ICMA

International Capital Market Association

International Capital Market Association European Repo Market Survey

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Disclaimer

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Executive Summary

In December 2023, the European Repo and Collateral Council (ERCC) of the International Capital Market Association (ICMA) conducted the 46th in its series of semi-annual surveys of the repo market in Europe.

The survey asked a sample of financial institutions in Europe for the value and breakdown of their repo contracts that were still outstanding at close of business on December 13, 2023. Replies were received from 60 entities, mainly banks.

Data were also reported separately by the principal automatic repo trading systems (ATS) and tri-party repo agents in Europe, giving the size and composition of all automatic electronic repo trading and most tri-party repo collateral management in Europe. In the latest survey, data have also been provided separately by both of the principal automated dealer-to-customer repo trading systems in Europe.

Total repo business

The total value of the repo contracts outstanding on the books of the 60 entities who contributed to the latest survey was a new record high of **EUR 10,899 billion,** compared with EUR 10,794 billion in the June 2023 survey. The change in the headline number was +1.0% since June and +5.1% year-on-year. Adjusting for changes in the composition of the survey sample, notably the withdrawal of Credit Suisse, reveals faster underlying growth of 3.1% in the second-half of 2023 and no deceleration in the growth of the survey sample since the first-half but confirms that there was a significant slowing-down in the rate of growth since 2022.

The long-term net reverse repo position of the survey sample, which has reflected the collateral scarcity created by central bank asset purchases since 2012, was dramatically reduced in June but largely restored in December. The reduction of the net reverse repo position in June reflected the swing from quantitative easing (QE) to quantitative tightening (QT) by central banks in 2022 and increased issuance of government securities, which reduced the need to borrow European government securities. The reversal in December was driven by a shift by many dealers of balance sheet capacity from Europe to the US and Asia, which increased borrowing of US Treasuries and JGBs.

Trading analysis

Automatic repo trading systems (ATS) lost share in the repo books of the survey sample. There was also a contraction in the value of transactions by all users across ATS, other than GC financing facilities. This reflected the shift in trading towards US Treasuries and JGBs, which diverted activity away from European ATS, but also easier supplies of cash and collateral, as central banks withdrew from the market and bond issuance surged, which reduced the need for dealers to rebalance cash and collateral inventory across ATS.

In contrast to interdealer (D2D) trading, there seems to have been continued overall growth in dealer-to-customer (D2C) business across automated repo trading systems.

Tri-party repo also grew rapidly but the main driver was still investment in GC financing repo.

Geographical analysis

The transfer of balance sheet capacity by dealers from Europe to the US and Asia may have been reflected in a higher share for cross-border trading into and out of the eurozone.

Clearing analysis

The reduction in business across ATS, which is overwhelmingly cleared across CCPs, had the effect of reducing CCP-clearing, excluding GC financing, but including post-trade clearing.

Cash currency analysis

The transfer of balance sheet capacity by dealers from Europe to the US and Asia was also reflected in increased positions in the US dollar and Japanese yen. Demand for high-yielding UK securities supported the share of sterling.

Collateral analysis

As noted, the share of European government securities declined in response to the move by some dealers into US Treasuries and JGBs and the easing of collateral scarcity by the withdrawal of central banks from the market and increased issuance of government securities. The share of UK gilts was sustained by demand for the high yields on offer in that market and the strong exchange rate.

Tri-party repo saw further inflows of covered bonds as the ECB's TLTRO facility continued to be unwound. Tri-party repo accumulated a significant share of issues by the EU and has become the main home for pfandbrief, which is no longer widely used in the bilaterally-managed market.

Contract analysis

Repos that were sponsored, guaranteed or indemnified accounted for 4.6% of the outstanding positions of the survey sample. 72% was in euros and 22% in dollars.

Repo rate analysis

The shares of floating-rate repos in the survey and in trading on ATS continued to grow as interest rate hikes continued over the summer.

Maturity analysis

Unusually for end-year, short dates increased. However, strong growth in positions between one and six months lengthened the overall weighted average term-to-maturity of repo books. The growth in these longer-term maturities was likely driven by collateral swaps conducted to reduce balance sheets at end-year.

The share of forward repo contracted again. In part, this may have been due to a recent change in the definition of forwards in the survey but it could also have reflected benign market conditions towards end-year lessening the need to anticipate the seasonal tightening of market conditions by using forward transactions.

Product analysis

The share of securities lending conducted on repo desks reversed direction after its recent recovery and fell back to a record low.

Concentration analysis

Growth became more concentrated among the largest firms.

Chapter 1: The Survey

On December 13, 2023, the European Repo and Collateral Council (ERCC) of the International Capital Market Association (ICMA) conducted the 46th in its series of semi-annual surveys of the repo market in Europe. The first of these surveys took place in June 2001 and the series now charts an unrivalled history of the development of the core segment of the European repo market over more than two decades, during which the market matured and grew while coping with unprecedented economic and financial turbulence.

The survey was carried out and the results analysed on behalf of ICMA by the author, Richard Comotto, under the guidance of the ERCC Council.

1.1 What the survey asked

The survey asked financial institutions operating in Europe who are members of ICMA for the starting value of the cash side of repos and reverse repos that were still outstanding at close of business on Wednesday, December 13, 2023. The survey therefore measures the stock or outstanding balance of transactions that have not matured or been terminated by the survey date. It does not measure the flow of transactions or turnover over the period between two successive survey dates.

The survey covers all types of true repo, which means agreements in which collateral is sold and repurchased, in other words, where collateralisation is by the transfer of legal title to the collateral rather than by the creation and attachment of a security interest such as a pledge. Such repo can take the form of repurchase transactions, reverse repurchase transactions, buy/sell-backs and sell/buy-backs. The survey does not cover synthetic or pledge structures.

The survey asked participating entities to divide their data into repo and reverse repo, as well as to break it down by: location of the counterparty; market segment; cash currency; type of contract; type of repo rate; remaining term-to-maturity; method of collateral management; origin of collateral; and some other categories. In addition, entities were asked to report the outstanding value and composition of any securities lending and borrowing conducted from their repo desks.

Since 2017, the survey has asked for the number of new transactions and the value of turnover since the previous survey (these are the only questions in the survey which measure turnover) and, since 2019, the numbers and types of legal agreements under which entities can transact repos.

An extract of the accompanying Guidance Notes for survey participants is reproduced in Appendix A.

As well as reports sent by participating entities, data have been provided separately since 2003 by the principal automatic repo trading systems (ATS) and the main tri-party repo agents in Europe.[1][2] The latter have also reported tri-party securities lending since 2016. Data is now also provided separately by the two principal automated dealer-to-customer repo trading systems in Europe.[3] Members of the Wholesale Market Brokers' Association (WMBA) contributed data on voice-broking separately between 2002 and 2017. These separate sources of data cover the business executed or managed by all ATS, the main automated trading systems and most of the tri-party market agents in Europe, providing background data on the population of electronic trading and tri-party management platforms in Europe against which the size, composition and changes in electronic trading and tri-party repos executed by the survey sample can be assessed.

1 The reporting ATS were BrokerTec (CME), eRepo (formerly TP Repo), Eurex, MTS Repo (Euronext) and SIX.
2 The reporting tri-party agents were Bank of New York Mellon, Clearstream Banking Luxembourg, Euroclear Bank, JP Morgan and SIS, who together account for the bulk of tri-party business in European repo. Agents not reporting included Citibank and Euroclear UKI (Crest).
3 Tradeweb has provided data back to 2020 and GLMX, who joined the survey in December 2023, from 2022..

1.2 The response to the survey

The latest survey was completed by 60 entities belonging to 52 financial groups. There were two fewer participants than in June 2023. This was the result of one new participant joining and three existing participants dropping out of the survey, one of which was Credit Suisse.

Of the 60 participants in the latest survey, 43 were headquartered across 14 European countries, including members of the EU (35), Norway (1), Switzerland (1) and the UK (6). The EU participants were headquartered across 11 of the 27 member states (there continued to be no participants in the survey from Finland and Sweden, and there were none from the former Accession States). 31 EU participants were headquartered across 10 of the 19 countries of the eurozone. Other survey participants were headquartered in Japan (5) and North America (12). 19 participants were branches or subsidiaries of foreign parents or supranational entities, most of which (15) continued to be located in the UK.

Many entities provided data for their entire European repo business. Others made separate returns for one or more (but not necessarily all) of their European offices. Participants were asked to report for both their UK and EU offices where they have divided their European business post-Brexit. A list of the entities that have participated in the ICMA's repo surveys is contained in Appendix B.

1.3 The next survey

The next survey is scheduled to take place at close of business on **Wednesday, June 12, 2024**.

Any financial institution wishing to join the next survey can download copies of the questionnaire and accompanying Guidance Notes from ICMA's website. The latest forms are published at www.icmagroup.org/surveys/repo/participate.

Entities who participate in the survey will receive a confidential list of their rankings across the main survey categories.

The data received in the survey are used for no other purpose than to inform the survey report. Individual returns are seen only by the author and participants can request that returns are anonymised before the data are made available to the author. Only aggregated data are published and ICMA is not permitted to disclose data reported by individual participants.

Questions about the survey should be sent by e-mail to reposurvey@icmagroup.org.

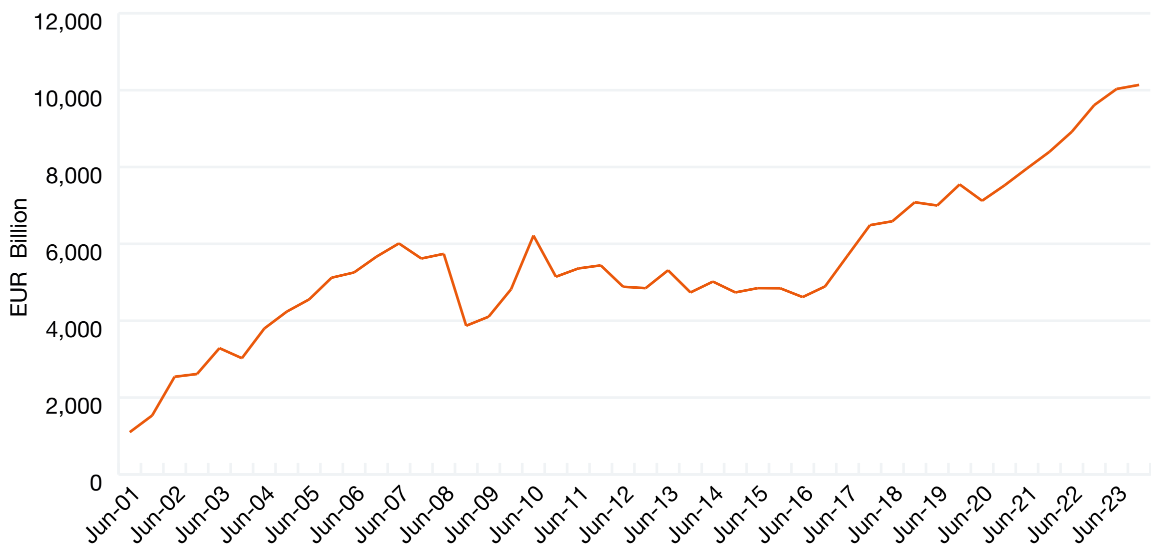
Chapter 2: Analysis of Survey Results

The aggregate results of the latest six surveys (2021-2023) are set out in Appendix C. The full results of all previous surveys can be found at www.icmagroup.org.

Total repo business (Q1)

The total value, at close of business on December 13, 2023, of repos and reverse repos outstanding on the books of the 60 entities who participated in the latest survey reached **EUR 10,899.8 billion**, a new all-time high. This means that the repo books of the survey sample grew by +1.0% since the last survey (from EUR 10,794.4 billion) and +5.1% year-on-year (from EUR 10,374.2 billion). These latest growth rates compare with +4.1% and +11.5%, respectively, in the June survey, suggesting that there was a further deceleration in the rate of growth of the survey sample in the second-half of 2023.

Figure 2.1 – Outstanding value of total business by the survey sample



The survey sample as a whole has been a net lender of cash to (and therefore a net borrower of collateral from) the rest of the repo market continuously since 2012, when central banks started to offer long-term liquidity support to the market (see Table 2.1).

Table 2.1 – Total repo business

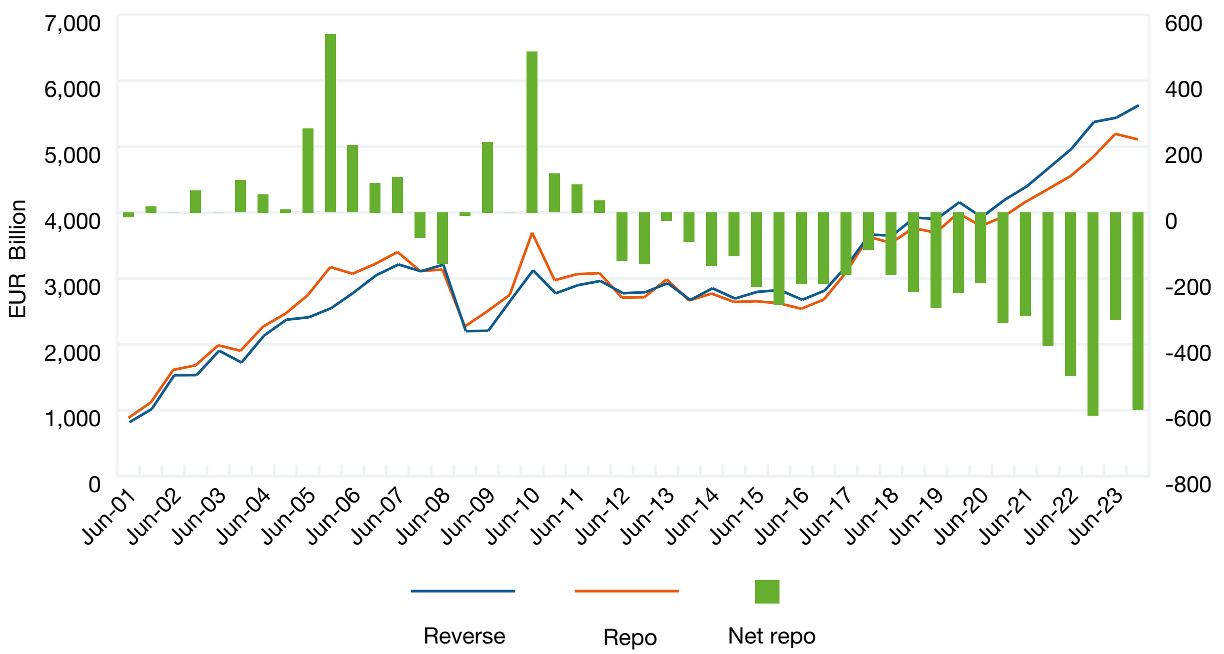
survey	total	repo	reverse repo
2023 December	10,900	47.3%	52.7%
2023 June	10,794	48.5%	51.5%
2022 December	10,374	47.0%	53.0%
2022 June	9,680	47.4%	52.6%
2021 December	9,198	47.8%	52.2%
2021 June	8,726	48.2%	51.8%
2020 December	8,285	48.0%	52.0%
2020 June	7,885	48.6%	51.4%
2019 December	8,310	48.5%	51.5%
2019 June	7,761	48.1%	51.9%
2018 December	7,846	48.5%	51.5%
2018 June	7,351	48.7%	51.3%
2017 December	7,250	47.8%	52.2%
2017 June	6,455	48.5%	51.5%
2016 December	5,656	48.1%	51.9%
2016 June	5,379	48.0%	52.0%
2015 December	5,608	47.5%	52.5%
2015 June	5,612	48.0%	52.0%
2014 December	5,500	48.8%	51.2%
2014 June	5,782	48.6%	51.4%
2013 December	5,499	49.2%	50.8%
2013 June	6,076	49.8%	50.2%
2012 December	5,611	49.1%	51.9%
2012 June	5,647	48.7%	51.3%
2011 December	6,204	50.3%	49.7%
2011 June	6,124	50.7%	49.3%
2010 December	5,908	51.0%	49.0%
2010 June	6,979	53.5%	46.5%
2009 December	5,582	50.0%	50.0%
2009 June	4,868	52.2%	47.8%
2008 December	4,633	49.9%	50.1%
2008 June	6,504	48.8%	51.2%
2007 December	6,382	49.4%	50.6%
2007 June	6,775	50.8%	49.2%
2006 December	6,430	50.7%	49.3%
2006 June	6,019	51.7%	48.3%
2005 December	5,883	54.6%	45.4%
2005 June	5,319	52.4%	47.6%
2004 December	5,000	50.1%	49.9%
2004 June	4,561	50.6%	49.4%
2003 December	3,788	51.3%	48.7%
2003 June	4,050	50.0%	50.0%
2002 December	3,377	51.0%	49.0%
2002 June	3,305	50.0%	50.0%
2001 December	2,298	50.4%	49.6%
2001 June	1,863	49.6%	50.4%

From 2016 until the December 2022 survey, net cash lending by the survey sample trended up, reflecting abundant central bank liquidity and the "dash for cash" during the Covid pandemic lock-down (see Figure 2.2). By December 2022, this net cash lending reached the equivalent of 6.0% of the total outstanding value of the survey (EUR 617.2 billion). Then, in June 2023, there was a sharp contraction in the net reverse repo position of the survey sample to 2.3% of the total outstanding value of the survey (EUR 252.1 billion).

It was thought that the June reversal might have represented a shift away from collateral borrowing and securities-driven repo by the survey sample (who are mostly market intermediaries) in response to the increased supply of securities from the unwinding of central bank assistance and new issuance.

However, in the latest survey, net cash lending by the survey sample recovered to 5.4% of the survey (EUR 599.4 billion). And, whereas the contraction in net cash lending in June 2023 was due to a sharp slowdown in the growth of gross reverse repo by the survey sample, the recovery in December 2023 reflected both an acceleration the growth of gross reverse repo and a sharp reversal in gross repo. In other words, the survey sample were lending more but borrowing less cash, while borrowing more but lending less securities.

Figure 2.2 – Total repo versus reverse repo positions of the survey sample



ICMA survey methodology

The survey measures the value of outstanding transactions at close of business on the survey date. While measurement of the flow of new repos between two dates is useful for some business and market analyses, the stock of transactions outstanding on one date was adopted because this gauges risk exposure and open interest.

However, outstanding value understates the share of shorter-term repos, given that such transactions run off faster between surveys than longer-term repos. Because repos traded on automatic trading systems (ATS) and cleared on a central counterparty (CCP) are typically very short-term, their share of outstanding balances is smaller than their share of turnover (which can be seen by comparing published aggregate SFTR data on new and outstanding repos).

When interpreting changes in outstanding balances, it needs to be remembered that these can reflect cumulative changes in turnover or variations in the tenor of new transactions or both.

Another important feature of the survey methodology is that it recognises repos from their transaction dates, that is, from when they are executed by the two parties and contracts are formed, rather than from their value or purchase dates, which are when cash and collateral are first due to be exchanged. This transaction-date basis means that the outstanding value measured by the survey includes forward repos, which will not have been recognised on the balance sheets of the sellers, as well as unsettled new non-forward transactions. Moreover, the survey will include one-day repos transacted on or before the survey date but not due to be settled until the business day after the survey date and on the following business day (that is, tom/next or spot/next repos). This gives greater weight to one-day repo than would measurement on a value-date basis.

The values measured by the survey are not adjusted for the reporting of the same transaction by two participants who are both contracting parties. However, a study by the author (see the report of the December 2012 survey) suggested that inflation due to this problem of double-counting was not very significant. Interestingly, a trade repository in Europe has estimated that two-sided reporting has been less than 30% under EU Securities Financing Transactions Regulations (SFTR) and less than 15% under UK SFTR, which is consistent with the author's estimate of double-counting.

The survey does not measure the value of repos transacted with central banks as part of their monetary policy operations but should include their reserve management operations in the repo market.

Growth in market size

In order to accurately gauge the growth of the European repo market (or at least that segment represented by the survey sample), it is not valid to simply compare survey totals. Some changes may represent the entry or exit of entities into and out of the survey, mergers between banks or the reorganisation of repo books across banking groups. To offset the impact of changes in the structure and composition of the survey sample, comparisons are also made of the aggregate outstanding positions reported by a sub-sample of those entities who have participated continuously in several surveys.

In the case of the latest survey, the growth since June 2023 in the repo books of the sub-set of 59 survey participants who had participated in the latest three surveys was +3.1% compared to +1.0% for the full survey sample and +6.3% year-on-year compared with +5.1%. It can be seen that changes in the survey sample therefore had a negative effect on the size of the latest survey. This was primarily because of the exit of Credit Suisse. Taking account of the change in the survey sample, it would appear that growth in repo books did not slow in the second-half of 2023 (as the adjusted rate of growth for the first-half of 2023 was also +3.1%) but did decelerate significantly year-on-year (for which the adjusted growth was +9.0%).

Between June and December 2023, 29 of the 60 entities who responded to the latest survey expanded their repo books (compared with 37 out of 62 between December 2022 and June 2023). The repo books of another 29 entities contracted over the same period (compared with 25 between the previous two surveys). Growth was therefore much less broadly spread across the survey sample in the second-half of 2023 than in the first-half.

Narrower growth in the survey sample is reflected in the median percentage change in all repo books falling to +0.8% from +9.1%. Moreover, the average unweighted change in the second-half of 2023 for the participants who expanded their repo books fell back to +43.5% from +54.2% in June. For those who contracted their books, the change was reduced to -12.9% from -15.3%. The weighted average change across all books was +5.7% compared with +9.7% in June. The distribution of changes was therefore positively skewed, with those posting increases in book size making larger changes than those posting decreases. This shift was reflected in the increased concentration in the survey sample (see below).

The estimated turnover of the survey sample

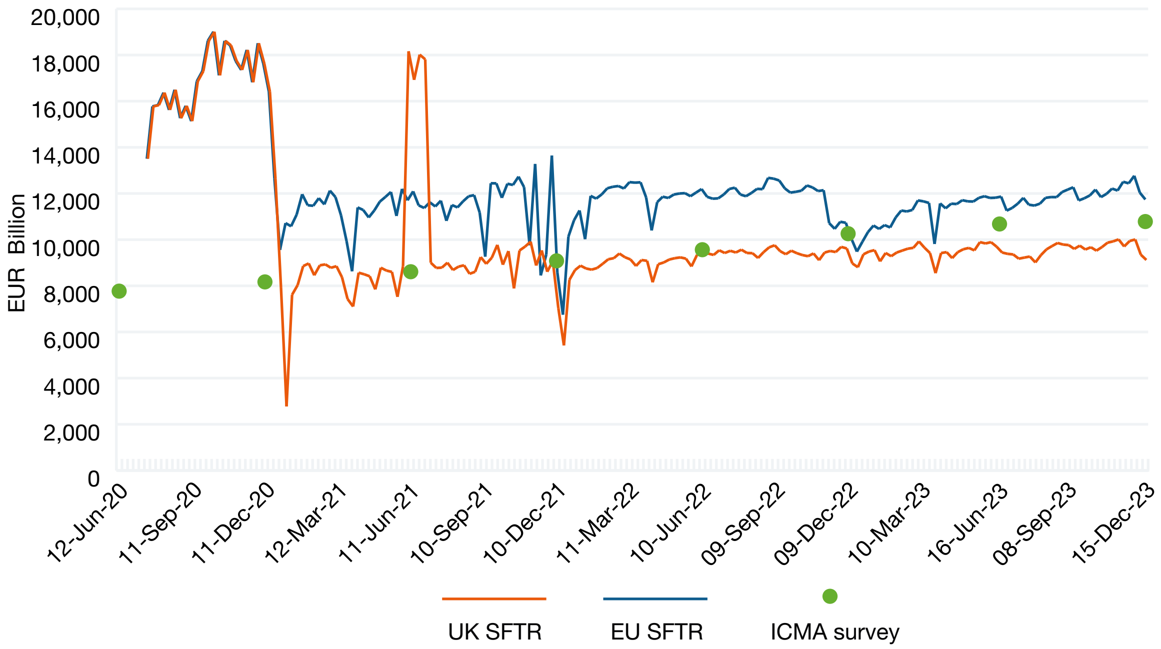
Entities accounting for over 47% of the total value of the latest survey reported their repo turnover over the six months since the previous survey. Grossing up the reported turnover, pro rata by the combined share of the outstanding value of the survey of those participants who did not report their turnover, would suggest that the daily average turnover for the whole survey sample over the second-half of 2023 could have been almost EUR 2,270 billion per day. This compares with EUR 2,846 billion between the two previous surveys, which is a fall of over -20%, suggesting that the June 2023 estimate may have been inaccurate.

