker or borrower). In case of net exposure collateral, the direction of collateral flow is specified by the sign of the collateral market value. In this regard, see ESMA's Guidelines on Reporting under Articles 4 and 12 SFTR, section 5.4.7.

³⁵ Securities make up more than 99% of the market value of transaction-level collateral. The

alternatives are repos involving commodities and repos employing cash as collateral (i.e. currency swaps).

³⁶ For a full list of collateral fields, see SFTR RTS and ITS.

³⁷ The reporting guidelines specify that counterparties should update the information on the collateral components no later than the working day following the value date. When the allocation of the single

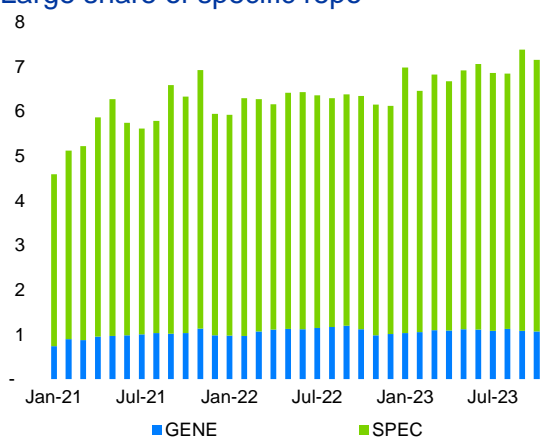
- for cash, the currency and the amount;
- for commodity, the product, subproduct and quantity;
- across all collateral types, the market value of collateral and the haircut applied;
- for cleared trades, initial and variation margins and excess collateral posted and received³⁸.

A repo transaction can be classified as either 'generic' or 'specific', and this classification is based on the collateral taker's ability to request a determined instrument in exchange for cash. When the collateral provider can choose the security among a range of instruments satisfying predefined criteria (e.g. collateral baskets³⁹), the repo is termed 'generic' ('GC' repo). Typically, these repos involve a third party in charge of collateral selection and management, such as a third-party agent or the presence of a CCP (e.g. GC financing facilities), even though this is not always the case.

MR-SFT.10

Generic vs specific repo principal amounts

Large share of specific repo



Note: Principal amount in outstanding repo transactions by generic collateral indicator, in EUR tn. 'GENE': generic collateral; 'SPEC': specific collateral. Last data point: Oct 2023. Sources: SFTR, ESMA.

On the other hand, when the collateral taker requests a specific instrument to be delivered as collateral, the repo is termed 'specific'. It is

collateral components is not defined yet, the SFTR mandates the reporting of information on the collateral basket employed. This feature of the reporting will be further examined in future work.

³⁸ Details of the information reported on margins for cleared SFTs are available in Table 3 of the SFTR RTS and ITS. Note that in this report we do not present data on margins for cleared repos and additional collateral posted as variation margining in non-cleared repos.

important to highlight that 'specific' is not equivalent to 'special': while a 'specific' collateral trade might lead to a 'special' repo, it is contingent on the repo rate. Specifically, it occurs when the repo trades at rate levels significantly below the GC rate, indicating heightened demand for this instrument in the collateral market.⁴⁰

Specific collateral trades accounted for 84% of outstanding principal amounts in 2023 on average (MR-SFT.10). The prevalence of specific collateral is in line with previous analyses relying on other regulatory and commercial datasets, and underlines the role of collateral provision through repo in European financial markets.⁴¹ The majority of collateral type used in specific collateral transactions is government bonds (89% of the collateral amounts in 2023 and 2022 on average, MR-SFT.S33), followed by corporate bonds (7%) and other bonds (2%). Regarding generic collateral transactions (MR-SFT.S32), government bonds are also the majority of collateral used (70% on average in 2023, 76% in 2022), followed by corporate bonds (which use increased in 2023 to 16% on average, compared to 12% in 2022), and securitized assets (7% on average in 2023 and 2022).

Collateral: Mainly sovereign bonds

Government bonds are the main asset type employed as collateral in the repo market across all segments. On average in 2023, they constituted 87% of the overall collateral pledged (MR-SFT.11). In centrally cleared repos, government bonds are almost exclusively used as collateral (98% in 2023). In the non-cleared segment their share is lower (79%), but still dominant. Other instruments frequently used in repurchase agreements are corporate bonds and securitized assets (8% and 3% in 2023, respectively).

Regarding the geographical distribution of

³⁹ A number of collateral basket ISINs are employed in GC financing facilities – notably, reference lists are available on the websites of the main venues.

⁴⁰ See the ECB (2022), '[Euro Money Market study 2022](#)'.

⁴¹ For reference, see ECB (2022), '[Euro money market study 2022](#)', which relies on MMSR data, and Brand, C., Ferrante, L. and Hubert, A. (2019), 'From cash- to securities-driven euro area repo markets: The role of financial stress and safe asset scarcity', ECB Working Paper Series No 2232, which relies on data from trading venues.

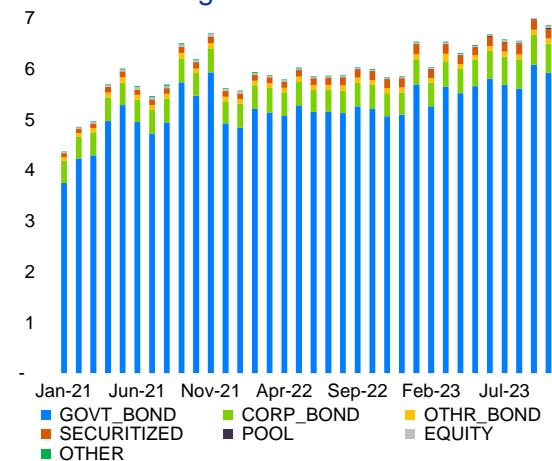
collateral, there is a concentration of instruments issued in a limited number of jurisdictions. EEA instruments are predominant, but there is also a relevant share of US and UK sovereign bonds. EEA sovereign bonds account for 65% of all sovereign bonds, and they are particularly employed in the cleared segment, where they represent around 90% of all bonds pledged. In particular, the most relevant role in cleared repos is played by IT, FR and DE government bonds, which represented 28%, 21% and 20%, respectively, of all cleared collateral in 2023.

On the other hand, the share of non-EEA bonds is higher in non-cleared repo transactions, with a relevant role of US Treasuries and UK Gilts, with an average collateral share of 22% and 8% during 2023.

MR-SFT.11

Collateral employed by instrument type

Prevalence of government bonds



Note: Market value of collateral employed in outstanding repo transactions by asset class, in EUR tn. Last data point: Oct 2023.
Sources: SFTR, ESMA.

Distinguishing further between centrally cleared and non-centrally cleared repos, the collateral pool appears more diverse in the latter segment, as shown by a much wider list of securities employed, resulting in a variety of asset classes and issuer domiciles (MR-SFT.S38). On average, only few ISINs (2.2k) are employed in centrally cleared transactions, while a substantially larger number is employed in the bilateral segment (46.4k).

Haircuts: Variability by asset class

The haircut is a key characteristic in a repurchase

agreement, serving as a risk control measure for uncleared repo transactions. Expressed as a percentage, it represents the difference between the market value of the collateral and the cash loan amount obtained by pledging the collateral. The determination of a haircut is based on factors such as the riskiness of the underlying asset, its liquidity, price volatility, and other aspects such as the risk profile of the borrower. This metric is relevant from a risk monitoring perspective, as movements in haircuts indicate changes in the perceived riskiness of asset classes, and in the credit risk of borrowers, as well as general shifts in conditions within secured lending markets.

It is important to remark that this report does not analyse margins posted and received for SFTs, which are reported separately in the SFTR database. Margins can play a similar role for CCPs as haircuts in non-cleared transactions. CCPs can charge margins on their repo exposure, but this is not reflected in trade-level haircuts.

In line with evidence from the UK market⁴², reported haircuts in centrally cleared repos are generally zero (MR-SFT.S40). This aligns with the predominance of sovereign bonds as collateral in this segment and the risk management practices of CCPs, which assess risk at the counterparty portfolio level rather than at the individual trade level.

On the contrary, non-cleared repos involve a wider variety of instruments pledged, including riskier and more volatile asset classes, thus displaying overall higher haircuts (MR-SFT.12). In particular, 33% and 62% of the non-cleared collateral value for corporate bonds and securitized products showed haircuts higher than 2% in 2023, on average. For the same asset classes, the most conservative haircut bucket (above 10%) constituted in 2023 a share of 6% and 10%, respectively, of the non-cleared collateral value, on average. This contrasted with significantly lower values for sovereign bonds, where only 5% of collateral amounts displayed haircuts above 2%.

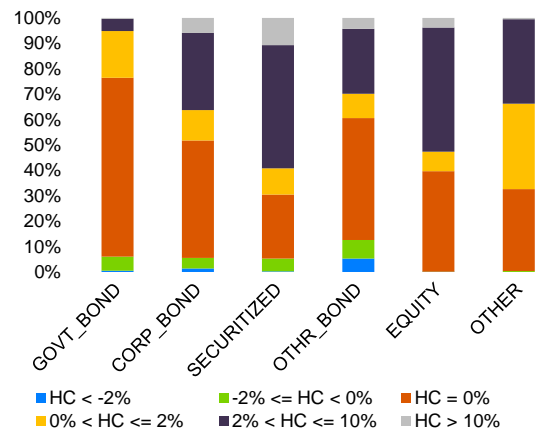
Nevertheless, zero haircuts on sovereign bonds and on other assets are also common in uncleared repos (MR-SFT.S12), where zero-haircut trades accounted for 70% of government bond collateral, with decreasing shares for other

⁴² See Julliard, C., Pinter, G., et al. (2022) 'What drives repo haircuts? Evidence from the UK market', *BIS Working Papers*, No 1027.

instrument types.⁴³

MR-SFT.12

Collateral by instrument type, haircut (non-cleared) Collateral characteristics drive haircuts levels



Note: Collateral market value distribution in non-cleared repo transactions by asset class and haircut bucket, in percentage. Date: 20th September 2023. Sources: SFTR, ESMA.

