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2013 ISDA Operations Benchmarking Survey

April 2013

The ISDA Operations Benchmarking Survey identifies and tracks operations processing trends in privately-negotiated, over-the-counter (OTC) derivatives. The results provide individual firms with a benchmark against which to measure the promptness and accuracy of their trade data capture, confirmation, and settlement procedures, as well as the level of automation of their operational processes.

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INTRODUCTION

The ISDA Operations Benchmarking Survey identifies and tracks operations processing trends in privately-negotiated, over-the-counter (OTC) derivatives. The results provide individual firms with a benchmark against which to measure the promptness and accuracy of their trade data capture, confirmation, and settlement procedures, as well as the level of automation of their operational processes. Please note that there are various proposed and final regulations implementing the Dodd-Frank Act in the US and EMIR and MiFID/MiFIR in Europe in regard to trade reporting, processing, execution, confirmations, and settlement. The results of this survey reflect data gathered prior to the implementation of these new regulatory requirements. ISDA first conducted the Survey in 2000 and has done so annually since then.

This year, seventy seven (77) ISDA member firms responded; fifty three (53) of those firms participated in last year's Survey as well. Appendix 1 lists the respondents, and Table 1 shows some sample characteristics. The Survey classifies respondents into three size groups based on monthly deal volumes across products.

Table 1
Firms Responding to ISDA Operations Benchmarking Survey
Number of firms

Size	Monthly Volume	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Responded 2012/2013
Large	≥3000	20	20	19	18	17	18	22	17	16	19	17	21	17
Medium	≥500	23	22	25	22	18	19	22	22	16	16	18	17	15
Small	<500	22	22	23	26	32	29	35	30	37	31	25	39	21
Total		65	64	67	66	67	66	79	69	69	66	60	77	53

The 2013 Survey refers to respondents' activities from January 1 to December 31, 2012. All amounts are in U.S. dollars. Each firm that responds to the Survey receives an individual feedback report that compares the firm's results with the results for respondents of similar size.

In select instances, G15 data is individually aggregated and augmented to the predefined Small, Medium and Large firm group size results. This practice is intended to explicitly showcase data relative to the G15 firms, which are classified as both Large and Medium sized firms, according to this survey.

The Survey covers five OTC derivative product groups: Interest Rate Derivatives, Credit Derivatives, Equity Derivatives, currency options and Commodity Derivatives. Section I of the Survey reports monthly volume statistics and Sections II through V report statistics for trade capture, confirmations, settlements and clearing. Section VI provides automation data by process and product, Section VII reports information on staffing levels for trade capture, confirmation and Settlement Staff. Section VIII reports information regarding industry initiatives.

Sapient served as consultants to this year's Operations Benchmarking Survey; the consultants collected and aggregated individual responses to the Survey. All data obtained from Survey responses were kept in strict confidence. Access by ISDA and Sapient staff is strictly limited, and the data is not shared with employees of other member firms or with any other outside party.

SURVEY RESULTS

SECTION I – VOLUMES

Survey respondents were asked to report their monthly Event Volumes by product type. Charts 1.1 and 1.2 show the results for all respondents. Chart 1.1 shows that overall OTC derivative volume fell by 8 percent during 2012. Chart 1.2 shows the results by product. Overall, credit and equity derivatives, and currency options fell by 30, 5 and 11 percent, respectively. In contrast, interest rate and commodity derivatives increased by 0.6, and 6 percent respectively.

Chart 1.1
Average Monthly Event Volumes, all products
Number of events

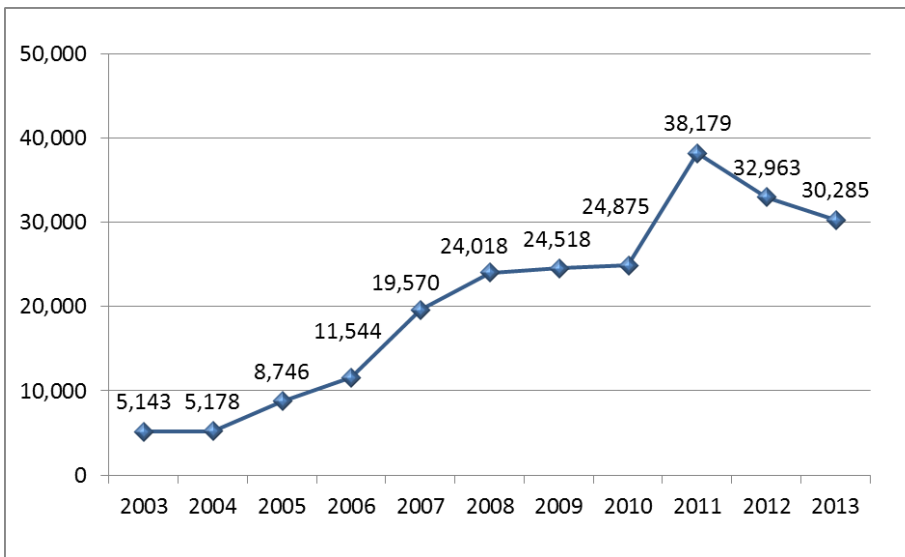


Chart 1.2
Average Monthly Event Volume, by products
Number of events

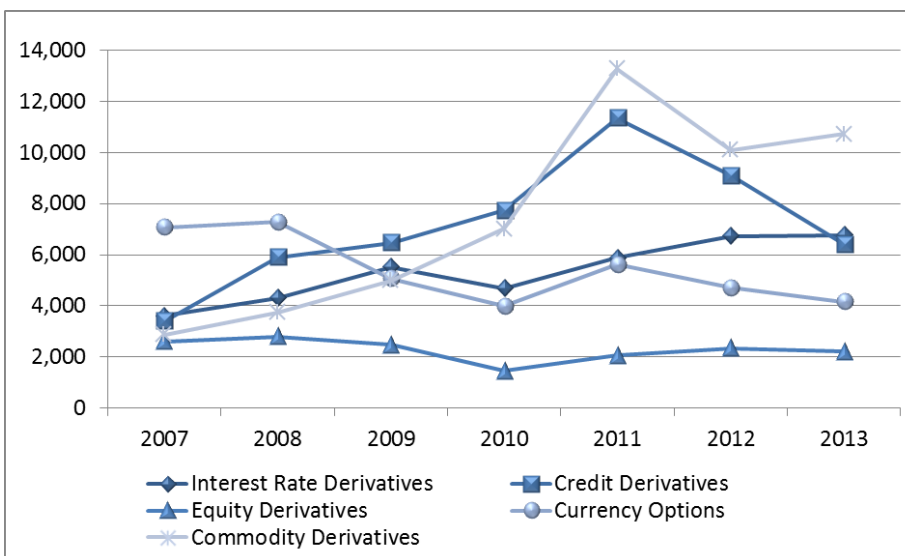


Table 1.1 shows volumes by product and firm size.