Comparing survey and SFTR data

Data published under the Securities Financing Transactions Regulation (SFTR) in the EU and the UK show that the value on December 15, 2023 (the SFTR reporting date closest to the latest survey date), of all outstanding repos reported to regulators was EUR 12,768 billion in the EU and EUR 10,009 billion in the UK, totaling EUR 22,777 billion (see Figure 2.3). This compares with a total of EUR 21,698 billion on June 16, 2023 (the SFTR reporting date closest to the previous survey date) and represents an increase of +5.0%, which was higher than for the survey sample. It also shows that the survey was equivalent to almost 48% of the EU and UK SFTR total in December, down from some 50% in June. While this comparison needs to be treated with caution, given the differences in methodologies, it is not unreasonable to infer that the survey covers a significant share of the European repo market.

Moreover, in its first annual report on SFTR data in the EEA, ESMA (the European Securities and Markets Authority) revealed that adjustments to reported data reduced the calculated EU market size by over one-third in terms of loan size. Even though ESMA's adjustments included the removal of forward repos and the data was for the EEA only, the reduction in the measured EEA market size means that the ICMA survey covers a greater proportion of the European market than estimated by a simple comparison with the SFTR data published weekly by the trade repositories. (A summary of the ESMA data report is included in Appendix E at the end of this report).

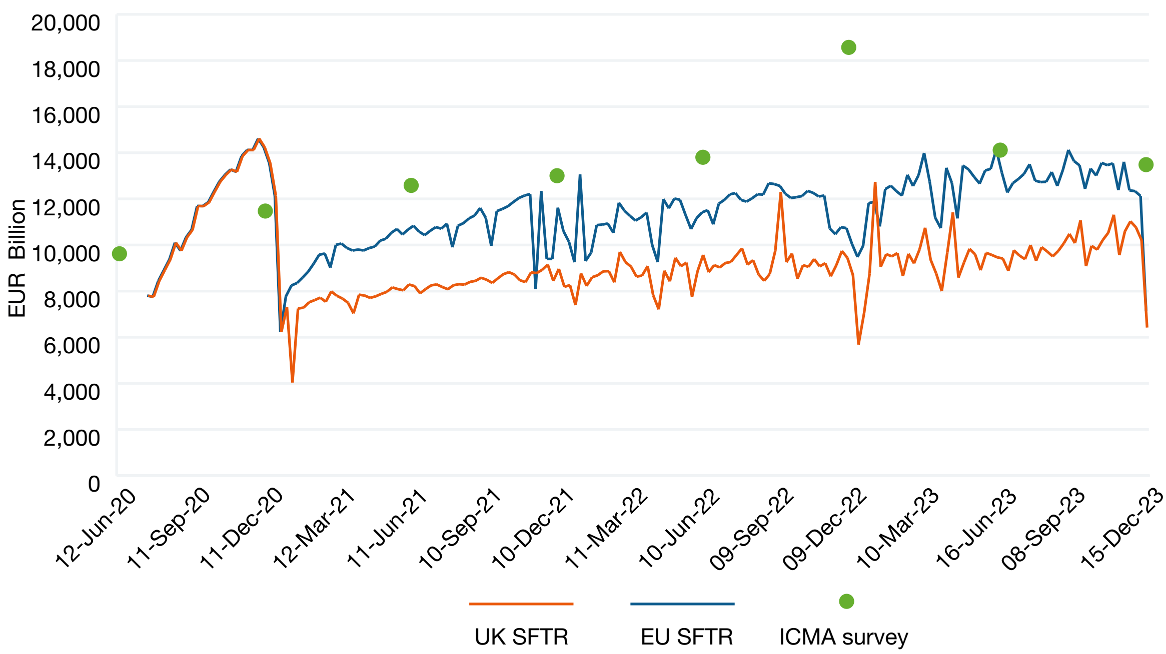
Figure 2.3 – ICMA survey versus SFTR public data: outstanding amounts



Sources: DTCC, KPDW, LSEG, RegisTR, author's calculations

Turnover in repo reported under SFTR between the week ending June 16, 2023, and the week ending December 15, 2023 (approximately the same interval as that covered by the survey), averaged EUR 2,555 billion per day in the EU and EUR 2,008 billion per day in the UK, totaling EUR 4,563 billion (see Figure 2.4). This represents a rise of +6.6% over the previous six-month average, which was in the opposite direction to the survey estimate, supporting the suggestion that the estimated turnover in the June survey was wrong. The turnover estimated in the survey (EUR 2,270 billion a day) fell to just under 50% of the SFTR total.

Figure 2.4 – ICMA survey versus SFTR public data: weekly turnover



Sources: DTCC, KPDW, LSEG, RegisTR, author's calculations

On the basis of estimated turnover, average outstanding deal size for the survey sample was EUR 40 million. Average outstanding deal size implied from SFTR public data was EUR 29 million. The larger deal size in the survey could reflect the fact that the survey sample is composed mostly of major market intermediaries, whose transactions may be larger than average.

Trading analysis (Q1.1)

Figure 2.5 – Trading analysis

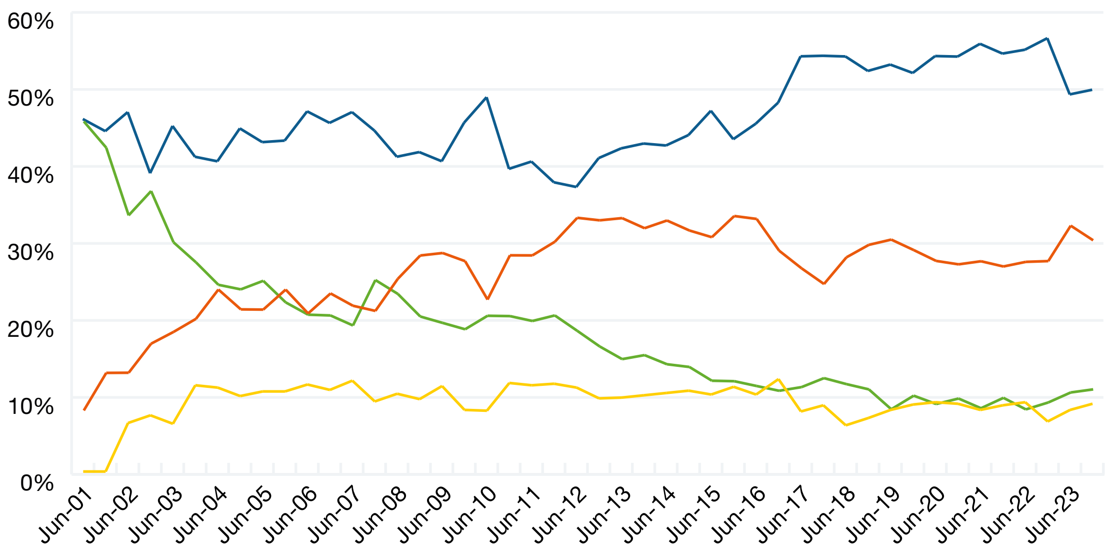


Table 2.2 – Trading analysis

	December 2023		June 2023		December 2022	
	share	users	share	users	share	share
direct	59.0%	60	57.7%	62	63.5%	61
of which tri-party	*8.8%*	*42*	*8.0%*	*44*	*6.5%*	*49*
voice-brokers	10.7%	41	10.3%	41	9.0%	32
ATS	30.2%	47	32.1%	47	27.5%	48

NB The June data have been corrected to take account of the resolution of misreporting by a major survey participant.

After the June survey, an error was detected in reporting by a major survey participant of their use of trading venues and the geography of their outstanding positions. The effect was to overstate the share of direct transactions in the survey sample in June at the expense of ATS business. The result of corrections to the June data has been to revise the share of direct business down to 57.7% from 63.7% and ATS up to 32.1% from 26.3%. Voice-brokers had a share of 10.3% in June, not 10.0%. The share of tri-party repo was unaffected. On the basis of the corrected data, it would appear that, as a result of growth in the share of tri-party repo and, to a lesser extent, of voice-brokered and direct business, the share of ATS repo contracted in December.

The contraction in the relative use of ATS by the survey sample was in cross-border business rather than domestic and GC financing repo. Growth in voice-brokered business was spread across domestic transactions and business into/out of the eurozone.

While the outstanding value of **tri-party** repo executed by the survey sample has been rising since June 2019 (apart from a relapse in December 2022, when cash investment in repo may have been deferred in response to interest rate uncertainty), its growth lagged that of the survey as a whole until last June, when tri-party repo by the survey sample reached an all-time high of EUR 874 billion and its share rebounded to a corrected 8.0%. This was notwithstanding a drop in the number of participants reporting tri-party business.[4] In December, growth in the outstanding value of tri-party business by the survey sample accelerated to reach a new all-time high of EUR 954.4 billion and a share of 8.8%.

An important driver of the growth of tri-party repo by the survey sample continued to be GC financing. This differs from other tri-party repo in that transactions are CCP-cleared and collateral is allocated from standardised baskets.[5] In the latest survey, while GC financing was only 1.7% of the survey total, it accounted for a record 18.7% of the aggregate tri-party exposure of the survey sample compared with 14.8% in June and a low of 5.5% in December 2020. It also took a record 39.2% of the outstanding value of tri-party reported separately by the ICSDs and SIS, up from 34.3% in June and a low of 2.9% in December 2020. GC financing was also 8.3% of the outstanding value of electronically-traded repo reported separately by the principal ATS in Europe, up from 7.2% in June. As noted, GC financing continued to grow while other ATS repo contracted.[6]

The increased share of tri-party repo in the survey sample was consistent with the continuing, although slower, expansion in the outstanding value of tri-party reported separately by the principal tri-party agents operating in Europe. Tri-party repo managed by the two ICSDs (International Central Securities Depositories) and SIS (in Switzerland) increased by +8.3% to EUR 672.5 billion, although this compares with a jump of +41.4% in June 2023.[7]

The net cash borrowed through tri-party repo by the survey sample was little changed at the equivalent of 4.1% of the total survey size from 4.0% in June. Underlying this figure, however, there was a reversal in the reduction in the share of gross tri-party cash lending by the survey sample (which rose to 26.6% from 25.2% of the outstanding value of tri-party repo) and a larger recovery in gross tri-party cash borrowing.

Table 2.3 – Numbers of participants reporting particular types of business

	Dec-23	Jun-23	Dec-22	Jun-22	Dec-21	Jun-21
ATS	47	47	48	45	46	46
anonymous ATS	43	41	43	40	44	41
voice-brokers	41	41	32	36	34	31
tri-party repos	42	44	49	42	45	43
total	60	62	61	56	56	59

The fall in the share of repos executed across **automatic trading systems (ATS)** by the survey sample in the second-half of 2023 was reflected in a sharp fall in the outstanding value of repos reported separately by the principal ATS in Europe to EUR 1,584.8 billion from EUR 1,759.7 billion in June (-9.9% compared with +6.6% over the first semester). There was also a contraction of about -7% in ATS turnover, compared with growth of +6.4% in June. And the number of new ATS transactions continued to fall (to less than 25,000 per day from almost 26,000), although the rate of decrease slowed to -3.7% from -6.0%.

The fall in ATS activity may be indicative of easier supplies of both cash and collateral for dealers as central banks started to withdraw from the market and as government bond issuance surged, reducing the need for dealers to rebalance cash and collateral inventory between themselves, which tends to take place across ATS. In addition, there was a transfer by many dealers of balance sheet capacity from Europe to the US and Japan,

4 The share of tri-party repo in the survey is structurally understated because some survey participants who are known to use tri-party repo do not fill out the trading analysis in their survey return.

5 GC financing repos are transactions cleared on CCPs and managed by tri-party agents. The largest GC financing facility in Europe is Eurex's GC Pooling service but facilities are also provided by LCH SA's €GCPlus and LCH Ltd's Term£GC.

6 All GC financing in Europe is electronically traded but not all is executed on ATS. A proportion are executed in the OTC market and registered with an ATS post-trade. Others are executed on D2C platforms such as Tradeweb and GLMX.

7 The ICSDs are Clearstream Banking Luxembourg and Euroclear Bank.

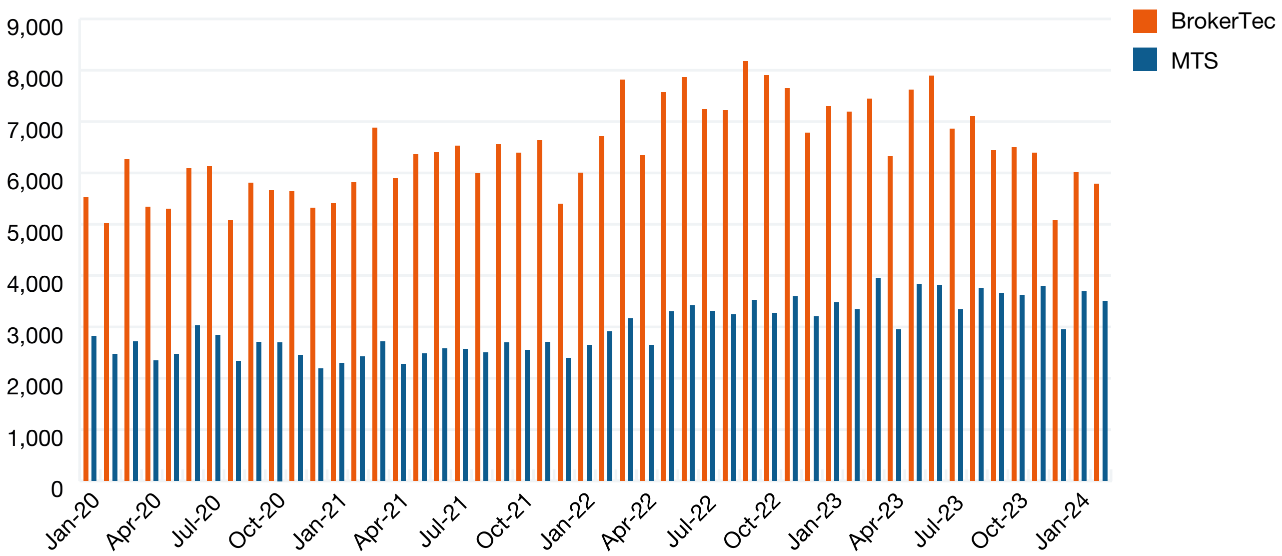
where expectations of changes in monetary policy were seen as offering greater trading opportunities. Given that European ATS specialise in European securities, this shift in trading adversely affected their business.

For BrokerTec, the rate of contraction over the second-half of 2023 in average monthly turnover accelerated to -12.4% from -2.7% over the previous semester (see Figure 2.6). This was due mainly to a drop in activity between September and December.

Turnover at MTS fell by -1.1% compared with growth of +6.1% in the first-half of 2023, in part, as a result of an exceptionally quiet December.

Compared with the second-half of 2022, the changes in turnover at BrokerTec and MTS were -14.7% and +4.9%, respectively.

Figure 2.6 – Monthly turnover in European repo on BrokerTec and MTS

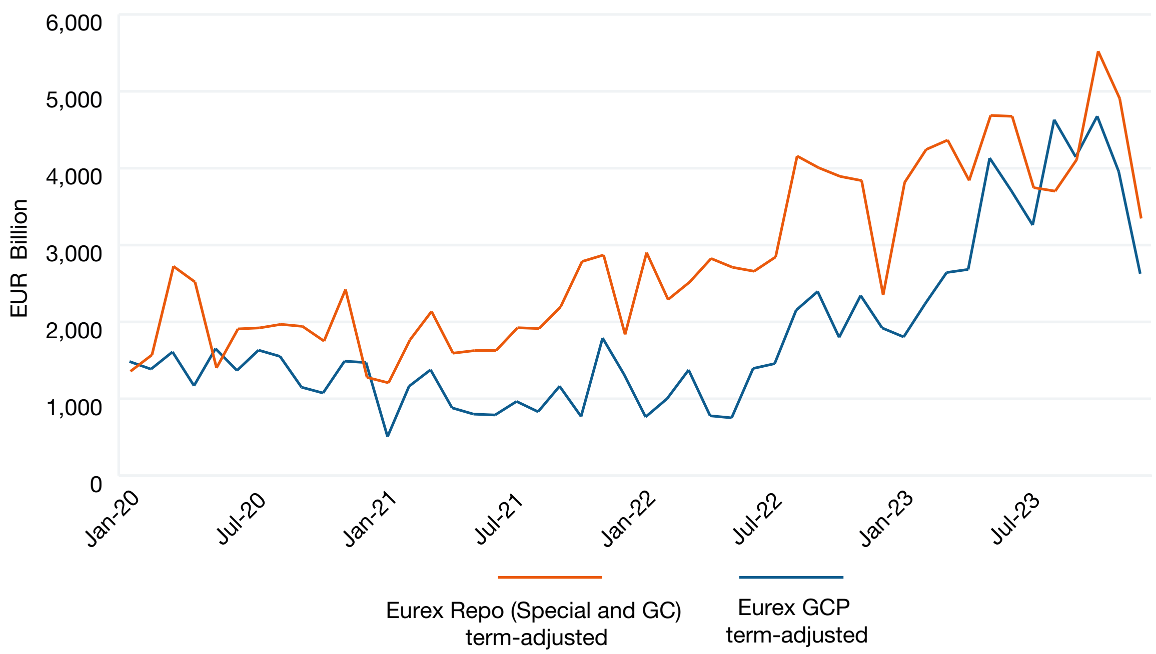


Sources: CME, Euronext

There was also a contraction in repo executed on the two repo platforms of Eurex as a result of a severe downturn in activity at year-end. Turnover on what is now called Eurex Repo Special and GC (abbreviated in this report to ERSGC) fell by -17.1% to an average daily value of EUR 176.1 billion from EUR 212.5 billion in June, while GC Pooling (GCP) fell by -18.0% to EUR 138.3 billion per day from EUR 168.6 billion. However, the picture for Eurex is complicated by the fact that these data are only published on a term-adjusted basis, although it is possible to imply unadjusted turnover for GCP from the STOXX GC Pooling indices (see Figures 2.7a and 2.7b).

Over 2023, there were two waves of term-adjusted activity on both ERSGC and GCP: rapid recovery from the seasonal end-year hiatus (faster in ERSGC than GCP) to a peak in May (in the case of GCP) or a plateau in Q2 split by Easter (in the case of ERSGC); and then a summer lull followed by an autumn peak in October before a larger-than-usual end-year drop.

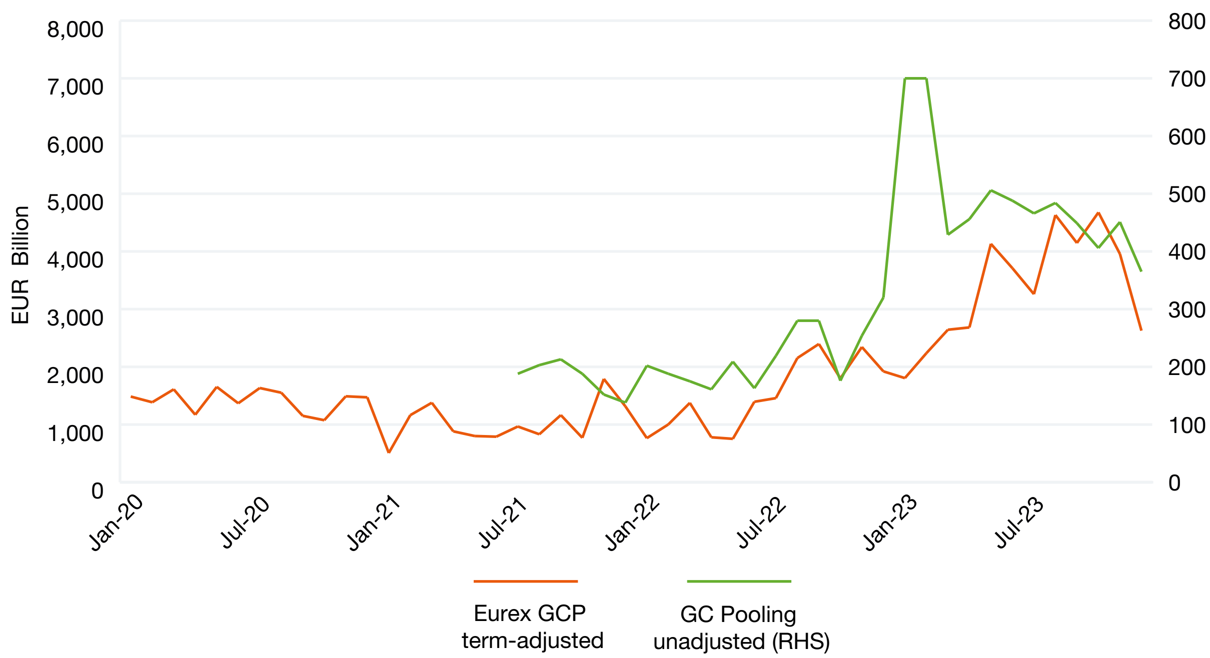
Figure 2.7a – Average daily term-adjusted turnover on Eurex repo trading systems



Sources: Eurex, author's calculations

In the case of GCP, the extent of changes in term-to-maturity can be implied by comparing the term-adjusted turnover of GCP (that is, the size of each transaction scaled up by the number of days in the term) with the unadjusted turnover underlying the STOXX GC Pooling indices. Thus, the ratio of term-adjusted to unadjusted activity on GCP averaged almost 6.9 during both 2022 and 2023 (compared with about 2.5 in the case of MTS Repo, which is a more typical ATS in terms of its business model).

Figure 2.7b – Average daily turnover on Eurex GC Pooling

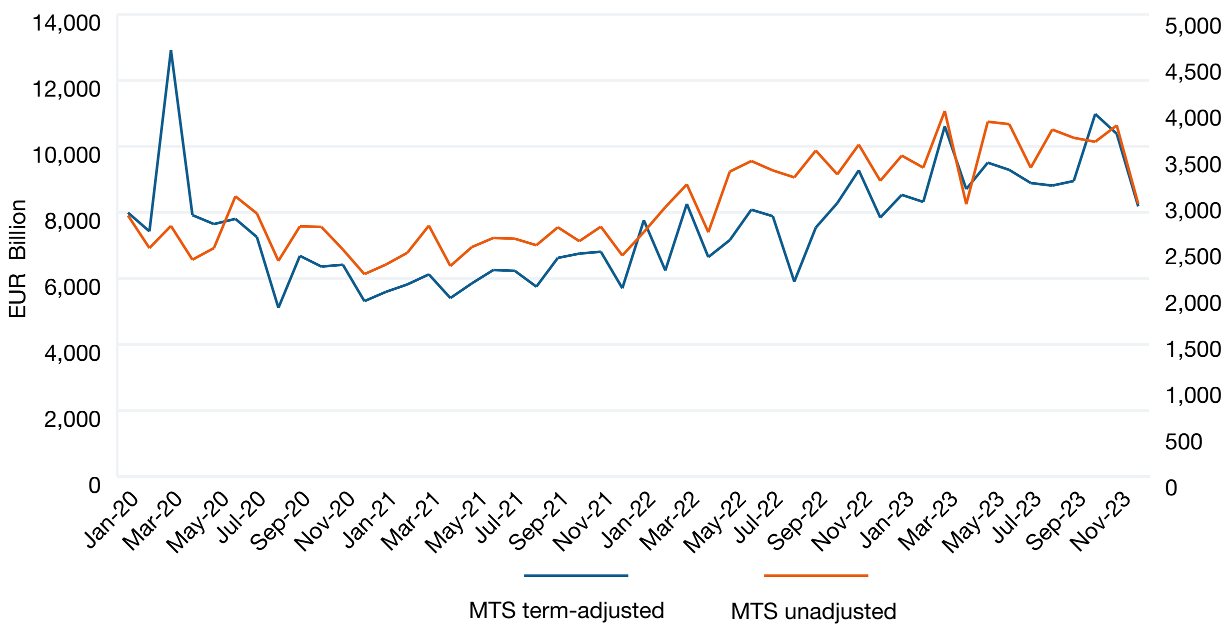


Sources: Eurex, STOXX, author's calculations

Given the spike in unadjusted turnover in the first couple of months of 2023 (+119.2%) and the slower growth in term-adjusted turnover over the same months (+16.4%), the recovery in GCP in the new year seems to have been accompanied by a rapid shortening of average maturities, perhaps as users unwound longer-term trades that served to bridge the seasonal slowdown and reporting dates at the end of the year. In contrast, the peak in term-adjusted turnover in May (+84.7% since February) outpaced a parallel rebound in unadjusted turnover (+17.9%), implying a modest recovery in the average term-to-maturity during the spring. Term-adjusted turnover spiked in August and October (+13.2% from May), while unadjusted turnover fell (-19.8% from May), implying a stronger lengthening of the average term-to-maturity ahead of the end-year, much as would be expected.