It is important to highlight that the same security may be subject to different haircut treatment, possibly due to the segment of execution of the trade, but also linked to counterparty risk and other factors. Further work will be needed to clarify the drivers behind haircut variations.

Repo rates: ECB rates as reference

In a repurchase agreement, the annualized interest rate on the principal amount of the transaction is termed 'repo rate'. Usually, the interest rate is charged to the cash borrower. However, in situations of increased demand or supply shortage of a specific securities, the repo rate can become negative. This implies that the collateral taker is paying an interest rate to the cash borrower in order to receive said collateral.

Over the last decade, following the accommodative monetary policy stance by the ECB and other central banks, repo rates have fallen towards and below zero. Since July 2022 however, in response to the shift to a more restrictive monetary policy, European repo rates have mirrored the developments of the ECB Deposit Facility Rate, consistently trending on an

upward path in 2023 (MR-SFT.S43).

The repo market is intricately connected, often serving as an alternative, to another segment of the money market: the unsecured interbank lending market. Thus, the repo rate is linked to the unsecured overnight rate (ESTR). As expected, the median repo rate is slightly lower than the unsecured rate, reflecting the reduced credit risk of the repo segment (MR-SFT.S42).

Moreover, rates and volumes in the European repo market display cyclical developments at quarter- and year-end, corresponding to regulatory reporting dates – a phenomenon that has been associated with banks engaging in window-dressing behaviour.⁴⁴

A fundamental feature of the European repo market is the type of underlying assets used as collateral. While government bonds are the primary type of underlying assets employed, the heterogeneity of European sovereign debt issuances imply significant differences in the valuation and perceived riskiness of such assets (MR-SFT.13).

In addition, asset purchases by the Eurosystem have reduced the amount of safe assets available in the market, resulting in collateral scarcity in certain bond segments (alleviated by the Eurosystem's securities lending programme).⁴⁵ Collateral shortage is thus another driver of repo rate variation across different asset jurisdictions.

⁴³ See Hempel, S. J., Kahn, R. J., Mann, R. et al. (2023) '[Why is so much repo not centrally cleared?](#)', Office of Financial Research, for a possible explanation of this phenomenon.

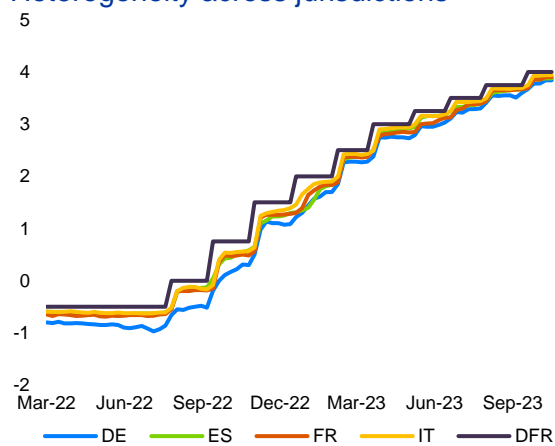
⁴⁴ See Bassi, C., Behn, M., Grill, M. et al. (2023) '[Window dressing of regulatory metrics: Evidence from repo markets](#)', *ECB Working Paper Series*,

No 2771, for a detailed description of window dressing behaviour in repo markets.

⁴⁵ See ECB (2020), '[Euro money market study 2020](#)' and Eisenschmidt, J., Ma, Y. and Zhang, A. L. (2022) '[Monetary policy transmission in segmented markets](#)', *ECB Working Paper Series*, for more details on collateral scarcity in European repo markets.

MR-SFT.13

Median repo rate of EEA government bonds Heterogeneity across jurisdictions



Note: Median fixed repo rate of selected EEA government bonds. DFR = ECB Deposit Facility Rate. Last data point: Oct 23.
Sources: SFTR, ECB SDW, ESMA.

monetary policy transmission, repo rates are regularly and closely monitored by the ECB⁴⁶; in this respect, SFTR data offers increased monitoring capabilities.

Given the importance of the repo market for

⁴⁶ See ECB (2020), [‘Euro money market study 2020’](#) and ECB (2022), [‘Euro money market study 2022’](#).

Statistical methods

SFTR data reporting

Summary

Article 4 of the SFTR indicates the set of information relative to SFT transactions to be reported to the Trade Repositories, which allows for the creation of a rich dataset. The reporting obligation follows the approach introduced in EMIR, implying similar operational steps when analysing the data, such as pairing and reconciliation of both sides of each transaction.

This section provides an overview of the content of the data and describes the analytics and methods used to develop the indicators used in this report. The main steps include the enrichment of data with ancillary information at the entity and instrument level, and various cleaning and filtering steps. Due to the size and complexity of the dataset, the implementation of outlier checks is fundamental.

Reporting obligation

SFTR mandates the reporting to the Trade Repositories (TR) of all SFT transactions concluded by an EU-domiciled entity or by an EU-domiciled branch of a foreign entity.

Article 4 of the SFTR indicates the information that needs to be reported relative to the SFT transactions. Focussing on repurchase agreements in particular, the data shall include:

- Details on the counterparties to the trade and on eventual beneficiaries;
- The principal amount of the loan, including currency, maturity and rate details;
- Detailed information on collateral, including type, instrument identifiers, quality and haircuts;
- Margins information for cleared transactions;
- Net exposure collateral reports, in the case of collateralisation on a net exposure basis.

In terms of granularity, SFTR data reporting is structured in a way that closely resembles EMIR reporting:

- trade-activity data is the most granular level (i.e. flow data), which covers all life events relative to a transaction; while

- trade-state data captures the state of a transaction at the end of a reporting date (i.e. stock data).

Trade-activity data is composed of a series of messages, each associated with a specific action type, facilitating the identification of each relevant stage in a transaction's lifecycle, e.g. the opening of a new trade, modifications, cancellations, or terminations. This set of information is very granular and comprehensive, and requires significant efforts in order to be analysed.

TRs aggregate activity data for outstanding transactions and provide trade-state reports, which outline the status of the outstanding SFTs at the end of a reporting date. This report utilises trade-state data for the analysis, focusing on Table 1 (i.e. 'Counterparty Data') and Table 2 (i.e. 'Loan and Collateral Data') of the reports. Future work will cover the remaining Tables (3 and 4), which contain information on margins for cleared transactions and on collateral re-use.

ESMA has developed and published Implementing Technical Standards⁴⁷ and Regulatory Technical Standards⁴⁸, which explain in detail the reporting requirements for entities subject to the reporting obligation. Furthermore, ESMA has developed guidelines

⁴⁷ Commission Implementing Regulation (EU) 2019/363 of 13 December 2018 laying down implementing technical standards with regard to the format and frequency of reports on the details of securities financing transactions (SFTs) to trade repositories in accordance with Regulation (EU) 2015/2365 of the European Parliament and of the Council and amending Commission Implementing Regulation (EU) No 1247/2012 with regard to the use of reporting codes in the

reporting of derivative contracts (OJ L 81, 22.3.2019, p. 85).

⁴⁸ Commission Delegated Regulation (EU) 2019/356 of 13 December 2018 supplementing Regulation (EU) 2015/2365 of the European Parliament and of the Council with regard to regulatory technical standards specifying the details of securities financing transactions (SFTs) to be reported to trade repositories (OJ L 81, 22.3.2019, p. 1).

that apply to TRs, to SFT counterparties and to competent authorities, in order to provide clarity on some SFTR provisions and their implementation.⁴⁹

The entry into force of the reporting took place in three stages, starting in July 2020 for financial counterparties such as credit institutions, investment firms, CSD and CCPs, October 2020 for insurance companies, UCITS and AIF managers and institutions for occupational retirement provision; and January 2021 for eligible non-financial counterparties.

To increase efficiency and leverage similarities between the reporting of derivatives and the reporting of SFTs, the SFTR aligned the obligation to report the details of SFTs to TRs with the obligation to report derivative transactions in EMIR.⁵⁰ Among others, there is alignment on the establishment of the reporting obligation, the registration requirements for TRs and the establishment of levels of access to data, building on the sufficiency of some of the controls in place for the already registered TRs.

Similar to EMIR, TRs are in charge of collecting and redistributing transaction data. TRs collect and maintain records, provide access to all details of SFTs to public authorities, as well as for publishing timely aggregate statistics on the data collected.⁵¹ ESMA manages the registration and the authorisation process of the TRs and their supervision.

At the inception of the reporting, four TRs were active in the provision of SFTR reporting services: DTCC Data Repository Ireland (DTCC Derivatives Repository before Brexit), UnaVista, Regis-TR and *Krajowy Depozyt Papierów Wartościowych*. Since November 2021, following the decision by Unavista to withdraw their provision of SFTR reporting services, a process to port out outstanding SFTs from Unavista to the other TRs has been initiated. The porting of all outstanding SFTs was concluded at the end of January 2022.