Table 1.1
Average Monthly Event Volume, by size group

All	2008	2009	2010	2011	2012	2013
Interest Rate	4,304	5,516	4,688	5,878	6,729	6,768
Credit	5,892	6,469	7,735	11,357	9,098	6,413
Equity	2,798	2,481	1,444	2,053	2,338	2,215
Currency Options	7,283	5,067	3,982	5,616	4,698	4,166
Commodity	3,741	4,985	7,025	13,275	10,099	10,722
Total OTC	24,018	24,518	24,875	38,179	32,963	30,285

G15	2008	2009	2010	2011	2012	2013
Interest Rate	12,328	18,369	19,156	20,797	23,209	27,707
Credit	17,982	23,648	31,563	42,088	31,870	25,266
Equity	6,520	6,666	4,765	5,747	6,346	6,515
Currency Options	20,150	14,935	13,206	15,253	12,070	13,402
Commodity	9,574	12,593	20,430	24,095	30,599	36,753
Total OTC	66,554	76,211	89,120	107,980	104,094	109,642

Large	2008	2009	2010	2011	2012	2013
Interest Rate	12,677	19,881	18,300	18,112	21,328	23,845
Credit	17,547	25,313	29,707	37,897	27,919	21,779
Equity	6,595	7,025	4,849	5,392	5,649	6,419
Currency Options	19,955	16,153	12,702	12,981	11,828	11,059
Commodity	8,346	13,600	19,271	21,893	27,592	28,078
Total OTC	65,121	81,972	84,829	96,274	94,315	91,180

Medium	2008	2009	2010	2011	2012	2013
Interest Rate	2,060	2,674	1,817	2,486	2,000	2,061
Credit	680	663	665	312	473	652
Equity	703	1,366	240	1,529	1,036	661
Currency Options	1,392	2,702	1,261	5,454	3,818	3,504
Commodity	1,042	969	529	598	695	938
Total OTC	5,878	8,374	4,512	10,380	8,021	7,815

Small	2008	2009	2010	2011	2012	2013
Interest Rate	335	418	411	591	413	336
Credit	87	64	49	122	80	55
Equity	255	138	82	90	167	121
Currency Options	315	269	233	257	312	282
Commodity	130	174	110	38	183	178
Total OTC	1,122	1,063	885	1,098	1,155	972

Table 1.2 gives summary statistics for volumes by product and firm size. The summary statistics show the dispersion in volumes within size classes. Mean and median volumes are relatively close for large firms, but differences between mean and median volume for medium and small sized firms suggest more dispersion within the results reported by firms in those categories.

Table 1.2
Monthly Event Volume Summary Statistic, by size group

Large	Number	Average	Median	25% Quartile	75% Quartile	Maximum
Interest Rate	19	23,845	25,098	12,853	31,088	51,976
Credit	18	21,779	23,309	8,612	33,676	52,147
Equity	19	6,419	6,111	3,462	8,296	21,740
Currency Options	19	11,059	7,960	3,115	18,343	34,653
Commodity	20	28,078	12,185	3,447	33,193	108,751

Medium	Number	Average	Median	25% Quartile	75% Quartile	Maximum
Interest Rate	17	2,061	1,525	1,225	2,709	5,714
Credit	16	652	222	96	794	2,850
Equity	15	661	588	172	805	2,000
Currency Options	16	3,504	966	476	1,463	38,872
Commodity	15	938	450	74	1,024	5,504

Small	Number	Average	Median	25% Quartile	75% Quartile	Maximum
Interest Rate	38	336	177	42	479	1,476
Credit	29	55	18	5	88	333
Equity	27	121	40	10	166	700
Currency Options	31	282	100	27	498	1,070
Commodity	19	178	40	6	218	1,040

Table 1.3 shows the percentage of Event Volume that is facing a G15 firm by product and firm size. Highest concentration of event volume: credit derivatives, with 82 percent. Lowest: commodity derivatives, with 32 percent.

Table 1.3
% of Event Volume Facing a G15 Firm

Averages weighted by products' respective Event Volume

	All	Large	Medium	Small
Interest Rate	59%	62%	51%	62%
Credit	82%	72%	90%	83%
Equity	51%	38%	51%	61%
Currency Options	50%	43%	48%	55%
Commodity	32%	29%	29%	37%
Average	52%	50%	50%	56%

SECTION II – TRADE CAPTURE

The Survey asked participants to rank error types from most common to least common. Table 2.2 shows the rankings for the five product categories. For most products, the most common errors are:

1. Payment Date(s) / Termination Date
2. Miscellaneous Fees
3. Counterparty Name

Table 2.1

Rankings by Common Sources of Errors

By product (with 1 being the most common)

Cause	Interest Rate	Credit	Equity	Currency Options	Commodity
Payment Date(s) / Termination Date	1	4	1	1	1
Miscellaneous Fees	2	1	3	3	5
Counterparty Name	3	3	5	2	3
Underlying	7	2	2	6	2
Trade Date / Effective Date	6	5	4	5	7
Notional Amount	8	8	6	4	4
Others	11	10	8	6	6
Business Day Convention	5	9	9	10	9
Language / Elections	9	11	7	9	8
Buy / Sell	12	7	11	8	9
Mutual Early Termination	4	12	10	11	12
Legal Agreement Date(s)	10	6	12	12	11

SECTION III – CONFIRMATIONS

Table 3.1 shows the underlying data for which Table 3.2 is based. This table identifies the electronic eligibility and confirmation thereof for all firm sizes' Event Volume.

Table 3.1
Electronic Confirmation of Event Volume

	Electronically Eligible		Not Electronically Eligible
	<i>Electronically Confirmed</i>	<i>Not Electronically Confirmed</i>	
All			
Interest Rate	86%	7%	7%
Credit	98%	0%	1%
Equity	30%	10%	60%
Currency Options	69%	15%	16%
Commodity	66%	20%	13%
G15			
Interest Rate	89%	6%	4%
Credit	99%	0%	1%
Equity	39%	4%	57%
Currency Options	71%	16%	13%
Commodity	71%	20%	7%
Large			
Interest Rate	89%	6%	5%
Credit	99%	0%	1%
Equity	31%	8%	61%
Currency Options	71%	16%	13%
Commodity	67%	20%	12%
Medium			
Interest Rate	62%	16%	22%
Credit	89%	5%	5%
Equity	20%	21%	58%
Currency Options	66%	10%	24%
Commodity	36%	27%	35%
Small			
Interest Rate	48%	25%	28%
Credit	96%	2%	1%
Equity	8%	41%	52%
Currency Options	39%	24%	36%
Commodity	10%	9%	81%

*In some cases, confirmation totals may not sum to 100%. This is a due to a minority of respondents submitting incomplete data.

The Survey asked respondents to report the proportion of Event Volume that is eligible for Electronic Confirmation as well as the proportion actually confirmed electronically. Table 3.2 shows the degree to which respondents are using electronic processing, which is measured as Electronically Confirmed Event Volume as a percentage of Electronically Eligible Event Volume.

