July 2014

ISDA®

Research Note

Revisiting Cross-Border Fragmentation of Global OTC Derivatives: Mid-year 2014 Update

Evidence has emerged that over-the-counter derivatives markets have fragmented along geographical lines since the start of the swap execution facility (SEF) regime in the US on October 2, 2013. That trend has been especially notable for euro interest rate swaps, with European dealers opting to trade with other European parties.

This development has accelerated since the start of mandatory SEF trading in the US from February 2014, and the market for euro interest rate swaps is now clearly split between US and non-US counterparties. This research note provides evidence of this further fragmentation since February, based on an empirical analysis of cleared derivatives data.

SUMMARY

Fragmentation of swaps markets has increased since the first MAT determinations in February, particularly for euro interest rate swaps

Earlier this year, ISDA published a report entitled *Cross-Border Fragmentation of Global OTC Derivatives: An Empirical Study* (January 2014). The analysis is part of a series[1] on the topic of market fragmentation, which aims to empirically characterize changes to cross-border pools of liquidity since the implementation of the swap execution facility (SEF) regime.

Under these rules, electronic trading platforms that provide access to US persons were required to register as SEFs with the Commodity Futures Trading Commission (CFTC) and comply with strict new rules from October 2, 2013. The first over-the-counter (OTC) derivatives products were subsequently mandated for trading – a process called made-available-to-trade (MAT) – from February 15, 2014. All US persons are now legally required to trade MAT instruments[2] on SEFs or designated contract markets – but similar rules are not yet in place elsewhere, meaning the same requirements do not exist for non-US persons.

This report provides an update to the January 2014 paper to analyze how the MAT determinations have affected trading activity, and specifically whether they have resulted in further fragmentation in global derivatives markets. To measure the effects on cross-border relationships, we collected monthly regional clearing data from LCH.Clearnet between January 2013 and May 2014 for US dollar and euro interest rate swaps (IRS). These swaps were chosen given their regional significance, liquidity and price transparency attributes.

Our findings reveal the market for euro IRS continues to grow more fragmented. According to LHC.Clearnet data:

- The average volume of euro IRS transacted between European dealers as a percentage of total euro IRS volume was 75% between January 2013 and September 2013. In the period following the implementation of the SEF rule – October 2013 through January 2014 - this average rose to 90%.

- The MAT determinations appear to have exacerbated euro IRS market fragmentation. The average European-to-European interdealer volume as a percentage of total euro IRS volume increased to 93% between February 2014 and May 2014.

- The average cross-border volume of euro IRS transacted between European and US dealers as a percentage of total euro IRS volume was 25% from January 2013 to September 2013. In the period following the implementation of the SEF rule, this average fell to 9% between October 2013 and January 2014.

- The MAT determinations drove average European-to-US interdealer volume even lower, to 6%, between February 2014 and May 2014.

- European dealer volume with Canadian dealers in the market for euro IRS has steadily increased since August 2013, while US dealer volume with Canadian dealers has trended lower.

[1] See *Footnote 88 and Market Fragmentation: An ISDA Survey* (December 2013) and *Made-Available-to-Trade: Evidence of Further Market Fragmentation* (April 2014); http://www2.isda.org/functional-areas/research/research-notes/

[2] MAT submissions are available on the CFTC website: www.cftc.gov

- The market for US dollar IRS is US-centric, whereas the market for euro IRS has a more global character and is thus more prone to fragmentation. Like euro IRS, European dealers primarily trade US dollar IRS with other European dealers, albeit to a lesser degree.

- US dollar IRS volume between European dealers increased after the October 2013 SEF rule came into force, but normalized in the months following the February 2014 MAT determinations.

- SEFs continue to be US-centric liquidity pools, with reported US dollar IRS trades accounting for over 70% of IRS volume traded on these platforms.

- The MAT determinations have also affected the average percentage of euro IRS trading on SEFs. Trading in euro-denominated IRS decreased once the MAT determinations came into force – from 13% to 9% – as liquidity continued to move away from US persons.

DEFINING CROSS-BORDER LIQUIDITY POOLS

Global trading of derivatives creates liquidity and pricing advantages for users

The global nature of the OTC derivatives market offers significant advantages to market participants. These advantages include pricing transparency, liquidity, orderly trading and a diversified range of potential counterparties, which reduces systemic risk. At the participant level, risk mitigation techniques, such as hedging and portfolio diversification, are most easily achieved at the lowest cost in such an environment.

Uncoordinated national legislation and regulations may pose a risk to these highly integrated markets, resulting in market fragmentation[3]. When this occurs, established cross-border trading relationships may be broken as smaller sources of regional liquidity emerge. These smaller pools may be characterized by less transparency, more price volatility and a concentration of market participants and risk.

In our previous report, *Cross Border Fragmentation of OTC Derivatives: An Empirical Analysis* (January 2014), we defined the scope of the OTC derivatives market by comparing two derivatives types in order to better understand changes in liquidity: euro and US dollar IRS. We chose these swaps for our use-case given cross-border preferences, pricing transparency and liquidity.

THE MARKET FOR EURO IRS

European dealers are opting to trade euro IRS with other European counterparties

For the purposes of this study, the market for euro IRS is defined as plain vanilla transactions being cleared from one dealer to another[4]. We chose the dealer-to-dealer (interdealer) market as it is the broadest measure in terms of liquidity.

Within this interdealer market, we can observe euro IRS regional and cross-border trading behavior on a monthly basis[5]. Table 1 describes the percentage of interdealer activity across counterparties located in four regions – Europe, the US, Canada and Asia – from January 1, 2013 to May 31, 2014.

Table 1 highlights a few notable trends, which were reported in the January 2014 analysis. For example, European dealers primarily trade euro IRS with other European dealers. From January 2013 to September 2013 (denoted by the yellow area), an average of 75% of cleared euro IRS was traded exclusively in European liquidity pools in our sample. Transactions occurring between European dealers and dealers in other regions, primarily the US, account for 25% of activity, on average, over the same period.