MTS helpfully publishes monthly turnover data that are both unadjusted and term-adjusted, allowing a direct comparison to show how the average term-to-maturity of new transactions is evolving (see Figure 2.8). Implied tenors on MTS followed a similar but more muted pattern to those on ERSGC: a shortening of maturities during the recovery in activity in early 2023, as shown by the faster growth in term-adjusted turnover; a spring peak split by Easter and accompanied by longer maturities as unadjusted turnover weakened; a summer lull; and then an extension to average maturity as term-adjusted turnover forged ahead in October-November. Some of these peaks in implied tenors seem to be driven by end-quarters (over which customers seek longer-term funding to avoid seasonal bouts of market illiquidity which arise as a consequence of dealers' "window-dressing") and bond futures delivery dates (over which dealers borrow in order to cover delivery obligations). In the case of October-November, the peak in term repo anticipates the seasonal run-down in activity ahead of the Christmas holidays and year-end. The October peak may also have been encouraged by the end of the ECB rate-hiking cycle.

Figure 2.8 – Average daily term-adjusted and unadjusted turnover on Euronext MTS



Source: Euronext

ATS activity, as reported separately by the platforms, continued to be overwhelmingly CCP-cleared (up to 96.2% from 95.0% in June).

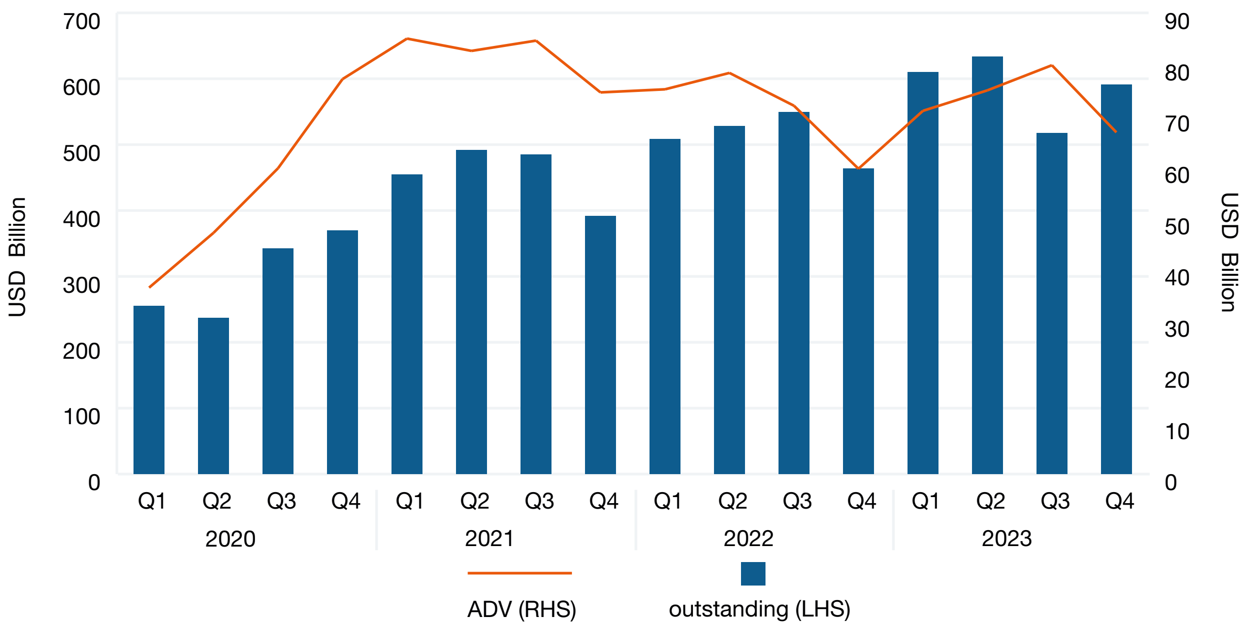
The ICMA survey now includes data from both of the principal **automated repo trading systems** that operate in the dealer-to-customer (D2C) market segment in Europe, that is, GLMX and Tradeweb.[8] The combined growth in

8 Automated trading systems typically employ a request-for-quote (RFQ) trading protocol and are mainly used for dealer-to-client (D2C) business, whereas ATS almost exclusively execute interdealer business (although some have RFQ options). The leading RFQ repo platforms in Europe are Tradeweb and GLMX. Other platforms include BrokerTec Quote and MTS BondVision but some others that are mentioned are largely for securities lending or equity repo.

average daily turnover on both platforms was +20.4% in Q4 compared with Q2 2023 and +21.6% in outstanding value over the second-half of the year, suggesting growing automation of trading in the D2C segment. However, the relative performance of the platforms was rather different.

Turnover on Tradeweb's European platform, which peaked at USD 80.3 billion per day in Q3, contracted by -10.9% in Q4, although it expanded by 11.8% compared with Q4 2022 (see Figure 2.9). Outstanding balances, having expanded by +36.6% in the first-half of 2023, contracted by -6.7% over the second-half, primarily due to a sharp decline in Q3, but recorded growth of +27.5% year-on-year. The decline in turnover but growth in outstanding balances over the second-half of 2023 suggest a substantial increase in the average term-to-maturity of repos negotiated across Tradeweb.

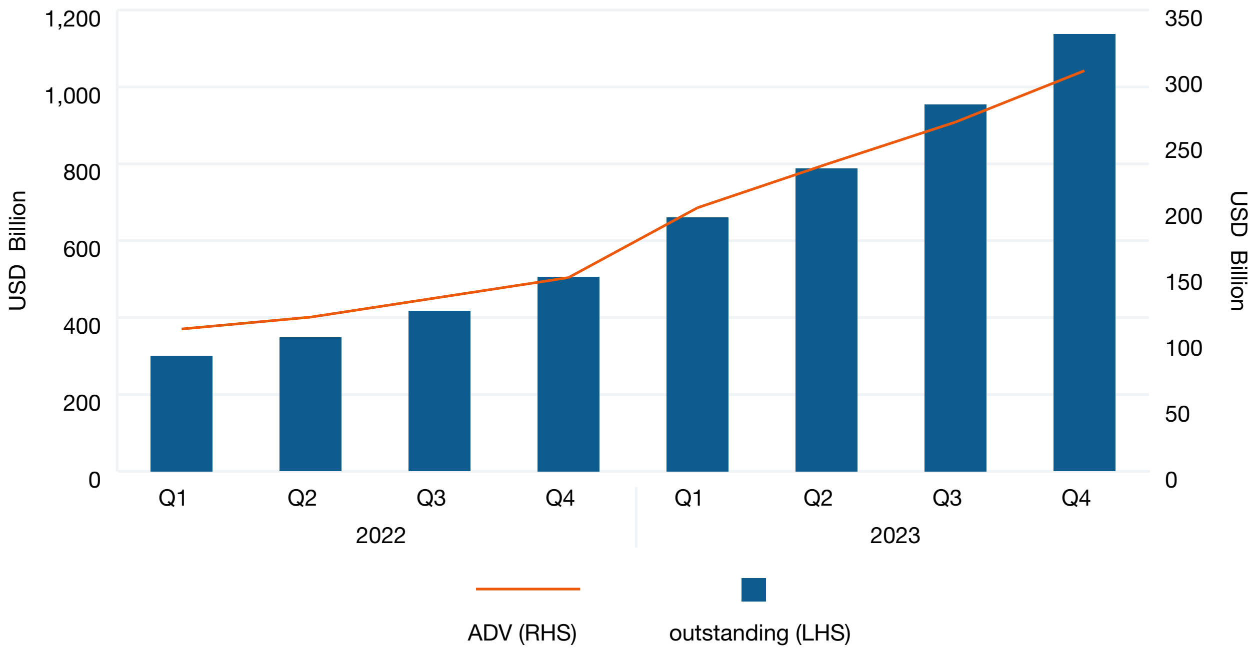
Figure 2.9 – Monthly turnover and outstanding value in European repo on Tradeweb



Source: Tradeweb

On GLMX, the growth in average daily turnover in Europe accelerated in 2023 to peak at USD 304 billion per day in the last quarter, +30.5% higher than in Q2 2023 and +107% over Q4 2022 (see Figure 2.10). The value of outstanding repo on GLMX grew by +30.5% over the second-half of 2023 and +6.7% year-on-year. The comparable rates of growth in turnover and outstanding balances of repos negotiated across GLMX imply little change in the average term-to-maturity. Moreover, the ratio of outstanding balances to turnover is much lower than at Tradeweb, suggesting a shorter average term-to-maturity.

2.10 – Monthly turnover and outstanding value in European repo on GLMX



Source: GLMX

Some indication of the use of automated (D2C) repo trading systems by the survey sample is given by a recent question in the survey about all electronic trading (automatic and automated). The total share reported was 35.4% compared with 30.2% for automatic (D2D) repo trading. However, the difference is equivalent to some EUR 570 billion, which is only about one-third of the combined Tradeweb-GLMX outstanding balances at Q4, suggesting that 35.4% is likely to be an underestimate.

Geographical analysis (Q1.1)

The secular downtrend in the share of **domestic repo** business in the survey was interrupted in the second-half of 2023 (see Table 2.4 and Figure 2.11). The share of domestic activity also recovered in tri-party repo but was unchanged in ATS.

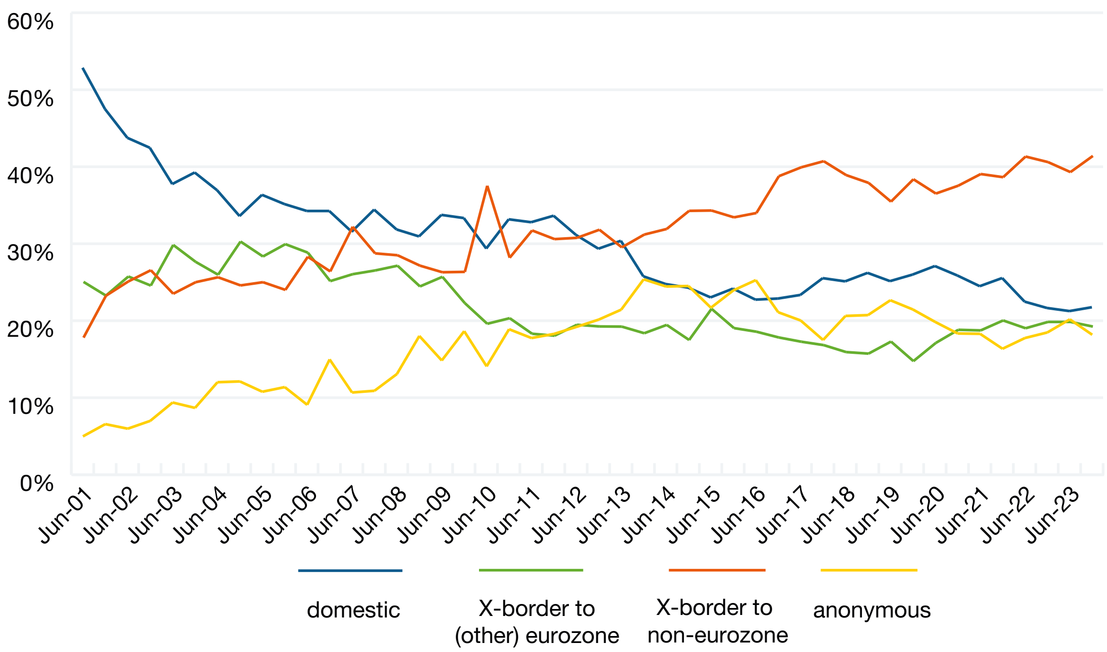
Table 2.4 – Geographical analysis

	December 2023		June 2023		December 2022	
	share	users	share	users	share	users
domestic	22.1%		21.6%		22.0%	
cross-border to (other) eurozone	18.9%		19.5%		19.5%	
cross-border to (other) non-eurozone	41.2%		39.1%		40.4%	
anonymous	17.8%	43	19.8%	41	18.1%	43

NB The June data has been corrected to take account of the resolution of misreporting by a major survey participant.

Cross-border business within the eurozone and anonymous (CCP-cleared) repo fell back, largely as counterparts to a recovery in the share of **cross-border business into and out of the eurozone**, which continues its secular growth and may have been boosted in December by increased trading in US Treasuries and JGBs.

Figure 2.11 – Geographical analysis

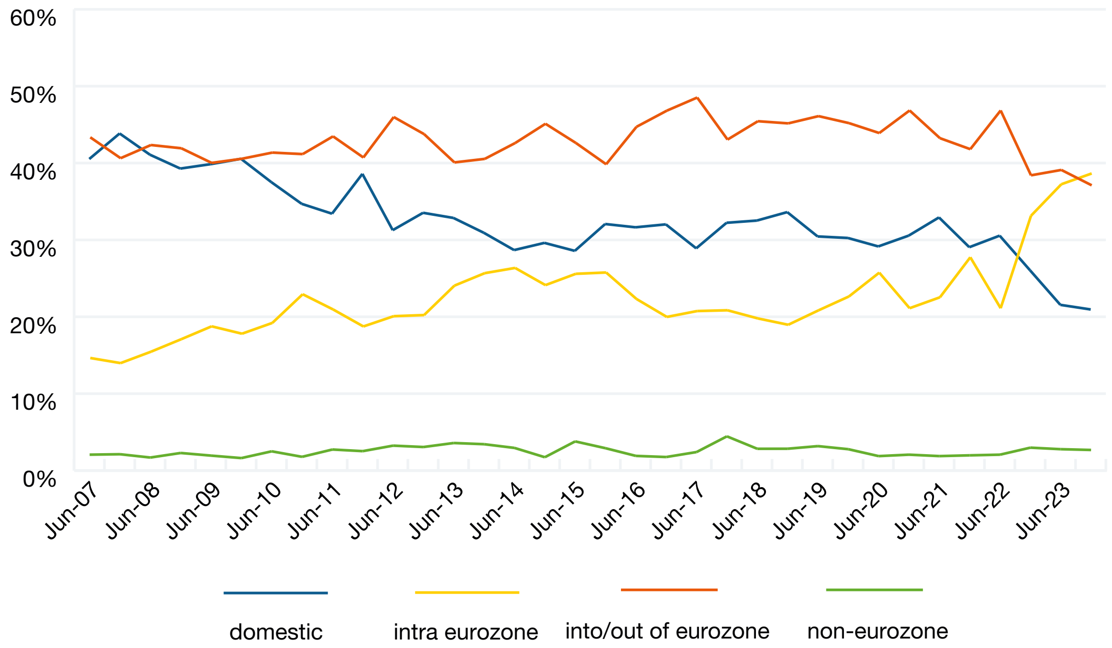


The shift back out of cross-border business within the eurozone was not seen in the business reported separately by the ATS, in which the share of business within the eurozone extended its recent dramatic rise (see Table 2.5 and Figure 2.12). This is likely to have been a reflection of the growth in GC financing.

Table 2.5 – Geographical comparisons in December 2023 (June 2023)

	main survey	ATS	tri-party
domestic	22.1% (21.6%)	21.3% (21.9%)	28.5% (27.8%)
cross-border	60.1% (58.6%)	78.7% (78.1%)	71.8% (72.6%)
anonymous	17.8% (19.8%)		

Figure 2.12 – Outstanding value of ATS business by location of counterparties reported by the ATS



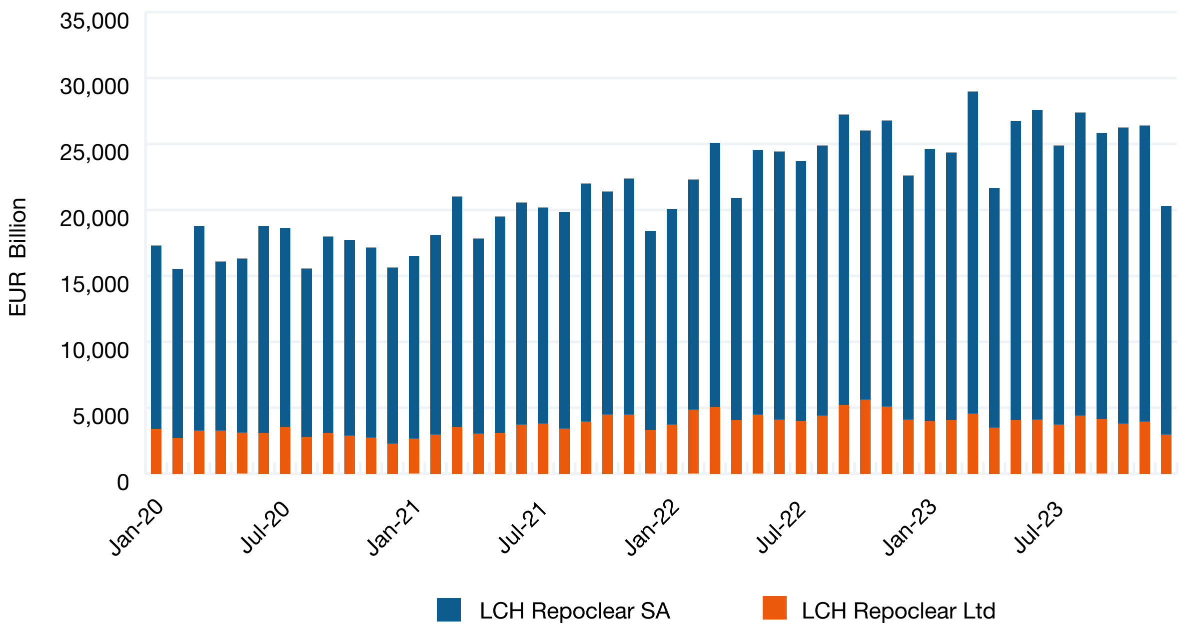
Sources: CME, Eurex, Euronext, SIX, TP ICAP

Clearing analysis (Q1.2 and Q1.8)

The outstanding value of **anonymous (CCP-cleared) repo trading** by the survey sample, excluding GC financing, dropped by -11.6% to EUR 1,670.6 billion in December 2023 from EUR 1,890.4 billion in June, extending the decline which started in June 2020. Its share of the survey sample contracted to 17.3% from 18.3% in December (just above the lows of 17.2% touched in December 2021 and 17.1% in December 2017).

The decline in both the outstanding value of anonymous (CCP-cleared) repo and its share of the survey sample is in line with the lower turnover publicly reported by LCH RepoClear, which is the largest repo CCP in Europe and the only one to publish its activity (see Figure 2.13). The average nominal value of collateral cleared per month on RepoClear over the second-half of 2023 was -1.9% lower than in the first-half of 2023. This compares with +1.8% over the second-half of 2022 and +10.1% in the first-half. Growth in CCP-clearing by RepoClear has therefore decelerated. This may have been a consequence of the relatively benign financial climate which prevailed during 2023.

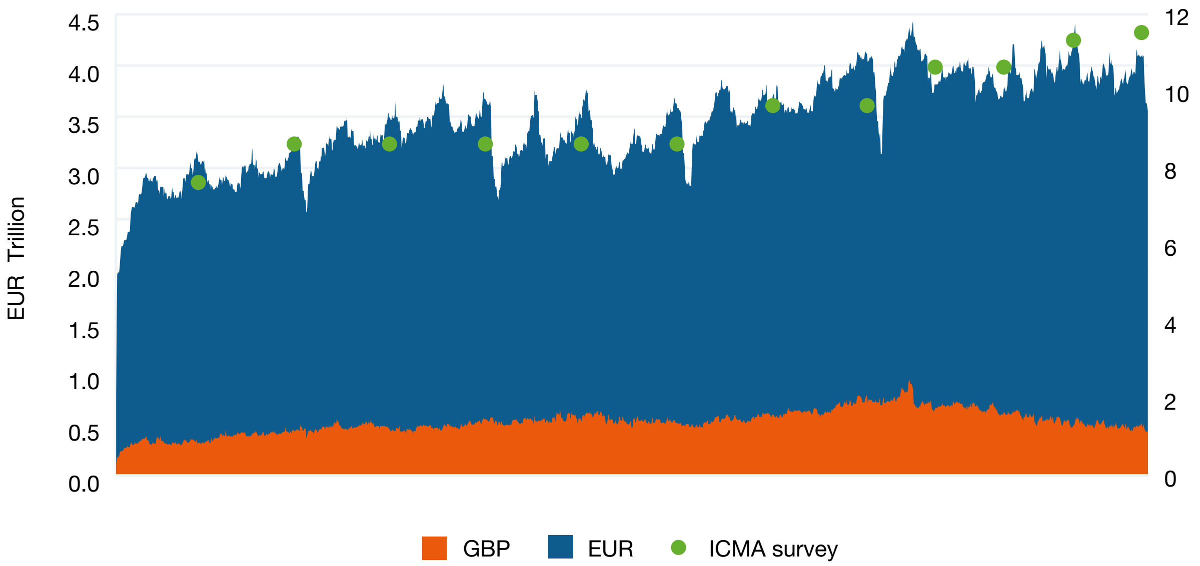
Figure 2.13 – Monthly cleared nominal turnover on LCH RepoClear in 2020-23 (EUR billion, double-counted)



Source: LCH

In terms of the outstanding nominal value of repo collateral cleared by LCH RepoClear (calculated in accordance with the ICMA survey methodology), CCP-clearing tended to lag behind the growth in the repo books of the survey sample after 2021 (see Figure 2.14). In large part, this was due to the decline in the CCP-clearing of sterling repo at LCH Ltd. Thus, in the first-half of 2023, while the outstanding value of cleared euro-denominated repo at LCH SA grew by +9.7% year-on-year to end-June 2023, balances at LCH Ltd contracted by -26.2%, resulting in overall growth at RepoClear of just +3.4%. Over the second-half of 2023, LCH SA contracted by -8.0% and LCH Ltd by -29.8%. In the case of LCH SA, some of the contraction would seem to have been due to a shortening of the average tenor of CCP-cleared transactions, as the average monthly turnover in the first-half of 2023 increased by +16.8% compared with the second-half and +4.3% in the second-half compared with the first-half. But the contraction of LCH Ltd was mainly due to reduced volume, which fell by -19.0% year-on-year.

Figure 2.14 – Daily outstanding nominal value of cleared repos on LCH RepoClear 2018- 2023 (EUR trillion, double-counted)



Source: LCH

In the case of Eurex Clearing AG (ECAG), which is the CCP for ERSGC and GCP, and for which outstanding data using the ICMA methodology is available only from 2021, it can be seen that the outstanding value of CCP-clearing of transactions executed on ERSCG levelled off in 2023 but those executed on GCP accelerated.