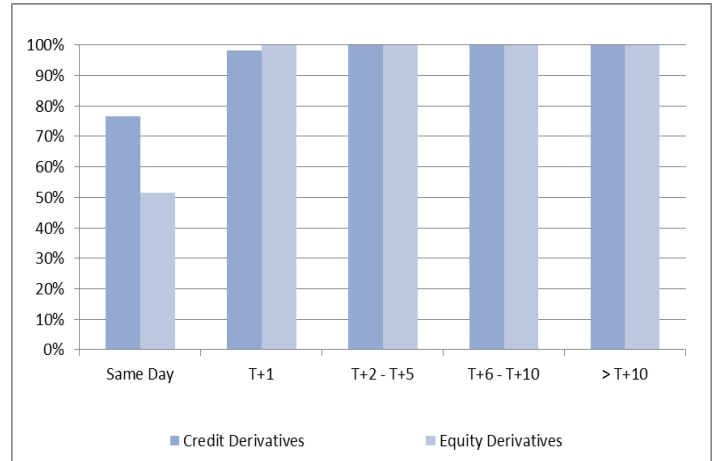
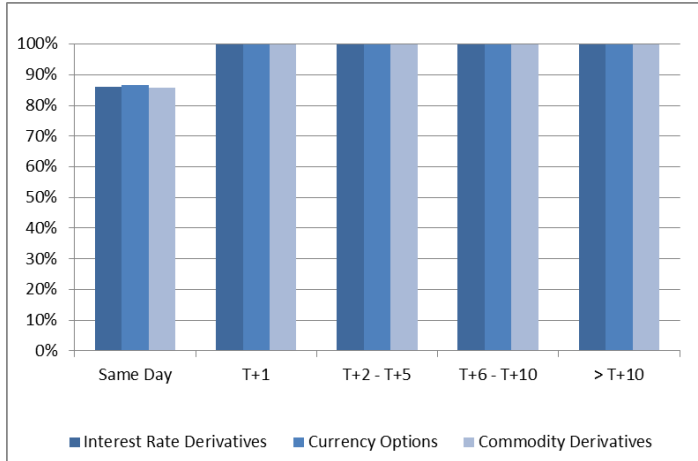
Table 3.2
Electronically Confirmed Event Volume as a percentage of Electronically Eligible Event Volume

	All			G15			Large			Medium			Small		
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
Interest Rate	83%	88%	92%	86%	90%	93%	85%	89%	94%	74%	82%	80%	68%	74%	66%
Credit	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	95%	98%	96%	98%
Equity	70%	78%	76%	86%	88%	90%	85%	87%	79%	9%	34%	48%	39%	11%	16%
Currency Options	67%	77%	82%	67%	74%	82%	68%	75%	82%	66%	85%	87%	61%	58%	62%
Commodity	66%	77%	77%	77%	77%	78%	67%	78%	77%	37%	77%	57%	52%	87%	51%

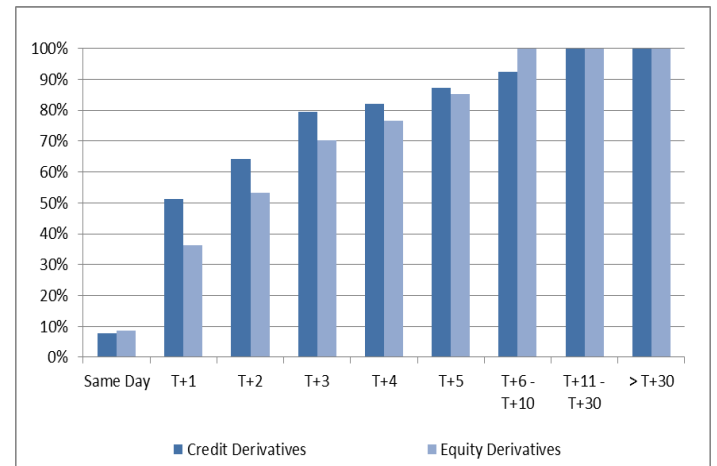
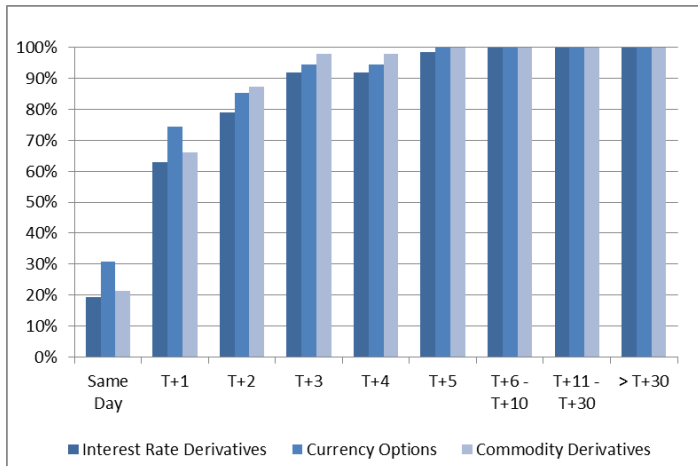
Charts 3.1 and 3.2 distinguish between electronic and non-Electronic Confirmations, where Electronic Confirmations are those submitted to an electronic platform.

Charts 3.1 & 3.2
Confirmations normally sent by a given time, all firms
Cumulative percentages

Electronic



Non-electronic



Survey respondents were asked to report average monthly Outstanding Confirmations, that is, those not yet executed by month-end. Table 3.3 below reports historical data on Outstanding Confirmations expressed as a day's worth of business, which is derived by multiplying the number of Outstanding Confirmations by a standard number of twenty-two business days and then dividing by monthly Event Volume.

Table 3.3
Average monthly levels of all confirmations outstanding
Business days

G15	2009	2010	2011	2012	2013
Interest Rate	6.9	2.9	2.0	1.5	1.0
Credit	3.5	1	0.4	0.4	0.3
Equity	9.7	7.4	6.5	6.5	6.1
Currency Options	2.6	1.3	1.8	1.8	1.6
Commodity	2.6	1.3	1.0	1.0	0.7

Large	2009	2010	2011	2012	2013
Interest Rate	6.8	2.8	2.1	1.5	0.9
Credit	3.5	1	0.5	0.4	0.3
Equity	9.7	7.3	6.7	6.4	5.0
Currency Options	2.6	1.3	1.8	1.8	1.5
Commodity	2.4	1.2	0.9	1.0	0.6

Medium	2009	2010	2011	2012	2013
Interest Rate	4.7	1.3	2.2	1.2	1.4
Credit	2.4	1.6	0.6	0.1	0.1
Equity	3	4.2	2.0	1.5	3.5
Currency Options	1.8	0.5	0.6	0.4	0.4
Commodity	1.5	1	1.1	1.0	2.2