Following the implementation of the SEF rules on October 2, 2013, clear shifts in trading behavior emerged. The percentage of European-to-European interdealer volume increased from an average of 75% to an average of 90% by January 2014. This trend accelerated further following the first MAT determinations coming into force on February 15, 2014 (denoted by the orange area), with the average reaching 93% between February 2014 and May 2014.

[3] In 2009, the Group of 20 nations committed to reforming the OTC derivatives market through mandatory clearing, increased margins (if non-cleared), and reporting requirements to global trade repositories. One of the most challenging aspects of these reforms has been global coordination of national legislation. The US CFTC, European Securities and Markets Authority (ESMA) and the European Commission (EC) have pledged to coordinate overlapping rules and pursue 'substitutive compliance' and 'mutual recognition'.

[4] LCH.Clearnet's SwapClear euro interest rate volume accounts for 65% of total euro interest rate volume, adjusted for double counting, as reported by the Bank of International Settlements June 2013.

[5] The location of counterparties relies on the country of incorporation of the legal entity sending the trade to clearing. Refer to Appendix A to view regional LCH.Clearnet SwapClear statistics.

Table 1: Percent of Cleared Interdealer Activity by European Dealers with European, US, Canadian and Asian Dealers: Euro IRS 1/1/2013 – 5/31/2014

2013	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Europe	76%	73%	72%	73%	75%	77%	76%	74%	71%	91%	90%	90%
USA	22%	26%	27%	26%	24%	22%	23%	25%	29%	9%	10%	9%
Canada	1.2%	0.9%	1.1%	0.7%	0.8%	1.0%	1.0%	0.5%	0.6%	0.7%	0.7%	0.9%

2014	Jan	Feb	Mar	Apr	May
Europe	90%	91%	93%	94%	93%
USA	9%	8%	6%	5%	6%
Canada	0.9%	1.0%	1.0%	0.8%	0.8%
Asia	0.2%	0.3%	0.2%	0.3%	0.2%

Source: LCH.Clearnet SwapClear

Table 2 describes the percentage of US interdealer activity across the same four regions. Interestingly, US dealers appear to trade the majority of euro IRS with European dealers. Although trading activity has been consistent throughout 2013, with no noticeable shifts following the October 2, 2013 SEF rule date, the average percentage of volume decreased in 2014 to 61% from 66% during 2013. This change may reflect a shift in relationships as the MAT determinations came into force (denoted by the orange area). Unsurprisingly, US-to-US interdealer volume increased from an average of 33% in 2013 to an average of 38% in 2014.

Table 2: Percent of Cleared Interdealer Activity by US Dealers with European, US, Canadian and Asian Dealers: Euro IRS 1/1/2013 – 5/31/2014

2013	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Europe	67%	70%	66%	64%	66%	70%	62%	60%	65%	67%	65%	64%
USA	31%	29%	33%	35%	33%	29%	37%	40%	34%	32%	34%	35%
Canada	1.7%	1.1%	0.8%	1.1%	1.1%	1.4%	1.0%	0.3%	0.4%	0.7%	0.8%	0.7%

2014	Jan	Feb	Mar	Apr	May
Europe	57%	55%	61%	75%	58%
USA	42%	44%	38%	24%	42%
Canada	0.7%	0.4%	1.1%	1.2%	0.3%
Asia	-	0.1%	0.1%	0.5%	0.1%

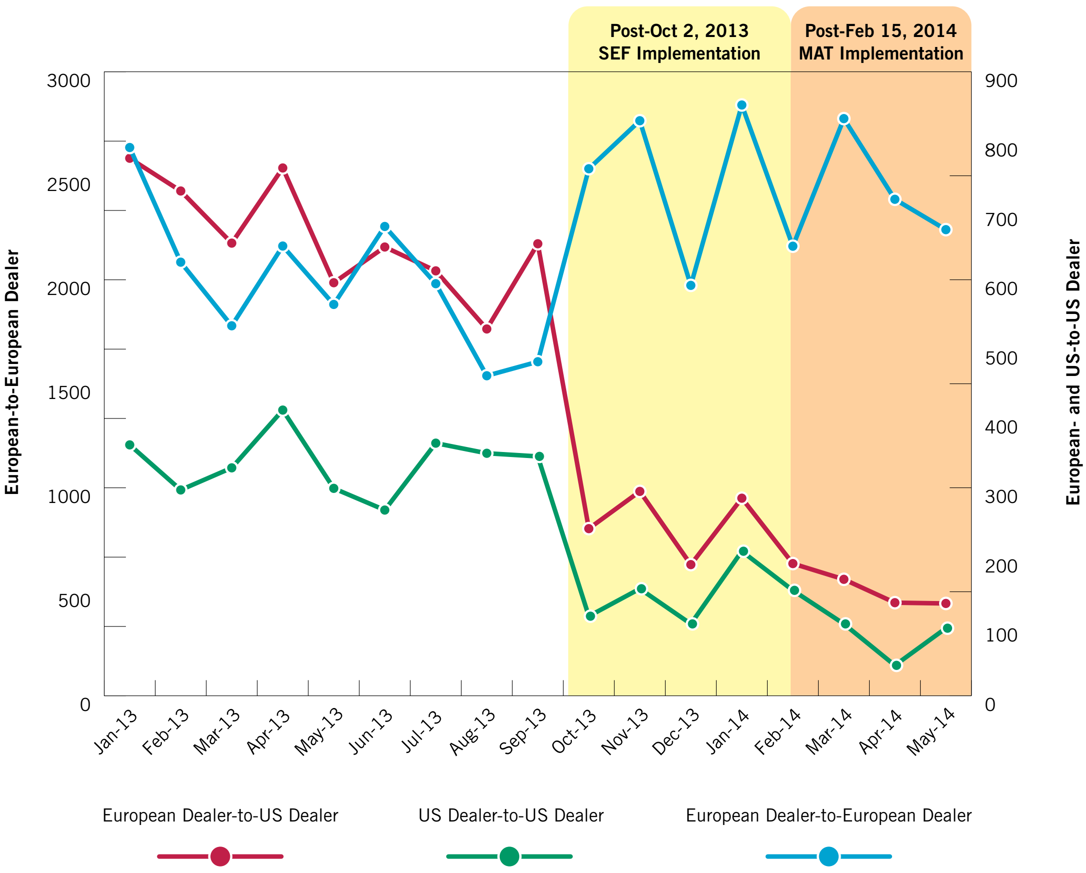
Source: LCH.Clearnet SwapClear

Chart 1 graphs the monthly notional volume of euro IRS transactions from January 2013 to May 2014. Several trends are evident pre- and post-US regulatory changes.