Figure 2.15 – Daily outstanding value of cleared repos on ECAG 2021-23 (EUR trillion, double-counted)

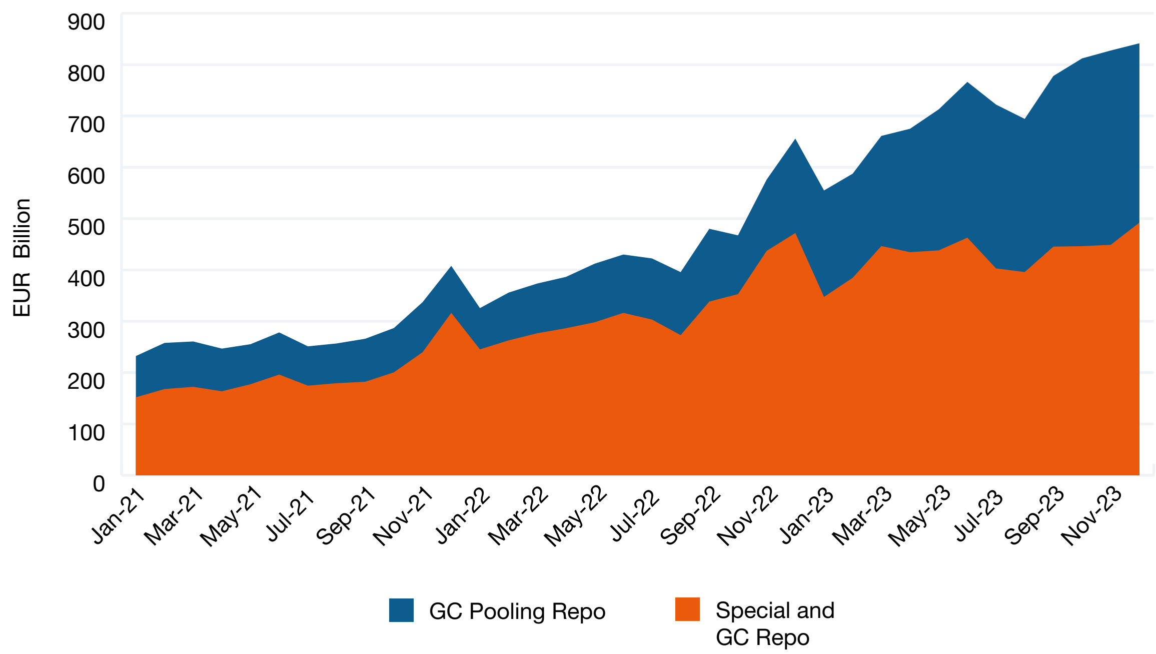
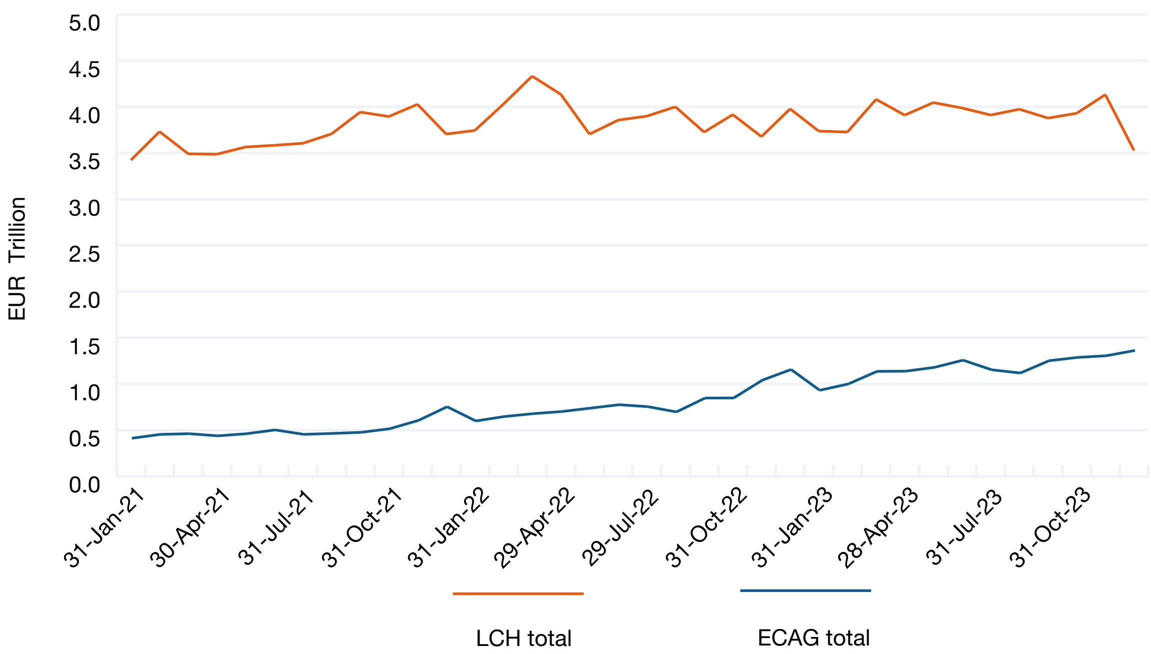


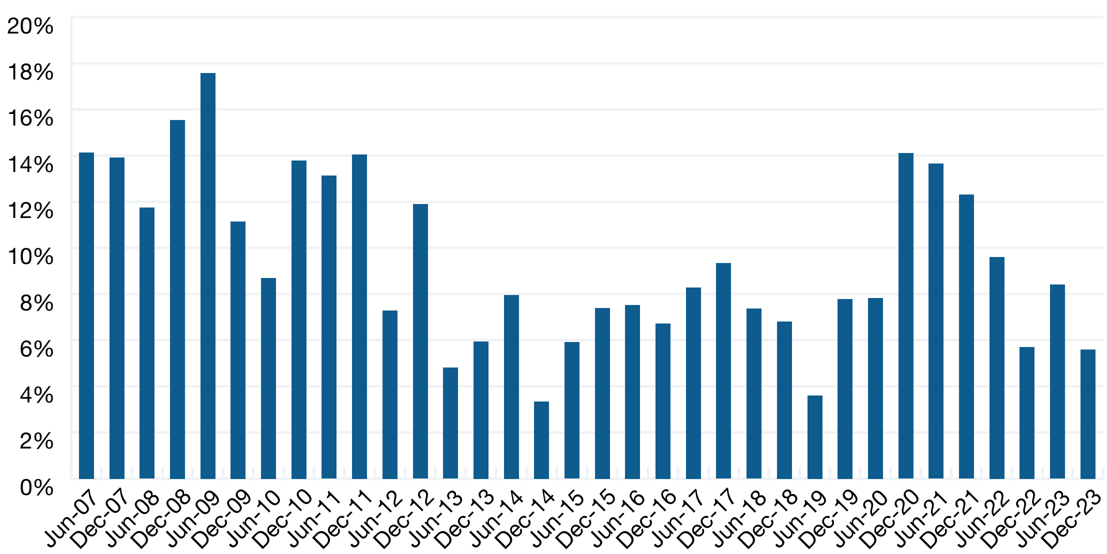
Figure 2.16 compares the outstanding values of balances at LCH and ECAG. LCH held 72.7% of the combined outstanding value at end-2023, compared with 76.6% at end-June.

Figure 2.16 – Daily outstanding value of cleared repos on LCH vs ECAG 2021-23 (EUR trillion, double-counted: calculated using same methodology as ICMA survey)



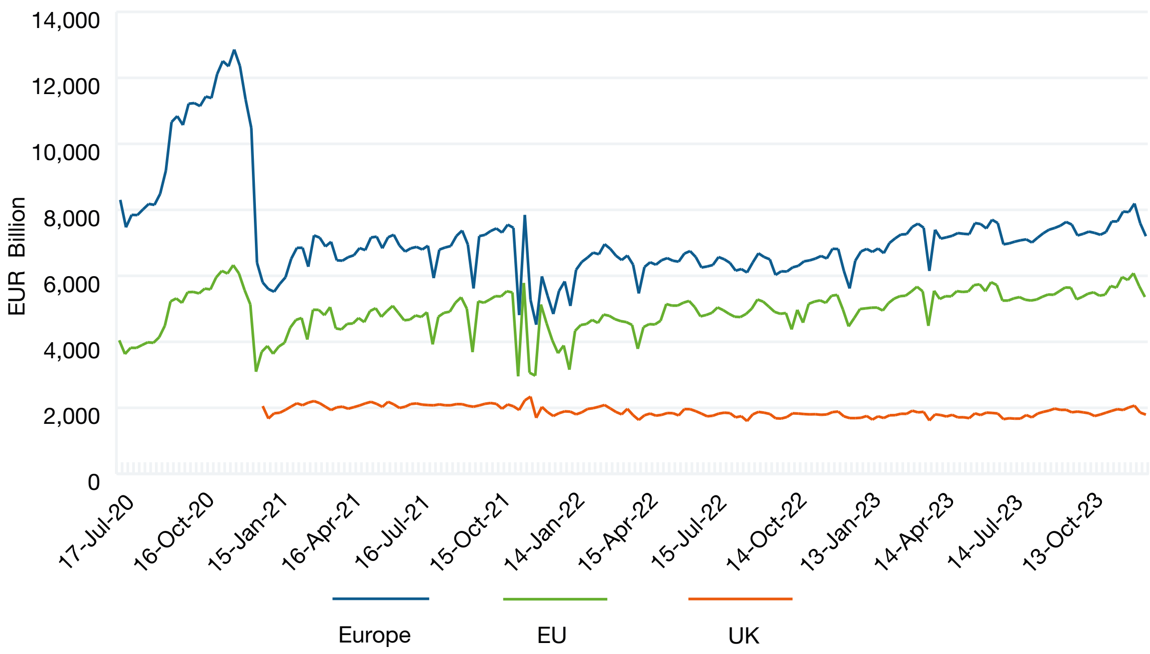
While the bulk of CCP-clearing is of repos transacted on ATS, a declining but still significant proportion continues to be transacted directly between parties and then registered with a CCP (see Figure 2.17). The share of this post-trade clearing by the survey sample fell slightly to 5.6% in December from a revised share of 6.0% in June.

Figure 2.17 – Post-trade CCP-clearing



The share of outstanding CCP-cleared repo in SFTR public data for the EU jumped to 48.3% in the second-half of 2023 from 41.1% over 2022, while the share in the UK (for sterling repo) fell further, to 17.8% from 18.9%, consistent with the data from LCH Ltd. The combined share of CCP-clearing in EU and UK SFTR public data increased to 34.3% from 31.0%, compared with 23.4% in the survey.

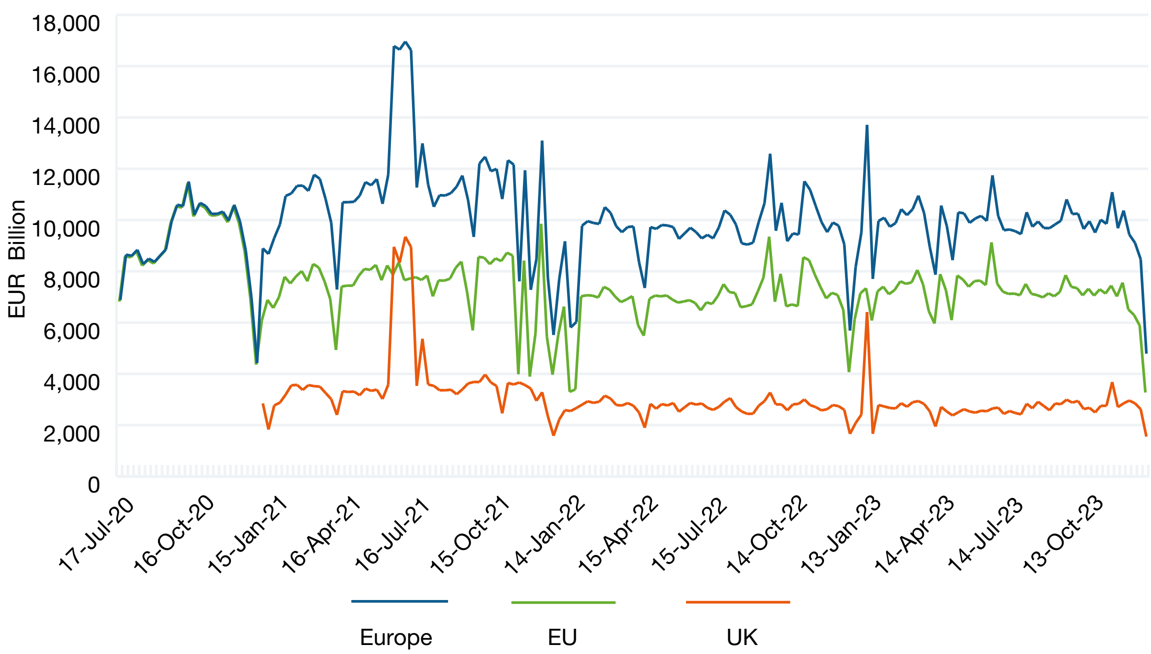
Figure 2.18 – Outstanding CCP-cleared repos reported under EU and UK SFTR (EUR trillion)



Sources: DTCC, KPDW, LSEG, RegisTR, author's calculations

While SFTR data shows increasing balances of CCP-cleared repo in the EU and little or no growth in similar balances in the UK (of sterling repo), SFTR turnover data suggests that much of the growth in balances in the EU reflect longer terms rather than more transactions being cleared (see Figure 2.19). Growth in average monthly turnover in the second-half of 2023 decelerated to -4.7% from 2.4% in the first-half in the case of EU transactions but increased to 0.4% from 0.0% in the UK. However, comparing the second-half of 2023 with the same period in 2022, in order to mitigate the impact of the end-year, puts the changes at -2.3% and 0.4%, respectively.

Figure 2.19 – New CCP-cleared repos reported under SFTR (EUR trillion)



Sources: DTCC, KPDW, LSEG, RegisTR, author's calculations

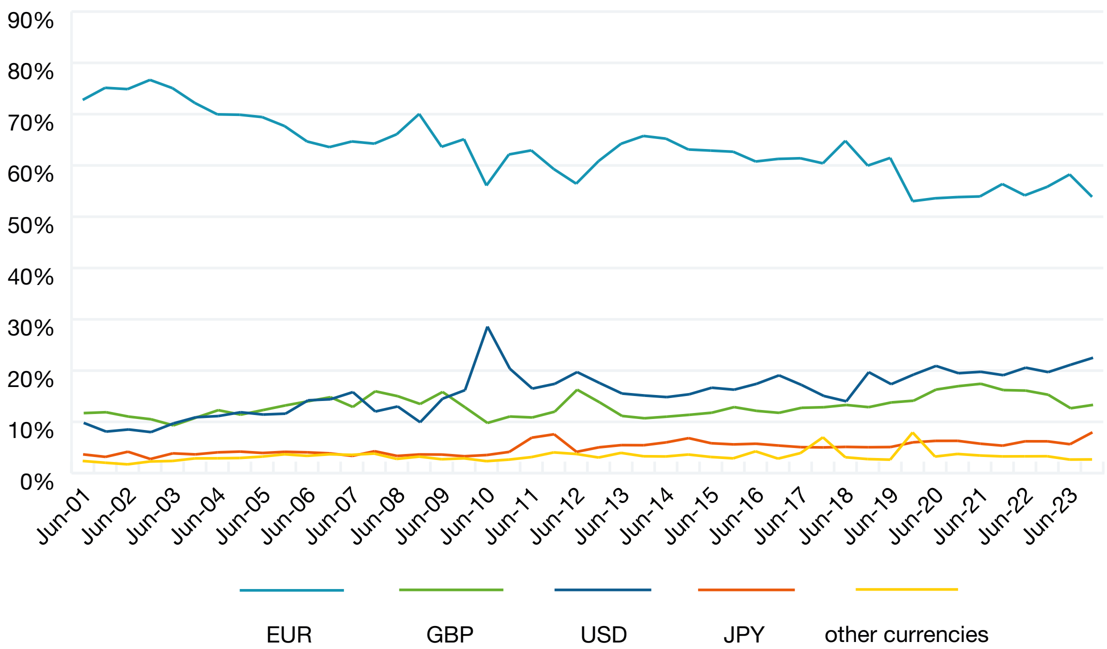
Cash currency analysis (Q1.3 and Q1.4)

The share of the euro in the survey retreated in December 2023, mainly in reaction to continued growth in the dollar and the recovery in the Japanese yen and pound sterling (see Table 2.6 and Figure 2.20). Activity in yen has been sparked by expectations of fundamental changes to monetary policy. Existing policy has given rise to collateral scarcity, with the central bank owning over half of JGBs and the entire amounts of some issues. In the case of sterling, there has been growing investor interest in the high yields offered by UK assets.

Table 2.6 – Cash currency analysis

	December 2023	June 2023	December 2022
EUR	54.4%	58.8%	56.4%
GBP	12.8%	12.1%	14.8%
USD	22.2%	20.8%	19.4%
DKK, SEK	1.2%	1.1%	1.2%
JPY	7.4%	5.1%	5.6%
CHF	0.2%	0.2%	0.2%
other APAC	0.8%	0.7%	1.3%
other currencies	1.0%	1.2%	1.1%
cross-currency	1.6%	1.6%	2.1%

Figure 2.20 – Currency analysis



Tri-party repo, as reported separately by the ICSDs and SIS, showed an almost opposite picture to the survey sample, with the share of the euro continuing to grow, that of sterling staying unchanged and the dollar and yen losing share (see Table 2.7). This probably reflected the securities-driven nature of the interest in dollars and yen in the bilaterally-managed repo market which may have led to dollar and yen-denominated securities being held back from the tri-party market.

Cross-currency tri-party repo reported separately by the ICSDs and SIS remained high, although it fell back to 33.1% from 40.3% in June.

Table 2.7 – Currency comparison in December 2023 (June 2023)

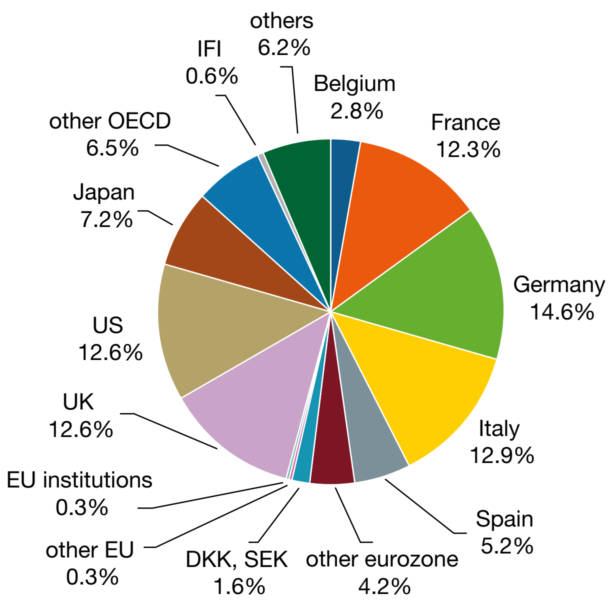
	main survey	ATS	tri-party
EUR	54.4% (58.8%)	89.8% (88.9%)	72.6% (68.9%)
GBP	12.8% (12.1%)	6.6% (7.3%)	5.7% (5.7%)
USD	22.2% (20.8%)	0.25% (0.5%)	19.3% (22.0%)
DKK, SEK	1.2% (1.1%)	0.0% (0.0%)	0.5% (0.7%)
JPY	7.4% (5.1%)	0.0% (0.0%)	1.0% (1.3%)
CHF	0.2% (0.2%)	3.3% (3.2%)	0.0% (0.4%)
other APAC	0.8% (0.7%)	0.0% (0.0%)	0.1% (0.6%)
etc	1.0% (1.2%)	0.0% (0.0%)	0.8% (0.5%)
cross-currency	1.6% (1.6%)		33.1% (40.3%)

Sources: Clearstream, Euroclear, SIS

Collateral analysis (Q1.9)

The share of all European securities (EU plus UK, government plus other) being held as collateral by the survey sample contracted to 66.8% from 71.6%, largely as a result of the expansion of holdings of US Treasuries (to 10.1% from 8.0%) and JGBs (to 5.7% from 3.8%) (see Figure 2.21).

Figure 2.21 – Collateral analysis (main survey)



The share of government securities in the pool of European collateral held by the survey sample continued to retreat, falling to 88.0% from 90.2% in June, the lowest since December 2018. This shrinkage was driven primarily by a contraction in the share of eurozone government securities to 52.2% from 56.9% and a fall in value but there was also a further increase in the share of European non-government collateral to 8.0% from 7.0% and an increase in their value. One exception was pfandbrief, holdings of which remained negligible at 0.1%, equivalent to just EUR 7.1 billion.

The largest contraction in eurozone government securities was in French issues, which dropped to 12.3% from 14.5% (see Table 2.8). There were also significant but smaller declines in the shares of government securities issued by Italy (to 12.9% from 13.7%), Spain (to 5.2% from 6.1%) and Belgium (to 2.8% from 3.5%).

On the other hand, German government securities remained at 13.2%, becoming once again the largest pool of collateral in the repo books of the survey sample. The share of UK government securities was largely unchanged at 11.2%. Securities issued by the EU held as repo collateral by the survey sample continued to remain nugatory (0.3%), although they had become an important component of tri-party repo (see below).

Table 2.8 – Collateral analysis

	December 2023	June 2023	December 2022
Germany	14.6%	14.6%	17.2%
Italy	12.9%	13.7%	12.2%
France	12.3%	14.5%	13.1%
Belgium	2.8%	3.5%	3.1%
Spain	5.2%	6.1%	5.2%
other eurozone	4.2%	4.4%	4.1%
DKK, SEK	1.6%	1.5%	1.5%
former EU Accession	0.3%	0.3%	0.3%
EU institutions	0.3%	0.2%	0.2%
UK	12.6%	12.8%	14.3%
international institutions	0.6%	0.6%	0.5%
US Treasuries	10.1%	8.0%	8.4%
other US	2.5%	2.2%	2.2%
Japan government	5.7%	3.8%	3.9%
other Japan	1.5%	1.4%	1.3%
other OECD ex APAC	6.2%	6.1%	6.2%
other APAC OECD	0.4%	0.3%	0.8%
eurobonds	1.9%	2.0%	1.6%
other fixed income	4.1%	3.7%	3.6%
equity	0.2%	0.3%	0.3%

There was a significant swing in holdings of US Treasury collateral from net securities lending by the survey sample (1.8% of the survey total) to net borrowing (0.4%). Net borrowing of JGBs and Danish non-government securities continued and increased, in the case of JGBs, to 2.7% from 1.2%. However, the shares of net borrowing declined in Italian government securities (to 1.1% from 2.1%), French government securities (to 0.4% from 1.2%), UK government securities (to 0.9% from 1.3%) and German government securities (to 0.8% from 1.2%).

There was an increase in the shares of net lending of UK non-government securities (to 0.8% from 0.6%), US non-government securities (to 0.5% from 0.1%), "other" OECD securities (to 1.5% from 0.6%) and Belgian non-government securities (to 0.9% from 0.7%). Net lending became relatively smaller in German and Belgian government securities (to 1.1% from 2.1% and to 0.8% from 1.0%, respectively).