SFTR data contains information reported by EEA domiciled market participants, irrespective of the location of their branches, as well as EEA branches of non-EEA market participants. The data reported to the TRs covers the four types of SFT transactions defined in Article 3 of the SFTR, namely repurchase agreements, securities lending trades, buy-sell back transactions and margin lending, executed both on-venue and OTC.

Supervisors and other public authorities have access to SFTR data, in accordance with the criteria⁵² set out in Articles 12 and 16 of the SFTR. In this respect, ESMA has direct access to the full wealth of data reported under SFTR.⁵³ SFTs concluded with the Bank for International Settlements or with members of the European System of Central Banks (ESCB) and other Member States' bodies performing similar functions are exempted from the reporting.

The statistics presented in this report are based on daily snapshots, chosen with a weekly or monthly frequency – we selected each Wednesday within the reporting period (in order to avoid weekend effects). The indicators presented in this report cover, for the most part, the whole period available since the implementation of the full data collection (end of January 2021) and conclude in October 2023.

Additionally, specific snapshots are included as of 19 September 2023. The snapshots utilised represent the status of outstanding repo transactions at the end of the reporting date – when employing different dates across time, this report compares the 'stock' of outstanding repos as of the chosen day of the week (we do not pool together observations to present weekly or monthly aggregations).

In the following subsections we present the ancillary operations performed to enrich the data, to account for double-sided reporting and outliers, and the other data cleaning steps performed prior to the analysis, with a particular focus on repo. The impact of these operations

⁴⁹ The [ESMA Guidelines on the reporting under Articles 4 and 12 of SFTR](#) have been published in March 2021.

⁵⁰ Article 4(9) of SFTR making reference to Regulation (EU) No 648/2012 Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories.

⁵¹ See RTS on [trade repositories](#) and RTS on [access to data in trade repositories](#).

⁵² For example, depending on the currency of the transaction and/or on the counterparty domicile.

⁵³ ESMA, the ESRB, but also the European Banking Authority and the European Insurance and Occupational Pensions Authority have access to all EEA information. Other authorities – including NCAs – have access to the relevant SFTR data based on their responsibilities and mandates.

on the repo subset is presented in the final subsection (i.e. 'Results of and statistics from the cleaning process').

Data enrichment

Additional data sources are used to complement the dataset, in order to exploit the full potential of the information provided. First, principal amounts, loan and collateral values can be reported in various currencies and need to be converted to EUR for comparability. The reference rates for the conversion are provided by the ECB.⁵⁴ As a reference date, this report uses the date of the trade state file: all transactions reported in one observation date are converted with the relevant exchange rates of the same date.

To identify the counterparties involved in an SFT, we draw information on LEI from the Global Legal Entity Identifier Foundation (GLEIF), notably the domicile of the counterparty. This step is necessary to understand whether or not a record should be paired and reconciled, which is determined on the basis of the location of the counterparty (similarly to the EMIR framework). This step is explained in detail in the next sub-section.

To distinguish between OTC and on-venue SFTs, we employ market identifier codes (MIC, ISO 10383) using the field 'Trading venue'. An SFT is classified as 'OTC traded' if the value in this field is either XXXX or XOFF; otherwise, it is categorized as an 'exchange-traded' SFT.

Additionally, we enrich the collateral instruments analysis by employing instrument-level data on asset classification and sectoral information from internal sources (Financial Instruments reference database)⁵⁵ and external ones (Refinitiv Eikon).

Finally, we obtain monetary policy rates and other relevant money market rates (e.g. ESTR) from the ECB. Currently, we employ these rates as relevant benchmark rates, with the intention to expand their usage to the computation of floating repo rates (a minority in repo data).

Pairing and reconciliation

Similar to EMIR data, an SFT transaction concluded between two counterparties subject to the reporting obligation will be reported by both entities (i.e. double reporting regime). In cases of one EEA and one non-EEA counterparty, only one report is observed in the data (single-sided trade). The double-reporting regime implies that those records that are reported twice (from each counterparty to the SFT) need to be linked with each other or paired and reconciled, in order to avoid double-counting the transaction and inflating the real exposure.

In order to pair the double-sided transactions, we first check whether both counterparties need to report their SFT activity based on their domicile. When this is the case, the records are matched by employing the 'unique transaction identifier', or a combination of 'SFT type' and 'master agreement type' in the case of net exposure collateral reporting. In order to further increase the number of matches, we also employ a matching approach that combines the LEIs of both counterparties and the 'unique transaction identifier' and we check for matches in the data even if the trade is potentially single sided. The pairing operation is carried out by the TRs as well, which provide a flag summarizing the pairing status of each record when producing the trade-state level reports.

The pairing procedure does not always achieve the desired outcome: as of the end of 2021, the pairing rate of SFTR stood at around 60%.⁵⁶ Thus, in some cases the procedure is not successful at matching reports that must be reconciled, i.e., where two reports should be observed. To deal with these 'unpaired' records, we choose a pragmatic approach and halve the notional amounts, following the approach adopted for the analysis of EMIR data.⁵⁷ In these instances, the reasoning behind this approach is that we expect both reports to be present in the data reported to the TR (and thus we assume compliance and completeness in the reporting); however, due to misreporting or other data quality issues the two records cannot be matched with each other.

⁵⁴ For ECB: Euro foreign exchange reference rates https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/index.en.html

⁵⁵ See [Financial Instruments Reference Data System register](#).

⁵⁶ For more information on pairing and reconciliation, see ESMA (2022), [EMIR and SFTR data quality report 2021](#).

⁵⁷ For reference, see 'Fundamental issues in EMIR data handling and statistics' in ESMA (2018), EU Derivatives Markets report.

The completeness assumption cannot be verified and represents a limitation of our pairing methodology.

Outlier identification and treatment

Due to the size of the data and the large number of reporting counterparties involved, the implementation of statistical methodologies to control for the presence of outliers in the data is required. Different methodologies may be applied to identify outliers in the sample. In this market report, we focus on repo and buy-sell back reporting and, in this subsection and in the subsequent one, we discuss extensively our approach to outlier identification and data cleaning specific to repurchase agreements currently applied.

Our approach may vary in the future, as further work with the data is undertaken. Similar methodologies and cleaning steps have been discussed and applied for the other SFT types in the database (namely, securities lending and margin lending).

Regarding outlier identification, we adopt an approach that combines theoretical knowledge of the markets with a machine learning algorithm in order to determine the key characteristics of each SFT type, and compute outlier thresholds for the most relevant monetary variables based on these characteristics. In particular, key features of repo and buy-sell back transactions identified by this approach are the generic collateral indicator (generic/specific) and the term of the trade (open/fixed). To compute the thresholds, we group the records by the characteristics identified, calculate the median value of the relevant monetary variable for repurchase agreements ('principal amount on value date') and add four times the standard deviation.

Results of and statistics from the cleaning process

As a first step, the outlier cleaning process is applied to the whole dataset, following the

approach described in the previous paragraph. In addition to the outlier procedure, some specific steps have been carried out to filter the repurchase agreements data before computing the various statistics and aggregations shown in the report.

The outlier procedure identifies a reduced number of records for repo and buy-sell back (4k records, that is 0.6% of the total); however, the exclusion of these records results in a moderate decrease of notional amounts (-19% of the total, a drop of roughly EUR 2tn).

Additional checks are carried out in the cleaning procedure, namely the removal of double-sided, paired trades with conflicting sides and the removal of stale records (identified as records with variable 'event date' older than one year). This filtering results in the exclusion of ~97k records flagged as 'stale' reports, leading to a corresponding drop in principal amounts (-7%) and collateral market value (-25%).

Moreover, further data cleaning steps applied on the subset of repo and buy-sell back transactions included the removal of term repos without maturity date and the exclusion of records with implausible collateral-to-loan ratios.⁵⁸ The application of an upward threshold on the collateral-to-loan ratios for repo trades without net exposure collateralization results in the identification and removal of 5k records (1% of the total) amounting to 36% of overall collateral market value.

As opposed to EMIR reporting, there is no specific indicator for intra-group trades in the SFTR. It is possible to identify SFTs traded between entities belonging to the same parent company through the LEIs of the counterparties. In this report these trades have not been removed, and this choice can potentially bias upwards the size of the outstanding repo positions. Additionally, inter-CCP reports relative to interoperability links have been excluded from the analysis.

⁵⁸ Implausible collateral-to-loan ratios for repo and buy-sell backs trades are defined through the combination of a dynamic threshold based on the ratio distribution (99th percentile) and on a fixed maximum threshold of 80, identified following a

sensitivity analysis (i.e. the market value of collateral reported at trade level should not amount to more than 80 times the value of the loan).

MR-SFT.14

Repo and buy-sell back

Cleaning and filtering steps

	No trades	No records	Principal amount (EUR tn)	Collat amount (EUR tn)
Full dataset	516,011	648,764	11.68	19.26
Outlier removal	512,726	644,760	9.44	17.13
Conflicting sides	511,325	643,359	9.42	17.11
Stale records	414,070	541,744	8.76	12.90
Missing maturity (term)	414,068	541,742	8.76	12.90
Extreme collateral-loan ratio	409,243	536,371	8.71	8.22
Forward repos	334,866	432,193	7.02	6.58
Intraday repos	333,221	430,548	6.99	6.58
Change	-35%	-34%	-40%	-66%

Note: Outstanding principal amount at value date for repo and buy-sell back trades, in EUR tn, as of 19th April 2023. Net exposure collateralisation not included in collateral amounts. Source: SFTR, ESMA.