Prior to the October 2013 SEF rule, an average of €1,990.7 billion ($2,708.3 billion) of euro IRS trades took place among European dealers (blue line) between January and September 2013. During the same period, an average volume of €661.3 billion ($899.7 billion) was transacted between European and US dealers (red line).

> *"Relationships appear to have shifted as European dealers became reluctant to trade with US counterparties"*

Chart 1: Monthly Interdealer Cleared Euro IRS Activity
Notional Volume (EUR bln), 1/1/2013 – 5/31/2014



Source: LCH.Clearnet SwapClear

Following the October 2, 2013 SEF rule coming into force (denoted by the yellow area), relationships appear to have shifted as European dealers became reluctant to trade with US counterparties. Between October 2013 and February 2014, average notional volume between European dealers increased to €2,453.7 billion ($3,338.2 billion), while European trading with US counterparties decreased to an average of €239.9 billion ($326.3 billion).

These trends appear to have been further exacerbated when the first MAT determinations came into force on February 15, 2014. European dealers continued to rely on regional liquidity and moved further away from US counterparties over the February 2014-May 2014 period (denoted by the orange area). Average European-to-European interdealer volume remained steady at €2,390.0 billion ($3,251.6 billion), while European trading with US counterparties again decreased to an average of €156.3 billion ($212.6 billion).

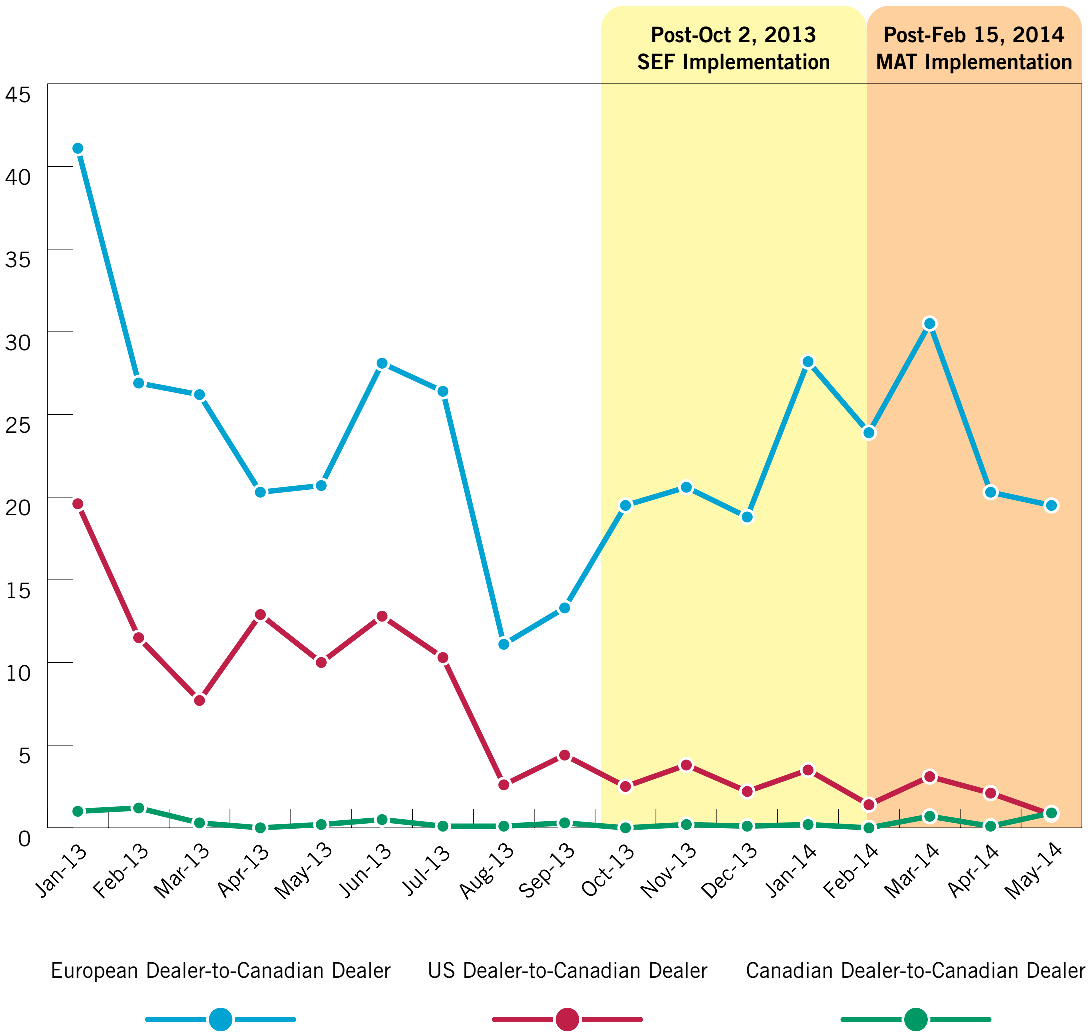
Meanwhile, US regional liquidity in the market for euro IRS has trended lower across the entire period under study. One possible explanation is lower liquidity in the US-person pools, such as SEFs. We will explore the composition of these pools in greater detail in a later section.