Table 2.9 – Collateral analysis --- largest net flows to/from survey sample (percentage of survey total)

net collateral lending		net collateral borrowing	
other OECD	1.5%	JGB	2.7%
German government	1.1%	Italian government	1.1%
Belgian non-government	0.9%	UK government	0.9%
German non-government	0.8%	Danish non-government	0.7%
UK non-government	0.8%	French non-government	0.4%
Belgian government	0.8%	APAC eurobonds	0.4%
Spanish government	0.7%	US Treasuries	0.4%
US non-government	0.5%	French government	0.4%
equity	0.2%	Japanese non-government	0.3%
		Italian non-government	0.3%
		European eurobonds	0.3%
		non-OECD	0.3%
		EU	0.2%
		Austrian government	0.2%
		other eurobonds	0.2%

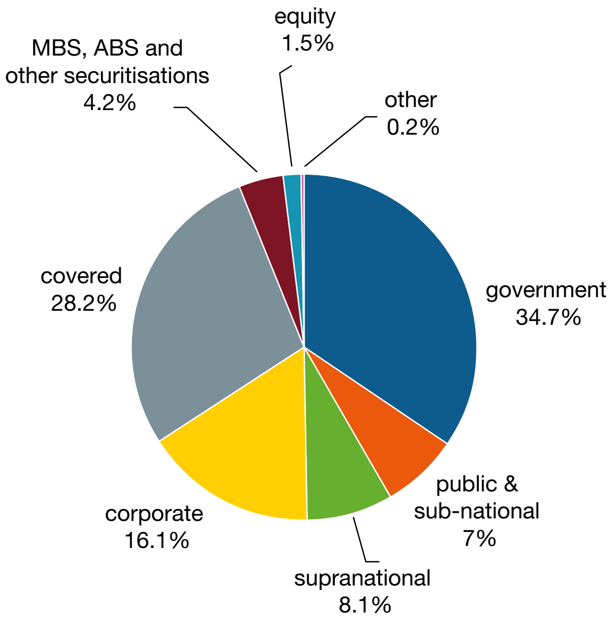
In tri-party repo managed by the ICSDs and SIS, the allocation of covered bonds continued to grow, reaching 28.2% from to 22.8% in June as this type of collateral flowed back from TLTRO, to be refinanced in the repo market or replaced by new issuance (see Table 2.10 and Figure 2.22). Corporate bond holdings in tri-party repo recovered but the share of government securities fell back sharply. The bulk of supranational collateral was provided by EU bonds (7.6%).

Table 2.10 – Tri-party repo collateral analysed by type of asset

	December 2023	June 2023	December 2022
government securities	34.7%	39.7%	38.2%
public agencies / sub-nationals	7.0%	7.4%	9.8%
supranational agencies	8.1%	7.8%	9.8%
corporate bonds	16.1%	14.0%	19.7%
covered bonds	28.2%	22.8%	16.0%
residential mortgage-backed	0.9%	3.7%	1.6%
commercial mortgage-backed	0.3%	1.1%	0.4%
other asset-backed	0.8%	0.4%	1.0%
CDO, CLN, CLO, etc	2.1%	1.2%	1.6%
convertible bonds	1.3%	1.3%	0.2%
equity	0.2%	0.2%	0.4%
other	0.2%	0.5%	1.2%

Sources: Clearstream, Euroclear, SIS

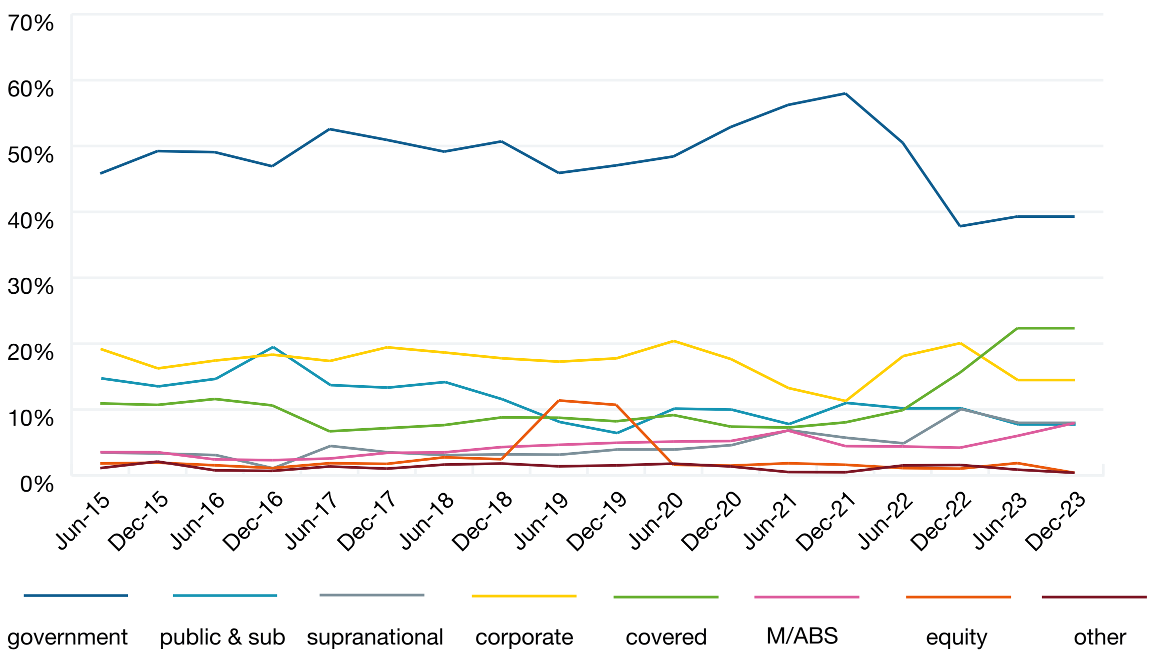
Figure 2.22 – Collateral analysis (selected tri-party agents) by type of asset



Sources: Clearstream, Euroclear, SIS

After increasing by +51.7% in the first-half of 2023 to a share of 39.7% of tri-party repo, the growth in all government securities allocated as collateral stalled (see Figure 2.23). Their share was pushed down to 34.7% by continued rapid growth in covered bonds (+40.2% to a share of 28.2% or EUR 58.1 billion) and a switch back towards supranational and corporate bonds (to 8.1% or EUR 58.3 billion and 16.1% or EUR 115.9 billion, respectively). There was also an expansion in the use of securitised bonds, albeit from a low base (to 2.9% from 1.6%), but a sharp drop in residential MBS (to 0.9% from 3.7%).

Figure 2.23 – Historic collateral analysis (selected tri-party agents) by type of asset



Sources: Clearstream, Euroclear, SIS

Changes in the composition of tri-party collateral as reported separately by the ICSDs and SIS were generally more modest than in the June survey and in the opposite direction to bilaterally-managed collateral on the books of the survey sample in the latest survey (see Table 2.11). The shares of Belgian and Italian government securities and EU bonds increased but were reduced in Dutch, German, Japanese, UK and US government securities. Austrian, Belgian, Italian, UK, US and especially French non-government securities increased share, as did pfandbrief (to 2.4%) and European and "other" Eurobonds (to 19.4% from 19.0%, where "other" Eurobonds are those issued outside Europe, Asia or North America). European eurobonds became the largest pool of tri-party collateral (14.7%), followed by French non-government securities (11.8%), EU bonds (7.1%), French government securities (6.1%), Belgium non-government securities (5.7%), Italian government securities and "other" eurobonds (4.7% each).

Table 2.11 – Triparty repo collateral analysed by type of asset --- largest changes (percentage of survey total)

increases		decreases	
French non-government	+3.8%	**US Treasuries**	-0.8%
EU	+1.4%	**JGB**	-0.4%
European eurobonds	+1.2%	**US non-government**	-0.4%
UK non-government	+1.0%		
Austrian non-government	+0.8%		
Italian government	+0.8%		
pfandbrief	+0.8%		
Belgian non-government	+0.6%		

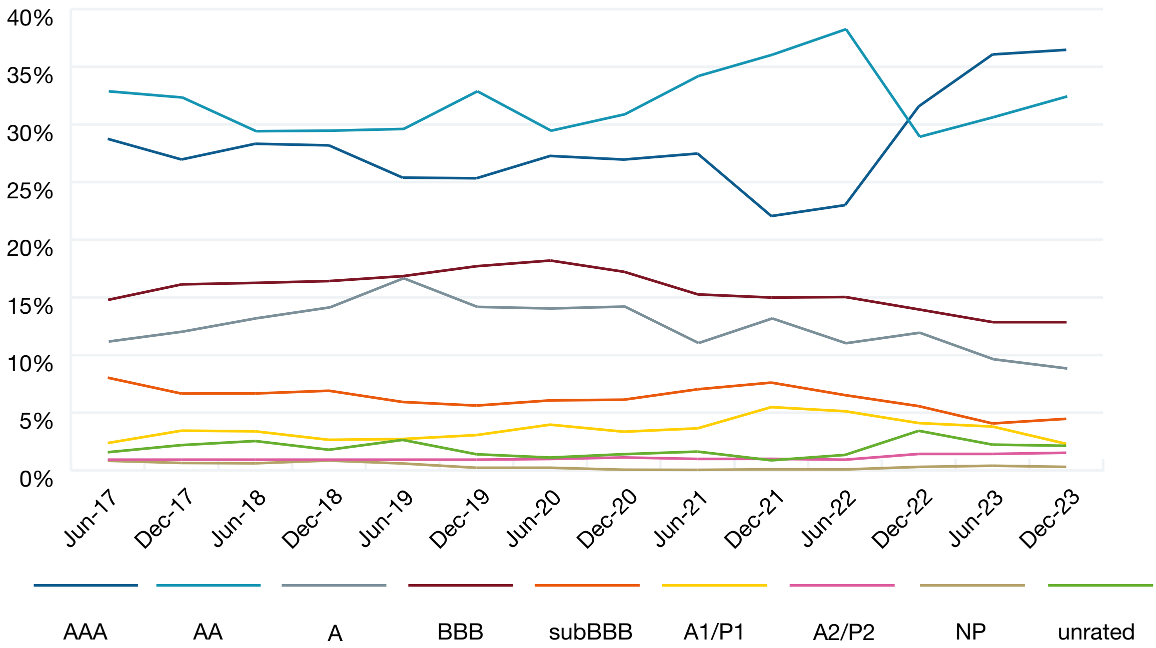
The value and share of AAA-rated securities allocated as collateral in tri-party repo stabilised but that of AA-rated securities continued to grow, largely at the expense of A-rated and money market securities (see Table 2.12 and Figure 2.24). The majority of government bonds are AA-rated.

Table 2.12 – Collateral analysis (selected tri-party agents) by credit rating

	December 2023	June 2023	December 2022
AAA	36.7%	36.3%	31.8%
AA	32.2%	30.4%	28.7%
A	8.7%	9.5%	11.8%
BBB	12.6%	12.6%	13.7%
below BBB-	4.7%	4.3%	5.8%
A1/P1	2.3%	3.8%	4.1%
A2/P2	0.3%	0.4%	0.3%
Non-Prime	0.6%	0.5%	0.5%
unrated	1.9%	2.0%	3.2%

Sources: Clearstream, Euroclear, SIS

Figure 2.24 – Historic collateral analysis (selected tri-party agents) by credit rating



Sources: Clearstream, Euroclear, SIS

There was a general decline in weighted average haircuts on tri-party collateral, with the exception of supranational securities, covered bonds and equity (see Table 2.13). The declines were particularly significant for MBS and other securitised bonds, although they remained above the levels reached in June.

Table 2.13 – Weighted-average collateral haircuts (all tri-party agents) analysed by type of asset

	December 2023	June 2023	December 2022
government securities	2.3%	2.7%	3.3%
public agencies / sub-nationals	3.7%	4.1%	3.5%
supranational agencies	3.6%	3.0%	3.0%
corporate bonds (financial)	4.3%	4.8%	6.1%
corporate bonds (non-financial)	7.1%	7.5%	7.2%
covered bonds	2.9%	2.8%	2.9%
residential mortgage-backed	4.9%	6.8%	2.9%
commercial mortgage-backed	4.5%	10.9%	2.0%
other asset-backed	5.3%	10.8%	5.7%
CDO, CLN, CLO, etc	8.2%	13.2%	5.2%
convertible bonds	9.7%	7.3%	8.8%
equity	6.5%	4.8%	7.2%
other	5.9%	5.0%	4.5%

Sources: BoNYM, Clearstream, Euroclear, JPMorgan, SIS

Contract analysis (Q1.5)

Figure 2.25 – Contract analysis

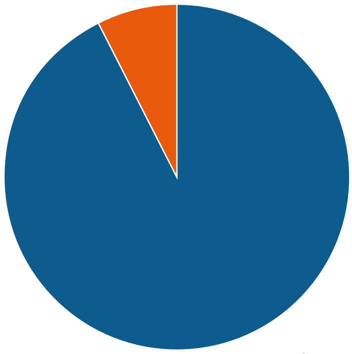


Table 2.14 – Contract comparison in December 2023 (June 2023)

	main survey	ATS	tri-party
repurchase transactions	92.6% (93.4%)	93.8% (92.9%)	100.0% (100.0%)
documented sell/buy-backs	7.3% (6.5%)	6.2% (7.1%)	
undocumented sell/buy-backs	0.0% (0.1%)		

Sources: BoNYM, Clearstream, Euroclear, JPMorgan, SIS, CME, Eurex, Euronext, SIX, TP ICAP

The share of repo master agreements in place among survey participants that were ICMA Global Master Repurchase Agreements (GMRA) increased to 88.1%.

In December, the survey started to ask about repo that participants have sponsored, guaranteed or indemnified (and which are therefore not on their balance sheets or have not been reported previously in the survey). The survey sample reported that these amounted to 4.2% of the total outstanding position, of which, some 72% was in euros and about 22% was in dollars. Only a small number of survey participants reported this type of activity and the current number is likely to be an underestimate.

Repo rate analysis (Q1.6)

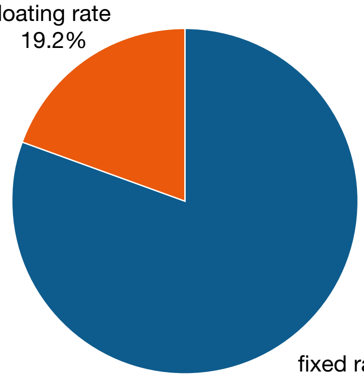
The shares of floating-rate repos in the survey and in trading on ATS continued the increase which started in 2020 in response to expectations of rising interest rates to reach 19.2%, approaching the record of 21.1% seen in June 2018 (see Table 2.15 and Figure 2.26).

Table 2.15 – Repo rate comparison in December 2023 (June 2022)

	main survey	ATS	tri-party
fixed rate	80.8% (85.1%)	97.0% (96.7%)	87.9% (93.7)%
floating rate	19.2% (14.9%)	3.0% (3.3%)	12.1% (6.3%)

Sources: BoNYM, Clearstream, Euroclear, JPMorgan, SIS, CME, Eurex, Euronext, SIX, TP ICAP

Figure 2.26 – Repo rate analysis



Maturity analysis (Q1.7)

The survey did not display the usual end-year seasonality. Instead, short-dates increased to 56.2% from 55.3% of the repo books of the survey sample (see Table 2.16 and Figure 2.27). This was largely due to growth in terms of more than one week (see below).

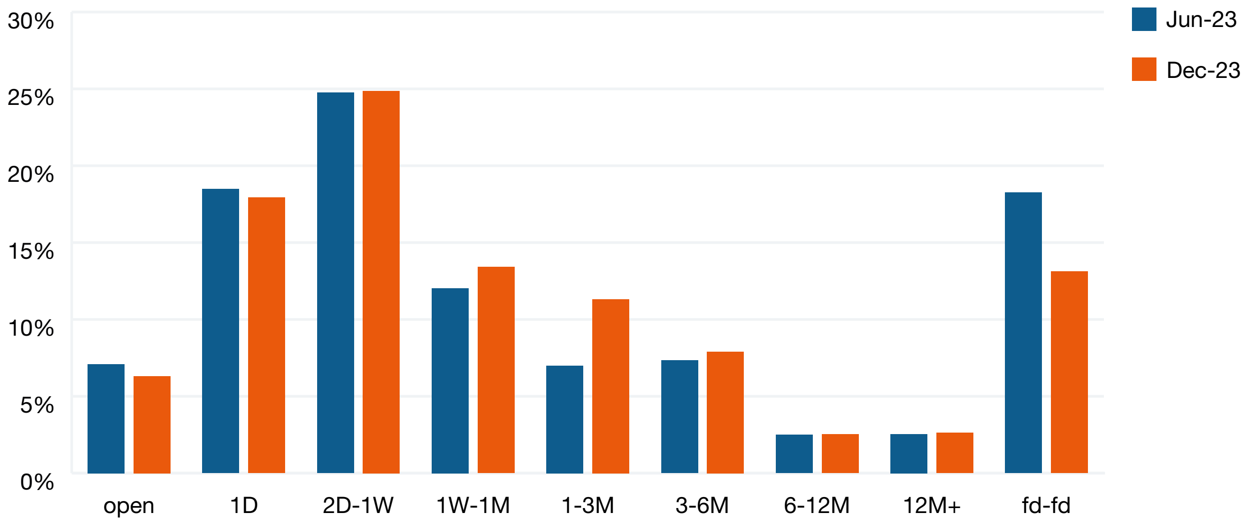
Forward repo continued to retreat from the record share of 20.2% in December 2022. Some part of that decline is likely to reflect the change in the definition of forward repo in the survey to T+5 or later.[9] However, there could also have been a reduction in forwards because of benign market conditions at the end of the year, which may have lessened the need to use forwards to anticipate the seasonal tightening of market conditions as dealers contract their balance sheets.

Table 2.16 – Maturity analysis

	December 2023	June 2023	December 2022
open	6.3%	7.1%	7.8%
1 day	17.9%	18.5%	17.8%
2 days to 1 week	24.9%	24.7%	19.7%
1 week to 1 month	13.4%	12.0%	10.8%
>1 month to 3 months	11.3%	7.0%	11.9%
>3 months to 6 months	7.9%	7.3%	7.1%
>6 months to 12 months	2.5%	2.5%	2.2%
>12 months	2.6%	2.5%	2.5%
forward-start	13.1%	18.3%	20.2%

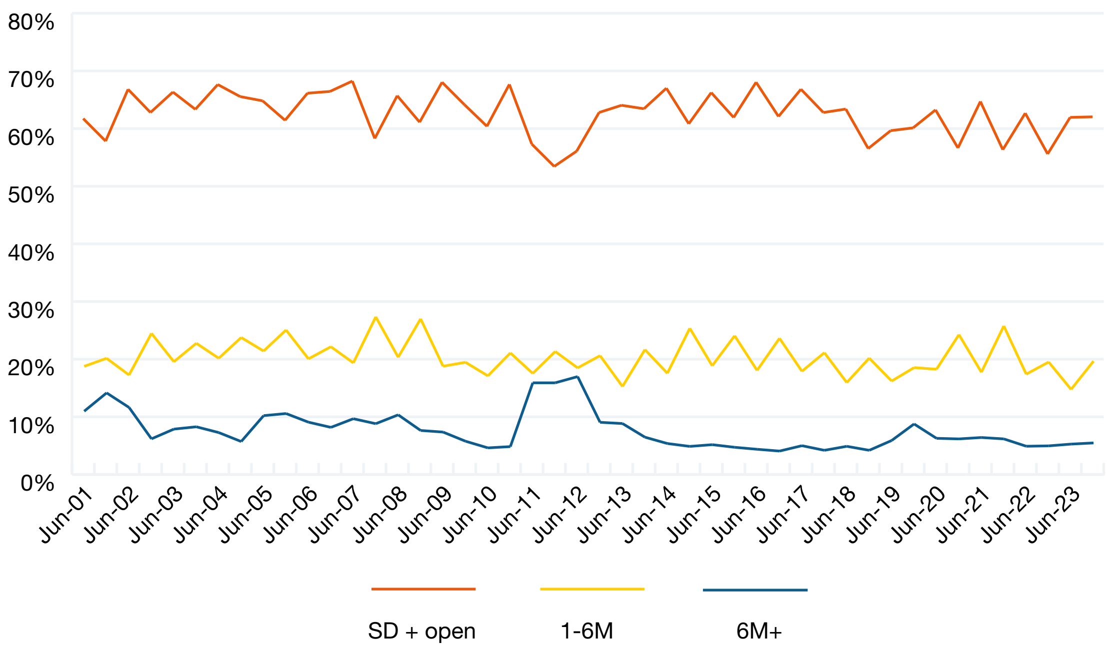
9 Forward repos are defined as transactions in which the initial exchange of cash and collateral takes place more than two days in the future and usually weeks or months later. However, this definition captures non-forward repos for later-than-normal settlement, which are referred to as being for "corporate value dates".

Figure 2.27 – Maturity analysis (main survey)



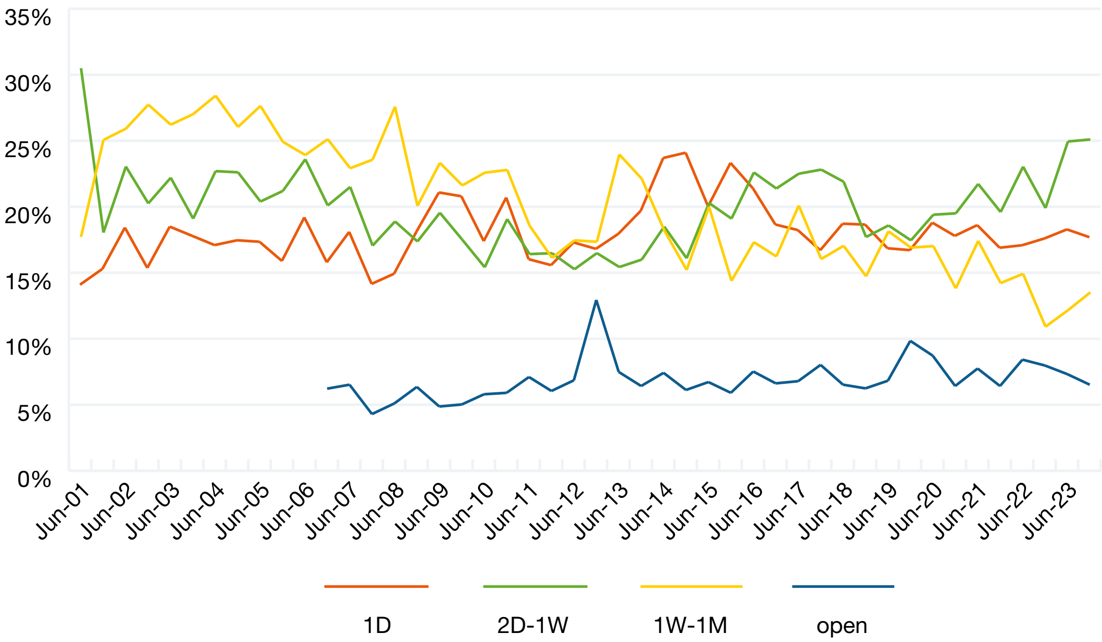
One to six-month repos continued to be highly seasonal, peaking in December and troughing in June (see Figure 2.28). This maturity band is often driven by activity in collateral swaps, which are exchanges of securities, often conducted by means of back-to-back repos and reverse repos, used to manage holdings of high-quality liquid assets (HQLA) over end-year regulatory reporting dates.

Figure 2.28 – Maturity analysis: non-forward terms (main survey)



Within short-dates, the share of repos with one week and one month remaining to maturity continued to recover, reaching 13.4% (see Figure 2.29). However, this maturity band still appears to be in secular decline. The counterpart is growth in the two-day to one-week band.

