

ISDA[®] Research Study

ISDA MARGIN SURVEY 2015 August 2015

The latest ISDA Margin Survey shows a small decline in the total amount of collateral supporting non-cleared derivatives transactions in 2014, in part due to a continued shift to central clearing. This shift has meant the collateral supporting cleared transactions has increased significantly. The number of client cleared collateral agreements also experienced sharp growth, as an increasing number of end users began clearing in response to regulatory changes.

CONTENTS

Summary	3
Methodology and Participants	5
Non-cleared Derivatives	7
• Collateral as a Risk Management Tool	7
• Collateral Assets	7
• Types of Collateral.....	8
• Number and Types of Collateral Agreements	10
• Collateral Coverage	11
• Treatment of Collateral	13
Cleared Derivatives	15
• Extent of Collateral Use.....	15
• Types of Collateral.....	16
Market Practices.....	21
• Derivatives Valuation for Collateralized Transactions	21
• Collateral Optimization	23
• Collateral Management.....	24
Portfolio Reconciliation and Electronic Messaging	26
• Portfolio Reconciliation Frequency	26
• Electronic Messaging	28
Firms Participating in the 2015 ISDA Margin Survey	29
Appendix	30

SUMMARY

Total collateral supporting non-cleared derivatives fell last year, but the amount of margin for cleared derivatives increased significantly

- Total collateral (reported plus estimated) supporting non-cleared derivatives transactions decreased by 6.2%, from \$5.34 trillion in 2013 to \$5.01 trillion in 2014 (see Chart 1)¹.
- The amount of collateral received against non-cleared derivatives increased slightly (4.4%), but the amount of collateral delivered rose substantially, growing by 28.6% between year-end 2013 and year-end 2014². The collateral-received figure was driven by a 6.7% increase in cash, which represented 76.6% of the total. Although US dollar and euro accounted for the bulk of cash, the largest year-over-year increases were seen in yen and 'other' currencies. The rise in collateral delivered was driven by an increase in cash, government securities and other securities, although cash represented the most delivered asset class (77.7%)³.
- Total reported collateral for cleared derivatives transactions (received and delivered for house and client cleared trades) rose 54%, from \$295 billion to \$455 billion between 2013 and 2014⁴. Total collateral (received and delivered) related to client clearing more than quadrupled, increasing by 262.5%. All collateral types contributed to the rise, with the use of cash, government securities and 'other' securities increasing by more than 250% per category.
- Similar to previous years, the 1994 ISDA Credit Support Annex (CSA) New York Law (pledge) comprised the largest share of non-cleared agreements, accounting for 46.8%. This was followed by the 1995 ISDA Credit Support Annex English Law (title transfer), which made up 30.1% of the total (see Chart 3).
- The use of CSAs for non-cleared derivatives transactions increased across every asset class in 2014. Credit and equity derivatives had the highest usage, at 97.0% and 91.3%, respectively (see Table 6).
- Lower percentages of cash, government securities and other securities were eligible for rehypothecation in 2014 versus the previous year (see Table 8). Cash comprised over 90% of collateral eligible for rehypothecation and more than 80% of collateral actually rehypothecated. Government securities accounted for the second most used asset class, followed by 'other securities'.
- Nearly two-thirds (65.9%) of cleared house trades used central counterparty (CCP) agreements (Chart 4). Cash was by far the most popular collateral type for amount delivered to meet initial margin and for variation margin (see Table 12). The US dollar was the most used currency delivered to meet initial margin requirements, increasing sharply from 2013 levels. However, use of the dollar received for variation margin declined slightly, amid gains in yen.

¹ A decrease in total collateral partially reflects fewer participants in this year's survey

² This year-over-year comparison reflects data from 14 large firms that reported both this year and in 2014. With 18 fewer participants in the survey this year, we used the large firms that responded both years to provide an even historical comparison. A 'large' firm is defined as one that has more than 3,000 active non-cleared ISDA collateral agreements

³ Figures reflecting all respondents can be found in Appendix Table A1

⁴ See Appendix Tables A2 and A3 for figures

- The majority of firms increased the number of agreements supporting client cleared transactions (see Chart 2). Large firms increased client clearing agreements by approximately 67% year-over-year.
- More than 85% of all firms surveyed this year indicated they manage their collateral processes in-house. Small firms manage collateral exclusively internally, while it is a near-exclusive process at medium-size firms. Larger firms outsource about a third of that business (see Table 17).
- The largest portfolios consisting of more than 5,000 trades are reconciled most frequently. As shown in Table 20, 87.1% of large portfolios are reconciled daily, versus 82.9% for portfolios with 2,500-5,000 trades.

This year's survey focuses more closely on cleared derivatives following the introduction of clearing mandates

METHODOLOGY AND PARTICIPANTS

ISDA's annual Margin Survey provides information about the use of collateral in the over-the-counter (OTC) derivatives business. Each year, survey questions evolve to reflect market developments in order to provide consistent, up-to-date benchmarks for collateral use. The data used in the 2015 Margin Survey is sampled as of December 31, 2014. This year, more attention is paid to the collateralization of cleared derivatives, in addition to coverage of the bilateral derivatives market.

First published in 2000, the ISDA Margin Survey is part of a broader set of ISDA initiatives in the area of collateral, including documentation, best practices and practitioner guidelines. As with all ISDA surveys, access to individual firm responses is strictly limited to selected ISDA staff and the data is not shared with employees of any ISDA member firm.

Please note there are various proposed and final regulations included in the Dodd-Frank Act and the European Market Infrastructure Regulation (EMIR) that pertain to collateral management. The results of this survey may reflect data gathered prior to the implementation of these new regulatory requirements.

Participant Statistics

Fewer participants responded to the 2015 ISDA Margin Survey versus the previous year. A total of 41 ISDA member firms completed the survey versus 59 during 2014, marking a 30.5% decline in participation. Several members, particularly those at smaller firms, decided not to participate given time constraints related to regulatory compliance issues.

Participants were based in 20 different countries across three regions: Europe, the Middle East and Africa (53%); the Americas (32%); and Asia (16%). This breakdown is mostly unchanged from 2014 survey statistics.

ISDA classifies participants into three size groups – large, medium and small – based on the number of active non-cleared agreements (see Table 1)⁵. In the 2015 survey, 34% of participants had more than 3,000 active agreements as of December 31, 2014, and were classified as 'large' firms as a result. Most participants (51%) were classified as 'medium', with between 100 and 3,000 agreements. Participants classified as 'small' represented 15% of the total.

Table 1: Profile of firms responding to the 2015 ISDA Margin Survey as of December 31, 2014

	Number of agreements	2015	2014	2013
Large	>3,000	34%	22%	18%
Medium	100 – 3,000	51%	51%	42%
Small	0 – 100	15%	27%	40%

⁵ An active agreement is a measure used to determine the size of a firm's derivative program. An 'active' collateral agreement is considered an executed agreement when: (i) there is an open exposure with active trades beneath it (whether or not collateral has been received/delivered); or (ii) where collateral has actually been received/delivered (even though there may be no open trades)

Changes in the percentage of firms of various sizes are typically a function of variations in the number of participating firms, rather than a shift in the number of agreements. Table 1 describes the breakdown of participant types by size each year rather than changes in the number of active agreements year-over-year.

Table 2 describes the type of entity that participated in the 2015 survey. Similar to previous years, banks and broker-dealers comprised the largest share, with the 'other' category – covering government-sponsored entities (GSEs), master trust banks and buy-side institutions – the second largest. Table 2 describes changes in the type of participant surveyed year-over-year, rather than general changes in the composition of market participants.

Table 2: Entity type breakdown of firms responding to the 2015 ISDA Margin Survey as of December 31, 2014

	2015	2014	2013
Bank/Broker-dealer	88%	87%	81%
Hedge fund	2%	2%	3%
Other	7%	7%	8%
Sovereign Nat'l Gov't	2%	--	--

Total non-cleared derivatives collateral in circulation fell by 6.2% partially as a result of increased clearing volumes

NON-CLEARED DERIVATIVES

Collateral as a Risk Management Tool

Credit risk exists whenever a firm has a relationship in which a counterparty has an obligation to make payments or deliveries in the future. There are a number of ways of addressing the credit risk arising from a derivatives transaction, but the use of collateral has long been established as an effective means of mitigation.