Chart 2 expands our previous analysis by detailing cross-border relationships in euro IRS between Europe, the US and Canada. Volumes are of a much smaller magnitude when compared to Chart 1 – not surprising as Canadian dealers tend to transact mostly Canadian dollar IRS. (Note: we will add Asian region data points in future analyses.)

> *US regional liquidity in the market for euro IRS has trended lower across the entire period under study*

The chart reveals there has been a 30% cumulative increase in European-to-Canadian interdealer volume since August 2013, from €11.1 billion ($15.1 billion) to €19.5 billion ($26.5 billion) in May 2014. From January 2013, US-to-Canadian interdealer volumes trended lower. Canadian-to-Canadian interdealer volumes have risen modestly since February 15, 2014 (denoted by the orange area).

Chart 2: Monthly Interdealer Cleared Euro IRS Activity
Notional Volume (EUR bln), 1/1/2013 – 5/31/2014



Source: LCH.Clearnet SwapClear

THE MARKET FOR US DOLLAR IRS

US dollar swaps are less affected by fragmentation, indicating the market is more US-centric in nature

Similar themes can be identified in an analysis of US dollar IRS. The market for US dollar IRS is defined as plain vanilla transactions between dealers that are cleared. Table 3 describes the percentage of interdealer activity across counterparties located in the four regions – Europe, the US, Canada and Asia – from January 1, 2013 to May 31, 2014.

Like euro IRS, European dealers primarily trade US dollar IRS with other European dealers, albeit to a lesser degree. From January 2013 to September 2013, an average of 52% of cleared US dollar IRS was traded exclusively in Europe, according to our sample. Transactions occurring between European dealers and US dealers accounted for an average of 43% of activity during this time.

Following the October 2, 2013 SEF rule implementation date (denoted by the yellow area), we observe clear shifts in trading behavior. During the months of October, November and December, we view an increase in average European-to-European interdealer activity from 52% to 58%, coupled with a decrease in average European-to-US interdealer activity from 43% to 38%. The shift is more subtle than changes in euro IRS.

Since January 2014, however, relationship trends appear to have normalized to the period preceding the SEF rule. This may be because the market for US IRS is US-centric, whereas the market for euro IRS has a more global character and is thus more prone to fragmentation.

Table 3: Percent of Cleared Interdealer Activity by European Dealers with European, US, Canadian and Asian Dealers: US dollar IRS 1/1/2013 – 5/31/2014

2013	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Europe	53%	50%	50%	51%	54%	55%	54%	53%	50%	60%	57%	55%
USA	44%	46%	45%	45%	42%	41%	40%	43%	41%	36%	39%	40%
Canada	4%	4%	4%	4%	3%	5%	5%	4%	9%	4%	4%	5%

2014	Jan	Feb	Mar	Apr	May
Europe	52%	52%	50%	54%	51%
USA	41%	42%	44%	39%	44%
Canada	5%	5%	5%	4%	4%
Asia	2.2%	0.8%	1.3%	3.0%	1.7%

Source: LCH.Clearnet SwapClear

Table 4 describes the percentage of US interdealer activity across the same four regions from January 1, 2013 to May 31, 2014. The analysis shows that US dealers appear to trade US dollar IRS consistently with other US counterparties and European dealers. This pattern remains intact even after the October 2, 2013 SEF rule implementation date, which further supports our view that the market for US IRS is more US-centric in nature, with the bulk of liquidity shared by US and European market participants.

Table 4: Percent of Cleared Interdealer Activity by US Dealers with European, US, Canadian and Asian Dealers: US dollar IRS 1/1/2013 – 5/31/2014

2013	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Europe	51%	51%	53%	48%	47%	49%	49%	47%	51%	47%	49%	47%
USA	45%	46%	43%	49%	49%	47%	47%	50%	44%	48%	47%	47%
Canada	4%	3%	4%	3%	4%	4%	5%	4%	5%	5%	3%	6%

2014	Jan	Feb	Mar	Apr	May
Europe	48%	44%	56%	47%	46%
USA	48%	51%	39%	48%	50%
Canada	4%	5%	5%	5%	4%
Asia	0.5%	0.3%	0.3%	0.2%	0.5%

Source: LCH.Clearnet SwapClear

"Like euro IRS, European dealers primarily trade US dollar IRS with other European dealers, albeit to a lesser degree"

Like euro IRS, European dealers primarily trade US dollar IRS with other European dealers, albeit to a lesser degree. Chart 3 reveals more subtle trends in pre- and post-regulatory trading. Unlike the market for euro IRS, cross-border divergences are less sharp and persistent. It appears that following the implementation of the SEF rules on October 2, 2013 (denoted by the yellow area), European dealers transacted more volume in an exclusive European liquidity pool. However, cross-border liquidity pools began to converge following the February 2014 MAT determinations (denoted by the orange area).

We observe that the European-to-European interdealer pool (blue line) moves in parallel to the shared European-to-US interdealer pool (red line) from February 2014-April 2014. During this time, the US-to-US interdealer pool (green line) is mostly flat.