Figure 2.29 – Maturity analysis: breakdown of short dates plus open (main survey)



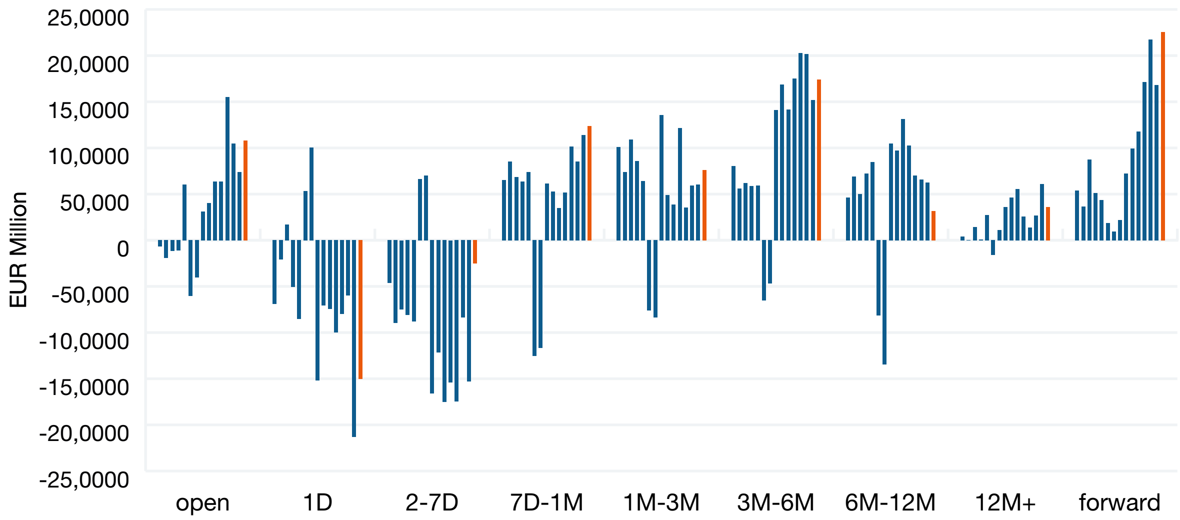
Despite the growth in short dates, the weighted average term-to-maturity of outstanding repos lengthened to 31-68 days from 30-66 days in June. This was largely due to the strong performance of the one to three-month band, and to a lesser extent, three to six months. As noted, changes in these bands are likely driven by collateral swaps to reduce balance sheets at end-year.[10]

The survey sample continued to run a negative funding gap, borrowing between one day and one week, and lending between beyond one week and forward (there was also net lending in open repo) (see Figure 2.30). The negative funding gap shrank in June but recovered in December, driven mainly by a sharp drop in net repo below one week that more than offset increases in net reverse repo between one week and six months as well as in open and forward repos.

Net borrowing by the survey sample between two and seven days continued to be strongly seasonal. Repos with a remaining term between three and six months and forward repos remained the principal channels for the net lending of cash and borrowing of securities by the survey sample.

10 The lower end of the range assumes that all transactions have the minimum term in each maturity band: the upper end assumes the maximum and a term of 31 days for open repo.

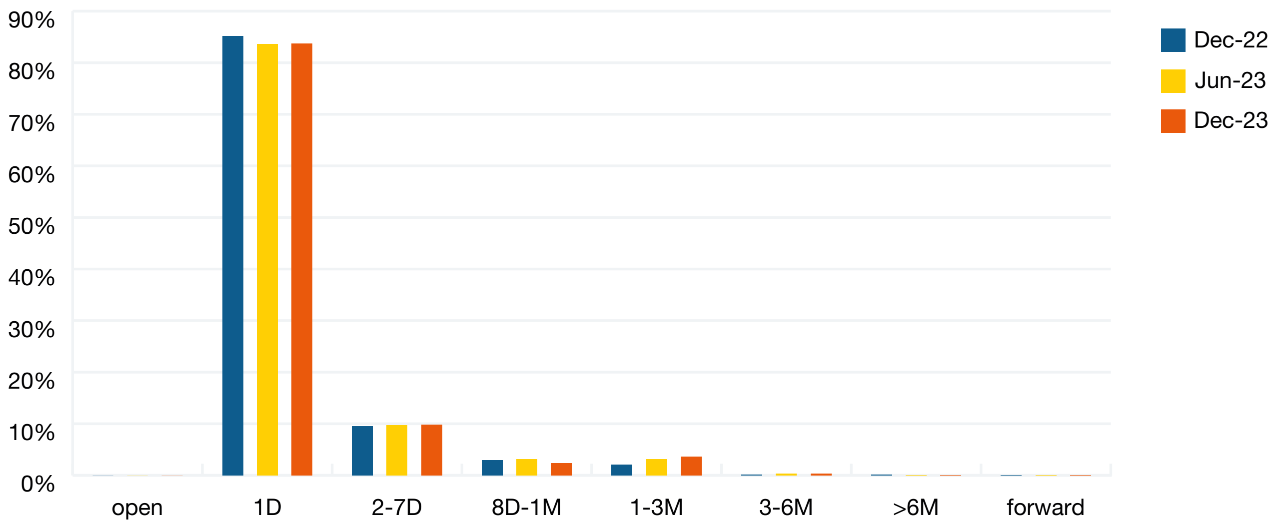
Figure 2.30 – Maturity analysis: maturity transformation profile --- net reverse repo (main survey)



Note: Each column represents one survey and each cluster of columns represents the change in the share of a particular tenor over surveys going back to December 2016. The red columns represent the latest two surveys.

The average term-to-maturity of ATS repo remained heavily skewed towards the very short term (see Figure 2.31). However, in December, short dates fell back to 96.0% from 96.5% in June, largely due to a relative decrease in the one-week to one-month maturity band to the lowest share since December 2019. One to three-month ATS repo increased share again, reaching 3.6% from 3.1%.

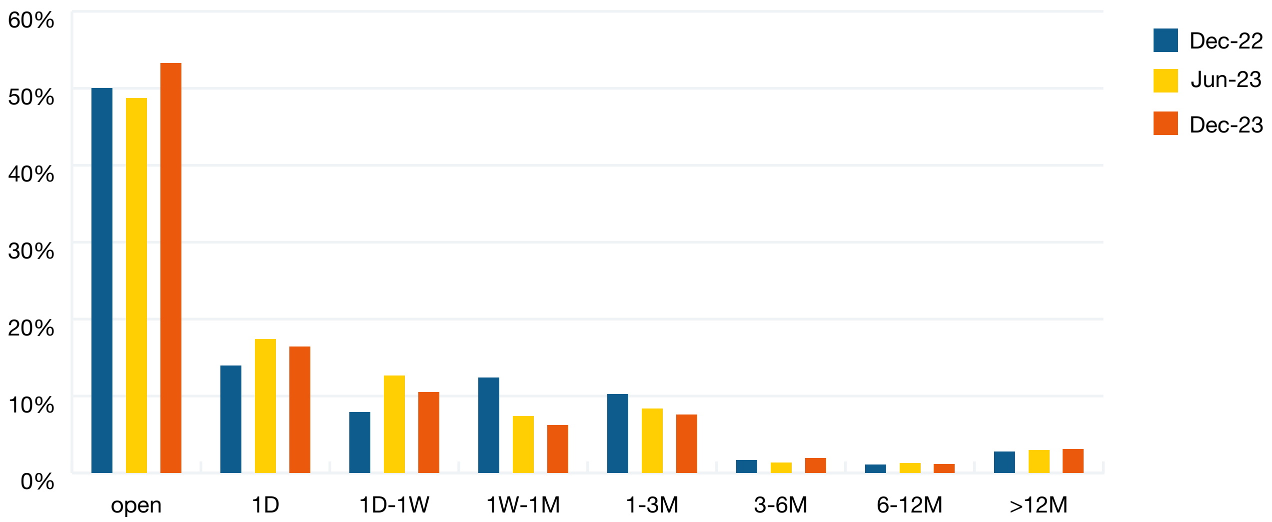
Figure 2.31 – Maturity analysis (ATS)



Sources: CME, Eurex, Euronext, SIX, TP ICAP

In tri-party repo, agents reported a drop in the share of all maturities out to three months as a result of an increase in open positions to 53.3% from 48.7% (see Table 2.17 and Figure 2.32). Short dates fell to 33.1% from 37.4%. These shifts may reflect expectations of further interest rate hikes in the second-half of 2023.

Figure 2.32 – Maturity analysis (tri-party agents)



Sources: Clearstream, Euroclear, SIS

Table 2.17 – Maturity comparison in December 2023 (June 2022)

	main survey	ATS	tri-party
open	6.3% (7.1%)	n/a	53.3% (48.7%)
1 day	17.9% (18.5%)	83.8% (83.7%)	16.4% (17.4%)
2 days to 1 week	24.9% (24.7%)	9.8% (9.7%)	10.5% (12.7%)
1 week to 1 month	13.4% (12.0%)	2.4% (3.2%)	6.2% (7.4%)
>1 month to 3 months	11.3% (7.0%)	3.6% (3.1%)	7.6% (8.4%)
>3 months to 6 months	7.9% (7.3%)	0.3% (0.3%)	1.9% (1.3%)
>6 months to 12 months	2.5% (2.5%)	0.0% (0.0%)	1.1% (1.3%)
>12 months	2.6% (2.5%)	0.0% (0.0%)	3.1% (3.0%)
forward	13.1% (18.3%)	0.0% (0.0%)	

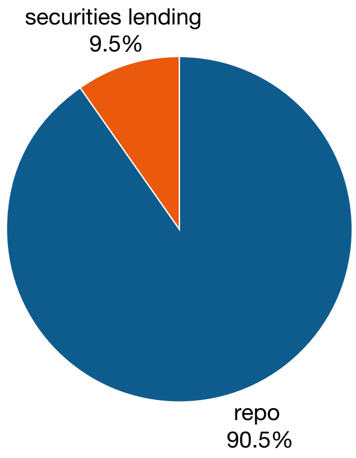
Sources: Clearstream, Euroclear, SIS, CME, Eurex, Euronext, SIX, TP ICAP

Product analysis (Q2)

The survey measures securities lending conducted on repo desks as a share of all the business executed on these desks. The share of securities lending in December reversed direction after its recent recovery and fell back from 18.0% in June to a record low of 9.5%, a level last seen in 2016-17 (see Figure 2.33).

Securities lending from repo desks remained mainly against fixed-income collateral (98.4%) and for fixed terms (58.6%), although fixed-term lending was much lower than in June (73.7%). A significant share of collateral (36.0%) was issued in the eurozone but most originated outside (44.3%), while the rest was domestic (19.7%).

Figure 2.33 – Product analysis



Concentration analysis

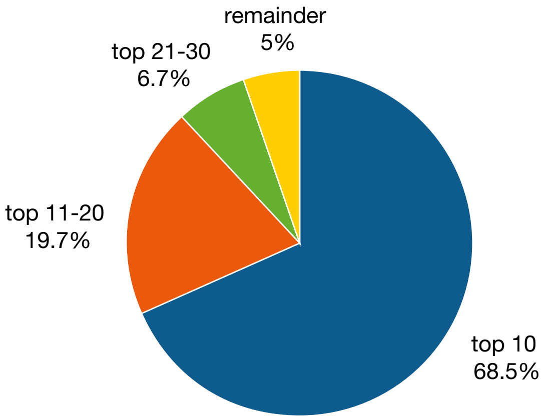
The exposures of the survey sample continued to become more concentrated in December 2023 in terms of the shares of the top three deciles of participants (see Table 2.18 and Figure 2.34).

Table 2.18 – Concentration analysis

	December 2023	June 2023	December 2022
top 10	68.5%	67.8%	67.0%
top 20	88.3%	86.7%	86.3%
top 30	95.0%	94.6%	94.4%
other	5.0%	5.4%	5.6%

NB The numbers for June 2023 and December 2022 have been revised.

Figure 2.34 – Concentration analysis



The increase in the concentration of the exposures of the survey sample contributed to a weakening in effective competition as measured by the Herfindahl Index, which rose to its highest level since June 2020 (see Table 2.19).

Table 2.19 – Herfindahl Index[11]

	index	numbers in survey
December 2003	0.045	76
June 2004	0.040	81
December 2004	0.047	76
June 2005	0.043	81
December 2005	0.043	80
June 2006	0.042	79
December 2006	0.050	74
June 2007	0.041	76
December 2007	0.040	68
June 2008	0.044	61
December 2008	0.049	61
June 2009	0.051	61
December 2009	0.065	59
June 2010	0.105	57
December 2010	0.064	57
June 2011	0.074	58
December 2011	0.065	62
June 2012	0.062	60
December 2012	0.054	69
June 2013	0.046	63
December 2013	0.046	66
June 2014	0.046	64
December 2014	0.043	64
June 2015	0.044	64
December 2015	0.041	70
June 2016	0.050	66
December 2016	0.056	65
June 2017	0.052	64
December 2017	0.049	64
June 2018	0.053	62
December 2018	0.060	59
June 2019	0.054	59
December 2019	0.059	60

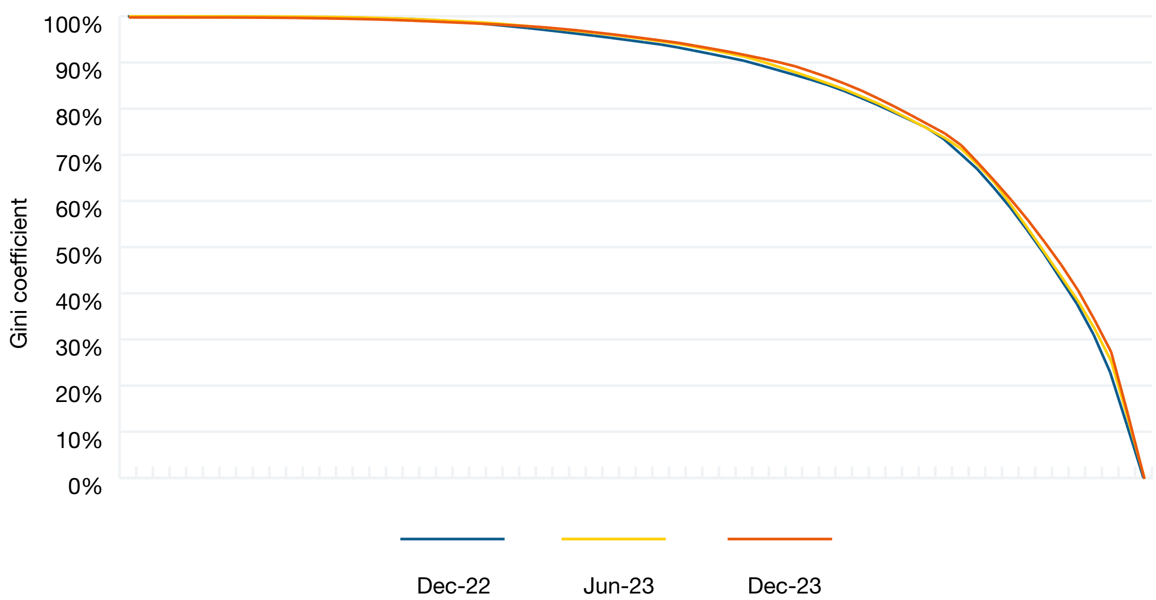
11 The Herfindahl Index is the sum of the squares of market shares divided by the square of the sum of market shares. The higher the index, the lower the degree of competition. If the index is higher, the more a single institution has a dominant market share and/or the more insignificant the market shares of all the other survey participants. A market in which several institutions have very large market shares can therefore have a relatively low index.

	index	numbers in survey
June 2020	0.069	61
December 2020	0.062	60
June 2021	0.064	59
December 2021	0.060	56
June 2022	0.063	56
December 2022	0.057	61
June 2023	0.060	62
December 2023	0.065	60

NB The indices from and including December 2021have been revised.

The increase in the concentration of the business of the survey sample can be seen in the upwards movement in the Gini coefficient curve (see Figure 2.35).

Figure 2.35 – Cumulative distribution of market share



Chapter 3: Conclusion

The forces driving the growth in the European repo market (as proxied by the survey sample) in the first-half of 2023 persisted into the second-half. Even as central banks came to the end of their rate-hiking cycle, traditional investors continued to return to the repo market and new participants arrived in order to take advantage of higher interest rates, wider term premia and the security provided by repo. In addition, banks from peripheral eurozone countries continued to refinance assets that flowed back from the ECB's TLTRO (Targeted Long-Term Refinancing Operation), which was reflected in further growth in the high share of covered bonds in tri-party repo.

In the second-half of 2023, the rate of growth in outstanding balances of the survey sample was steady compared with the first-half but lower than in 2022. Growth also became more concentrated among the largest firms.

The net reverse repo position (net cash lending and securities borrowing) of the survey sample, which was dramatically reduced in June, was largely restored in December. Net reverse repo had been a growing feature since central banks began implementing extraordinary monetary policy measures in 2012 and was seen as a reflection of the need by dealers (who dominate the survey sample) to borrow securities made scarce by central bank purchases. The pivot by central banks from QE to QT in 2022, by withdrawing cash and releasing collateral, was expected to reduce securities borrowing by dealers. The rapid growth in the issuance of government securities was also seen as a factor. Indeed, that appears to have been the case in European government securities (other than UK gilts, where higher yields revived investor interest). However, in the second-half of 2023, many dealers switched balance sheet capacity from Europe to the US and Asia, where expectations of changes in monetary policy were seen as offering more lucrative trading opportunities. This led to an increase in borrowing of US Treasuries and JGBs, which pushed the survey sample back into a net reverse repo position.

The shift out of Europe into the US and Asia was also reflected in increased positions in the US dollar and Japanese yen, in the withdrawal of US Treasuries and JGBs from tri-party repo, and in higher shares for cross-border trading into and out of the eurozone. It may also have impacted activity on automatic repo trading systems (ATS). Other than GC financing facilities, the share of ATS contracted in the repo books of survey sample, probably because the ATS specialise in European government securities. However, reduced business on ATS may also have been indicative of easier supplies of both cash and collateral for dealers as central banks withdrew from the market and bond issuance surged, reducing the need for dealers to rebalance cash and collateral inventory, which they do across ATS.

The reduction in business across ATS (which is overwhelmingly cleared across CCPs) had a knock-on effect on CCP-clearing outside of GC financing, including reduced post-trade clearing. The share of CCP-clearing of sterling-denominated repo against UK gilts also declined further.

On the other hand, there seems to have been generally strong growth in dealer-to-customer (D2C) business, at least that executed across automated repo trading systems. The added significance of this automated repo trading is that major participants on the customer side are hedge funds.

The pivot from QE to QT is reported to have impacted the frequency and expensiveness of specials in the repo market and has also boosted tri-party repo, which is part of the cash-driven GC segment. However, tri-party repo was still mainly driven by investment in GC financing facilities, which combine tri-party collateral management and CCP-clearing and form a niche eurozone market segment offering more term repos which is accessible to some buyside institutions.

Rising interest rates fueled further growth in floating-rate repo.

Forward repo contracted again. This is likely to have partly reflected a change in the survey definition but benign market conditions towards end-year may have lessened the need to anticipate the seasonal tightening of market conditions with forward transactions.

About the Author

This report was compiled by Richard Comotto, who is Senior Consultant to the ICMA's European Repo and Collateral Council. He is also author of the ICMA's *Guide to Best Practice in the European Repo Market* and its *Repo FAQs*, Course Director of the ICMA Professional Repo Market and Collateral Management Course and of the ICMA-ISLA GMRA-GMSLA Workshop and author of the ICMA SFTR *Task Force's Repo Reporting Recommendations* and the ICMA *CSDR Cash Penalty Best Practice Recommendations and FAQ*s. In addition, Richard provides technical assistance on behalf of ICMA, IMF, World Bank, Asian Development Bank and other organisations to developing repo markets around the world.

Appendix A: Survey Guidance Notes

The data required by this survey are: the total value of the repos and reverse repos booked by your repo desk that are still outstanding at close of business on Wednesday, December 13, 2023, and various breakdowns of these amounts, as well as the total value of all repos and reverse repos turned over the six months since the previous survey (which was on June 14, 2023).

Branches of your bank in other countries in Europe may be asked to complete separate returns. If your repo transactions are booked at *another branch*, please forward the survey form to that branch. If branches of your bank in *other countries* run their own repo books, please copy the survey form to these branches, so that they can also participate in the survey. Please feel free to copy the survey form to other banks, if you discover that they have not received it directly.

Guidance Notes

General guidance

a) Please fill in as much of the form as possible. For each question that you answer, you will receive back your ranking in that category.

b) If your institution does not transact a certain type of repo business, please enter 'N/A' in the relevant fields. On the other hand, if your institution does that type of business but is not providing the data requested by the survey, please do not enter anything into the relevant field. If your institution does that type of business but has no transactions outstanding, please enter zero into the relevant field.

c) You only need to give figures to the nearest *million*. However, if you give figures with *decimal points*, please use full stops as the symbols for the decimal points, *not* commas. For *nil returns*, please use zeros, *not* dashes or text. Do not use negative signs.

d) Please do not re-format the survey form, ie change its lay-out, and do not leave formulae in the cells of the underlying spreadsheet.

e) Include all varieties of repos, ie repurchase transactions (classic repos and pensions livrées) and sell/buy-backs (e.g. simultaneas and PCT). There is a separate question (see question 2) on securities lending and borrowing transactions (including securities lending and borrowing against cash collateral).

f) Exclude repo transactions undertaken with central banks as part of their official money market operations. Other repo transactions with central banks, e.g. as part of their reserve management operations, should be included.

g) Give the value of the *cash* which is due to be repaid on all repo and reverse repo contracts (*not* the market value or nominal value of the collateral) that are still *outstanding at close of business* on Wednesday, December 13, 2023. This means the value of transactions at their repurchase prices.

h) "Outstanding" means repos and reverse repos with a repurchase date, or which will roll over, on or after Thursday, December 14, 2023. You should include all *open repos and reverse repos* that have been rolled over from Wednesday, December 13, 2023, to a later date and all *forward repos and reverse repos* that are still outstanding as forward contracts at close on Wednesday, December 13, 2023.

i) Give separate totals for (a) repos plus sell/buy-backs and (b) reverse repos plus buy/sell-backs.

j) The survey seeks to measure the value of repos and reverse repos on a transaction date basis, rather than a purchase date basis. This means that you should include all repo and reverse repo contracts that have been agreed <u>before</u> close of business on Wednesday, December 13, 2023, even if their purchase dates are later. An unavoidable consequence of using the transaction date is that tom/next and spot/next transactions that are rolled over will be counted more than once, eg a tom/next repo transacted on the day before the survey date and rolled over on the survey date will feature twice.

k) Give *gross* figures, i.e. do *not* net opposite transactions with the same counterparty. If this is not possible, please indicate that your figures are net.

l) Do not report synthetic repos.

m) You should include *intra-group* transactions between different legal entities or between foreign branches and the parent company.

Guidance on specific questions in the survey form

1.1 Transactions (1.1.1) direct with counterparties or (1.1.2) through voice-brokers should exclude all repos transacted over an ATS (see below). These should be recorded under (1.1.3).

(1.1.2) Transactions through voice-brokers should be broken down in terms of the location of the counterparties, rather than the location of the voice-brokers.

(1.1.3) "ATSs" are automatic or semi-automatic trading systems (e.g. BrokerTec, Eurex Repo, MTS, eRepo and SIX Repo) but not voice-assisted electronic systems used by voice-brokers (where voice-brokers record and communicate transactions agreed by telephone or electronic messaging) or automated systems such as GLMX or TradeWeb (which offer a request-for-quote (RFQ) trading model). Nor does use of an ATS include trading assisted by electronic means of structured messages and confirmations such as Bloomberg's RRRA and similar screens. Transactions on automated trading systems (RFQ systems) should be included in (1.2.2) --- see below. Transactions through voice-assisted systems should be included in (1.1.2). Anonymous transactions through an ATS with a central counterparty (e.g. Euronext Clearing (formerly CC&G), LCH, BME Clearing (formerly MEFFClear) and Eurex Clearing) should be recorded in either (1.1.3.4) or (1.1.3.5). (1.1.3.4) is for GC financing systems. These are ATS that are connected to a CCP <u>and</u> a tri-party repo service. Examples include Eurex Repo Euro GC Pooling (EGCP), LCH SA's €GCPlus and LCH Ltd's £GC. They do not include GC basket trading on ATS in which the seller manually selects the securities to be delivered from a list prescribed by the ATS. This activity may be cleared across a CCP but does not involve a tri-party service and should be recorded in (1.1.3.5).