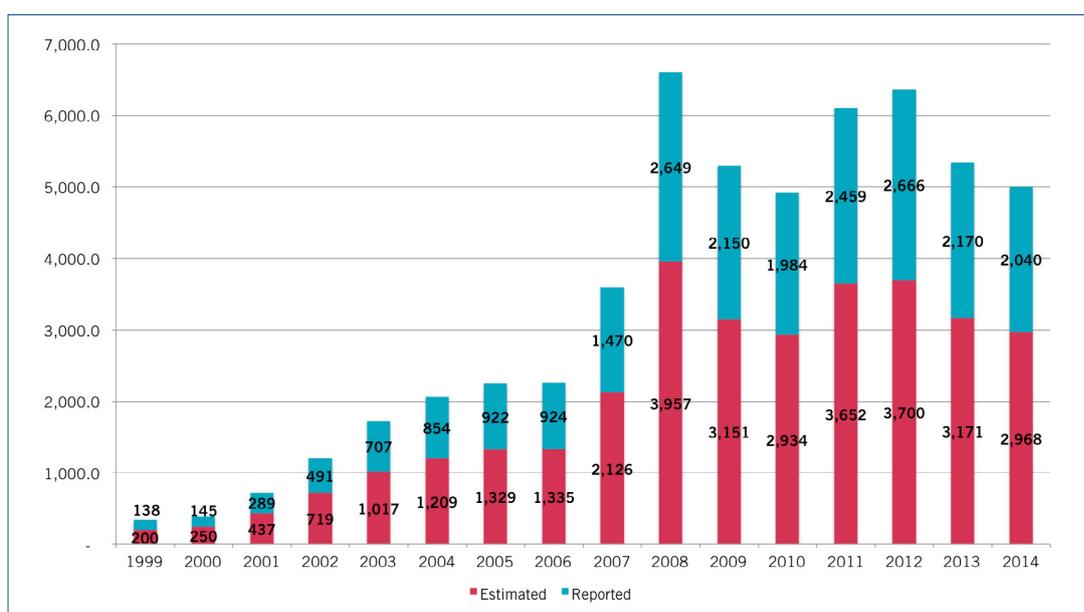
In an evolving regulatory environment that broadly seeks to reduce the counterparty risk associated with derivatives, the continued use of non-cleared collateralization has an increasingly important role to play in risk mitigation. This section details the use of collateral assets for this purpose.

Collateral Assets

The reported amount of collateral in circulation is defined as the collateral balances that have been received or delivered, respectively, by two counterparties to a non-cleared derivatives contract. In this year's survey, the combined collateral of 41 participants was approximately \$2.04 trillion at the end of 2014.

Chart 1 provides a history of reported collateral from the end of 1999 to the end of 2014. Each year, total reported collateral is adjusted for market participants that are not part of the ISDA survey. Factors such as the number of participants and changing market and regulatory conditions drive this statistic⁶.

Chart 1: Growth in value of reported and estimated collateral (USD billions) as of December 31, 2014



⁶ The method used to calculate how non-participant collateral drives the estimate of total collateral in circulation can be found in the Appendix on page 33

The estimated amount of collateral in circulation was approximately \$2.97 trillion at the end of 2014, representing a 6.4% decline from the previous year. Total collateral (reported plus estimated) supporting non-cleared derivatives transactions decreased by 6.2%, from \$5.34 trillion in 2013 to \$5.01 trillion in 2014. Much of this decrease can be attributed to the rise in the amount of OTC derivatives that are now cleared.

Types of Collateral Assets

Table 3 depicts the breakdown of reported collateral received and delivered against non-cleared derivatives transactions by asset category. The table compares large firms that participated in the survey in 2014 and 2015. Total year-end 2014 statistics across all firm sizes are available in Appendix Table A1.

The amount of collateral received against non-cleared derivatives increased modestly (4.4%), while the amount of collateral delivered rose substantially, growing by 28.6% between year-end 2013 and year-end 2014⁷.

The collateral-received figure was driven by a 6.7% increase in cash, which represented 76.6% of collateral used. Although the US dollar and euro accounted for the bulk of cash, the largest year-over-year increases were seen in yen and 'other' currencies.

Collateral received in the form of government securities decreased 8.3%, while the use of 'other' securities increased by 5.9%. These two groups accounted for 13.4% and 10.1% of total collateral received, respectively. The largest decreases were in US and European Union government bonds, while the largest increases came from supranational and US municipal securities.

The use of delivered cash for non-cleared derivatives rose by 23.9%, and represented 77.7% of collateral usage by asset type. Changes were driven by increased use of all G-4 currencies, as well as 'other' (non-G-4) currency types.

Government securities delivered as collateral climbed by 45.4% and represented 18.0% of total collateral delivered. This increase was driven mostly by a large jump (247.1%) in the use of UK government securities being pledged.

Use of 'other' securities as a deliverable collateral type increased by 59.4% year-over-year. The largest increases were observed in US municipal bonds, government agency/government-sponsored enterprises (GSEs), and equities. However, this segment overall only represented 4.3% of total collateral delivered.

⁷ While large firms' total collateral has increased, total collateral for all respondents has declined, reflecting fewer participants in this year's survey

Table 3: Composition of collateral received and delivered against non-cleared derivative transactions (USD billions) as of December 31, 2014

Amt of Collateral Assets	2014		2013	
	Received	Delivered	Received	Delivered
CASH				
USD	366.9	277.9	341.9	241.8
EUR	324.9	255.1	319.3	199.3
GBP	18.9	31.8	18.4	24.6
JPY	28.9	10.1	21.4	6.7
Other	28.1	28.0	18.3	14.3
Cash Sub Total	767.6	603.0	719.3	486.6
GOVERNMENT SECURITIES BY ISSUER				
United States	37.4	37.6	46.9	31.8
European Union	24.2	58.4	27.3	42.9
United Kingdom	24.6	33.0	16.6	9.5
Japan	27.9	8.5	23.3	9.6
Other	20	2.4	32	2.5
Government Securities Sub Total	134	139.9	146.1	96.2
OTHER SECURITIES				
Government Agency/GSEs	18.7	14.7	14.6	7.3
Supranational bonds	6.8	1.4	3	1.1
US municipal bonds	4.5	0.0	1.3	0
Covered bonds	1.2	0.1	1.6	0.1
Corporate bonds	16.9	5.5	22	7.1
Letter of credit	4.2	0.1	3.5	1.2
Equities	28.9	4.8	32.8	1.1
Metals and other commodities	0	0.1	0	-
Other	19.6	6.9	16.3	3.2
Other Securities Sub Total	100.8	33.6	95.2	21.1
TOTAL	1,002.40	776.5	960.6	604

*Data includes large firms who participated in both the 2014 and 2015 ISDA Margin Surveys

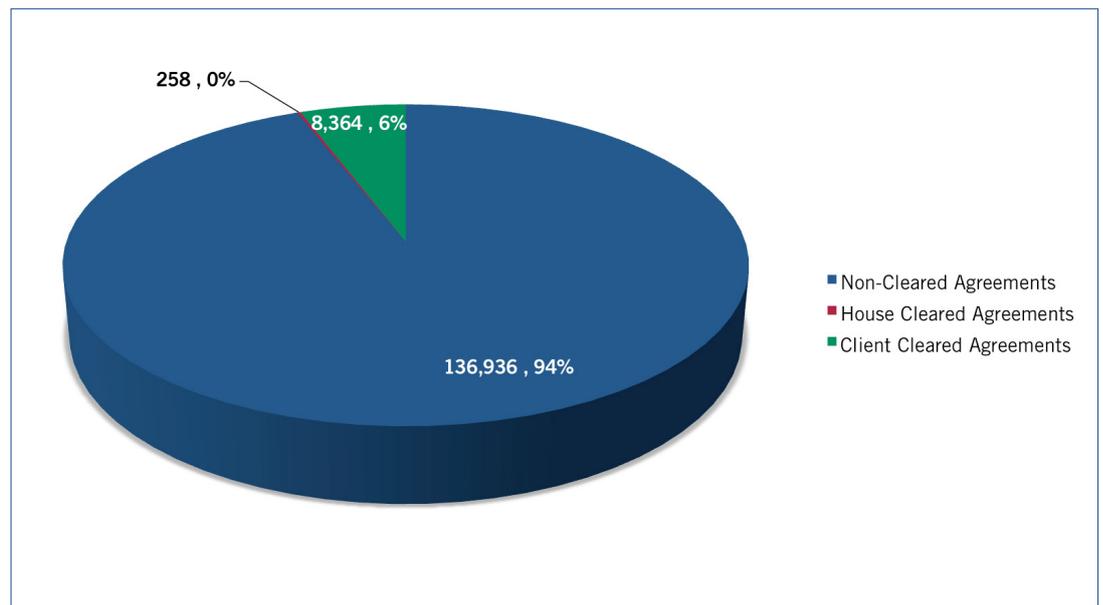
Number and Types of Collateral Agreements