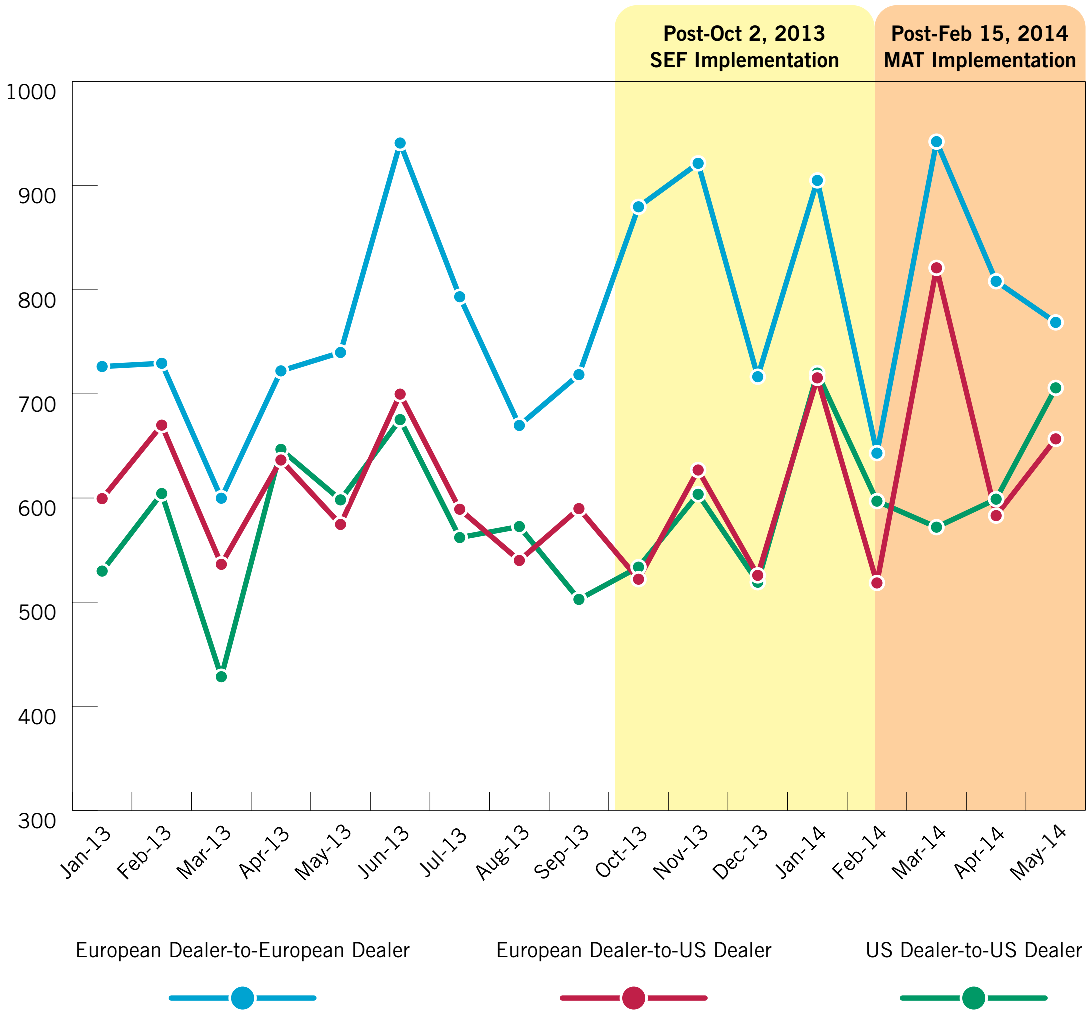
The last data point collected from May 2014 is interesting, as it points to a volume decrease in the exclusive European pool. At this time, the exclusive US pool begins to out-pace the 'shared' cross-border pool. Monthly notional volumes are fairly consistent: \$768.7 billion, \$705.8 billion and \$656.8 billion for the European, US and shared pools, respectively. We will continue to monitor the US dollar IRS market to better understand these trends as they develop.

As with the euro analysis, we also consider cross-border relationships in US dollar IRS between Europe, the US and Canada, as shown in Chart 4. Again, volumes across these relationships are of a much smaller magnitude when compared to Chart 3, reflecting the domestic focus of many Canadian dealers.

The chart reveals an increasing and similar magnitude of volume across European and US dealers when facing Canadian counterparties. European-to-Canadian interdealer liquidity appears to have shaper spikes during some of the IMM months when compared to US-to-Canadian interdealer volume. The cumulative increase of cleared European- and US-to-Canadian interdealer volume over the full analysis period of 51% and 73%, respectively, is likely the outcome of US regulations designed to increase the volume of cleared IRS and other derivatives.

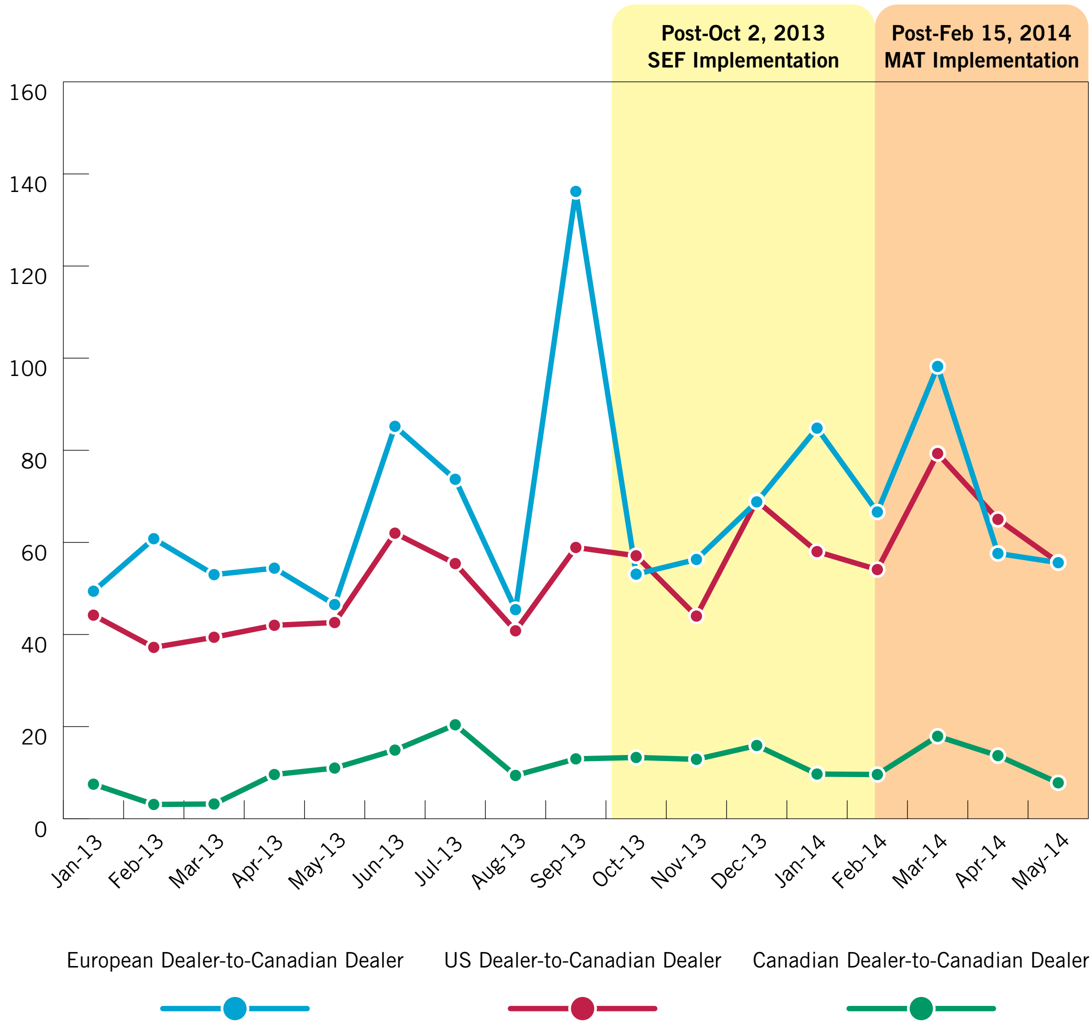
> ***"European-to-Canadian interdealer liquidity appears to have shaper spikes during some of the IMM months when compared to US-to-Canadian interdealer volume"***