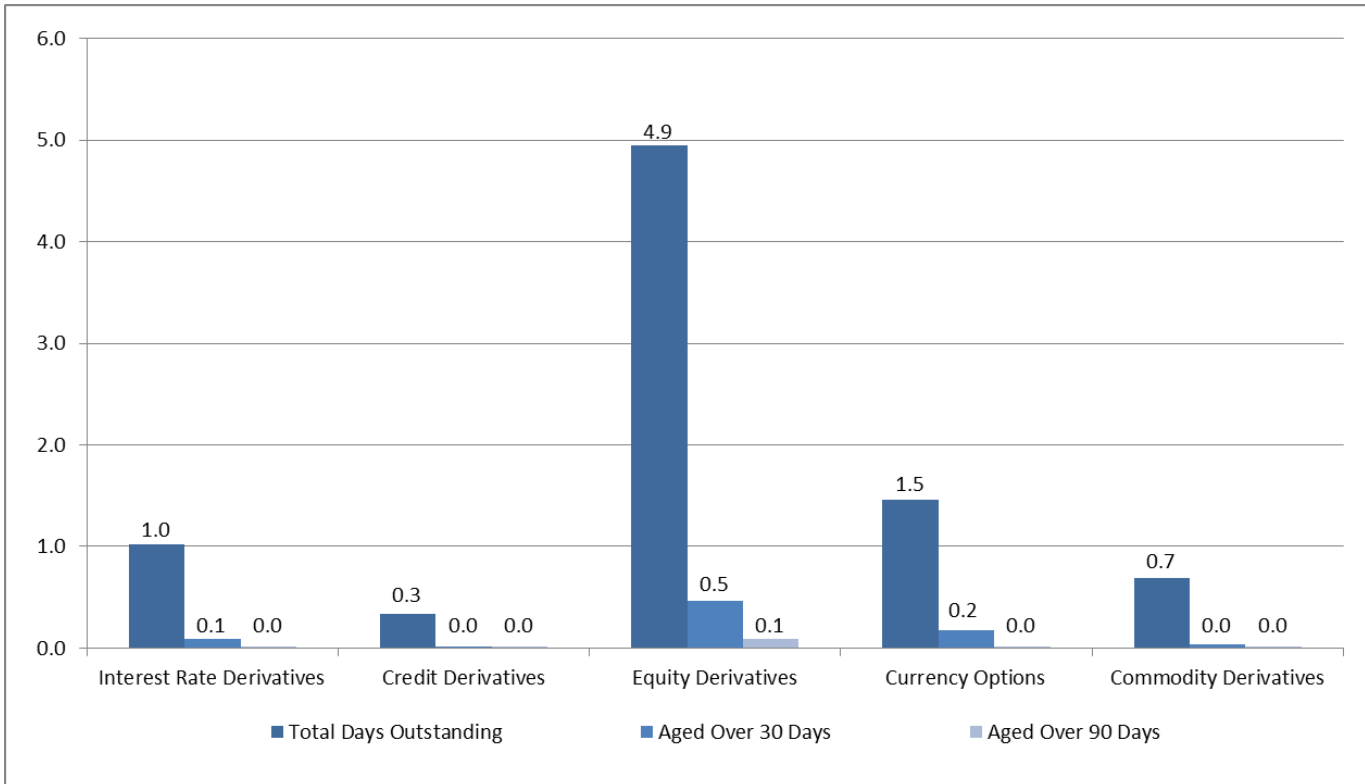
Small	2009	2010	2011	2012	2013
Interest Rate	5.4	3.5	1.8	1.9	2.0
Credit	3.6	1.3	1.2	1.4	0.7
Equity	9.8	7.2	6.0	4.1	2.9
Currency Options	6.4	1.3	3.3	3.1	6.0
Commodity	2.9	1.6	7.0	1.8	1.0

The Survey also asked for monthly confirmations aged greater than 30 and greater than 90 days. Chart 3.3 compares those aged confirmations with total Outstanding Confirmations.

Chart 3.3

All Confirmations outstanding, by age

Business days



The Survey asked respondents to rank the most common factors that affect confirmation dispatch times. The most common factors from table 3.4 are:

1. New or Non-Standard Product
2. Awaiting Data or Approval from Traders/Marketers
3. Non-Standard Language

Table 3.4
Factors affecting confirmation dispatch times
Ranked by importance

	Interest Rate	Credit	Equity	Currency Options	Commodity
New or Non-Standard Product	1	2	2	1	1
Awaiting Data or Approval from Traders/ Marketers	2	1	1	2	2
Non-Standard Language	3	3	3	4	3
High Volumes	4	6	4	3	4
Systems / Technology Issues	6	3	5	5	6
Awaiting Data or Approval from Legal / Compliance	5	6	6	6	5
Awaiting Data / Details from External Source such as KYC Documentation, Static Data etc.	7	5	7	7	7
Awaiting Data or Approval from Credit or Collateral Department	8	8	8	8	8

The Survey also listed a set of risk mitigation criteria used to prioritise the chasing of Outstanding Confirmations and asked respondents to rank the criteria. The top factors from Table 3.4 are:

1. Unrecognised Trade
2. Business Days Outstanding
3. Type of Counterparty

Table 3.5
Criteria used to prioritise outstanding confirmations
Ratings

	Interest Rate	Credit	Equity	Currency Options	Commodity
Unrecognised Trade	1	1	1	2	2
Business Days Outstanding	2	2	2	1	1
Type of Counterparty	3	3	3	3	3
Master Agreement Signed	4	4	5	5	4
Type of Transaction	5	5	4	4	5
Net Present Value	6	7	7	6	6
Collateral Held / Collateral Agreement Signed	8	6	6	7	7
Credit Rating of Counterparty	7	8	8	7	10
Broker Confirmation Checked	9	11	8	11	7
Positive Feedback from Settlement Departments	9	9	11	10	9
Others	11	9	8	9	11
Positive Feedback from Collateral Departments	12	12	12	12	12

Table 3.6 shows the times by which respondents aim to complete the Affirmation process, with separate results for Affirmation of Electronic and of non-Electronic Confirmations.

Table 3.6
Expected Affirmation times, all respondents

Electronic	Interest Rates	Credit	Equity	Currency Options	Commodity
T+0	67%	55%	46%	58%	48%
T+1	30%	45%	30%	28%	32%
T+2 - T+5	3%	0%	24%	14%	16%
T+6 - T+10	0%	0%	0%	0%	4%
>T+10	0%	0%	0%	0%	0%

Non-electronic	Interest Rates	Credit	Equity	Currency Options	Commodity
T+0	23%	26%	19%	25%	11%
T+1	23%	26%	36%	25%	41%
T+2 - T+5	54%	48%	45%	48%	42%
T+6 - T+10	0%	0%	0%	2%	3%
>T+10	0%	0%	0%	0%	3%