(1.2.1) This item includes all the transactions recorded in (1.1.3) <u>plus</u> any transactions executed directly with counterparties and via voice-brokers which are then registered with and cleared through a central counterparty.

(1.2.2) Questions (1.1.3.1) to (1.1.3.5) measure repos and reverse repos transacted on automatic or semi-automatic trading systems such as BrokerTec, Eurex Repo, MTS and eRepo, but not voice-assisted electronic systems used by voice-brokers (where voice-brokers record and communicate transactions agreed by telephone or electronic messaging) or automated systems such as BrokerTec Quote, GLMX, MTS BondVision or TradeWeb (which offer a request-for-quote (RFQ) trading model). This question asked for the total value of business transacted on any electronic trading system, whether automatic, semi-automatic or automated, and therefore including automated systems such as GLMX or TradeWeb, which offer a request-for-quote (RFQ) trading model. Electronic trading Is defined in terms of where the contract is executed and so does <u>not</u> include voice-assisted electronic systems used by voice-brokers or trading assisted by electronic means of structured messages and confirmations such as Bloomberg's RRRA and similar screens.

1.5 "Repurchase transactions" (also known as "classic repos") include transactions documented under the Global Master Repurchase Agreement (GMRA) 1995, the Global Master Repurchase Agreement (GMRA) 2000 or the Global Master Repurchase Agreement (GMRA) 2011 *without* reference to the Buy/Sell-Back Annexes, and transactions documented under other master agreements. "Sell/buy-backs" are therefore taken to include all transactions that are not documented. Repurchase transactions are characterised by the immediate payment by the buyer to the seller of a compensatory or manufactured payment upon receipt by the buyer of a coupon or other income on the collateral held by the buyer. If a coupon or other income is paid on collateral during the term of a sell/buy-back, the buyer does not make an immediate compensatory or manufactured payment to the seller, but reinvests the income until the repurchase date of the sell/buy-back and deducts the resulting amount (including reinvestment income) from the repurchase price that would otherwise be due to be received from the seller. Sell/buy-backs may be quoted in terms of a forward price rather than a repo rate. Where sell/buy-backs are documented (e.g. under the Buy/Sell-Back Annexes to the GMRA 1995, 2000 or 2011), periodic adjustments to the relative amounts of collateral or cash - which, for a repurchase transaction, would be performed by margin maintenance transfers or payments - are made by adjustment or re-pricing. All open repos are likely to be repurchase transactions.

1.6 "Open" repos, which are reported in (1.7.3), are defined for the purposes of this survey as contracts that have no fixed repurchase date when negotiated but are terminable on demand by either counterparty. Open repos should also be included in fixed-rate repo (1.6.1) unless their repo rates are linked to interest rate indexes which will be refixed during the life of the repos, in which cases, they would be reported as floating-rate repos (1.6.2).

1.7 This section asks for the remaining term to maturity (not the original term to maturity) of repos to be broken down as follows:

(1.7.1.1) 1 day – this means:

- all contracts transacted prior to Wednesday, December 13, 2023, with a repurchase date on Thursday, December 14, 2023;
- overnight, tom/next, spot/next and corporate/next contracts transacted on Wednesday, December 13, 2023.

(1.7.1.2) 2–7 days – this means:

- all contracts transacted prior to Wednesday, December 13, 2023, with a repurchase date on Friday, December 15, 2023, or any day thereafter up to and including Wednesday, December 20, 2023;
- contracts transacted on Wednesday, December 13, 2023, with an original repurchase date on Friday, December 15, 2023, or any day thereafter up to and including Wednesday, December 20, 2023 (irrespective of the purchase date, which will vary).

(1.7.1.3) More than 7 days but no more than 1 month – this means:

- all contracts transacted prior to Wednesday, December 13, 2023, with a repurchase date on Thursday, December 21, 2023, or any day thereafter up to and including Monday, January 15, 2024;
- contracts transacted on Wednesday, December 13, 2023, with an original repurchase date on Thursday, December 21, 2023, or any day thereafter up to and including Monday, January 15, 2024 (irrespective of the purchase date, which will vary).

(1.7.1.4) More than 1 month but no more than 3 months – this means:

- all contracts transacted prior to Wednesday, December 13, 2023, with a repurchase date on Tuesday, January 16, 2024, or any day thereafter up to and including Wednesday, March 13, 2024;
- contracts transacted on Wednesday, December 13, 2023, with an original repurchase date on Tuesday, January 16, 2024, or any day thereafter up to and including Wednesday, March 13, 2024 (irrespective of the purchase date, which will vary).

(1.7.1.5) More than 3 months but no more than 6 months – this means:

- all contracts transacted prior to Wednesday, December 13, 2023, with a repurchase date on Thursday, March 14, 2024, or any day thereafter up to and including Thursday, June 13, 2024;
- contracts transacted on Wednesday, December 13, 2023, with an original repurchase date on Thursday, March 14, 2024, or any day thereafter up to and including Thursday, June 13, 2024 (irrespective of the purchase date, which will vary).

(1.7.1.6) More than 6 months but no more than 12 months – this means;

- all contracts transacted prior to Wednesday, December 13, 2023, with a repurchase date on Friday, June 14, 2024, or any day thereafter up to and including Friday, December 13, 2024;
- contracts transacted on Wednesday, December 13, 2023, with an original repurchase date on Friday, June 14, 2024, or any day thereafter up to and including Friday, December 13, 2024 (irrespective of the purchase date, which will vary).

(1.7.1.7) More than 12 months – this means;

- all contracts transacted prior to Wednesday, December 13, 2023, with a repurchase date on Monday, December 16, 2024, or any day thereafter;
- contracts transacted on Wednesday, December 13, 2023, with an original repurchase date on or after Monday, December 16, 2024 (irrespective of the purchase date, which will vary).

(1.7.2) Forward repos are now defined for this survey as contracts with a purchase date of Wednesday, December 20, 2023, or later, in other words, settling on T+5 or later. This definition has been amended to avoid an overlap with corporate/next transactions, which usually settle at T+3 or T+4.

(1.7.3) Open repos in this field should equal open repos in item (1.6.3).

1.8 Please confirm whether the transactions recorded in the questions in (1.6 and 1.7) include your tri-party repo business. Some institutions do not consolidate their tri-party repo transactions with their direct or voice-brokered business because of delays in receiving reports from tri-party agents or the complexity of their tri-party business.

(1.8.1) and (1.8.2) should not include any repos transacted across GC financing systems and recorded in (1.8.3).

1.9 "Eurobonds" (also known as "international bonds") are defined as securities held outside national central securities depositories (CSD), usually in an ICSD such as Clearstream or Euroclear, or a custodian bank; typically with the ISIN prefix XS; often issued in a currency foreign to the place of issuance; and sold cross-border to investors outside the domestic market of the place of issuance. Eurobonds should be recorded in (1.9.30-33), except for those issues by "official international financial institutions", which should be recorded in(1.9.20). Eurobond does not mean a bond denominated in euros.

(1.9.20) "Official international financial institutions, including multilateral development banks" such as:

African Development Bank (AfDB)

Asian Development Bank (AsDB)

Bank for International Settlements (BIS)

Caribbean Development Bank (CDB)

Central American Bank for Economic Integration (CABEI)

Corporacion Andina de Fomento (CAF)

Council of Europe Development Bank

East African Development Bank (EADB)

European Bank for Reconstruction and Development (EBRD)

Inter-American Development Bank Group (IADB)

International Fund for Agricultural Development (IFAD)

Islamic Development Bank (IDB)

Nordic Development Fund (NDF)

Nordic Investment Bank (NIB)

OPEC Fund for International Development (OPEC Fund)

West African Development Bank (BOAD)

World Bank Group (IBRD and IFC)

Securities issued by the EU (but not individual EU members) should now be included in the new question 1.9.37. EU issuers include:

European Commission

European Financial Stability Mechanism (EFSM)

European Financial Stability Facility (EFSF)

European Investment Bank (EIB)

European Stabilisation Mechanism (ESM)

(1.9.21) US Treasury" includes bills, notes and bonds, including floating-rate notes, issued by the US central government but not securities guaranteed by that government, such as Agency securities.

(1.9.23) "Japanese government" includes bills, notes and bonds issued by the Japanese central government but not securities guaranteed by that government.

(1.9.25) "Other OECD countries" are Australia, Canada, Chile, Iceland, Israel, Korea, Mexico, New Zealand, Norway, Switzerland and Turkey.

(1.9.26) "Other non-OECD European, Middle Eastern & African countries" should exclude any EU countries.

(1.9.34) "Equity" includes ordinary shares, preference shares and equity-linked debt such as convertible bonds.

2.1 This question asks for the total gross value of transactions with a transaction date on or after June 14, 2023 (the day after the previous survey date), to and including December 13, 2023 (the latest survey date). In other words, it asks for the turnover or flow of business over the six month interval and includes all business transacted since the last survey date, even if it has matured before the survey date. This section is therefore different from the rest of the survey, which asks for the value of business outstanding on the survey date, in other words, the stock of transactions.

2.2 This question asks for the number of individual transactions with a transaction date on or after June 14, 2023 (the day after the previous survey date), to and including December 13, 2023 (the latest survey date), even if it has matured before the survey date. In other words, this is the number of tickets written.

3 This question asks for the cash value of any repos in which the survey participant is not a principal but provides a guarantee, indemnity or similar credit support. This support could be through a facility such as DTCC Sponsored Repo, LCH Sponsored Clearing or Eurex ISA Direct, or could be a bilateral arrangement.

4 "Total value of securities loaned and borrowed by your repo desk" includes the lending and borrowing of securities with either cash or securities collateral. Exclude any securities lending and borrowing done by desks other than your repo desk. If your repo desk does not do any securities lending and borrowing, this line will be a nil return.

5.1 "Active" means about once a week or more often.

For further help and information

If, having read the Guidance Notes, you have any further queries, please e-mail the independent survey administrator at reposurvey@icmagroup.org.

Appendix B: Survey Participants

List of respondents	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Dec-17	Jun-18	Dec-18	Jun-19	Dec-19	Jun-20	Dec-20	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Dec-23
ABN Amro Bank	x	X	X	X	X																
Allied Irish Banks	x	x	x	x	x	x	x	x	x	x											
AXA Bank Europe	x	x	x	x	x	x	x	x													
Banc Sabadell	x	x	x	x	x	x	x	x		x											
Banca d'Intermediazione Mobiliare (IMI)	x	x	x	x	x	x	x	x	x	x											
Banca Monte dei Paschi di Siena	x	x	x	x	x	x				x	x	x	x	x	x	x	x	x	x	x	x
Banco BPI	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Banco Santander	x	x	x	x	x	x	x	x	x	x	x	x							x	x	x
UniCredit Bank Austria (Bank Austria)	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x
Bank fuer Arbeit und Wirtschaft und Oesterreichische Postsparkasse (Bawag)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bank of Ireland	x	x	x	x	x	x	x	x	x	x	x	x	x	x							
Bank Przemyslowo-Handlowy SA																					
Landesbank Berlin																					
Banque de Luxembourg	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Banque et Caisse d'Epargne de l'Etat	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Barclays Capital	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bayerische Landesbank	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x					
BBVA	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
BHF-Bank	x																				
BHF-Bank International																					
BNP Paribas	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bundesrepublik Deutschland Finanzagentur	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Caixabank (including Bankia)	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x
Caixa d'Estalvis de Catalunya	x	x		x	x																
Bankia SA (formerly Caja de Ahorros y Monte de Piedad de Madrid (Caja Madrid))	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x						
CA-CIB (formerly Calyon)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Citigroup	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	4
Commerzbank	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Canadian Imperial Bank of Commerce and Credit (CIBC)	x	x	x	x	x		x	x	x		x	x	x	x	x	x				x	
Commonwealth Bank of Australia																			x		
Confederación Española de Cajas de Ahorros (CECA)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Credit Suisse Securities (Europe) Ltd	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Danske Bank	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Daiwa Securities SMBC Europe	x	x	x	x	x																

List of respondents	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Dec-17	Jun-18	Dec-18	Jun-19	Dec-19	Jun-20	Dec-20	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Dec-23
Dekabank Deutsche Girozentrale	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Deutsche Bank	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Deutsche Postbank	x	x	x	x	x	x	x	x	x	x											
Belfius Bank (formerly Dexia)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Banque Internationale Luxembourg (formerly Dexia BIL)							x	x		x			x								
Dexia Kommunal Bank Deutschland																					
DNB Bank ASA					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
DZ Bank	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
EFG Eurobank Ergasias	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Erste Bank der Oesterreichischen Sparkassen	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Euroclear Bank	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x	x	x	x	x
European Investment Bank															x	x	x	x	x	x	x
Hypothekenbank Frankfurt International (formerly Eurohypo Europäische Hypothekenbank)	x	x																			
Fortis Bank	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Goldman Sachs	x	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x	x	x	x
HSBC	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
HSBC Athens																					
HSBC France																					
HSH Nordbank					x																
Unicredit Bank Germany (Bayerische Hypo-und-Vereinsbank)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
ICBC Standard Bank					x	x	x														
ING Bank	x	x	x	x	x	x	x														
Intesa SanPaolo	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Jefferies International	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
JP Morgan	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
KBC	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
KfW	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Kingdom of Belgium Federal Public Service Debt Agency	x	x	x	x	x	x	x	x	x	x	x			x							
Landesbank Baden-Württemberg, Stuttgart	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x
Landesbank Hessen-Thüringen -Girozentrale (Helaba)	x	x	x	x	x	x	x		x												
Lloyds Bank Commercial Banking											x	x	x	x	x	x	x	x	x	x	x
Lloyds Bank Plc								x	x	x	x	x	x	x	x	x	x	x	x	x	x
Macquarie Bank	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x			x		
Bank of America Merrill Lynch	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Mitsubishi Securities International		x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
Mizuho International	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Morgan Stanley	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x
National Australia Bank					x																

List of respondents	Dec-13	Jun-14	Dec-14	Jun-15	Dec-15	Jun-16	Dec-16	Jun-17	Dec-17	Jun-18	Dec-18	Jun-19	Dec-19	Jun-20	Dec-20	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Dec-23
National Bank of Greece						x	x														
Newedge																					
Nomura International	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Norddeutsche Landesbank Girozentrale	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x						
Nordea Markets	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Norinchukin Bank	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Nova Ljubljanska Banka d.d.	x		x		x	x	x	x	x		x	x	x	x	x	x	x	x	x		
Nykredit Bank A/S													x	x	x	x	x	x	x	x	x
Piraeus Bank					x	x	x		x												
Post Italiane																				x	x
Rabobank	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Royal Bank of Canada		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
NatWest Markets (formerly Royal Bank of Scotland)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
RBI									x												
Société Générale	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Standard Chartered													x	x	x	x	x	x	x	x	x
Toronto Dominion Bank	x		x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x
UBS	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
UniCredit Bank AG Milano Branch	x	x		x	x	x	x	x		x			x	x	x	x	x	x	x	x	
Unicredit Bank Spa									x		x	x	x	x	x	x	x	x	x	x	x
Westdeutsche Landesbank Girozentrale																					
	66	64	64	64	70	66	65	64	64	62	59	56	60	61	60	59	56	56	61	62	60

Appendix C: Summary Of Survey Results

	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Dec-23
Q1 What are the total gross values of cash due to be repaid by you and repaid to you on repo transactions maturing after survey date? (figures in EUR billions)	**8,726**	**9,492**	**9,680**	**10,374**	**10,795**	**10,900**
Of the amounts given in response to question (1) above:						
1.1 How much was transacted:						
direct with counterparties						
• in the **same country** as you	15.9%	16.5%	16.3%	15.1%	14.4%	12.9%
• cross-border in (other) **eurozone countries**	13.2%	13.1%	12.5%	12.8%	15.1%	11.6%
• cross-border in **non-eurozone countries**	35.1%	33.5%	35.7%	35.6%	34.2%	34.5%
through **voice-brokers**						
• in the **same country** as you	4.0%	4.3%	2.9%	3.3%	4.0%	4.6%
• cross-border in (other) **eurozone** countries	2.7%	3.9%	3.5%	3.8%	4.1%	4.1%
• cross-border in **non-eurozone** countries	1.6%	1.8%	1.7%	1.9%	1.9%	2.0%
on **ATSs** with counterparties						
• in the **same country** as you	4.9%	5.1%	3.6%	3.6%	3.1%	4.6%
• cross-border in (other) **eurozone** countries	2.5%	2.6%	2.7%	2.9%	3.2%	3.2%
• cross border-border in **non-eurozone** countries	2.1%	3.0%	3.7%	2.9%	2.7%	4.7%
• anonymously across a GC financing system	0.6%	0.7%	0.8%	0.8%	1.1%	1.7%
• anonymously across a central clearing counterparty but not GC financing	17.3%	15.3%	16.6%	17.3%	16.2%	16.0%
• total through a central clearing counterparty	31.5%	28.8%	27.0%	23.8%	25.7%	23.4%
• transacted across any electronic system	32.4%	23.9%	24.4%	23.2%	19.6%	29.1%
1.2 How much of the cash is denominated in:						
• EUR	54.5%	56.8%	54.7%	56.4%	58.8%	54.4%
• GBP	16.9%	15.7%	15.6%	14.8%	12.1%	12.8%
• USD	19.5%	19.1%	20.3%	19.4%	20.8%	22.2%

	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Dec-23
• SEK, DKK	1.6%	1.5%	1.3%	1.2%	1.1%	1.2%
• JPY	5.2%	4.7%	5.7%	5.6%	5.1%	7.4%
• CHF	0.0%	0.1%	0.0%	0.2%	0.2%	0.2%
• other Asian and Pacific currencies	1.1%	0.9%	1.1%	1.3%	0.7%	0.8%
• other currencies	1.2%	1.2%	1.4%	1.1%	1.2%	1.0%
1.3 How much is cross-currency?	2.3%	1.9%	1.8%	2.1%	1.6%	1.6%
1.4 How much is:						
• classic repo	92.3%	93.2%	93.8%	94.0%	93.4%	92.6%
• documented sell/buy-backs	7.5%	6.4%	5.7%	5.9%	6.5%	7.3%
• undocumented sell/buy-backs	0.2%	0.4%	0.4%	0.1%	0.1%	0.0%
1.5 How much is:						
• fixed rate	88.8%	89.0%	88.0%	87.1%	85.1%	80.8%
• floating rate	11.1%	11.0%	12.0%	12.9%	14.9%	19.2%
• open	0.1%					
1.6 How much fixed and floating rate repo is (1.6.1) for value before (survey date) and has a remaining term to maturity of:						
• **1 day**	18.8%	16.6%	17.3%	17.8%	18.5%	17.9%
• **2 - 7days**	21.5%	18.6%	22.8%	19.7%	24.7%	24.9%
• more than **7 days** but no more than **1 month**	17.3%	13.7%	14.8%	10.8%	12.0%	13.4%
• more than **1 month** but no more than **3 months**	9.8%	16.7%	9.5%	11.9%	7.0%	11.3%
• more than **3 months** but no more than **6 months**	7.5%	7.9%	7.4%	7.1%	7.3%	7.9%
• more than **6 months**	3.8%	3.2%	2.4%	2.2%	2.5%	2.5%
• more than **12 months**	2.4%	2.7%	2.2%	2.5%	2.5%	2.6%
• **forward-forward repos**	11.4%	14.5%	1.3%	20.2%	18.3%	13.1%
• **open**	7.5%	6.1%	8.2%	7.8%	7.1%	6.3%
1.7 How much is tri-party repo:	83.1%	82.1%	75.9%	75.7%	72.7%	76.3%
• for **fixed terms to maturity**	6.9%	6.8%	13.3%	12.6%	12.5%	5.1%
• on an **open** basis	9.2%	11.1%	10.8%	11.7%	14.8%	18.7%
GCF	8.0%	8.6%	9.0%	6.5%	8.0%	8.8%
1.8 How much is against collateral issued in:						
Austria						
• by the central government	0.9%	0.9%	1.0%	0.8%	0.8%	0.8%
• by other issuers	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%

	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Dec-23
Belgium						
• by the central government	3.3%	2.9%	2.6%	2.6%	2.9%	2.2%
• by other issuers	0.3%	0.4%	0.5%	0.5%	0.6%	0.6%
Denmark						
• by the central government	0.2%	0.2%	0.3%	0.2%	0.2%	0.1%
• by other issuers	0.6%	0.6%	0.6%	0.7%	0.8%	0.9%
Finland						
• by the central government	0.4%	0.4%	0.4%	0.5%	0.5%	0.4%
• by other issuers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
France						
• by the central government	12.6%	13.2%	12.8%	12.5%	13.8%	11.5%
• by other issuers	0.5%	0.6%	0.6%	0.6%	0.7%	0.8%
Germany						
• by the central government	14.0%	14.3%	14.5%	15.8%	13.4%	13.2%
pfandbrief	0.1%	0.1%	0.5%	0.6%	0.0%	0.1%
• by other issuers	0.7%	1.4%	0.6%	0.8%	1.1%	1.3%
Greece						
• by the central government	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%
• by other issuers	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%
Ireland						
• by the central government	0.3%	0.4%	0.3%	0.3%	0.3%	0.3%
• by other issuers	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%
Italy						
• by the central government	11.2%	11.5%	11.6%	12.0%	13.2%	12.3%
• by other issuers	0.4%	0.4%	0.4%	0.2%	0.5%	0.7%
Luxembourg						
• by the central government	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%
• by other issuers	0.3%	0.3%	0.3%	0.3%	0.2%	0.3%
Netherlands						
• by the central government	1.2%	1.3%	1.2%	1.0%	1.3%	1.2%
• by other issuers	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%
Portugal						
• by the central government	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%
• by other issuers	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%
Spain						
• by the central government	4.9%	5.2%	4.8%	4.8%	5.6%	4.6%
• by other issuers	0.6%	0.7%	0.3%	0.4%	0.6%	0.6%

	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Dec-23
Sweden						
• by the central government	0.5%	0.5%	0.4%	0.3%	0.3%	0.3%
• by other issuers	0.8%	0.3%	0.3%	0.2%	0.3%	0.3%
UK						
• by the central government	14.9%	14.1%	13.9%	12.9%	11.4%	11.2%
• by other issuers	1.1%	1.3%	1.3%	1.4%	1.5%	1.4%
US Treasury	8.7%	10.9%	9.4%	8.4%	8.0%	10.1%
US other issuers	2.3%	2.2%	2.2%	2.2%	2.2%	2.5%
US but settled across EOC/CS						
other countries						
Bulgaria						
• by the central government						
• by other issuers						
Cyprus						
• by the central government						
• by other issuers						
Czech Republic						
• by the central government	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
• by other issuers	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
Estonia						
• by the central government						
• by other issuers						
Hungary						
• by the central government	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
• by other issuers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Latvia						
• by the central government						
• by other issuers						
Lithuania						
• by the central government						
• by other issuers						
Malta						
• by the central government						
• by other issuers						
Poland						
• by the central government	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
• by other issuers	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Dec-23
Romania						
• by the central government						
• by other issuers						
Slovak Republic						
• by the central government						
• by other issuers						
Slovenia						
• by the central government						
• by other issuers						
Other EU members by central government	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%
Other EU members by other issuers	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
• by official international financial institutions	0.2%	0.4%	0.5%	0.5%	0.6%	0.6%
Japan						
• Japanese government	3.5%	3.9%	4.0%	3.9%	3.8%	5.7%
• Other Japanese issuers	1.2%	1.1%	1.3%	1.3%	1.4%	1.5%
Other Asian & Pacific OECD countries in the form of fixed income securities, except eurobonds	0.4%	0.3%	0.2%	0.8%	0.3%	0.4%
Other OECD countries in the form of fixed income securities, except eurobonds	6.4%	3.4%	6.6%	6.2%	6.1%	6.2%
Other OECD						
non-OECD EMEA	0.8%	0.7%	0.7%	0.7%	0.5%	0.5%
non-OECD Asian & Pacific	0.6%	0.5%	0.5%	0.5%	0.3%	0.4%
non-OECD Latin America	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%
eurobonds issued by European entities	0.8%	0.8%	0.7%	0.7%	0.9%	0.9%
eurobonds issued by US entities	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
eurobonds issued by Asian & Pacific entities	0.4%	0.3%	0.4%	0.4%	0.4%	0.5%
eurobonds issued by other entities	0.4%	0.3%	0.4%	0.4%	0.6%	0.4%
equity	0.3%	0.4%	0.5%	0.3%	0.3%	0.2%
collateral of unknown origin or type	0.2%	0.1%	0.0%	0.5%	0.6%	0.8%
collateral in tri-party which cannot be attributed to a country or issuer	1.2%	1.4%	1.5%	1.6%	1.9%	2.1%
EU issues	0.3%	0.3%	0.1%	0.2%	0.2%	0.3%
total gross values of repo & reverse repo with APAC	4.3%	3.9%	4.7%	6.8%	4.7%	5.4%

	Jun-21	Dec-21	Jun-22	Dec-22	Jun-23	Dec-23
Q2 What is the total value of securities loaned and borrowed *by your repo desk*: to/from counterparties						
in the **same country** as you						
• in fixed income	17.1%	22.1%	25.8%	24.8%	17.7%	19.6%
• in equity	4.4%	0.0%	0.1%	0.0%	0.1%	0.1%
• cross-border in (other) **eurozone** countries						
• in fixed income	19.5%	26.3%	30.7%	25.1%	35.6%	35.5%
• in equity	13.0%	0.3%	0.3%	0.2%	0.3%	0.5%
• cross-border in **non-eurozone** countries						
• in fixed income	35.6%	50.8%	42.5%	49.4%	45.8%	43.3%
• in equity	10.5%	0.4%	0.6%	0.4%	0.5%	1.0%
for which the term to maturity is						
fixed	52.7%	71.6%	68.0%	70.6%	73.7%	58.6%
open	47.3%	28.4%	32.0%	29.4%	26.3%	41.4%
Number of GMRAs	80.3%	84.9%	92.0%	82.9%	86.9%	88.1%

Appendix D: The ICMA European Repo And Collateral Council

The ICMA European Repo and Collateral Council (ERCC) (formerly the ICMA European Repo Council) is the forum where the repo dealer community meets and forges consensus solutions to the practical problems of a rapidly evolving marketplace. In this role, it has been consolidating and codifying best market practice. The contact and dialogue that takes place at the ERCC underpins the strong sense of community and common interest that characterises the professional repo market in Europe.