Chart 3: Monthly Interdealer Cleared US Dollar IRS Activity
Notional Volume (USD bln), 1/1/2013 – 5/31/2014



Source: LCH.Clearnet SwapClear

Chart 4: Monthly Interdealer Cleared US Dollar IRS Activity Notional Volume (USD bln), 1/1/2013 – 5/31/2014



Source: LCH.Clearnet SwapClear

EURO AND US DOLLAR MARKET COMPARISON

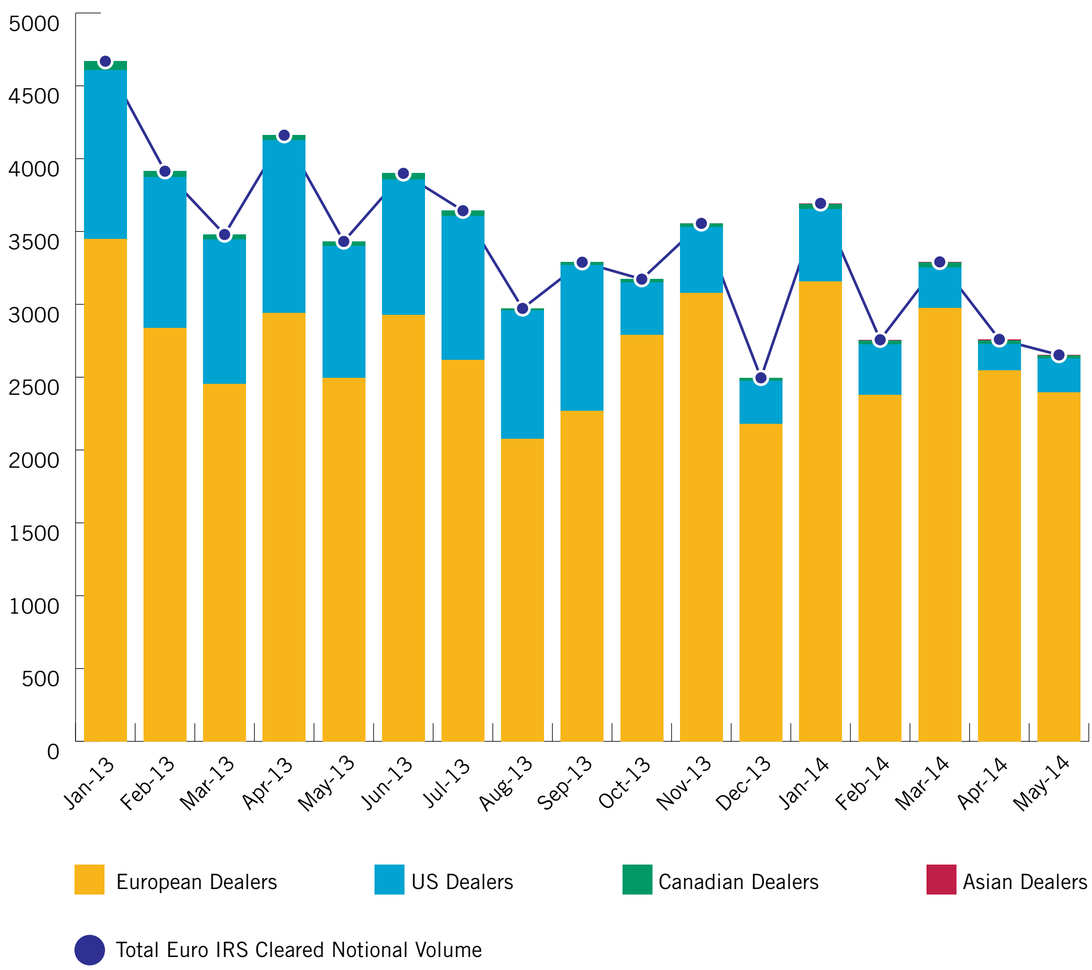
Cleared euro IRS volumes have fallen, while volume in US dollar swaps has increased

Finally, summing all of the regional monthly transactional data reveals other important observations about the cleared market for euro and US dollar IRS, as shown in charts 5 and 6.

Total cleared euro IRS volumes have declined 43% over the entire analysis period (Chart 5), while total cleared US dollar volumes have risen 15% (Chart 6). On a cumulative basis, euro IRS volumes decreased by 25%, while US dollar IRS volumes increased by 43%.