SECTION IV – SETTLEMENTS

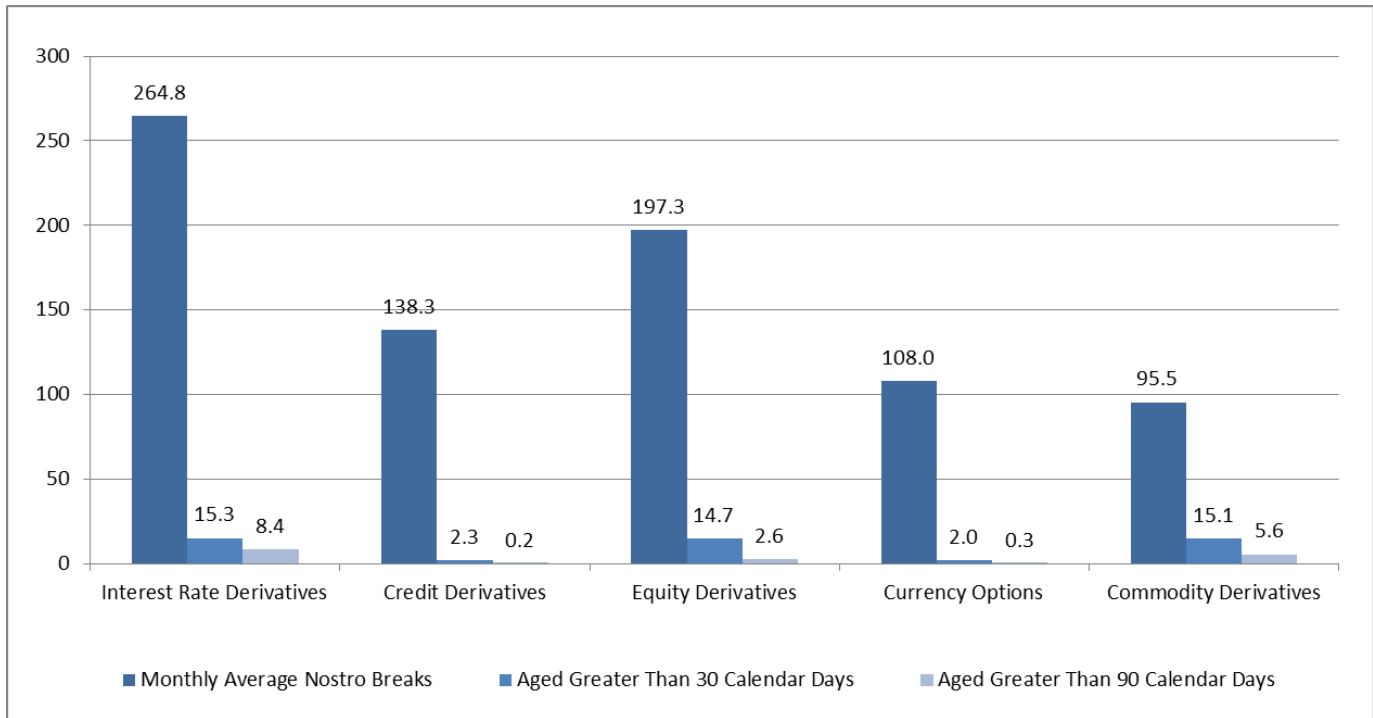
Table 4.1 shows the percentage of settlement volume that involves Nostro breaks, that is, mismatches of expected and actual cash flows between paying and receiving institutions. The table also shows 2013 Nostro Breaks by size category.

Table 4.1
Percent of monthly settlement volume resulting in Nostro Breaks

	All					2013		
	2009	2010	2011	2012	2013	Large	Medium	Small
Interest Rate	9%	4%	5%	4%	5%	5%	5%	6%
Credit	6%	4%	5%	5%	4%	5%	4%	3%
Equity	15%	6%	6%	7%	7%	7%	5%	8%
Currency Options	6%	4%	6%	4%	4%	5%	4%	3%
Commodity	11%	5%	8%	5%	7%	6%	6%	8%

Chart 4.1 shows outstanding Nostro Breaks by product, along with breaks aged more than 30 calendar days and those aged more than 90 days.

Chart 4.1
Monthly average and aged Nostro Breaks, all respondents
Average by product



The Survey also asked respondents for the normal time frames for resolution of Nostro Breaks. Respondents were given choices ranging from one day to more than four weeks from the original settlement date. Table 4.2 shows the distribution of time to resolution by product.

Table 4.2
Times to Nostro Break resolution, all respondents
% resolved within specified time

	Interest Rate					Credit					Equity				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
1 Day	4%	10%	6%	9%	5%	7%	9%	11%	18%	8%	5%	9%	5%	10%	15%
2 Days	14%	22%	18%	21%	17%	15%	23%	26%	25%	29%	18%	39%	33%	35%	35%
3 - 5 Days	50%	41%	53%	55%	57%	43%	51%	46%	45%	47%	45%	36%	46%	38%	35%
1 - 2 Weeks	23%	21%	22%	13%	19%	24%	15%	17%	11%	16%	25%	14%	15%	18%	15%
2 - 4 Weeks	5%	5%	0%	2%	2%	11%	2%	0%	0%	0%	8%	2%	0%	0%	0%
>4 Weeks	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

	Currency Options					Commodity				
	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
1 Day	17%	7%	7%	13%	17%	11%	16%	30%	24%	30%
2 Days	19%	36%	27%	39%	30%	22%	28%	21%	24%	28%
3 - 5 Days	45%	40%	54%	41%	45%	53%	41%	33%	34%	28%
1 - 2 Weeks	11%	13%	12%	7%	8%	8%	16%	15%	16%	11%
2 - 4 Weeks	6%	4%	0%	0%	0%	6%	0%	0%	3%	2%
>4 Weeks	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table 4.3 shows the percentage of average monthly payments that are STP, that is, the end-to-end processing of automated data without manual intervention.

Table 4.3
Percentage of average monthly payments are STP

	All	G15	Large	Medium	Small
Interest Rate	56%	74%	66%	65%	47%
Credit	51%	78%	73%	52%	37%
Equity	32%	27%	27%	46%	29%
Currency Options	52%	75%	69%	55%	39%
Commodity	34%	46%	45%	33%	25%
Average	45%	60%	56%	50%	35%

The below Table asks firms to rank the top 3 common reasons for a monthly payment being non-STP, with 1 being the most common reason. The table represents the overall result after consolidating all responses.

Table 4.4
Reasons for non-STP monthly payments

	Interest Rate	Credit	Equity	Currency Options	Commodity
Confirmation of Settlement with counterparty prior to release of payment	1	1	1	2	1
Missing Standard Settlement Instruction (SSI)	2	2	2	1	2
Others	3	3	3	3	3
Incorrect SWIFT format	4	4	4	4	4

Table 4.5
Monthly settlements, all respondents
By product

All	2005	2006	2007	2008	2009	2010	2011	2012	2013
Interest Rate	12,826	12,183	15,341	25,017	29,389	27,150	27,818	34,742	31,065
Credit	4,960	9,641	18,450	37,669	44,327	29,162	27,149	30,536	18,653
Equity	1,139	27,997	3,421	6,771	6,648	3,583	3,173	10,033	8,383
Currency Options	3,983	3,643	7,752	3,246	4,226	4,100	3,447	3,325	3,329
Commodity	641	1,920	3,623	5,182	5,039	4,872	6,353	9,162	8,729

Table below shows settlements' average, median top and bottom quartiles, and the maximum on a monthly basis.