The ERCC was established in December 1999 by the International Capital Market Association (ICMA, which was then called the International Securities Market Association or ISMA) as a body operating under ICMA auspices.

Membership of the ERCC is open to any ICMA member who transacts repo and associated collateral business in Europe, is willing to abide by the rules and has sufficient professional expertise, financial standing and technical resources to meet its obligations as a member.

The ERCC meets twice a year (usually in February/March and September) at different financial centres across Europe. The Steering Committee now comprises 19 members elected annually and meets six or seven times a year.

More information about the ERCC is available on www.icmagroup.org.

Appendix E: ESMA SFTR Data Report 2024

This report was published in April 2024. Unlike the ICMA survey, it covers only the repo market in the EEA.

Most of the data presented in the report have been measured as the average of the mid-week outstanding positions over the first nine or ten months of 2023 or as positions on Wednesday 20 September 2023.

The size of the market given in the report is smaller than that published each week by the trade repositories by about one-third because the data have been scrubbed by ESMA to remove outliers and other anomalies.[12] In addition, intraday and forward repos have been removed from most of the analyses.

Overview

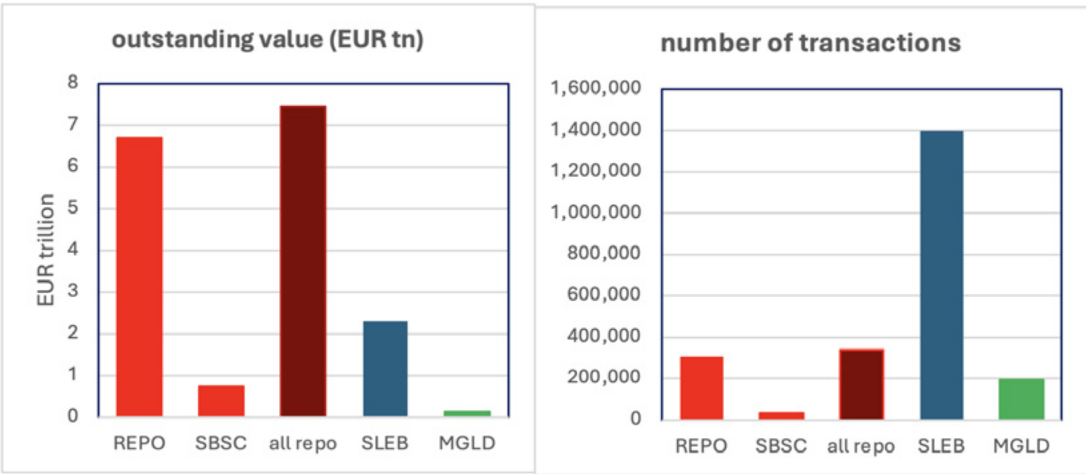
- The outstanding value of the EEA repo market in September 2023 was EUR 7.3 trillion. The growth in value over January-October 2023 was +10.5% but the number of trades fell by -9.0%. This compares with a figure of EUR 11.45 trillion in the weekly published data for average mid-week outstanding value over January-October 2023.
- In contrast to securities lending, repo business comprised a smaller number of larger trades.
- There were 4,000 “professional intermediaries” using repurchase transactions and 2,000 using buy/sell-backs to service some 210 and 3,000 “clients”, respectively. The large number of buy/sell-back clients may be retail.
- Banks were predominant with 55% of positions. Investment funds accounted for 4.4% and other NBFIs (including CCPs) 39%, while corporates were just 1.5%.
- Repos on Trading Venues accounted for 41.4% of outstanding positions: the rest was OTC.
- CCPs accounted for 40% of outstanding value, of which, 98.2% were repos against government bonds and 89.9% were specifics. The share of centrally-cleared repo was much higher for Trading Venues (82.2% compared to 17.8% for OTC).
- A surprisingly small share of 6% of outstanding value was managed by tri-party agents.
- The EEA repo market was overwhelmingly cross-border (80%) with most counterparties outside the EEA (58%). UK counterparties provided 12% of cash lending to the EEA and borrowed 9%.
- France, Germany, Italy and Ireland were the largest EEA markets. France and, to a lesser extent, Germany were boosted by the resident CCPs and Ireland by UCITS administration.
- In cross-border business, the largest positions were taken by entities in Germany, Netherlands, Italy, Spain and Ireland.
- 12 EEA countries had repo markets of less than EUR 10 billion.
- The share of EUR cash was 62% on 20 September 2023, USD was 24% and GBP 7%.
- Original maturities were mainly short-dated (66.3%). ON was 46.6% and open repo 8.3%.
- In terms of residual maturities, the share of intraday repo was 21%, while 1-day repo was 32%, other short dates were 21%, while forwards and open repo were both 7%.
- GC accounted for just 14.9% of outstanding value but the concept of GC in SFTR is unclear. 70% of GC but 89% of specific collateral were government securities.

12 The data scrubbing consists of the removal of outliers, paired repos with conflicting sides, stale records (more than one year old), term repos without a maturity date, repos with implausible loan-to-collateral ratios and CCP-CCP repos across interoperability links (ie LCH SA to Euronext CC&G). On the other hand, intra-group repos (which should not have been reported) are not removed and pairs of repos which it has not been possible to pair are retained and halved on the assumption that both repos have been reported but have defects that prevent pairing. The result is to reduce the number of transactions by 35% from 516,011 to 333,321, the cash value by 40% and the collateral value by 66%.

- The number of ISINs in bilaterally-cleared repo was 46,600 compared with 2,2000 in centrally-cleared repo but the latter are undoubtedly also traded in the bilaterally-cleared market.
- Most haircuts for government securities were zero. Haircuts for other collateral clustered in the zero and 2-10% brackets and tended to be higher for equity and securitised bonds and lower for corporate and other bonds.
- The median rate for centrally-cleared repo was 3.67% versus 3.73% for bilaterally-cleared.

Analysis

1 Instruments



1.1 size of markets in all types of SFT

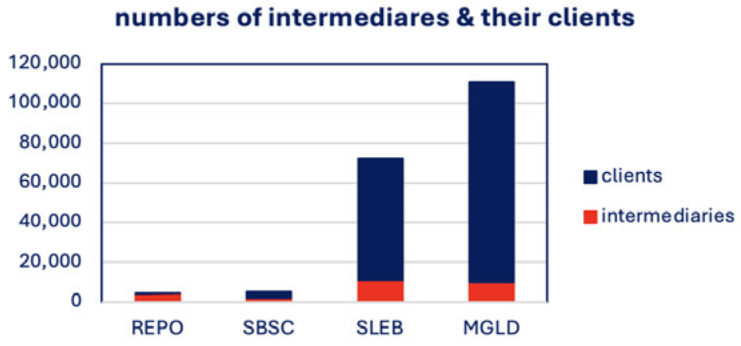
September 2023	outstanding value (EUR tn)	share	number of transactions	share
repurchase transactions (REPO)	6.7	68%	305,000	16%
buy/sell-back (SBSC)	0.743	8%	32,000	2%
all repo	*7.443*	*76%*	*337,000*	*18%*
securities lending (SLEB)	2.3	23%	1,400,000	72%
margin lending (MGLD)	0.124	1%	193,000	10%
all SFT	9.8	100%	1,900,000	100%

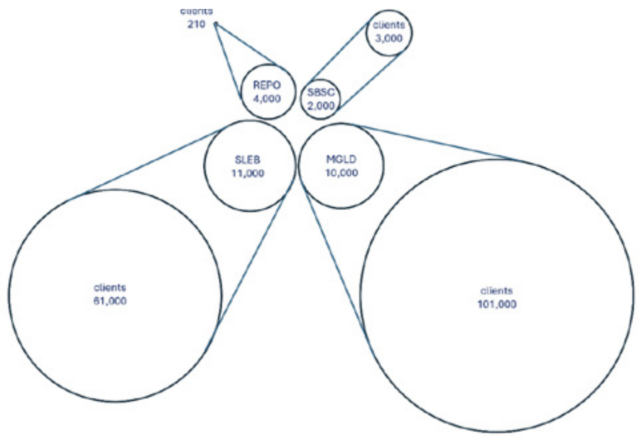
- The report confirms that the **repo** market executes a small number of large trades compared with **securities lending**, which produces a much larger number of smaller trades; **margin lending** comprises an even smaller number of even smaller trades. However, the difference between repo and securities lending is distorted by the inflation in the number of securities lending transactions due to the SFTR requirement to break up loans of multiple securities into single-security loans, while the number of repos is inflated by electronic platforms breaking up repos against multiple securities into single-security trades before sending instructions to CCPs.
- SFTR data show the outstanding value of the repo market at EUR 7,443 billion in September 2023. The ICMA survey says EUR 10,899 billion but includes the UK repo market.
- Growth in the average mid-week outstanding value of repo over January-October 2023 was +10.5% to EUR 6.9 trillion but the number of repos over the same period fell by -9.0% to 329,000. The December 2023 ICMA survey puts year-on-year growth at 5.1% but this is for a limited, largely dealer and pan-European survey

sample. SFTR data show that year-on-year growth in outstanding value to 20 September 2023 was +11.0% to EUR 7.4 trillion or +15.9% to EUR 7.3 trillion, depending on which data are used. All the numbers imply that growth was decelerating towards the end of 2023.

- Repurchase transactions were 90% of all repo. The ICMA survey said 92.6% in December 2023.

2 Counterparties





2.1 intermediaries vs clients in different types of SFT

September 2023	professional intermediaries		clients	
repurchase transactions (REPO)	4,000	95%	210	5%
buy/sell-back (SBSC)	2,000	40%	<3,000	60%
securities lending (SLEB)	11,000	15%	61,000	85%
margin lending (MGLD)	10,000	9%	101,000	91%

- An unexpectedly small number of parties trade repo. As many of those using repurchase transactions are probably also doing buy/sell-backs, the total number is likely to be much less than the 6,000 in the first table.
- There are a very large number of clients in buy/sell-backs. They could be retail.

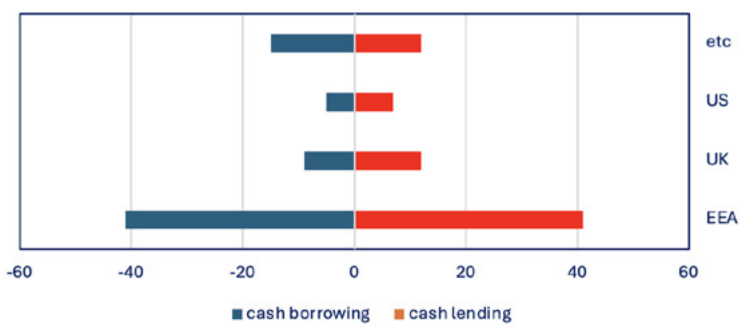
2.2 shares of repo market by type of counterparty

September 2023	number of firms	share of population	share of outstanding value
banks (CDTI)	591	19.1%	55.0%
investment firms (INVF)	1,288	41.4%	4.4%
other NBFI (ORPI, INUN, REIN, UCIT, AIFD)	387	12.4%	39.3%
non-financials	841	27.1%	1.4%
total	**3,107**	**100.0%**	**100.0%**

- In terms of the average of outstanding value over January-October 2023 rather than on one day in September, bank exposure was lower at 52%, investment firms were higher at 11%, foreign funds were 6%, EEA funds 3% and CCPs 20%. Within EEA firms only, CCPs took a larger share: 29% of cash borrowing and 33% of lending. But these numbers are inconsistent with other data on centrally-cleared repo which shows its share of total outstanding value at 40% of the average over January-October 2023 and 38% in September 2023. Central-clearing in the ICMA survey was 23.4% in December 2024.
- SFTR data put market concentration at 48.7% for the top five parties and 63.8% for the top 10. The ICMA survey estimates 46.4% and 68.5%, respectively.
- Charts 8 and 9 in the ESMA report show network charts illustrating greater interconnectedness in the bilaterally-cleared market. Chart 8 shows shared positions in the centrally-cleared market and chart 9 shows the same for the bilaterally-cleared market, both for September 2023.
- In chart 8, there are six CCPs, 42 banks, four investment firms and three unclassified entities (who are not funds, insurers or non-financials). Inter-CCP links have been excluded (eg LCH SA to Euronext/CC&G). CCP 14 dominates with large positions with 44 members, CCP 4 is second with smaller positions with 40 members, CCP 13 has 13 positions, CCP 12 has six, CCP 8 has 5 and CCP 6 has 2. CCP 14 would seem to be LCH SA, 13 could be Euronext/CC&G or LCH Ltd and 4 may be ECAG. CCPs 14 and 4 share all the non-banks as members, except one unclassified entity.
- In chart 9, there are some 120 entities with multiple edges but many are weak. The number of significant nodes in the OTC network is about a dozen, not that different to the number of CCPs.

3 Counterparty location

shares of repo & reverse repo between EEA & others



3.1 repo & reverse repo between EEA and other locations

% September 2023		lenders				
		EEA	UK	US	etc	total
borrowers	EEA	41	12	7	12	72
	UK	9				9
	US	5				5
	etc	15				15
	total	69	12	7	12	100

3.2 top four EEA repo locations

% September 2023	borrower	lender	net lending
FR	55	53	-2
DE	17	19	-2
IT	7	5	-2
IE	5	6	1

3.3 repo with non-EEA counterparties

% September 2023	borrower	lender	net lending
DE	58	47	-11
NL	60	59	-1

3.4 repo with other EEA counterparties

% September 2023	borrower	lender	net lending
NL	60	59	-1
ES	58	61	3

- The EEA was a net cash borrower (borrowing EUR 5.3 trillion, while lending EUR 5.1 trillion). The largest four EEA countries were positioned in the same direction.
- The UK and US were net cash lenders to the EEA. The rest of the world was a net cash borrower from the EEA. The ICMA survey sample remained a net cash lender in December 2023. However, SFTR data, being for the whole market, reflects the position with the rest of the world, whereas the ICMA survey shows the position taken by large dealers.
- Of Other Counterparties in SFTR reports, 19% were in the same country as the Reporting Counterparties and 80% were cross-border, of which 22% were in other EEA countries and 58% outside the EEA. The ICMA survey puts domestic business at a similar share of 22.1% in December 2023.
- Note that the data on France and, to a lesser extent, Germany and Italy are distorted by the inclusion of the CCPs based in those countries as normal counterparties. This may explain the over-representation of France and the under-representation of Italy.
- Ireland is clearly an anomaly but this would seem to reflect its role in administering UCITS.

- 12 EEA countries had repo markets of less than EUR 10 billion in size.
- SFTR data confirmed that repo in Italy is largely domestic. 62% of cash borrowing and 93% of cash lending (and 21% net cash lending) was domestic.

4 Execution venues

4.1 shares of execution venues centrally and bilaterally-cleared

% September 2023	centrally-cleared	bilaterally-cleared	all
OTC	17.8	84.2	58.6
Trading Venue	82.2	15.8	41.4

4.2 shares of execution venues centrally and bilaterally-cleared by type of repo

% September 2023		centrally-cleared	bilaterally-cleared	all	
OTC	REPO	87	13		58.6
	SBSC	95	5		
Trading Venue	REPO	76	24	43	41.4
	SBSC	91	9	28	

- Trading Venues (Regulated Markets, MTF and OTF) took 43% of all repurchase transactions and 28% of all buy/sell-backs in September 2023 but 76% and 91%, respectively, of centrally-cleared repurchase transactions and buy/sell-backs. This demonstrates the synergy between CLOB-based automatic repo trading systems (ATS) and CCPs. The ICMA survey put ATS business at 30.2% in December 2023.
- The OTC market accounted for 59% of all repo but only 13% and 5% of centrally-cleared repurchase transactions and buy/sell-backs. OTC repos that are centrally-cleared are those registered with CCPs post-trade (eg via ETCMS to LCH or via MTS to CC&G). These numbers are in the same order of magnitude as those in the ICMA repo survey.

5 Post-trade

- Centrally-cleared repo accounted for an average 40% (EUR 2.7 trillion) of the total over January-October 2023 versus 23.4% in the ICMA survey. Accordingly, bilaterally-cleared repo accounted for 61% (EUR 4.2 trillion) of the SFTR total.
- Tri-party repo accounted for just 6% but it is unclear if this includes GC financing. This compares to 8.8% in the ICMA survey for December 2023.

6 Cash currency

% Jan-Oct 2023	share of outstanding value	share of number of repos
EUR	62	64
USD	24	36?
GBP	7	

- The share of the euro in outstanding value did not change much between 2022 and 2023 but the share of the number of euro-denominated repos jumped from 53% to 64%.

- The ICMA survey puts the share of the euro in December 2023 at 54.4%, pound sterling at 12.8% and US dollar at 22.2%. Of course, the ICMA survey includes the UK, which increases the share of sterling.

7 Maturities

7.1 original term to maturity

% Jan-Oct 2023		share	term	share
centrally-cleared	fixed-term	86.6	ON	26.1
			T+2 to 1M	26.6
			etc	47.2
	open	23.3	n/a	
bilaterally-cleared	fixed-term	99.5	ON	71.1
			T+2 to 1M	11.4
			etc	17.4
	open	0.5	n/a	
total	fixed-term	91.6	ON	46.6
			T+2 to 1M	19.7
			etc	33.6
	open	8.3	n/a	

7.2 residual term to maturity

% Jan-Oct 2023	share	term	share
fixed-term	93.0	T	21
		T+1	19
		TN	11
		SN	2
		<1M	21
		>1M	14
		forward	7
		?	5
open	7.0	n/a	n/a

- Repos with a maturity on T would appear to be intra-day transactions. If transactions maturing on T are indeed intra-day repo, most are likely to be auto-collateralisation transactions.
- SFTR data shows fixed-term repos (excluding intra-day) in terms of residual maturity as 53%, of which, 1-day repo is 32%, and forwards 7%. The ICMA survey returned 56.2%, 17.9% and 13.1%, respectively, for December 2023.

8 Collateral - GC vs specifics

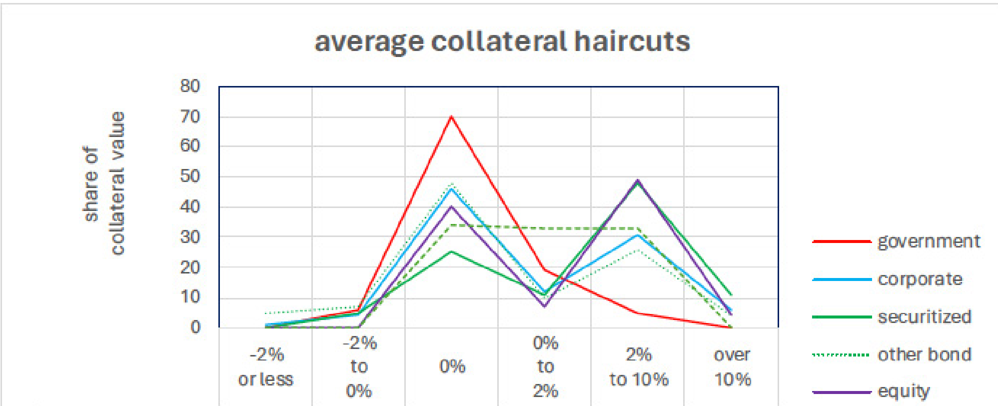
% Jan-Oct 2023	share	collateral	share
GC (GENE)	16	government	70
		corporate	16
		securitised	7
specifics (SPEC)	84	government	89
		corporate	7
		securitised	2

- 84% of the outstanding value of collateral in September 2023 was specific rather than GC. This is in line with the ECB MMSR estimate, although that measures turnover.

9 Collateral - type of collateral

- In centrally-cleared repo, on average over January-October 2023, there were 2,200 ISIN in centrally-cleared repo and 46,600 ISINs in bilaterally-cleared transactions. But the total will be 46,600, as it is almost certain that all the 2,200 centrally-cleared ISINs are traded outside CCPs.
- SFTR data apparently shows that almost 1% of average outstanding value was in collateral other than securities. ESMA says cash and commodities. It describes repos against cash collateral as being “currency swaps”. In fact, cash collateral should be temporary and will represent the redemption of collateral during the term of a repo, cover for a failure to return a margin security and substitute collateral in tri-party repo when there is a lack of eligible securities.

10 haircuts (bilaterally-cleared repo)



	-2% or less	-2% to 0%	0%	0% to 2%	2% to 10%	over 10%
government	0	6	70	19	5	0
corporate	1	4	46	12	31	6
securitized	0	5	25	11	48	11
other bond	5	7	48	10	26	4
equity	0	0	40	7	49	4
etc	0	0	34	33	33	0

- It can be seen that haircuts for most types of collateral cluster at zero and in the 2-10% bracket.
- Government bonds are an exception: most are zero with a negative skew towards lower haircuts.
- Similar proportions of corporate, equity and "other" types of collateral have zero haircuts. Securitised bonds are the exception.
- Similar proportions of corporate and "other" types of collateral also have haircuts between 2% and 10%.
- Similar proportions of securitised and equity have haircuts between 2% and 10%.

11 Repo rates

- The median centrally-cleared repo rate on 20 September 2023 was 3.73% and the bilaterally-cleared rate 3.67%. There are charts in the final section of the report giving a little more analysis of repo rates (versus ECB rates and ESTR; DE, ES, FR and IT compared; EEA, US and UK compared) but nothing new.
- For the time being, ESMA is ignoring floating-rate repo on the basis it is a "minority". In the ICMA survey, it reached 19.2% of outstanding value in December.

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