Respondents to the 2015 ISDA Margin Survey reported a total of 145,558 active collateral agreements for both cleared and non-cleared transactions at year-end 2014 (see Chart 2). This included 136,936 non-cleared agreements, 8,364 client cleared agreements and 258 house cleared agreements.

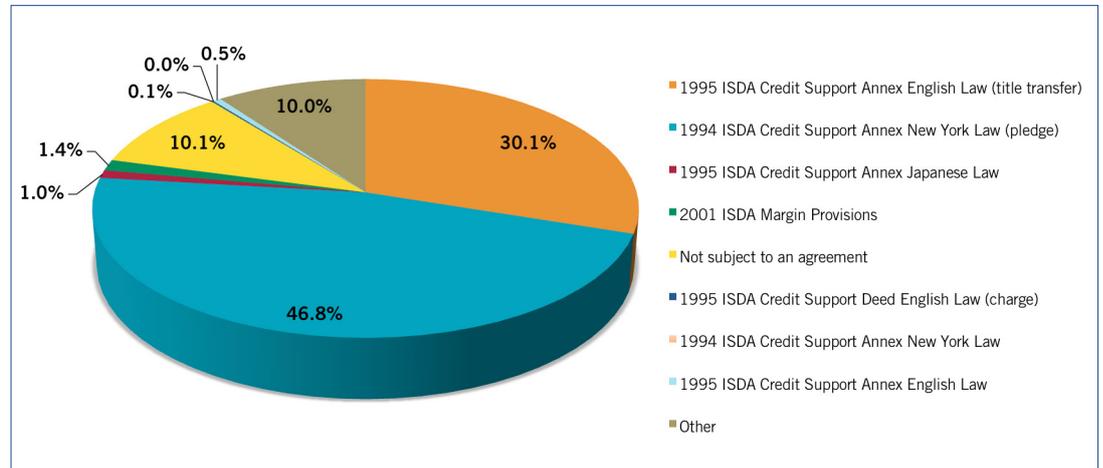
Comparing figures from large firms that participated in both the 2014 and 2015 surveys produces some interesting observations. For example, the number of client cleared agreements has risen by 67.1% as firms continue to add new client clearing business. On the other hand, the count of house-cleared agreements dropped by 21.3% and non-cleared agreements fell by 7.2%.

The total count of inactive agreements rose by 17.9% during 2014 compared to the previous year, even though there were fewer survey participants across all firm sizes this year. This increase may point to more counterparties leaving the market as a result of increased operational and regulatory costs.

Chart 2: Composition of active agreements as of December 31, 2014



Similar to previous years, the 1994 ISDA Credit Support Annex (CSA) New York Law (pledge) comprised the largest share of non-cleared agreements, accounting for 46.8%. This was followed by the 1995 ISDA Credit Support Annex English Law (title transfer), which made up 30.1% of the total (see Chart 3).

Chart 3: Composition of active non-cleared agreements as of December 31, 2014

Collateral Coverage

Collateral coverage was measured in several ways in this year's survey. Participants were asked to provide the number of active non-cleared derivatives collateral agreements according to portfolio size. Of the 191,304 agreements split by size, the majority (91.8%) related to portfolios consisting of less than 100 trades (see Table 4).

Table 4: Percentage of active non-cleared collateral agreements by portfolio size as of December 31, 2014

	2015	2014
Greater than 5,000 trades	0.4%	0.3%
Between 2,500 and 5,000 trades	0.3%	0.3%
Between 500 and 2,499 trades	2.0%	1.6%
Between 100 and 499 trades	5.5%	11.0%
Less than 100 trades	91.8%	86.8%

Participants were also asked to classify non-cleared active collateral agreements by counterparty type. Dealers, banks and hedge funds overwhelmingly use CSAs, the survey reveals (Table 5).

Table 5: Percentage of active bilateral derivatives collateral agreements by counterparty type as of December 31, 2014

	CSA	No CSA
Dealers	90.4%	9.6%
Central Counterparties	79.4%	20.6%
Banks and Security Firms	95.5%	4.5%
Non-Financial commodity dealers	41.1%	58.9%
Insurance and Financial Guaranty Firms	88.0%	12.0%
SPVs, SPCs, and SPEs	62.8%	37.2%
Hedge Funds	94.1%	5.9%
Pension Plans	75.3%	24.7%
Mutual Funds	68.8%	31.2%
Other Financial Firms	70.4%	29.6%
Non-Financial Institutions	28.6%	71.4%
Government-sponsored entities/ Government Agencies	42.4%	57.6%
Sovereign national governments	69.0%	31.0%
Local or regional government entities	75.6%	24.4%
Other	0.8%	99.2%

The use of CSAs for non-cleared derivatives transactions increased across every asset class in 2014. Credit and equity derivatives had the highest usage, at 97.0% and 91.3%, respectively.

Table 6: Bilateral derivative collateral transactions by product type as of December 31, 2014

	CSA	No CSA
Commodity derivatives	59.1%	40.9%
Credit derivatives	97.0%	3.0%
Equity derivatives	91.3%	8.7%
Fixed-income derivatives	88.9%	11.1%
Foreign Exchange derivatives (excluding spot transactions)	73.0%	27.0%

Although the trend towards smaller portfolios and a greater use of CSAs across counterparty and asset type corresponds to results taken from the 2014 Margin Survey, subtle differences in participation rates and the types of participants affect the outcome. The figures in Tables 4-6 are therefore influenced by the characteristics of participants each year, as well as changes in portfolio sizes and collateral transactions.

Treatment of Collateral

The 2015 survey included several questions on how firms treat collateral that is received and delivered to meet non-cleared derivatives exposures. The first question focused on independent amount (IA) and variation margin that was received and delivered over the period. Several participants indicated they commingle IA and variation margin, and therefore provided combined figures.

As in previous years, cash was most commonly used for IA and received/delivered variation margin (see Table 7). Government securities were the second most popular asset type, followed by 'other' securities.

Compared with last year, more firms reported comingled IA and variation margin amounts than in the past. This change in methodology makes it more challenging to create a year-over-year comparison.

Table 7: Percentage of independent amount and variation margin received and delivered as of December 31, 2014

	Received			Delivered		
	Cash	Govt securities by issuer	Other Securities	Cash	Govt securities by issuer	Other securities
Independent Amount (IA)	55.4%	24.2%	20.3%	64.7%	11.1%	24.1%
Variation Margin	77.2%	16.3%	6.4%	75.3%	21.4%	3.3%
Commingled IA and VM	71.7%	12.0%	16.3%	76.4%	20.9%	2.8%

Collateral received may be re-lent, a practice known as 'rehypothecation'⁸. Collateral re-use is common across the industry and serves an important role in reducing collateral funding costs and ensuring the global supply of high-quality collateral assets is not overwhelmed by demand, which could drive up the price of such assets⁹.

Participants were asked to report the amount of collateral assets that were eligible to be rehypothecated, as well as the amount of assets that were actually rehypothecated across the three types of collateral received and delivered.

Cash comprised more than 90% of collateral that is eligible to be rehypothecated and over 80% of collateral that is actually rehypothecated. Government securities accounted for the second most used collateral type, followed by 'other securities' (see Table 8).