Table 4.6
Monthly settlements, by size group

Large	Average	Median	25% Quartile	75% Quartile	Maximum
Interest Rate	99,190	85,000	31,137	153,151	237,495
Credit	62,587	37,675	16,823	85,217	232,864
Equity	24,948	10,936	4,809	20,222	223,441
Currency Options	9,837	7,776	1,391	16,650	26,500
Commodity	20,912	6,706	811	16,759	152,079

Medium	Average	Median	25% Quartile	75% Quartile	Maximum
Interest Rate	16,608	16,259	3,332	23,518	60,405
Credit	1,167	606	231	1,706	4,000
Equity	1,885	950	505	1,973	11,000
Currency Options	1,321	612	407	1,075	9,240
Commodity	1,774	493	150	1,523	15,500

Small	Average	Median	25% Quartile	75% Quartile	Maximum
Interest Rate	2,333	1,400	94	4,000	9,500
Credit	429	80	10	355	3,109
Equity	165	80	11	211	700
Currency Options	248	75	16	436	1,290
Commodity	215	60	8	267	1,121

Table 4.7
Percentage of monthly settlement volume prematched with the counterparty

	All	Large	Medium	Small
Interest Rate	49%	26%	45%	63%
Credit	65%	59%	66%	68%
Equity	59%	54%	71%	56%
Currency Options	64%	71%	64%	60%
Commodity	65%	62%	61%	73%

SECTION V – CLEARING

The Survey asked respondents for the percent of trades considered clearing eligible, volume of cleared eligible, and total cleared event volume.

Table 5.1
Cleared event volume as a percentage of clearing eligible event volume

	Cleared Event Volume as a percentage of Event Volume (a)	Clearing Eligible as a percentage of Event Volume (b)	Cleared Event Volume as a percentage of Clearing Eligible (a/b) x 100
All			
Interest Rate	20.59%	25.31%	81.35%
Credit	13.81%	16.79%	82.26%
Equity	0.00%	0.00%	0.00%
Currency Options	0.00%	0.00%	0.00%
Commodity	23.82%	30.16%	79.00%
G15			
Interest Rate	19.64%	22.94%	85.63%
Credit	13.84%	16.36%	84.59%
Equity	0.00%	0.00%	0.00%
Currency Options	0.00%	0.00%	0.00%
Commodity	18.94%	25.60%	74.00%
Large			
Interest Rate	19.50%	23.34%	83.57%
Credit	15.20%	18.12%	83.86%
Equity	0.00%	0.00%	0.00%
Currency Options	0.00%	0.00%	0.00%
Commodity	22.57%	28.57%	79.00%
Medium			
Interest Rate	30.35%	39.49%	76.85%
Credit	0.64%	12.53%	5.08%
Equity	0.00%	0.00%	0.00%
Currency Options	0.00%	0.00%	0.00%
Commodity	15.00%	18.41%	81.47%
Small			
Interest Rate	13.89%	34.97%	39.73%
Credit	0.45%	20.83%	2.17%
Equity	0.00%	0.00%	0.00%
Currency Options	0.00%	0.00%	0.00%
Commodity	1.13%	3.78%	29.82%

The Survey asked respondents to identify their relationships with clearing counterparties. Below quantifies the number of firms who satisfy the following statements.

Table 5.2
Clearing Counterparties

		All	G15	Large	Medium	Small
Number of Clearing Member Firms that respondents have established clearing relationships with	2012	11	31	28	9	4
	2013 (estimated)	17	60	51	11	6
Number of Executing Brokers that respondents have established clearing relationships with	2012	7	12	13	6	6
	2013 (estimated)	12	11	14	12	10
Number of Central Counterparty Clearing Houses that respondents have memberships with		3	9	7	2	1

Table 5.3
Use of Central Counterparties for all cross-asset clearing business

	Single Counterparty	Multiple Counterparties
All	21%	79%
G15	7%	93%
Large	6%	94%
Medium	7%	93%
Small	34%	66%

SECTION VI – AUTOMATION

The Survey asked respondents for the percent of volume automated for five operational processes. Table 6.1 shows the results for all respondents. The bottom row shows the average degree of automation for each product group and the far right column shows the average degree of automation by function.

Table 6.1
Degree of automation by product and function, all respondents
Average percent of volume automated

Function	Interest Rate	Credit	Equity	Currency Options	Commodity	Average for function
Confirmation generation - fully automated (trades confirmed through Markitwire, DTCC, Swift and other external and in-house automation systems)	61%	82%	39%	56%	34%	54%
Confirmation dispatch (for Non-Electronic Confirmation only)	49%	31%	31%	51%	47%	42%
Confirmation matching (Electronic solutions offering both generation and matching / Affirmation should be counted under "Confirmation generation" and "Confirmation matching")	50%	70%	30%	44%	25%	44%
Nostro Reconciliation	73%	73%	69%	74%	73%	72%
Settlement Pre-Matching	22%	47%	23%	35%	10%	28%
Average for Product	51%	61%	38%	52%	38%	

Table 6.2
Degree of automation by product and function, for G15
Average percent of volume automated

Function	Interest Rate	Credit	Equity	Currency Options	Commodity	Average for function
Confirmation generation - fully automated (trades confirmed through Markitwire, DTCC, Swift and other external and in-house automation systems)	86%	95%	64%	75%	63%	76%
Confirmation dispatch (for Non-Electronic Confirmation only)	60%	43%	39%	63%	67%	55%
Confirmation matching (Electronic solutions offering both generation and matching / Affirmation should be counted under "Confirmation generation" and "Confirmation matching")	69%	75%	51%	63%	56%	63%
Nostro Reconciliation	82%	85%	78%	86%	70%	80%
Settlement Pre-Matching	38%	76%	40%	60%	9%	45%
Average for Product	67%	75%	54%	69%	53%	

SECTION VII – STAFFING

Table 7.1 presents another staffing measure, namely, trades per Full Time Equivalent staff.

Table 7.1

Transactions per Full Time Equivalent staff

Calculated based on the monthly average event volume

G15	Confirmation	Settlement
Interest Rate	459	729
Credit	1119	1105
Equity	135	245
Currency Options	755	3034
Commodity	1838	1693
Large		
Interest Rate	494	780
Credit	1105	1119
Equity	167	298
Currency Options	762	2755
Commodity	1850	1697
Medium		
Interest Rate	335	284
Credit	296	242
Equity	144	150
Currency Options	883	1891
Commodity	293	280
Small		
Interest Rate	76	79
Credit	30	24
Equity	46	39
Currency Options	120	92
Commodity	115	107

The Survey asked respondents about the percent of staff that is Outsourced or in a Low Cost Location. Table 7.2 shows the results for all respondents and for large sized firms compared with the last two years results.

Table 7.2
Percent of full time equivalent staff that is Outsourced or in a low-cost location

All Firms	Interest Rate			Credit			Equity			Currency Options			Commodity		
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
Confirmation Staff	20%	19%	17%	18%	17%	17%	15%	15%	14%	23%	22%	21%	11%	9%	8%
Settlement Staff	22%	22%	21%	22%	23%	18%	16%	20%	19%	27%	25%	25%	13%	12%	14%

Large Firms	Interest Rate			Credit			Equity			Currency Options			Commodity		
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
Confirmation Staff	48%	49%	43%	50%	43%	43%	36%	32%	33%	45%	37%	50%	24%	20%	18%
Settlement Staff	52%	49%	46%	59%	49%	45%	43%	41%	46%	54%	38%	51%	27%	20%	30%

SECTION VIII – INDUSTRY INITIATIVES

The Survey asked respondents a number of questions regarding their approach to Clearing Initiatives. Respondents were also asked to report what percentage of their anticipated 2013 Project Portfolio would be related, either directly or indirectly to meeting Clearing Initiatives.