Finally, after carrying out the described cleaning steps, when describing the outstanding principal amounts in the repo market we opted to remove forward transactions (i.e. repurchase agreements with value date in the future, where the first leg of the trade has not been settled yet) and intraday transactions, unless specified. Counterparties should not send valuation and collateral information for the last day of an SFT, meaning that for intraday transactions, i.e. repo transactions concluded and terminated on the same day, no information on collateral allocation is available. This lack of information on collateral, as well as the fact that those transactions are already closed, explain why we excluded intraday repos from the analytical approach proposed in the majority of the report. This choice is further motivated by the need to obtain a representation of current outstanding amounts when describing the 'stock' of repurchase agreement exposure and follows analogous filtering decisions in similar publications.⁵⁹ Nevertheless, it is important to underline that these transactions are relevant information for supervisors and public authorities with access to the data, and that they may provide useful insights in other settings and for various types of analysis.

⁵⁹ For reference, see Bassi, C., Behn, M., Grill, M. et al. (2023) ['Window dressing of regulatory](#)

[metrics: Evidence from repo markets'](#), ECB Working Paper Series, No 2771.

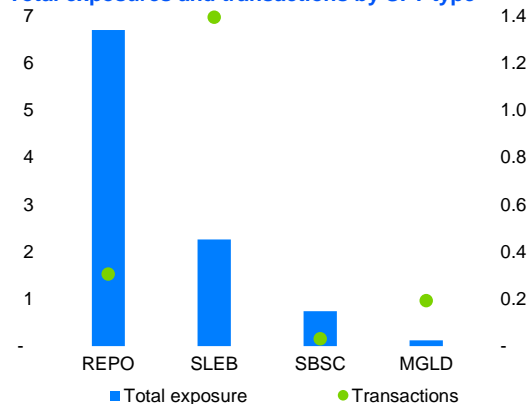
SFT statistics

SFT markets overview

Market overview

MR-SFT.S.1

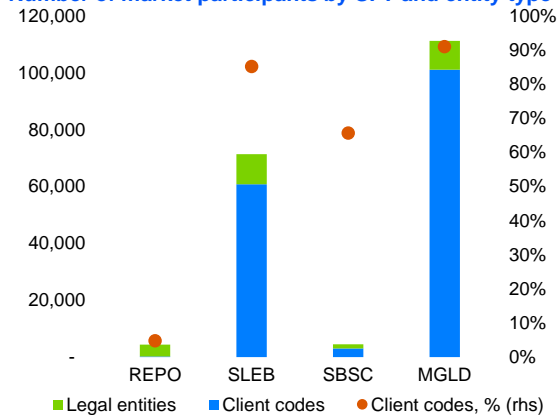
Total exposures and transactions by SFT type



Note: Total exposure (lhs, EUR tn) and transactions (rhs, in mn), by SFT type. Data as of 20 September 2023. Sources: SFTR, ESMA.

MR-SFT.S.2

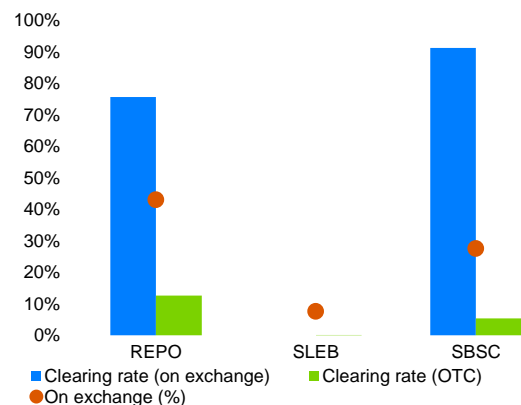
Number of market participants by SFT and entity type



Note: Number of market participants by SFT and entity type (lhs). Number of client codes, in percentage of the total, on the rhs. Data as of 20 September 2023. Sources: SFTR, ESMA.

MR-SFT.S.3

Share of cleared exposures by execution and SFT type



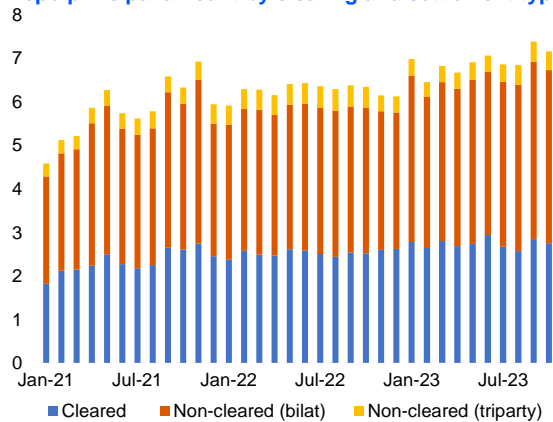
Note: Share of cleared exposures by execution and SFT type, in percentage of exposure. Data as of 20 September 2023. Sources: SFTR, ESMA.

Repo markets

Repo overview

MR-SFT.S.4

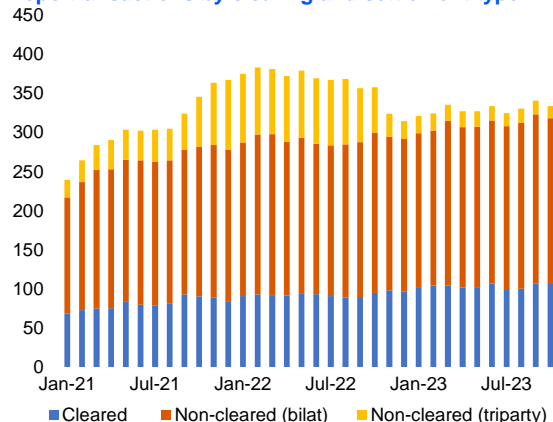
Repo principal amount by clearing and settlement type



Note: Principal amount in outstanding repo transactions by cleared, non-cleared bilateral and non-cleared triparty flag, in EUR tn. Last data point: Oct 2023.
Sources: SFTR, ESMA.

MR-SFT.S.5

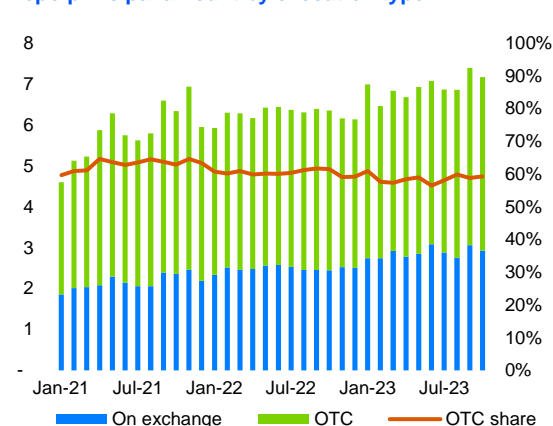
Repo transactions by clearing and settlement type



Note: Number of outstanding repo transactions by cleared, non-cleared bilateral and non-cleared triparty flag, in thousands. Last data point: Oct 2023.
Sources: SFTR, ESMA.

MR-SFT.S.6

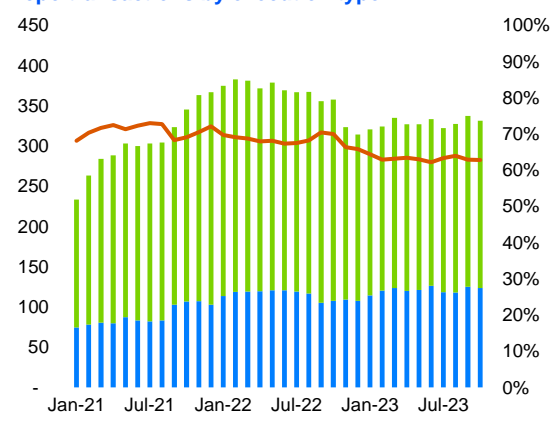
Repo principal amount by execution type



Note: Principal amount in outstanding repo transactions by execution type, in EUR tn. OTC share of the total amounts on the rhs. Last data point: Oct 2023.
Sources: SFTR, ESMA.

MR-SFT.S.7

Repo transactions by execution type

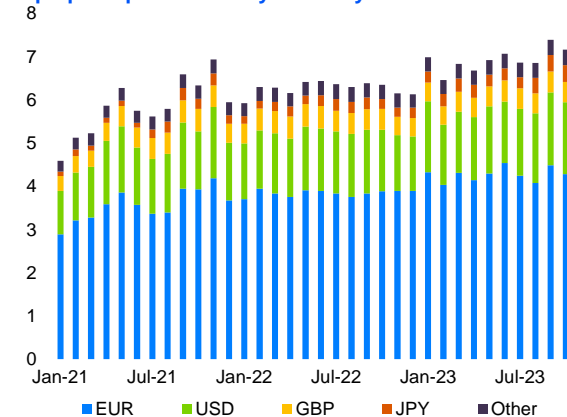


Note: Number of outstanding repo transactions by OTC flag, in thousands. OTC share of the total on the rhs. Last data point: Oct 2023.
Sources: SFTR, ESMA.