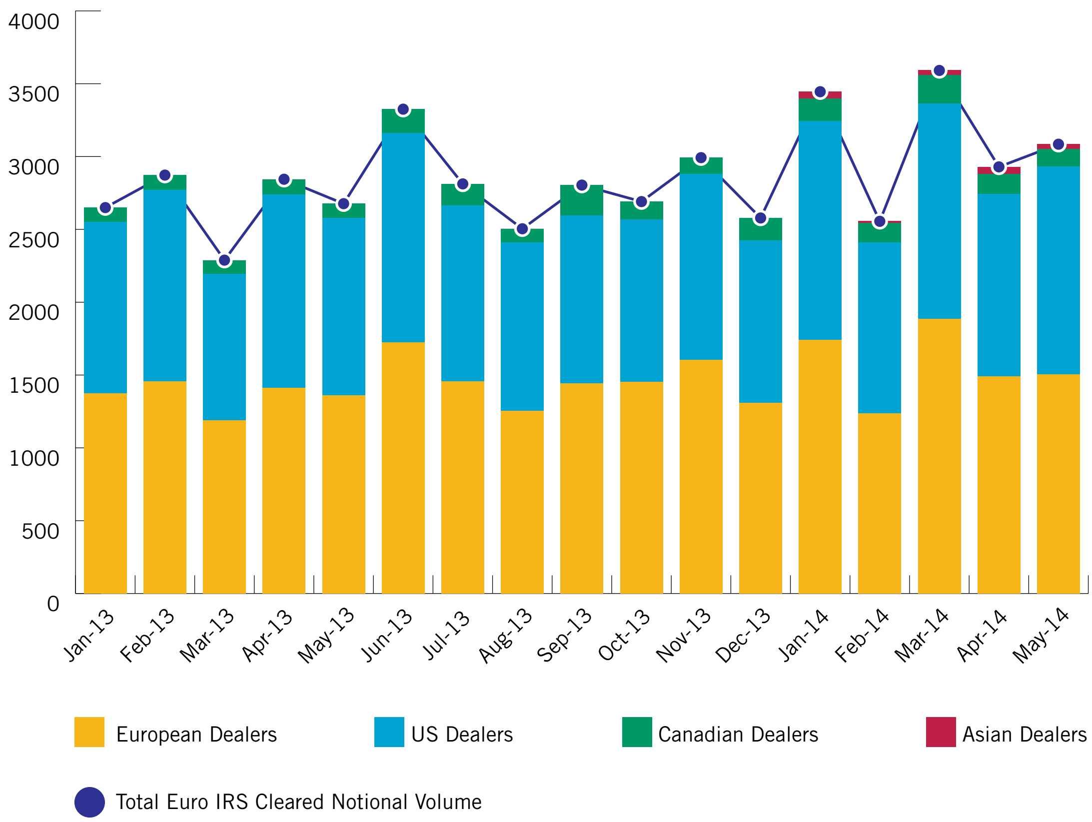
The increase in cleared US dollar IRS volume is driven by recent CFTC rules designed to clear more IRS and other derivatives. As we will see in the next section, US-centric liquidity pools that are reported to Depository Trust & Clearing Corporation (DTCC) and Bloomberg's swap data repository show an increase in cleared volume, particularly for US dollar-denominated swaps.

Chart 5: Monthly Total Interdealer Cleared Euro IRS Activity Notional Volume (EUR bln), 1/1/2013 – 5/31/2014



Source: LCH.Clearnet SwapClear

Chart 6: Monthly Total Interdealer Cleared US Dollar IRS Activity Notional Volume (USD bln), 1/1/2013 – 5/31/2014



Source: LCH.Clearnet SwapClear

SEF EURO AND US DOLLAR LIQUIDITY

US dollar swaps dominate trading volume on SEFs

We now turn to euro and US dollar SEF volumes to further distinguish US person and non-US person liquidity. SEF data was obtained from the DTCC's Global Trade Repository (GTR). Like our cleared volume sample, interdealer flows also dominate SEF trading[6].

Given the SEF rules apply to any eligible trade involving a US person, it is not surprising that 70% of interest rate swap volume transacted on SEFs, on average, was denominated in US dollars once the October 2, 2013 rule was implemented. Table 5 compares the percentage of US dollar, euro and other currency swaps traded on SEFs.

Interestingly, the percentage of euro trading on SEF decreased once the first MAT determinations came into force on February 15, 2014 (denoted by the orange area). Between October 2013 and January 2014 (denoted by the yellow area), the average percentage of euro trades was 13%. This average decreased to 9% between February 2014 and May 2014.

Table 5: US Dollar and Euro IRS Trading as a Percent of Total SEF Trading 1/1/2013 – 5/31/2014

	Oct 13	Nov 13	Dec 13	Jan 14	Feb 14	Mar 14	Apr 14	May 14
US Dollar	70%	71%	73%	67%	68%	74%	73%	75%
Euro	13%	14%	12%	13%	11%	8%	7%	8%
Other	17%	14%	15%	20%	21%	18%	19%	17%

Source: LCH.Clearnet SwapClear

Given the relatively small impact of non-US dollar trading occurring on SEF versus the overall market, we believe the majority of this liquidity is likely shared exclusively by US dealers. The question is whether the US-to-US interdealer trading activity, as highlighted in Chart 3, will continue to trend upwards for US dollar IRS in future months. Results from ISDA's December 2013 survey suggest it might, as 84% of participants believe non-US persons are choosing not to trade on SEF platforms.

CONCLUSION

The October 2 effective date for SEF compliance has clearly had an impact on trading relationships in the OTC derivatives markets. Our updated empirical analysis supports recent December 2013 ISDA survey findings indicating that liquidity has further fragmented following the first MAT determinations coming into force on February 15, 2014. Trading between US persons and non-US persons has declined. Most notably, fragmentation is disrupting the market for euro interest rate swaps as liquidity pools have become more exclusive among European dealers.