⁸ The practice of collateral re-use involves the pledging and re-delivery, sale, investment or other contractually permitted use of collateral received by a party. All collateral received under title transfer forms of collateral agreements has the intrinsic property of being re-usable, because title to the asset has been transferred. ISDA CSAs generally include the right of re-use unless parties specifically remove it

⁹ Non-cleared margin rules published by the Working Group on Margining Requirements will set strict limits on rehypothecation

Table 8: Amount of collateral assets received: eligible versus actually rehypothecated as of December 31, 2014

	Cash	Govt securities by issuer	Other securities
Total received (USD millions)	855,508	155,059	109,629
ELIGIBLE to be rehypothecated	91.6%	77.7%	53.2%
ACTUALLY rehypothecated	82.2%	52.8%	26.9%

A high percentage of eligible cash collateral was rehypothecated by large and medium firms (see Table 9). Nearly three-quarters of all government securities that were eligible for rehypothecation were re-used by large firms, with 36.9% rehypothecated by medium-sized entities. These percentages are in line with results observed in the 2014 margin survey.

Table 9: Rehypothecated collateral as a percentage of eligible collateral by firm size as of December 31, 2014

	Large	Medium	Small
Cash	90.9%	77.3%	0.0%
Government securities by issuer	72.4%	36.9%	0.0%
Other securities	50.0%	56.5%	0.0%

Total collateral related to client clearing more than quadrupled, increasing by 262.5%

CLEARED DERIVATIVES

Extent of Collateral Use

The 2015 survey focused more on key statistics involving cleared derivatives following the introduction of clearing mandates in 2013 under the Dodd-Frank Act in the US.

Total reported collateral for cleared derivatives transactions (received and delivered for house and client cleared trades) rose 54%, from \$295 billion to \$455 billion between 2013 and 2014.

Comparing 2014 and 2013 data across large firms (and adjusting for firms that did not participate in the 2015 survey), there was an increase in the amount of client-clearing relationships year-over-year. Relationships were added between dealers and other banks/securities firms (203.3%), insurance and financial guaranty firms (184.2%), and local or regional government entities (1,160.0%). House cleared active collateral agreements with central counterparties rose 32.8% year-over-year as additional clearing relationships were added.

Table 10 compares the percentage of active cleared derivatives collateral agreements by counterparty type during 2014. Client-cleared agreements make up the majority of all agreements and are concentrated with banks and securities firms, special-purpose vehicles (SPVs), special-purpose companies (SPCs) and special-purpose entities (SPEs), hedge funds and mutual funds.

Table 10: Percentage of active cleared derivative collateral agreements by counterparty type as of December 31, 2014

	House trades	Client cleared
Dealers	0.0%	0.0%
Central counterparties	0.6%	0.8%
Banks and security firms	0.0%	36.6%
Non-Financial commodity dealers	0.0%	0.0%
Insurance and financial guaranty firms	0.0%	8.8%
SPVs, SPCs, and SPEs	0.0%	20.6%
Hedge funds	0.0%	17.3%
Pension plans	0.0%	3.0%
Mutual funds	0.0%	10.0%
Other financial firms	0.0%	0.6%
Non-financial institutions	0.0%	0.1%
Government-sponsored entities/Government Agencies	0.0%	0.5%
Sovereign national governments	0.0%	0.0%
Local or regional government entities	0.0%	0.8%
Other	0.0%	0.0%

As in previous years, fixed-income derivatives comprised the largest asset class for active cleared collateral agreements. This was the case for both for house (83.5%) and client (8.1%) trades (see Table 11).

Table 11: Percentage of active cleared derivative collateral agreements: by product type as of December 31, 2014

	House trades	Client cleared
Commodity derivatives	0.0%	0.0%
Credit derivatives	6.1%	0.8%
Equity derivatives	0.0%	0.6%
Fixed-income derivatives	83.5%	8.1%
Foreign Exchange derivatives (excluding spot transactions)	0.4%	0.5%

Types of Collateral

Banks, broker-dealers and clearing members were asked to provide information on the collateral assets received and delivered for both house and client cleared derivatives trades (see Tables 12 and 13)¹⁰.

Cash was the popular collateral type for amounts received and delivered to meet variation margin, accounting for more than 90% of collateral used (see Table 12).

Information from large firms that participated in both the 2014 and 2015 surveys was used to provide a year-over-year comparison between the asset types. Looking across periods, the US dollar substantially increased as the most used currency delivered to meet initial margin. However, the US dollar showed small declines in use for received and delivered variation margin. Gains in both euro and sterling were seen in these areas.

Government securities increased substantially as a collateral type received to meet variation margin. European Union government bonds were most often used, followed by US government securities. The amount of government securities delivered to meet initial margin and delivered to meet variation margin was fairly stable year-over-year.

Declines were observed in 'other' securities delivered to meet initial margin. This was concentrated most in government agency/GSE, supranational and corporate bonds.

¹⁰ Underlying data can be found in Tables A2 and A3 in the Appendix

Table 12: Composition of collateral received and delivered against cleared derivative transactions: House Trades as of December 31, 2014

Cash	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
USD	N/A	19.2%	6.1%	36.0%
EUR	N/A	19.9%	58.5%	25.5%
GBP	N/A	8.1%	14.7%	10.0%
JPY	N/A	15.8%	6.5%	6.8%
Other	N/A	37.0%	14.2%	21.7%
% of Total collateral	N/A	91.9%	34.2%	99.4%

Government Securities by Issuer	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
United States	N/A	15.0%	32.1%	16.6%
European Union	N/A	74.1%	23.6%	43.5%
United Kingdom	N/A	3.6%	8.1%	0.0%
Japan	N/A	6.0%	17.0%	0.0%
Other	N/A	1.2%	19.2%	39.9%
% of Total Collateral	N/A	8.1%	57.9%	0.6%

Other Securities	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
Government agency/GSEs	N/A	0.0%	3.8%	0.0%
Supranational bonds	N/A	0.0%	0.0%	0.0%
US municipal bonds	N/A	0.0%	3.1%	0.0%
Covered bonds	N/A	0.0%	0.4%	0.0%
Corporate bonds	N/A	0.0%	34.7%	0.0%
Letters of credit	N/A	0.0%	0.0%	0.0%
Equities	N/A	0.0%	0.0%	0.0%
Metals and other commodities	N/A	0.0%	0.0%	0.0%
Other	N/A	0.0%	57.9%	0.0%
% of Total collateral	N/A	0.0%	0.4%	0.0%

US dollars and related securities were most used as received and delivered collateral in relation to client clearing (Table 13). As in previous years, cash is solely used for received and delivered variation margin.

A number of differences can be observed when comparing information between large firms that participated in both the 2014 and 2015 surveys. For example, there was an increase in the number of agreements supporting client cleared transactions, with large firms increasing their number of client cleared agreements by 67.1% (see Chart 2).

Total collateral (received and delivered) related to client clearing more than quadrupled, increasing by 262.5%. All collateral types contributed to the rise, with the use of cash, government securities and 'other' securities increasing by more than 250% per category.

Cash was the most commonly used collateral type as a percentage of the total, but declined from 66.6% to 59.3% as received collateral to meet initial margin. Conversely, cash delivered to meet initial margin rose from 51.7% to 60.1% over the year. Government securities received to meet initial margin increased from 30.8% to 38.6%, but the amounts delivered to meet initial margin fell from 48.2% to 38.3%. Other securities received and delivered were largely unchanged.