Repo characteristics

MR-SFT.S.8

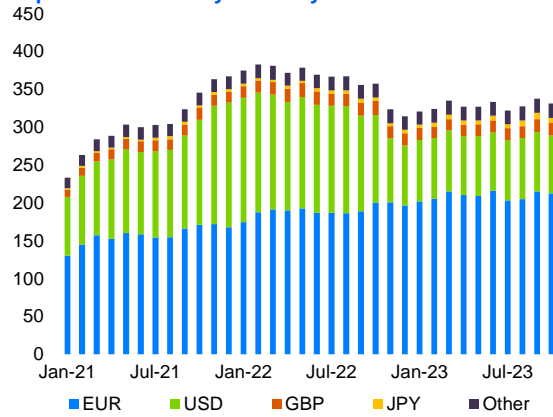
Repo principal amount by currency



Note: Principal amount in outstanding repo transactions by currency, in EUR tn. Last data point: Oct 2023.
Sources: SFTR, ESMA.

MR-SFT.S.9

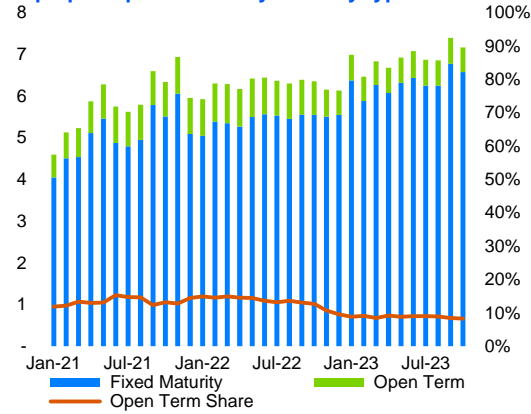
Repo transactions by currency



Note: Number of outstanding repo transactions by currency, in thousands. Last data point: Oct 2023.
Sources: SFTR, ESMA.

MR-SFT.S.10

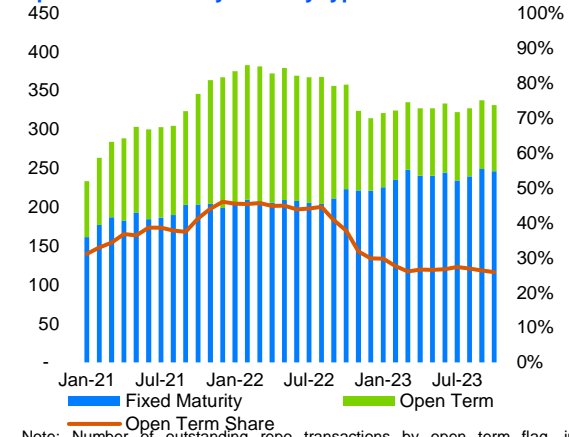
Repo principal amount by maturity type



Note: Principal amount in outstanding repo transactions by open term flag, in EUR tn. Open term share of the total on the rhs. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.11

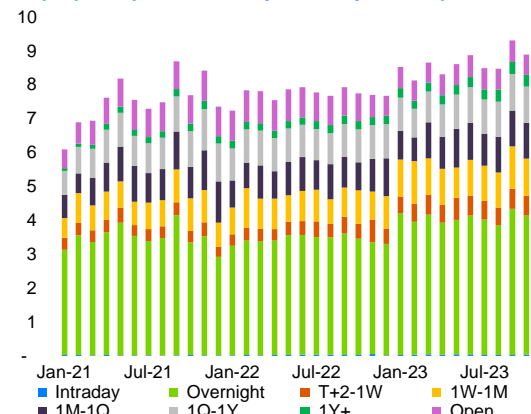
Repo transactions by maturity type



Note: Number of outstanding repo transactions by open term flag, in thousands. Open term share of the total on the rhs. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.12

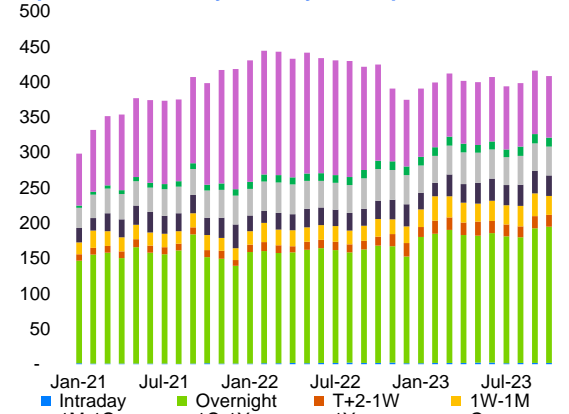
Repo principal amount by maturity at inception



Note: Principal amount in outstanding repo transactions by maturity at inception, in EUR tn. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.13

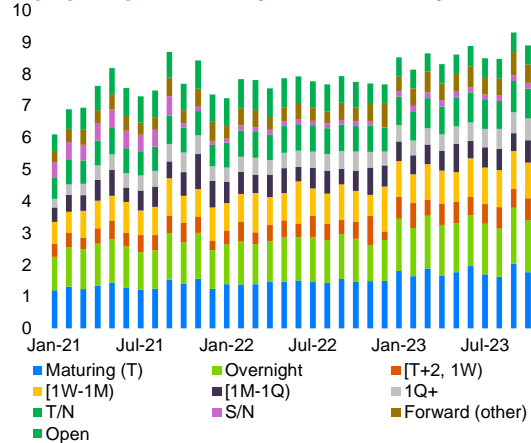
Repo transactions by maturity at inception



Note: Number of outstanding repo transactions by maturity at inception, in thousands. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.14

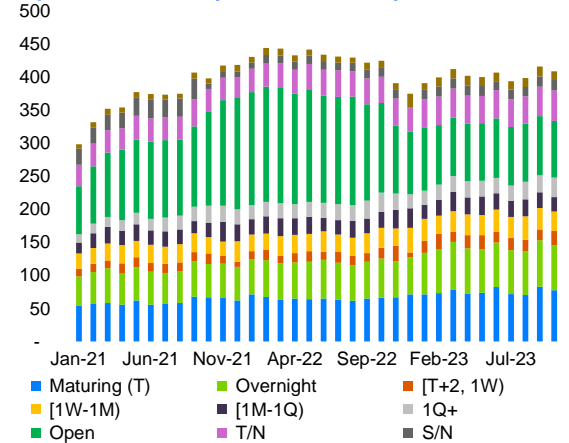
Repo principal amount by residual maturity



Note: Principal amount in outstanding repo transactions by residual maturity, in EUR tn. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.15

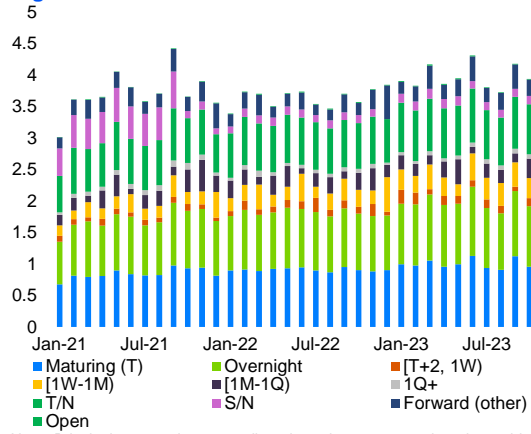
Repo transactions by residual maturity



Note: Number of outstanding repo transactions by residual maturity, in thousands. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.16

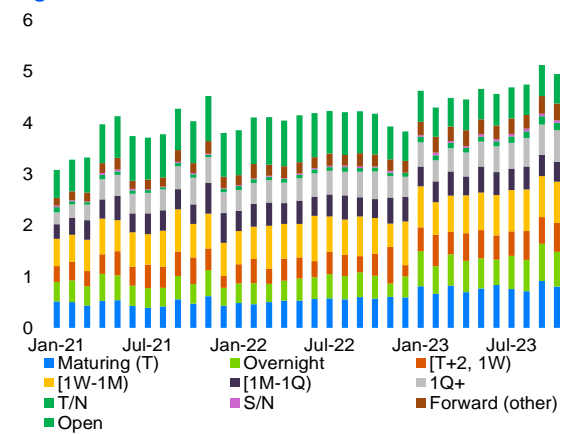
Repo principal amount by residual maturity – Cleared segment



Note: Principal amount in outstanding cleared repo transactions by residual maturity, in EUR tn. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.17

Repo principal amount by residual maturity – Uncleared segment

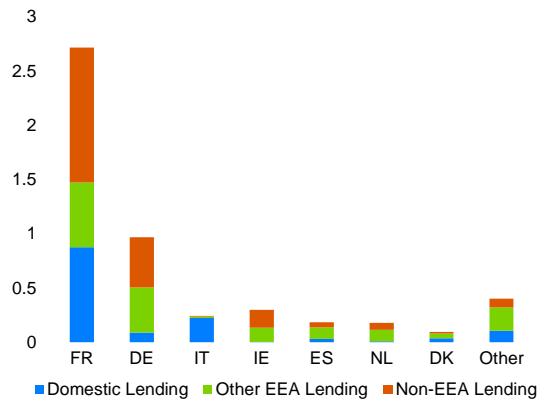


Note: Principal amount in outstanding non-cleared repo transactions by residual maturity, in EUR tn. Last data point: Oct 2023. Sources: SFTR, ESMA.

Repo Activity by Domicile

MR-SFT.S.18

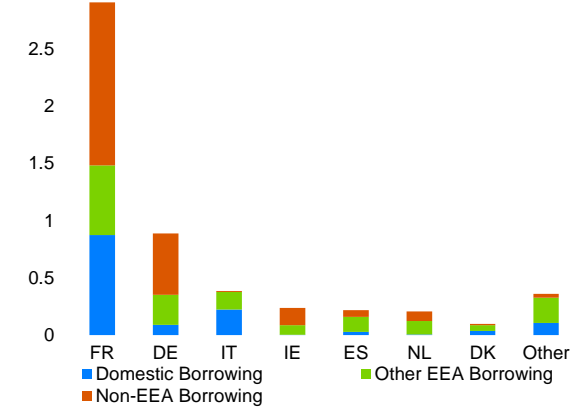
Repo lending by counterparty jurisdiction and domicile of lender



Note: Repo lending by counterparty jurisdiction and domicile of borrower, in EUR tn. Date: 20th September 2023.