Table 8.1
Preferred operational approach to Clearing
Rankings (1 being the most preferred)

	Rank
Use Custom In-house Build	1
Use Pre-packaged Software	2
Out-source to a Clearing Provider (dealer bank)	3
Out-source to a Third Party Administrator	4
Others	5

Respondents were also asked to indicate if they were considering a number of factors relating to the Clearing landscape. Table 8.2 shows the results for all respondents.

Table 8.2
Consideration in the Clearing landscape

	Yes	No
Begin Clearing before regulatory rules mandate it	76%	24%
Join global Clearing houses	79%	21%
Join only Regional CCPs where your firm is located	28%	72%
Intend to provide FCM services in the US	31%	69%
Intend to become a Clearing Provider globally	29%	71%
Is a stake holder in the governance of a CCP	42%	58%
Wish to become a stakeholder in the governance of a CCP	28%	72%
Our firm does not plan to clear	12%	88%

Table 8.3
Number of firms on-boarding to the following industry solutions within the given timeframes

	Derivatives trading platforms	CCPs	ISDA Amend	Other
Less than 2 weeks	6	8	18	1
2-4 weeks	5	4	7	1
1-3 months	13	21	17	3
More than 3 months	26	29	12	6

APPENDIX 1 – 2013 SURVEY PARTICIPANTS

Alkhalij Commercial Bank	National Australia Bank
Banco Bilbao Vizcaya Argentaria, S.A.	National Bank of Canada
Banco de Crédito del Perú	National Bank of Greece SA
Bank of America Merrill Lynch	Nomura International plc
Bank of New York Mellon Global Markets	Norddeutsche Landesbank Girozentrale
Barclays Bank Plc	Northern Trust
BayernLB	Northern Trust Custodian
Belfius Bank SA	PIMCO
BlueMountain Capital Management	PNC BANK, National Association
BNP Paribas	Protective Life
BP	Prudential Global Funding
Caisse de dépôt et placement du Québec	PSEG ER&T
Česká spořitelna	Quebec
Cheyne Capital Management (UK) LLP	Rabobank International
Citibank	Rand Merchant Bank a div of First Rand Bank
Commonwealth Bank Of Australia	Royal Bank of Canada
Credit Suisse	Royal Bank of Scotland
Daiwa Securities Co. Ltd.	Santander
Danske Bank	Scotiabank
DBS Bank Ltd	SEB
Deutsche Bank	SGCIB
DNB BANK ASA	Shinsei Bank, Limited
DZ BANK AG Deutsche Zentrug-Genossenschaftsbank	Standard Bank of South Africa Ltd
Eurobank Ergasias SA	Standard Chartered PLC
Fidelity Investments	Sumitomo Mitusi Trust Bank, Limited
Freddie Mac	SunTrust Bank
Goldman Sachs	Svenska Handelsbanken AB (publ)
HSBC	TD Securities
ING Bank NV	The Bank of Tokyo-Mitsubishi UFJ, LDT.
Invesco Advisers, Inc	The Governor and Company of the Bank of Ireland
Itau Unibanco S/A	The Master Trust Bank of Japan,Ltd.
J.P. Morgan	UBS AG
Jefferies and Company, Inc.	UniCredit Bank AG
JPMorgan Asset Management	Wellington Management Company, LLP
KfW	Wells Fargo Bank, N.A.
Kiwibank Limited	Westpac Banking Corporation
Landesbank Baden-Württemberg	Zürcher Kantonalbank
Lloyds Banking Group	
Mizuho Corporate Bank, Ltd.	
Morgan Stanley	

APPENDIX 2 – DEFINITIONS OF TERMS USED IN 2013 SURVEY QUESTIONNAIRE

Affirmation: The process by which two counterparties verify that they agree the primary economics of a trade. The affirmation process may be done by telephone, voice recording, email or electronic checkout platform.

Backloaded: The process of inputting existing outstanding OTC transactions into a trade repository/warehouse or CCP

CCP: Central Counterparty; See *Clearing House*

Cleared (Trade): Derivative products cleared centrally by a CCP. Cleared Trades may be transacted bilaterally and then transferred (or novated) to a CCP or booked directly with the CCP. Responses should include any trades that were done via a broker.

Cleared Event Volume: Event volume that is cleared by a CCP

Clearing: See *Clearing Eligible*

Clearing Eligible: The transaction is of a type that is currently cleared by a CCP such as LCH, ICE, CME, or other clearing organization.

Clearing House: A clearing house is a financial institution that provides clearing and settlement services for financial and commodities derivatives and securities transactions. These transactions may be executed on a futures exchange or securities exchange, as well as off-exchange in the over-the-counter (OTC) markets.

Clearing Initiatives: Industry Initiatives pertinent to OTC Clearing.

Clearing Provider (Dealer Banks): Service offering from sell-side firms offering securities clearing, custody, order execution, settlement, and lending services to traders, hedge fund managers, broker-dealers, and investment advisors. Service might also provide operational and administrative services for registered broker dealers.

Commodity Derivatives: OTC derivative products that are swaps, forwards, or options in which the underlying variable is a commodity price, basket of commodity prices, or commodity price index. Common underlying commodities include precious and base metals, crude oil and other petroleum products, natural gas, electric power, freight rates, and weather. Do not include exchange-traded (listed) commodity derivatives. Short dated (where the number of business days between trade date and delivery date is less than or equal to five business days) Physical Power and Gas trades should be INCLUDED in deal volume but EXCLUDED from Outstanding Confirmations. NGX is classified as exchanged listed.

Confirmation Staff: All employees involved in the confirmation of OTC derivatives trades, including drafting outgoing confirmations, chasing and reviewing incoming confirmations, investigating and reconciling confirmation discrepancies and conducting the affirmation of key economic trade details.

Confirmations Matching: Process of reconciling the terms of a transaction as confirmed by each counterparty, either manually or on an electronic platform such as DTCC or Markitwire.

Credit Derivatives: "An over the counter (OTC) financial derivative instrument that enables the isolation and separate transfer of credit risk. For purposes of this survey, Credit Derivatives include, but are not limited, to credit default swaps(CDS), total return swaps, credit linked notes, and credit spread forwards and options. Underlying credits include

single corporate or sovereign names, baskets, portfolios, credit indices, and obligations(and indices of obligations) such as asset backed securities(ABS), collateralized debt obligations(CDO) and leveraged loans."

Currency Options: OTC options in which the buyer has the right but not the obligation to exchange money denominated in one currency for another currency at an agreed exchange rate on or until a specified date. For the purpose of this survey, currency options include but are not limited to deliverable vanilla Options, non-deliverable vanilla options, simple exotic options, complex exotic options, cross currency/FX puts, calls, range forwards, and corridors; average rate currency options; binary, barrier and rainbow options on currencies, and quanto options. Do not include NDFs, spots, forwards or other exchange-traded (listed) FX derivatives.

Custom in-house build: Bespoke solutions developed in-house specifically for own firms.