Table 13: Composition of collateral received and delivered against cleared derivative transactions: Client Clearing as of December 31, 2014

Cash	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
USD	93.1%	42.9%	91.1%	65.6%
EUR	5.0%	8.1%	3.6%	10.7%
GBP	1.2%	2.1%	1.6%	3.4%
JPY	0.4%	41.4%	1.5%	10.6%
Other	0.4%	5.5%	2.1%	9.7%
% of Total collateral	59.3%	100.0%	60.1%	100.0%

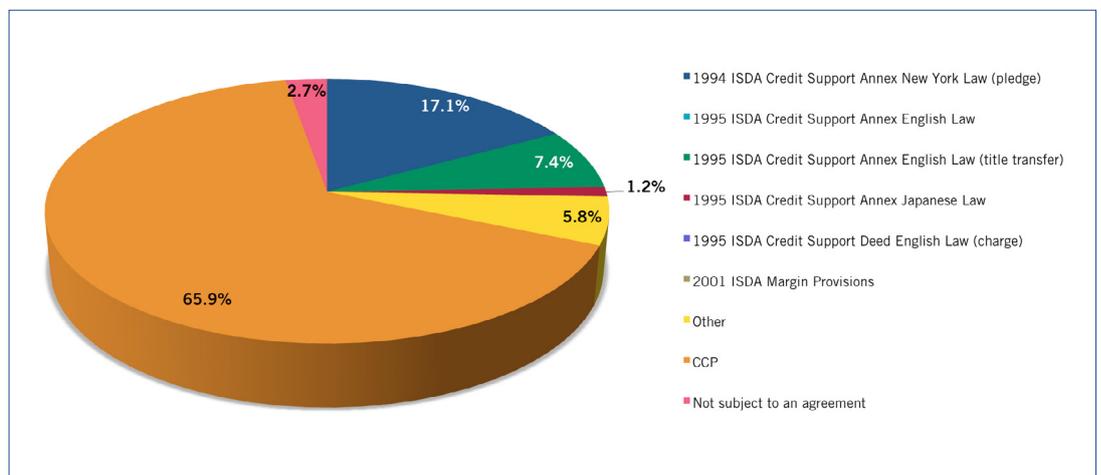
Government Securities by Issuer	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
UNITED STATES	90.6%	0.0%	96.8%	0.0%
European Union	3.9%	0.0%	0.6%	0.0%
United Kingdom	1.1%	0.0%	1.2%	0.0%
Japan	0.8%	0.0%	1.4%	0.0%
Other	3.6%	0.0%	0.0%	0.0%
% of Total Collateral	38.6%	0.0%	38.3%	0.0%

Other Securities	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
Government agency/GSEs	51.3%	0.0%	90.5%	0.0%
Supranational bonds	0.0%	0.0%	0.0%	0.0%
US municipal bonds	0.0%	0.0%	0.0%	0.0%
Covered bonds	4.3%	0.0%	8.7%	0.0%
Corporate bonds	0.0%	0.0%	0.0%	0.0%
Letters of credit	0.0%	0.0%	0.0%	0.0%
Equities	0.0%	0.0%	0.0%	0.0%
Metals and other commodities	0.0%	0.0%	0.0%	0.0%
Other	44.5%	0.0%	0.9%	0.0%
% of Total collateral	2.0%	0.0%	1.6%	0.0%

As reported in the previous section, 145,558 active collateral agreements were in place for both cleared and non-cleared transactions as of December 31, 2014. Of these agreements, 136,936 were non-cleared, 258 related to cleared house trades and 8,364 related to client cleared agreements.

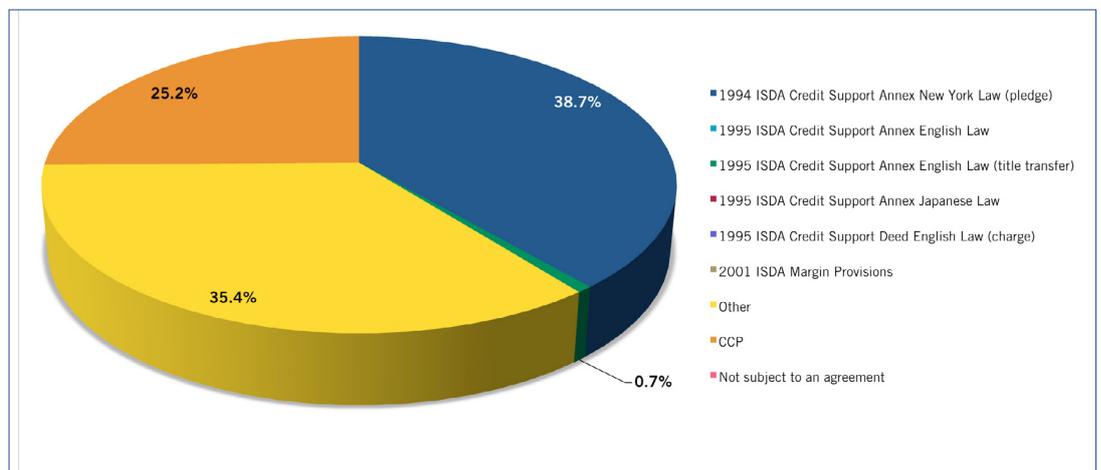
Nearly two-thirds (65.9%) of cleared house trades used CCP agreements. The second-largest category was the 1994 ISDA Credit Support Annex New York Law (pledge), which made up 17.1% of the total.

Chart 4: Composition of active cleared agreements: House trades as of December 31, 2014



The split of cleared agreements for client clearing is more evenly distributed compared to house trades. For example, client clearing addendums (denoted as ‘CCP’ in Chart 5 below) accounted for 25.2% of the total, making it the fastest growing segment. The 1994 ISDA Credit Support Annex New York Law (pledge) accounted for the largest percentage of total client cleared agreements, representing 38.7% of the total. ‘Other’, which includes bespoke agreements, accounted for 35.4%.

Chart 5: Composition of active cleared agreements: Client clearing as of December 31, 2014



MARKET PRACTICES

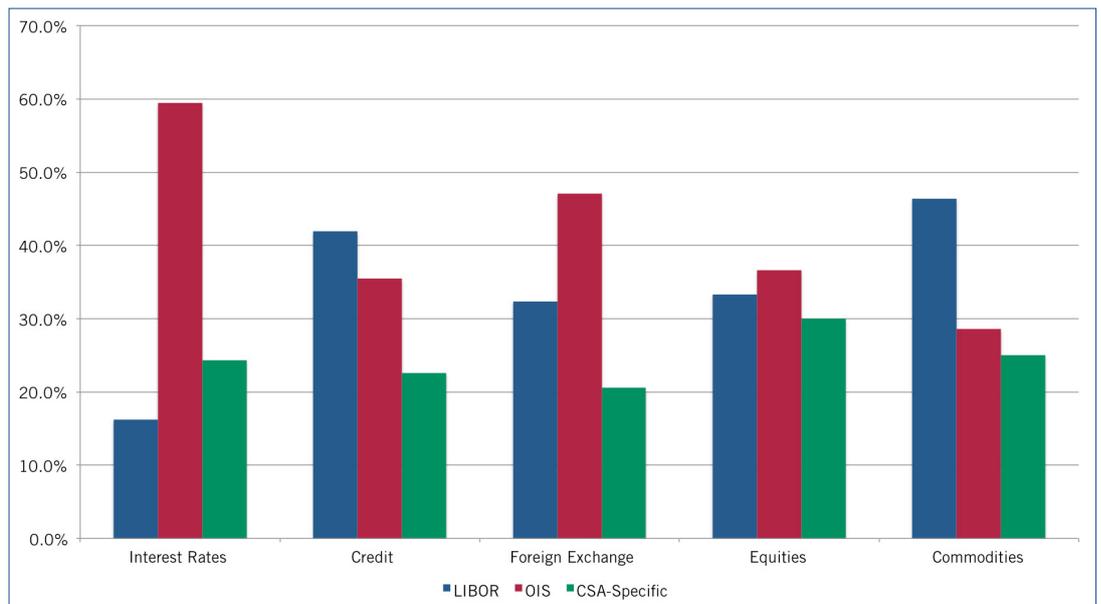
The shift to OIS discounting continued in 2014 and is most widely used for interest rate derivatives

Derivatives Valuation for Collateralized Transactions

Historically, market participants have valued derivatives cashflows using LIBOR. However, many firms began using the overnight indexed swap (OIS) rate as a discount rate for cash-collateralised derivatives in the wake of the financial crisis, as this is the rate used to determine the interest paid on cash collateral. This trend continued last year, with the move to OIS discounting motivated by better funding alignment and the reduction of liquidity risk (see Chart 6).

The use of OIS discounting is most broadly observed in the interest rate derivatives category¹¹, but increased at the fastest rate for foreign exchange and equity derivatives – by 16.3% and 13.3%, respectively. Other CSA-specific methodologies were most prevalent in the equity and commodity asset classes.