MR-SFT.S.19

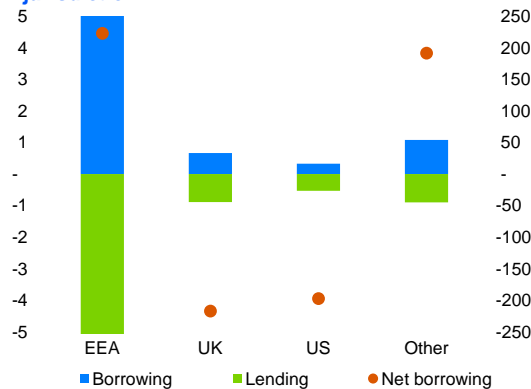
Repo borrowing by counterparty jurisdiction and domicile of lender



Note: Repo borrowing by counterparty jurisdiction and domicile of lender, in EUR tn. Date: 20th September 2023.

MR-SFT.S.20

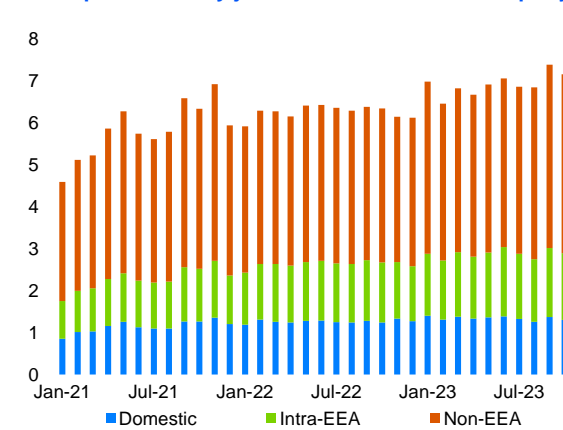
Repo borrowing and lending by counterparty jurisdiction



Note: Repo borrowing and lending by counterparty jurisdiction in EUR tn on lhs. Net repo borrowing, in EUR bn, on rhs. Date: 20th September 2023. Sources: SFTR, ESMA.

MR-SFT.S.21

Principal amount by jurisdiction of other counterparty

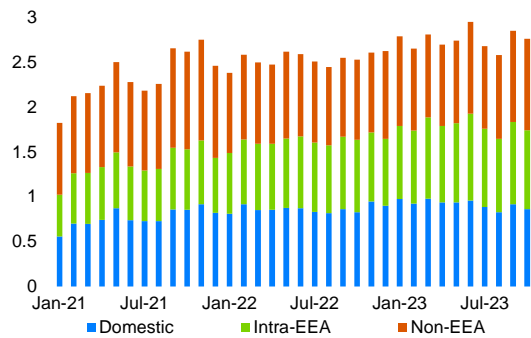


Note: Principal amount in outstanding repo transactions by jurisdiction of the other counterparty, in EUR tn. 'domestic': the (EEA) reporting counterparty is domiciled in the same country of its counterparty. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.22

Principal amount by jurisdiction of other counterparty - Cleared

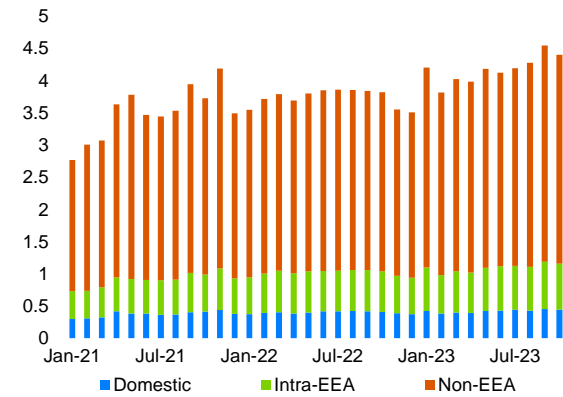
3.5



Note: Principal amount in outstanding cleared repo transactions by jurisdiction of the other counterparty, in EUR tn. 'domestic': the (EEA) reporting counterparty is domiciled in the same country of its counterparty. Last data point: Oct 2023.
Sources: SFTR, ESMA.

MR-SFT.S.23

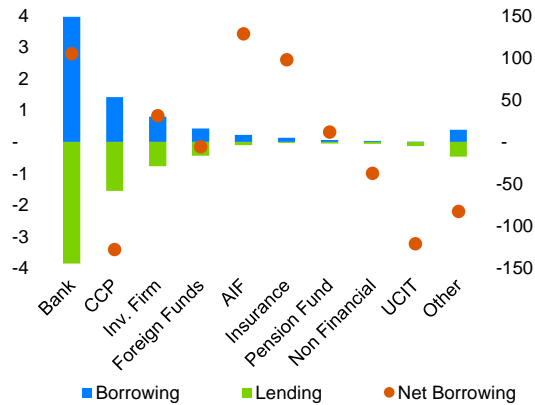
Principal amount by jurisdiction of other counterparty - Uncleared



Note: Principal amount in outstanding uncleared repo transactions by jurisdiction of the other counterparty, in EUR tn. 'domestic': the (EEA) reporting counterparty is domiciled in the same country of its counterparty. Last data point: Oct 2023.
Sources: SFTR, ESMA.

MR-SFT.S.24

Repo borrowing and lending by counterparty sector



Note: Repo borrowing and lending by counterparty sector in EUR tn on lhs. Net repo borrowing, in EUR bn, on rhs.
Sources: SFTR, ESMA.

MR-SFT.S.25

Repo borrowing and lending by jurisdiction domicile

Borrower/ Lender	EEA	UK	US	Other	Total
EEA	41%	12%	7%	12%	72%
UK	9%	-	-	-	9%
US	5%	-	-	-	5%
Other	15%	-	-	-	15%
Total	69%	12%	7%	12%	100%

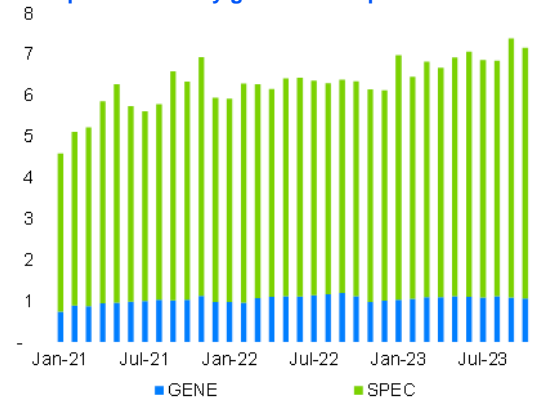
Note: Cross-regional principal amounts between EEA and non-EEA counterparties, as a percentage of the total. Rows represent cash borrowers and columns cash lenders. Empty cases are either zeros or lower than 0.1% of the total. Date: 20 September 2023.
Source: SFTR, GLEIF, ESMA.

Repo collateral use

Collateral overview

MR-SFT.S.28

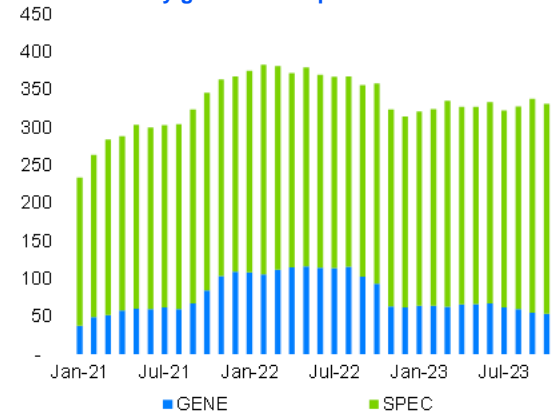
Principal amounts by generic and specific collateral



Note: Principal amount in outstanding repo transactions by generic collateral indicator, in EUR tn. 'GENE': generic collateral; 'SPEC': specific collateral. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.29

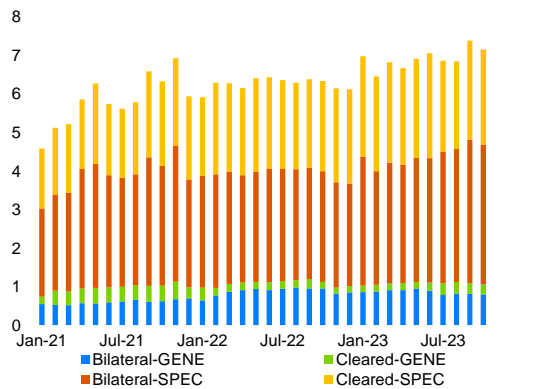
Transactions by generic and specific collateral and segment



Note: Number of outstanding repo transactions by generic collateral indicator, in thousands. 'GENE': generic collateral; 'SPEC': specific collateral. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.30