Dodd-Frank: Dodd-Frank Regulatory Reform Bill <http://www.cftc.gov/LawRegulation/DoddFrankAct/index.htm>

Electronic Confirmation: The process by which derivative post-trade processes are automated. Confirmations are submitted to an electronic platform for matching, e.g. Markitwire, DTCC, Swift.

Electronically Confirmed: See *Electronic Confirmation*. Cleared OTC should be included in the electronically confirmed bracket as ISDA assume those trades are bilaterally traded and given up to CCP. G15 firms include cleared OTC volume in this bracket. Exchange traded (listed) derivatives should not be included.

Electronically Eligible: Transactions that are eligible for matching on an industry recognised platform e.g. DTCC, MarkitWire

EMIR: European Market Infrastructure Regulation

http://ec.europa.eu/internal_market/financial-markets/derivatives/index_en.htm

Equity Derivatives: OTC derivative products with payments linked to the performance of equities or equity indices. For the purposes of this survey, Equity Derivatives include but are not limited to; share and index swaps and options, equity forwards, equity options, equity linked notes, relative performance trades, correlation swaps, dividend swaps and options, and variance swaps and options. Do not include exchange traded (listed) equity derivatives.

Event Volume: Number of events relating to OTC derivatives trades sent to Operations for processing during the period. The following constitute 'events' for the purpose of this Survey: new trades, confirmable amendments (i.e. any economic amendment that requires a new confirmation to be drafted), partial and full terminations, increases/decreases and novations. Exclude (i) all internal, intra-company and intra-group trades, (ii) terminations and partial terminations arising from Tri-Optima or other tear-up services and (iii) one-way notices such as corporate action notices. One structure should be reported as one trade irrespective of the number of tickets. Prime broker activity or intermediation should be reported as two trades. Allocation splits should be reported as the number of funds to which a block trade is allocated. If, due to systems constraints, you are unable to report on the above basis, please indicate so in the Supplementary Information block provided at the end of the relevant section in the Survey and provide an estimate of the percentage effect on the Event Volume reported.

Failed Payments: Payments your firm has requested an Agent to action on your behalf but for various reasons the Agent has not been able to action the payment OR SWIFT message you have sent to your Agent which have failed. For the purpose of this Survey, the transfer of money is to be considered a payment.

FCM Service Provider: FCM is a firm that transacts futures and options business on behalf of institutions and the general public.

Front Office Staff: All employees entering into OTC derivatives trades housed on front office payroll, including: traders, marketers, sales, trade assistants, structurers and business managers, including staff allocated to a proprietary desk if the activity handled by such a desk is otherwise reported within this Survey. Where resources are shared across different business lines, e.g. one trade assistant for credit derivatives and interest rate trades, please allocate the appropriate percentage share of resource.

Full Time Equivalent: Percentage of time an employee (whether permanent, temporary or contractor) works represented as a decimal, e.g. a full-time person is 1.0, a person working 3 days per week is 0.6 and a person dedicating 50% of his/her time to the relevant activity is 0.5.

G15 Firms: Group of 15 major derivatives dealers. [Barclays Capital, BNP Paribas, BOA-ML, Citi, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JP Morgan, Morgan Stanley, Nomura, Royal Bank of Scotland, Societe Generale, UBS, Wells Fargo]

Industry Initiatives: Projects resulting from a drive to implement industry best practice or process improvements.

Interest Rates Derivatives: OTC derivative products that involve the exchange of cash flows calculated on a notional amount using specified interest rates. For the purposes of this Survey, Interest Rate Derivatives include but are not limited to: interest rate swaps, including cross-currency swaps, forward rate agreements (FRA) and interest rate options such as caps/floors, collars, swaptions, inflation swaps, and exotic options. Do not include exchange-traded (listed) interest rate derivatives.

KYC (Documentation): Documents required to ensure that 'Know Your Client' requirements are adequately fulfilled.

Low Cost Location: Location selected for its lower operating cost (includes onshore and offshore locations).

Margin Amounts: The sum of money which must be deposited, and maintained, in order to provide protection against default by a counterparty to a trade.

Mutual Early Termination: A bilaterally agreed clause that allows both counterparties to a transaction to terminate the trade early under certain defined circumstances.

Non Electronic Confirmation: Confirmation not included in the definition of Electronic Confirmation, i.e., not submitted to an electronic platform for matching.

Nostro Break: A mismatch of cashflows between the paying and receiving banks, which occurs when the expected amount of cash settlement differs from the actual amount.

Nostro Reconciliation: The process performed to ensure that the expected cash movements of a transaction (or multiple transactions) are reconciled with the actual cash movements effected.

Outsourced: Refers to the contracting out to an external service provider of activities that could be performed within a company.

Outstanding Confirmations: Total number of Electronic and Non-Electronic Confirmations not fully executed as at month end. Includes confirmations not yet drafted or issued, confirmations drafted but not yet issued, confirmations not yet received (where the counterparty is expected to draft the confirmations), confirmations issued but not yet returned and confirmations with open queries. Short dated (where the number of business days between trade date and delivery

date is less than or equal to five business days) Physical Power and Gas trades should be EXCLUDED from Outstanding Confirmations.

Pre-packaged software: An application program developed for sale to the general public (Off-the-Shelve) - Not customized or tailored for individual firms.

Project Portfolio: Series of projects organized into a single portfolio that describes project objectives, costs, timelines, accomplishments, resources, and risks.

Regional CCPs: CCPs that function solely for products currencies traded in particular region of operation.

Regulatory Compliance: Regulatory compliance describes the evolving best practise in firms to comply with relevant laws, regulations and industry commitments.

Reporting Period: The data submitted should relate to the period from 1 January 2012 to 31 December 2012.

Settlement Staff: All employees performing settlement functions, including prematching, investigation and reconciliation of settlement fails and breaks (including Nostro breaks).

Settlements: For the purpose of Question 17 of the Survey, this number should represent the gross number of settlements (both payments and receipts) before applying any netting (pre-netted settlements).

Settlements Pre-Matching: Process of matching payments via an electronic platform such as DTCC, in which counterparties can bilaterally match payments in advance of a settlement date.

SSI: Standard Settlement Instructions for derivative transactions. SSIs outline the bank account details of legal entities for specific currencies and / or products.

STP "Straight Through Processing": The end-to-end processing of automated data without manual intervention.

STP rate of paper confirmations: Number of paper confirmations auto-dispatched by a confirmation system (no manual intervention, drafted and sent via e-mail or fax route) as a percentage of all paper confirmations dispatched (auto + manual).

Third Party Administrator: Used by Buy-side funds, Third-Party Administrators (TPAs) to handle middle and back-office functions. TPAs also use third parties to provide independent valuations for trades, including OTC portfolios and clearing advisory.

Trade Capture Staff: All employees whose primary function is to book, amend and blotter all trade events into trade capture and operations systems. Additional responsibilities may include liaising with the Front and Back Office to investigate queries and Unrecognised Trades, static data maintenance, options exercise and expiry monitoring, and calculating coupon and fee payments.

Unrecognised Trade: Transaction that cannot be identified by the alleged counterparty to the trade.