Chart 6: Composition of CSA discounting basis as of December 31, 2014



¹¹ This implementation of the most relevant valuation (MRV) basis, and in particular, the numerical difference between historical LIBOR valuation and the new funding-sensitive valuation, is sometimes referred to as funding valuation adjustment (FVA)

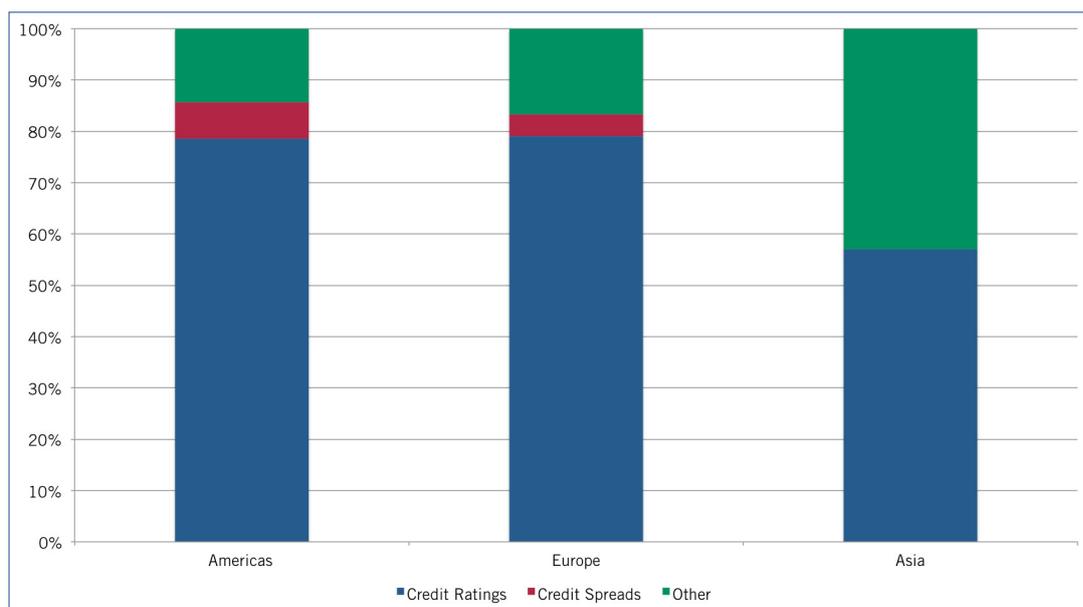
Table 14 summarizes the current state of implementation of derivatives valuation methodologies by region for the purpose of margining under collateral agreements. The use of OIS as a discount rate for derivatives cashflows has become more prevalent in all three regions for most asset classes. There has been a marked shift to using OIS over LIBOR.

Table 14: CSA discounting methodology, by products and region as of December 31, 2014

	Americas			Europe			Asia		
	LIBOR	OIS	CSA-spec	LIBOR	OIS	CSA-spec	LIBOR	OIS	CSA-spec
Interest Rates	8.3%	58.3%	33.3%	15.8%	57.9%	26.3%	33.3%	66.7%	0.0%
Credit	40.0%	20.0%	40.0%	33.3%	46.7%	20.0%	66.7%	33.3%	0.0%
Foreign Exchange	27.3%	36.4%	36.4%	23.5%	58.8%	17.6%	66.7%	33.3%	0.0%
Equities	40.0%	20.0%	40.0%	20.0%	46.7%	33.3%	60.0%	40.0%	0.0%
Commodities	55.6%	0.0%	44.4%	35.7%	42.9%	21.4%	60.0%	40.0%	0.0%

Participants were also asked if they have CSAs with collateral thresholds (see Chart 7)¹². While the threshold methodology is most commonly based on credit ratings in all three regions, several participants also rely on other methods, such as net asset value, fixed amounts or percentage of notional. By region, the collateral threshold methodology mix has not changed much since the previous year, with credit ratings remaining the most important factor.

Chart 7: CSA collateral threshold methodology by region as of December 31, 2014



¹² Thresholds set at a portfolio level induce non-linear effects on trade valuation because they reduce the amount of collateral collected as compared to the amount required to fund future swap cashflows. Trades executed while the collateral threshold has not been reached are uncollateralized. Once the threshold has been exceeded, the portfolio becomes partially collateralized

Collateral Optimization

The efficient and effective use of collateral, known as collateral optimization, has become more important to market participants¹³. As collateralization becomes more commoditized through process improvement and automation, there is an increasing trend to introduce business rules that maximize the efficiency and minimize the cost of collateral.

The practice of collateral optimization is particularly important in the event high-quality collateral becomes scarce. Over 83% of large firms optimize collateral and 70.0% of these do it systematically. This occurs on a daily basis 60.0% of the time. Medium-sized firms are not far behind, as 65.0% optimize collateral. Of this group, 53.8% do it systematically. Most of this systematic optimization occurs when needed (61.5%). Small firms optimize collateral roughly one third of the time. When they do this, they employ systematic optimization 100% of the time, half of which is done daily and half of which is done when needed.

Table 15: Collateral optimization statistics by firm size as of December 31, 2014

	All	Large	Medium	Small
Optimize collateral	65.8%	83.3%	65.0%	33.3%
Systematic optimization	64.0%	70.0%	53.8%	100.0%
Daily basis	44.0%	60.0%	30.8%	50.0%
When material	56.0%	50.0%	61.5%	50.0%
Other frequency	0.0%	0.0%	0.0%	0.0%

Collateral optimization appears to be best aligned as a front-office activity, particularly for large- and medium-sized firms. However, operations departments managed this process for one quarter of all participants (see Table 16). One reason for the front-office focus could be that the optimization strategy is based on liquidity risk, funding costs, capital costs and other economic factors that are a part of everyday life on the trading desk. Meanwhile, rules-based methods for optimization may fall within the sphere of the operations group.

Table 16: Collateral optimization function by firm size as of December 31, 2014

	All	Large	Medium	Small
Front office	34.8%	33.3%	36.4%	33.3%
Operations	24.6%	29.6%	18.2%	33.3%
Credit department	13.0%	14.8%	15.2%	0.0%
Corporate treasury	15.9%	18.5%	15.2%	11.1%
Other	11.6%	3.7%	15.2%	22.2%

¹³ Optimization refers to the ability to post and re-use collateral according to delivery preferences, such as cost of funding and delivery, liquidity and market capitalization, embedded haircuts in the CSA, availability of assets to the delivery party, cost of reinvestment and yield, ability to re-use, and risk

Collateral Management

Collateral management is typically an internal process. More than 85% of all firms surveyed this year indicated they manage their collateral processes in-house. Small firms manage collateral exclusively internally, while it is a near exclusive process in medium size firms. Larger firms outsource about a third of that business (see Table 17).

Table 17: Percentage of firms that manage collateral externally: by firm size as of December 31, 2014

	All	Large	Medium	Small
All	0.0%	0.0%	0.0%	0.0%
Some	13.2%	33.3%	5.0%	0.0%
None	86.8%	66.7%	95.0%	100.0%

In order to better understand the nature of margin calls and collateral movement, participants were asked to report the daily average amount of initial and variation margin received and paid for both non-cleared and cleared transactions. Some participants were only able to provide commingled figures. Table 18A describes the range of values using quartiles by firm size for bilateral trades. Table 18B provides the same information for cleared trades. Large firms generally make up the third and fourth quartiles in each category.