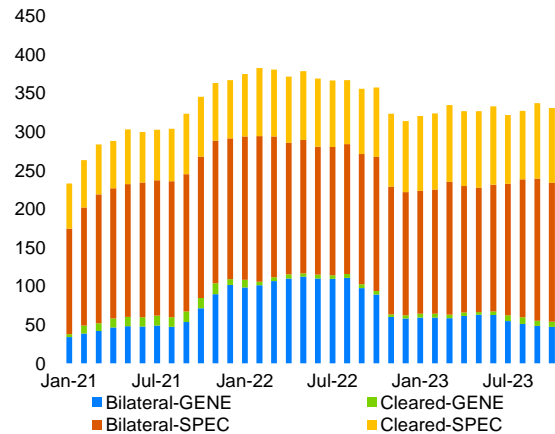
Principal amounts by generic and specific collateral and segment



Note: Principal amount in outstanding repo transactions by clearing and generic collateral indicator, in EUR tn. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.31

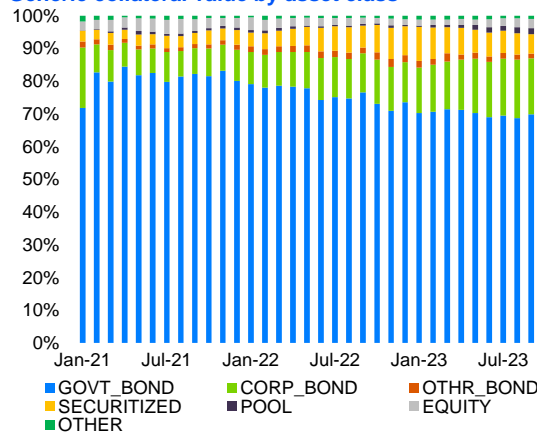
Transactions by generic and specific collateral and segment



Note: Number of outstanding repo transactions by clearing and generic collateral indicator, in thousands. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.32

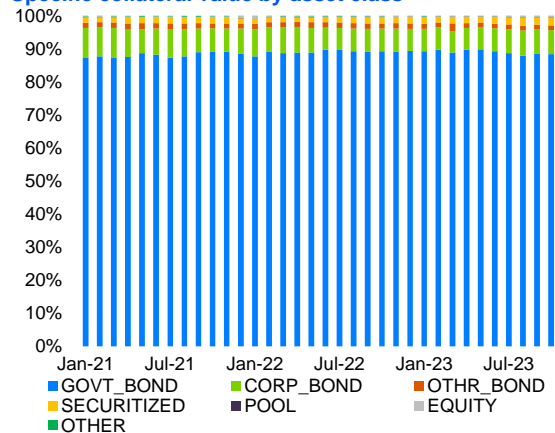
Generic collateral value by asset class



Note: Market value of generic collateral employed in outstanding repo transactions by asset class, in percentage. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.33

Specific collateral value by asset class

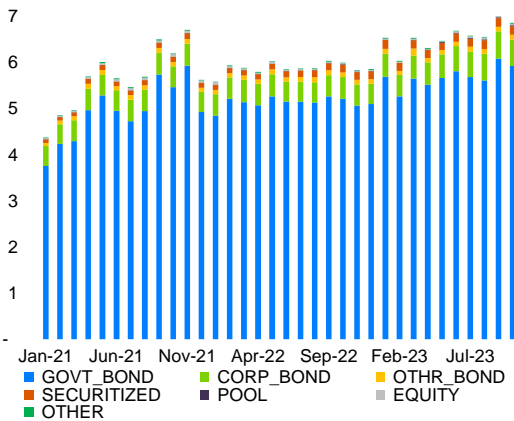


Note: Market value of specific collateral employed in outstanding repo transactions by asset class, in percentage. Last data point: Oct 2023. Sources: SFTR, ESMA.

Collateral characteristics

MR-SFT.S.34

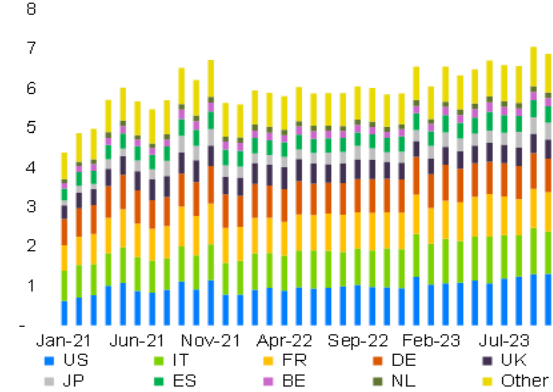
Repo collateral value by asset class



Note: Market value of collateral employed in outstanding repo transactions by asset class, in EUR tn. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.35

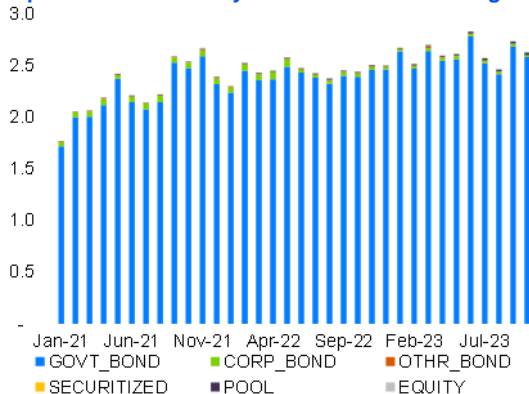
Repo collateral value by issuer jurisdiction



Note: Market value of total collateral employed in outstanding repo transactions by issuer jurisdiction, in EUR tn. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.36

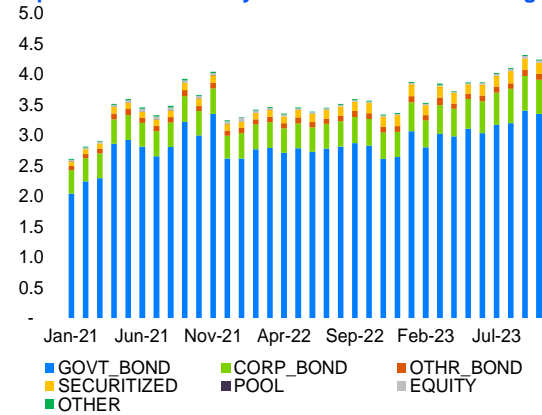
Repo collateral value by asset class - cleared segment



Note: Market value of collateral employed in outstanding cleared repo transactions by issuer jurisdiction, in EUR tn. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.37

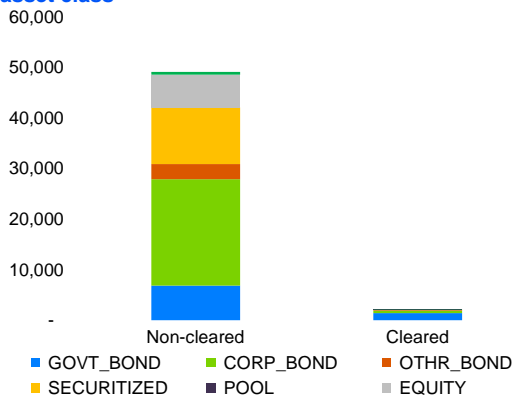
Repo collateral value by asset class - uncleared segment



Note: Market value of collateral employed in outstanding non-cleared repo transactions by issuer jurisdiction, in EUR tn. Last data point: Oct 2023. Sources: SFTR, ESMA.

MR-SFT.S.38

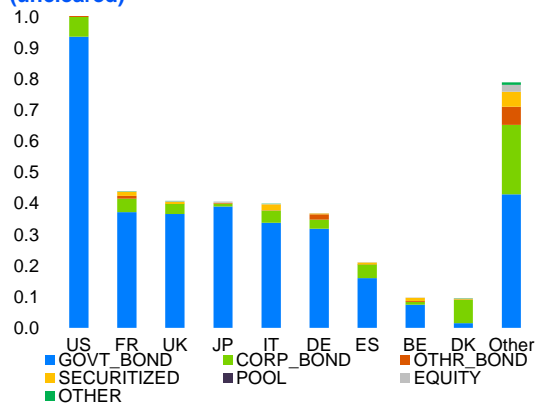
Repo number of collateral instruments by segment and asset class



Note: Number of instruments employed as collateral in outstanding repo transactions by market segment and asset class. Date: 20th September 2023. Sources: SFTR, ESMA.

MR-SFT.S.39

Repo collateral value by issuer jurisdiction and asset class (uncleared)

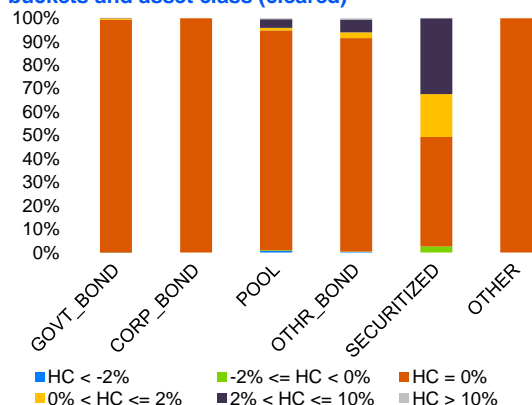


Note: Market value of collateral employed in non-cleared repo transactions by asset class and issuer jurisdiction, in EUR tn. Date: 20th September 2023. Sources: SFTR, ESMA.

Haircuts

MR-SFT.S.40

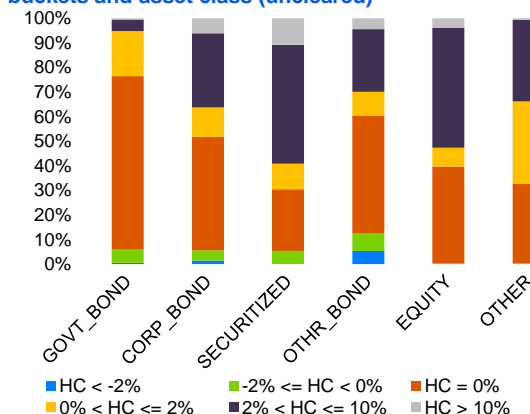
Repo collateral market value distribution by haircut buckets and asset class (cleared)



Note: Collateral market value distribution in cleared repo transactions by asset class and haircut bucket, in percentage. Date: 20th September 2023. Sources: SFTR, ESMA.

MR-SFT.S.41

Repo collateral market value distribution by haircut buckets and asset class (uncleared)

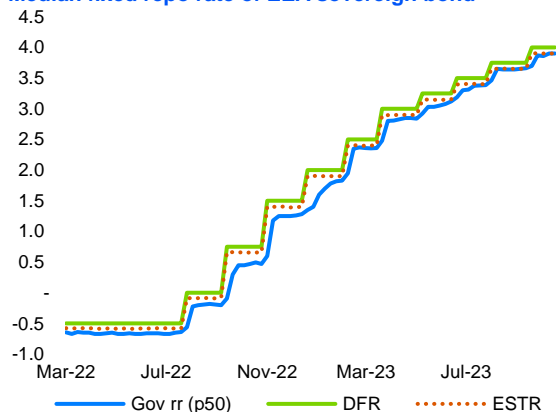


Note: Collateral market value distribution in non-cleared repo transactions by asset class and haircut bucket, in percentage. Date: 20th September 2023. Sources: SFTR, ESMA.

Repo rates

MR-SFT.S.42

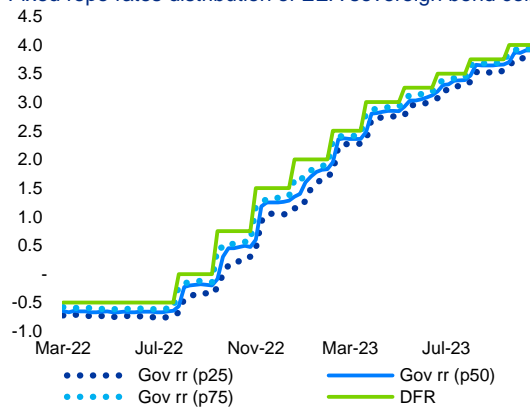
Median fixed repo rate of EEA sovereign bond



Note: Median fixed repo rate of EEA government bond depo rate. DFR = ECB Deposit Facility Rate. Last data point: Oct 23. Sources: SFTR, ECB SDW, ESMA.

MR-SFT.S.43

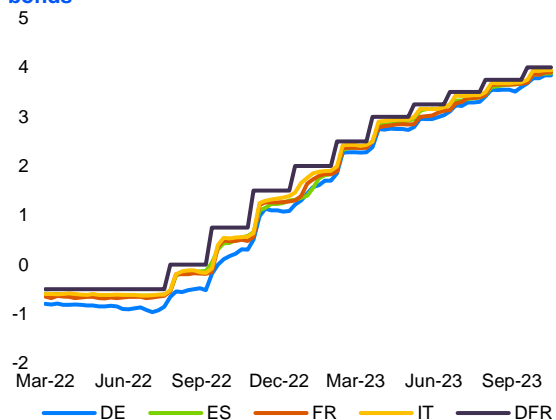
Fixed repo rates distribution of EEA sovereign bond collateral



Note: Fixed repo rates distribution of EEA sovereign bond collateral. DFR = ECB Deposit Facility Rate. Last data point: Oct 23. Sources: SFTR, ECB SDW, ESMA.

MR-SFT.S.44

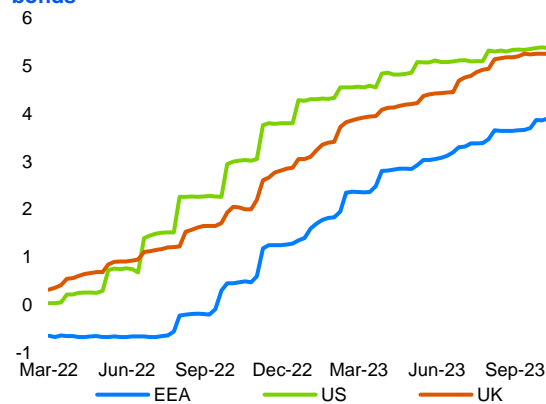
Median fixed repo rates of selected EEA sovereign bonds



Note: Median fixed repo rate of selected EEA government bonds. DFR = ECB Deposit Facility Rate. Last data point: Oct 23. Sources: SFTR, ECB SDW, ESMA.

MR-SFT.S.45

Median fixed repo rates of selected non-EEA sovereign bonds



Note: Median fixed repo rate of selected EEA, US and UK government bonds. Last data point: Oct 2023. Sources: SFTR, ECB SDW, ESMA.

Annex

Glossary

Alternative Investment Fund (AIF): An AIF is a collective investment undertaking, including investment compartments of such an undertaking, that raises capital to invest it in accordance with a defined investment policy for the benefit of investors. An AIF does not include an undertaking that requires authorisation under the UCITS directive.

Buy-Sell Back or Sell-Buy Back transaction: A transaction by which a counterparty buys or sells securities or commodities with an agreement to repurchase or resell them at an agreed-upon price on a specified future date. It's termed a buy-sell back transaction for the buyer and a sell-buy back transaction for the seller. These transactions are close to repurchase agreements.

Central counterparty (CCP): An entity that interposes itself between the two sides of a transaction, becoming the buyer to every seller and the seller to every buyer.

Central securities depository (CSD): Together with CCPs, CSD contribute to a large degree in maintaining post-trade infrastructures that safeguard financial markets and give market participants confidence that securities transactions are executed properly and in a timely manner, including during periods of extreme stress. A CSD is a legal person that operates a securities settlement system and provides at least one other core service such as notary service or central maintenance service.

Clearing: The process of establishing positions, including the calculation of net obligations, and ensuring that financial instruments, cash, or both, are available to secure the exposures arising from those positions.

Clearing member: An undertaking that participates in a CCP and is responsible for discharging the financial obligations arising from that participation.

Counterparty: An entity that takes the opposite side of a financial contract, for example, the borrower in a loan contract, or the buyer in a sales transaction.

Generic Collateral (GC): In a GC repo, the collateral provider can choose the security to provide as collateral amongst a range of securities meeting predefined criteria. This also includes, but is not limited to, GC facilities provided by an Automatic Trading System such as those run by CCPs, and transactions in which the collateral is managed by a triparty agent.

Haircut: A risk control measure, expressed as a percentage, that represents the difference between the market value of the collateral and the cash loan amount obtained by pledging said collateral. For repos, the haircut is calculated as 1 minus the ratio between cash and collateral value, multiplied by 100.

Margin lending transactions: This transaction type involves extending credit connected to the purchase, sale, or trading of securities, but not including other loans secured by securities as collateral.

Remaining maturity: The period from the reference date until the final contractually scheduled payment.

Repo rate: The annualised interest rate on the principal amount of the repurchase transaction in accordance with the day count conventions.

Repurchase transactions (Repos): In a repurchase transaction, one counterparty transfers securities or commodities (the collateral) to the lender with a commitment to repurchase them or similar assets at a predetermined price on a future date. Conversely, the borrowing party engages in a reverse repurchase transaction. These agreements are governed by specific terms and usually involve recognized exchanges holding rights to the securities or commodities.

Securities or commodities lending and borrowing: A transaction involving the transfer of securities or commodities, accompanied by an agreement ensuring the return of equivalent securities or commodities at a later date. For the party transferring these assets, it is considered lending, while for the receiving party, it is considered borrowing.

Specific Collateral (SC): In a SC repo, the seller and the buyer agree in advance on a specific instrument to be delivered as collateral.

Trade repository (TR): A legal person that centrally collects and maintains the records of securities financing transactions.

Tri-party agent: A third party (a custodian bank or international clearing organization) that acts as an intermediary between the two counterparties, and to which the reporting counterparty has outsourced the post-trade processing of the repo, including the collateral management.

Undertakings for Collective Investment in Transferable Securities (UCITS): UCITS are undertakings with the sole object of collective investment in transferable securities or in other liquid financial assets and which operate on the principle of risk-spreading; and with units which are, at the request of holders, repurchased or redeemed, directly or indirectly, out of those undertakings' assets.

List of abbreviations

AIF	Alternative Investment Fund
bp	basis point
CCP	Central Counterparty
CM	Clearing Member
CSD	Central securities depository
DFR	Deposit Facility Rate
ECB	European Central Bank
EEA	European Economic Area
EMIR	European Markets Infrastructure Regulation
ESMA	European Securities and Markets Authority
FSB	Financial Stability Board
ISIN	International Securities Identification Number
LEI	Legal Entity Identifier
MGLD	Margin lending transaction
MIC	Market Identifier Code
MiFIR	Markets in financial instruments Regulation
MMF	Money Market Fund
MiFID	Markets in Financial Instruments Directive
NCA	National Competent Authority
OTC	Over the counter
REPO	repurchase transaction
SBSC	buy-sell back and sell-buy back transactions
SLEB	securities or commodities lending or securities or commodities borrowing,
SFT	Securities Financing Transaction
SFTR	Securities Financing Transactions Regulation
TR	Trade Repository
UCITS	Undertakings for the Collective Investment in Transferable Securities

Countries abbreviated according to ISO standards

Currencies abbreviated according to ISO standards



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