Table 18A: Average daily collateral movement by firm size (US\$ millions) as of December 31, 2014: Non-cleared

Non-Cleared						
Quartile	Average collateral received			Average collateral paid		
All	IM	VM	Comingled	IM	VM	Comingled
1	3	6	9	1	6	10
2	11	62	162	7	50	125
3	34	236	967	26	195	899
4	1,655	2,855	3,045	1,676	2,792	3,029
Large firms	IM	VM	Comingled	IM	VM	Comingled
1	9	158	664	10	161	636
2	36	607	1,377	35	590	1,250
3	54	1,468	2,248	47	1,423	2,271
4	1,655	2,855	3,045	1,676	2,792	3,029
Medium firms	IM	VM	Comingled	IM	VM	Comingled
1	1	6	4	1	4	4
2	2	55	6	2	46	7
3	14	244	54	7	160	46
4	27	643	260	18	645	284
Small firms	IM	VM	Comingled	IM	VM	Comingled
1	-	10	11	0	11	11
2	-	13	64	0	14	32
3	-	115	134	0	50	77
4	-	191	191	0	159	159

Table 18B: Average daily collateral movement by firm size (USD millions) as of December 31, 2014: Cleared

Cleared									
Quartile	Average collateral received					Average collateral paid			
	House Cleared		Client Cleared			House Cleared		Client Cleared	
	IM	VM	IM	VM	IM	VM	IM	VM	
All	3	0	1	2	0	1	1	1	
1	3	0	1	2	0	1	1	1	
2	6	4	10	10	6	4	12	9	
3	28	19	16	33	18	14	38	64	
4	82	585	150	82	205	96	473	321	
Large firms	IM	VM	IM	VM	IM	VM	IM	VM	
1	4	12	5	10	8	3	12	8	
2	26	136	14	15	31	18	21	39	
3	54	142	26	53	44	79	94	76	
4	82	585	150	82	205	96	473	321	
Medium firms	IM	VM	IM	VM	IM	VM	IM	VM	
1	1	0	1	1	0	0	1	1	
2	5	1	1	2	6	4	1	2	
3	10	6	6	2	10	9	4	2	
4	40	34	10	2	38	29	10	2	
Small firms	IM	VM	IM	VM	IM	VM	IM	VM	
1	-	0	-	-	0	0	-	-	
2	-	0	-	-	1	0	-	-	
3	-	0	-	-	1	0	-	-	
4	-	0	-	-	2	1	-	-	

Participants were also asked to provide the daily average count of outgoing and incoming margin calls of non-cleared transactions. The majority of these movements are performed by the largest firms. Table 19 provides a quartile analysis by firm size.

Table 19: Count of average daily collateral movements: by firm size as of December 31, 2014

Average daily count of incoming margin calls									
Quartile	Non-Cleared			House Cleared			Client Cleared		
	Large	Medium	Small	Large	Medium	Small	Large	Medium	Small
1	363	13	4	12	3	1	50	1	1
2	616	22	5	20	4	2	202	1	1
3	698	43	8	58	9	2	469	2	1
4	795	113	10	675	401	3	2,017	12	1
Average daily count of outgoing margin calls									
Quartile	Non-Cleared			House Cleared			Client Cleared		
	Large	Medium	Small	Large	Medium	Small	Large	Medium	Small
1	459	17	3	11	2	1	61	1	-
2	647	26	4	20	3	2	176	1	-
3	799	44	5	47	5	2	769	2	-
4	980	98	12	800	399	3	3,382	15	-

PORTFOLIO RECONCILIATION AND ELECTRONIC MESSAGING

More than 80% of derivatives portfolios containing more than 2,500 trades are reconciled daily

Portfolio Reconciliation Frequency

The 2015 survey asked participants how frequently they reconcile portfolios. As shown in Table 20, 87.1% of large portfolios and 82.9% of portfolios ranging in size from 2,500-5,000 trades are reconciled daily.

More than half of portfolios ranging in size from 500–2,499 trades are reconciled daily. This percentage declines for portfolios consisting of 100–499 trades (43.8%) and portfolios consisting of fewer than 100 trades (38.6%).

Dodd-Frank and EMIR regulations, which require more rigorous and frequent portfolio reconciliation, are expected to continue driving this trend.

Table 20: Count of reconciliation frequency by portfolio size as a percentage of total as of December 31, 2014

	Daily	Weekly	Monthly	Qrtly	Yearly	Other
Greater than 5,000 trades	87.1%	0.2%	3.9%	3.9%	0.0%	4.9%
Between 2,500 and 5,000 trades	82.9%	0.4%	3.2%	2.5%	0.0%	11.0%
Between 500 and 2,499 trades	56.2%	11.0%	2.1%	6.3%	15.8%	8.5%
Between 100 and 499 trades	43.8%	28.0%	0.4%	9.3%	0.1%	18.4%
Less than 100 trades	38.6%	3.2%	7.3%	17.9%	9.9%	23.1%

Unsurprisingly, large firms have the greatest number of portfolios consisting of greater than 5,000 trades (343) versus medium-sized firms (14). They also have the greatest number of portfolios that are reconciled daily across each size bucket (35,936) versus medium- (1,756) and small-sized firms (153).

Table 21 describes the frequency of portfolio reconciliation across each size category organized by firm size.

Table 21: Count of portfolio reconciliation frequency by firm size as of December 31, 2014

Large Firms	Daily	Weekly	Monthly	Qrtly	Yearly	Other
Greater than 5,000 trades	87.1%	0.3%	3.8%	3.8%	0.0%	5.1%
Between 2,500 and 5,000 trades	81.9%	0.0%	3.5%	2.7%	0.0%	11.9%
Between 500 and 2,499 trades	76.1%	0.7%	3.5%	5.9%	0.1%	13.8%
Between 100 and 499 trades	44.3%	25.2%	0.3%	9.7%	0.1%	20.4%
Less than 100 trades	40.0%	3.2%	7.3%	16.7%	9.7%	23.1%
Total	41.1%	4.2%	6.9%	16.1%	9.0%	22.7%

Medium firms	Daily	Weekly	Monthly	Qrtly	Yearly	Other
Greater than 5,000 trades	87.5%	0.0%	6.3%	6.3%	0.0%	0.0%
Between 2,500 and 5,000 trades	95.0%	5.0%	0.0%	0.0%	0.0%	0.0%
Between 500 and 2,499 trades	24.6%	26.8%	0.0%	7.2%	40.9%	0.5%
Between 100 and 499 trades	38.9%	45.4%	0.8%	7.5%	0.0%	7.3%
Less than 100 trades	19.7%	4.0%	6.1%	33.9%	12.5%	23.7%
Total	22.4%	10.3%	4.9%	28.4%	14.4%	19.6%

Small firms	Daily	Weekly	Monthly	Qrtly	Yearly	Other
Greater than 5,000 trades	-	-	-	-	-	-
Between 2,500 and 5,000 trades	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Between 500 and 2,499 trades	73.7%	26.3%	0.0%	0.0%	0.0%	0.0%
Between 100 and 499 trades	79.5%	20.5%	0.0%	0.0%	0.0%	0.0%
Less than 100 trades	60.2%	2.9%	12.3%	8.2%	0.0%	16.4%
Total	65.1%	8.1%	8.9%	6.0%	0.0%	11.9%

Electronic Messaging

The increase in collateral volumes driven by Dodd-Frank and EMIR regulatory requirements are necessitating a migration towards electronic messaging and away from manually intensive processes. Firms are continuing to upgrade and automate their derivatives collateral management processes to ensure volumes can be absorbed given the integration of cleared, non-cleared and legacy margin requirements subject to new rules.

The percentage of respondents utilizing an electronic messaging platform has risen for the third year in a row. Currently, 48.6% of participants subscribe to an electronic messaging platform versus 35.6% in the 2014 survey.

Table 22 compares 2015 and 2014 electronic messaging use by firm size. Results show that 83.3% of large firms utilize electronic platforms. This number appears slightly lower than the previous year given differences in participation. Although medium- and small-sized firms engage such platforms less frequently, use has increased dramatically across these two groups.

Table 22: Count of active electronic platform CSAs by firm size as of December 31, 2014

	All	Large	Medium	Small
2015	48.6%	83.3%	31.6%	33.3%
2014	35.6%	100.0%	21.9%	7.1%

FIRMS PARTICIPATING IN THE 2015 ISDA MARGIN SURVEY

AKK Government Debt Management Agency	ING Bank NV
Ally Financial	JPMorgan Chase*
Bank of America Merrill Lynch*	KBC Bank NV
Banco BPI SA	KfW Bankengruppe
Bank of Montreal	Maple Bank GmbH
Bank of New York Mellon	Master Trust Bank of Japan
Bank of Nova Scotia	Mitsubishi UFJ Morgan Stanley Securities Co Ltd
Bank of Tokyo Mitsubishi UFJ	Mizuho Capital Markets Corporation
Barclays*	Morgan Stanley*
BBVA	Nomura
Belfius Banque and Assurances	Nordea AB
BNP Paribas*	Royal Bank of Canada
Cecabank	Shinsei Bank Limited
Citadel	Société Générale*
Citigroup*	Sumitomo Mitsui Banking Co
Credit Suisse*	Swedbank
Deutsche Bank*	UBS*
DNB Bank ASA	Wells Fargo*
DZ Bank AG	Westpac Banking Corporation*
Goldman Sachs*	Zürcher Kantonalbank
HSBC*	

*Denotes "large" firms

APPENDIX

Table A1: Composition of collateral received and delivered against non-cleared derivative transactions (USD millions) as of December 31, 2014

	Received			Delivered		
	2015	2014	2013	2015	2014	2013
Cash						
USD	382,731	383,156	419,710	298,232	309,522	357,792
EUR	377,192	440,872	627,725	315,615	367,652	537,440
GBP	19,913	22,977	34,073	31,897	34,599	40,379
JPY	36,816	28,557	34,736	25,193	19,605	26,322
Other	38,855	29,624	14,357	33,341	21,885	16,670
Sub total	855,508	905,187	1,130,601	704,278	753,263	978,603
Government securities by issuer	2015	2014	2013	2015	2014	2013
United States	39,626	52,496	54,673	45,075	55,293	78,724
European Union	28,331	31,471	30,733	70,013	81,246	92,410
United Kingdom	24,704	21,286	13,459	33,118	13,649	20,861
Japan	37,993	37,293	33,064	15,010	17,361	30,056
Other	24,405	19,841	13,869	10,078	7,783	7,338
Sub total	155,059	179,366	164,564	173,294	175,331	229,389
Other securities	2015	2014	2013	2015	2014	2013
Government agency/GSEs	19,067	19,956	31,223	15,852	9,879	15,356
Supranational bonds	7,221	0	1,044	1,857	0	2,112
US municipal bonds	4,516	2,786	4,225	2	448	29
Covered bonds	1,716	0	3,187	721	0	2,277
Corporate bonds	21,193	35,130	34,904	6,178	12,372	8,437
Letters of credit	4,195	3,904	6,138	102	1,221	728
Equities	30,733	41,563	31,809	6,217	2,959	4,748
Metals and other commodities	25	31	34	62	0	0
Other	20,963	20,544	13,976	7,917	6,088	2,505
Sub total	109,629	123,915	126,540	38,907	32,968	36,192
Total collateral	1,120,196	1,208,468	1,421,706	916,479	961,562	1,244,185

Table A2: Composition of collateral received and delivered against cleared derivative transactions (USD millions): house trades as of December 31, 2014

Cash	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
USD	N/A	17,977	854	18,958
EUR	N/A	18,559	8,208	13,426
GBP	N/A	7,528	2,066	5,279
JPY	N/A	14,751	907	3,603
Other	N/A	34,615	1,996	11,411
Sub Total	N/A	93,430	14,031	52,677

Government Securities by Issuer	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
United States	N/A	1,243	7,634	53
European Union	N/A	6,123	5,612	139
United Kingdom	N/A	299	1,916	0
Japan	N/A	500	4,038	0
Other	N/A	100	4,573	127
Sub Total	N/A	8,264	23,773	319

Other Securities	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
Government agency/ GSEs	N/A	-	125	-
Supranational bonds	N/A	-	0	-
US municipal bonds	N/A	-	101	-
Covered bonds	N/A	-	15	-
Corporate bonds	N/A	-	1,135	-
Letters of credit	N/A	-	0	-
Equities	N/A	-	0	-
Metals and other commodities	N/A	-	0	-
Other	N/A	-	1,892	-
Sub Total	N/A	-	3,267	-

Total collateral	N/A	101,695	41,071	52,996
-------------------------	-----	---------	--------	--------

Table A3: Composition of collateral received and delivered against cleared derivative transactions (USD millions): client clearing as of December 31, 2014

Cash	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
USD	28,610	46,471	17,808	43,524
EUR	1,528	8,781	704	7,091
GBP	365	2,278	318	2,240
JPY	114	44,872	303	7,035
Other	129	6,002	412	6,449
Sub Total	30,746	108,404	19,545	66,340

Government Securities by Issuer	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
United States	18,144	-	12,076	-
European Union	783	-	72	-
United Kingdom	225	-	153	-
Japan	161	-	178	-
Other	717	-	0	-
Sub Total	20,031	-	12,479	-

Other Securities	Amount Received to meet Initial Margin	Amount Received to meet Variation Margin	Amount Delivered to meet Initial Margin	Amount Delivered to meet Variation Margin
Government agency/ GSEs	543	-	471	-
Supranational bonds	-	-	-	-
US municipal bonds	-	-	-	-
Covered bonds	45	-	45	-
Corporate bonds	-	-	-	-
Letters of credit	-	-	-	-
Equities	-	-	-	-
Metals and other commodities	-	-	-	-
Other	470	-	5	-
Sub Total	1,058	-	521	-

Total collateral	51,835	108,404	32,545	66,340
-------------------------	---------------	----------------	---------------	---------------

ADJUSTMENT TO REPORTED COLLATERAL TO OBTAIN ESTIMATED COLLATERAL

Double Counting of Collateral

The objective of the ISDA Margin Survey is to estimate the importance of collateralization in the market and not simply to estimate the value of assets used as collateral. The survey therefore tracks the gross amount of collateral – defined as the sum of all collateral delivered out and all collateral received by survey respondents – and does not adjust for double counting of collateral assets. Double counting takes at least two forms. The first occurs when one survey respondent delivers collateral to or receives collateral from another respondent. The collateral assets in this case are counted twice: once as received and once as delivered. The second source of double counting is collateral re-use – sometimes called rehypothecation – where collateral is delivered from one party to another, then delivered to a third party, and so on. A single unit of re-used collateral may consequently be counted several times by the survey as the collateral progresses down the chain of parties re-using it. But because each re-use represents the securing of a separate and distinct credit exposure between two parties, we believe it is valid to count the collateral as many times as it is used. If, in contrast, the objective was simply to measure the value of assets currently in use as collateral, then it would be necessary to adjust for double counting.

Adjusting for Non-responding Firms

In order to arrive at an industry gross amount, we adjust the reported sample results for non-participation in the survey. The non-participation problem arises because the Margin Survey is compiled from the responses of ISDA member firms only. There are two possible distortions resulting from non-response to the survey. The first occurs when two firms, neither of which has responded to the survey, engage in an exchange of collateral with each other. The second occurs when a non-responding firm and a responding institution engage in an exchange of collateral, so the collateral posting is counted only once. We only adjust for the second, as we believe the amount of collateralization that does not involve a responding firm in the ISDA sample is of minor significance.

The adjustment is based on the following calculation. First, we poll several major dealer respondents for the percentage of collateral received from and delivered to entities that responded to the survey. We use the results to calculate an average percentage of collateral received from non-respondents and an average percentage delivered to non-respondents. We then adjust the total amount of collateral held by major dealers with non-respondents by adding in the collateral with non-respondents. The resulting number is significantly larger than that based only on reported amounts. The adjustment is conservative, however, in that it only adjusts the collateral held by the largest dealers. We therefore believe that, while the final number of \$2.97 trillion is a more accurate reflection of the amount of collateral use than the estimate based solely on the survey responses, it still understates the actual amount of collateral in circulation.



ABOUT ISDA

Since 1985, ISDA has worked to make the global derivatives markets safer and more efficient. Today, ISDA has over 800 member institutions from 67 countries. These members comprise a broad range of derivatives market participants, including corporations, investment managers, government and supranational entities, insurance companies, energy and commodities firms, and international and regional banks. In addition to market participants, members also include key components of the derivatives market infrastructure, such as exchanges, clearing houses and repositories, as well as law firms, accounting firms and other service providers. Information about ISDA and its activities is available on the Association's web site: www.isda.org.

ISDA® is a registered trademark of the International Swaps and Derivatives Association, Inc.