[6] Further volume, counterparty and other information is available on individual SEF websites.

Appendix A1: LCH.Clearnet SwapClear Interdealer Cleared Euro IRS Activity
Notional Volume (EUR bln), 1/1/2013 – 5/31/2014

	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
European Dealer																	
Europe	2,635	2,084	1,778	2,161	1,880	2,255	1,980	1,538	1,605	2,533	2,764	1,972	2,839	2,160	2,774	2,386	2,240
USA	775	728	653	761	596	647	613	529	652	241	294	189	285	190	168	134	133
Canada	41	27	26	20	21	28	26	11	13	20	21	19	28	24	31	20	19
Asia	-	-	-	-	-	-	-	-	-	-	-	-	6.4	6.3	5.1	7.9	3.9
Total	3,451	2,838	2,457	2,942	2,497	2,930	2,619	2,077	2,270	2,793	3,079	2,180	3,159	2,381	2,977	2,548	2,396
US Dealer																	
Europe	775	728	653	761	596	647	613	529	652	241	294	189	285	190	168	134	133
USA	362	297	328	412	299	268	364	349	345	115	154	103	208	152	103	44	97
Canada	20	11	8	13	10	13	10	3	4	2	4	2	4	1	3	2	1
Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.3	0.9	0.3
Total	1,156	1,036	989	1,186	904	927	987	881	1,001	358	452	295	496	344	275	181	231
Canadian Dealer																	
Europe	41	27	26	20	21	28	26	11	13	20	21	19	28	24	31	20	19
USA	19.6	11.5	7.7	12.9	10.0	12.8	10.3	2.6	4.4	2.5	3.8	2.2	3.5	1.4	3.1	2.1	0.8
Canada	1.0	1.2	0.3	-	0.2	0.5	0.1	0.1	0.3	-	0.2	0.1	0.2	-	0.7	0.1	0.9
Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05
Total	62	40	34	33	31	41	37	14	18	22	25	21	32	25	34	22	21
Asian Dealer																	
Europe	-	-	-	-	-	-	-	-	-	-	-	-	6.4	6.3	5.1	7.9	3.9
USA	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.3	0.9	0.3
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05
Asia																	
Total	-	-	-	-	-	-	-	-	-	-	-	-	6.4	6.6	5.4	8.7	4.2

Appendix A2: LCH.Clearnet SwapClear Interdealer Cleared US Dollar IRS Activity
Notional Volume (USD bln), 1/1/2013 – 5/31/2014

	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14
European Dealer																	
Europe	726	729	600	722	740	941	793	670	718	880	921	716	905	643	942	808	769
USA	599	670	536	637	575	700	589	540	590	522	627	526	715	518	821	583	657
Canada	49	61	53	54	47	85	74	45	136	53	56	69	85	67	98	58	56
Asia	-	-	-	-	-	-	-	-	-	-	-	-	38.3	9.9	25.4	45.3	25.1
Total	1,375	1,460	1,189	1,413	1,361	1,726	1,456	1,255	1,444	1,455	1,605	1,311	1,744	1,238	1,887	1,494	1,506
US Dealer																	
Europe	599	670	536	637	575	700	589	540	590	522	627	526	715	518	821	583	657
USA	530	604	428	647	598	675	562	573	503	534	604	519	720	597	572	599	706
Canada	44	37	39	42	43	62	55	41	59	57	44	69	58	54	79	65	56
Asia	-	-	-	-	-	-	-	-	-	-	-	-	8.2	3.6	4.8	3.0	7.4
Total	1,173	1,311	1,004	1,325	1,215	1,437	1,207	1,153	1,151	1,113	1,275	1,114	1,502	1,173	1,477	1,250	1,426
Canadian Dealer																	
Europe	49	61	53	54	47	85	74	45	136	53	56	69	85	67	98	58	56
USA	44	37	39	42	43	62	55	41	59	57	44	69	58	54	79	65	56
Canada	7.5	3.1	3.2	9.6	11.0	14.9	20.4	9.4	13.0	13.3	12.9	15.9	9.7	9.6	17.9	13.7	7.8
Asia	-	-	-	-	-	-	-	-	-	-	-	-	0.5	0.3	0.7	0.1	0.7
Total	101	101	96	106	100	162	149	96	208	123	113	154	153	131	196	137	120
Asian Dealer																	
Europe	-	-	-	-	-	-	-	-	-	-	-	-	38.3	9.9	25.4	45.3	25.1
USA	-	-	-	-	-	-	-	-	-	-	-	-	8.2	3.6	4.8	3.0	7.4
Canada	-	-	-	-	-	-	-	-	-	-	-	-	0.5	0.3	0.7	0.1	0.7
Asia	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.0	0.0	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	47.1	13.8	30.9	48.4	33.2

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ISDA has published other research notes on this topic:

- ***Made-Available-to-Trade(MAT): Evidence of Further Market Fragmentation***, April 2014: http://www2.isda.org/attachment/NjYwNQ==/MAT%20Study%2020140404_AMENDED_Y_AXIS_LABEL.pdf
- ***Cross-Border Fragmentation of Global OTC Derivatives: An Empirical Analysis***, January 2014: http://www2.isda.org/attachment/NjIzNw==/Cross%20Border%20Fragmentation%20-%20An%20Empirical%20Analysis.pdf
- ***Footnote 88 and Market Fragmentation: An ISDA Survey***, December 2013: http://www2.isda.org/attachment/NjE3Nw==/Footnote%2088%20Research%20Note%2020131218.pdf

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ABOUT ISDA

Since its founding in 1985, the International Swaps and Derivatives Association has worked to make over-the-counter (OTC) derivatives markets safe and efficient.

ISDA's pioneering work in developing the ISDA Master Agreement and a wide range of related documentation materials, and in ensuring the enforceability of their netting and collateral provisions, has helped to significantly reduce credit and legal risk. The Association has been a leader in promoting sound risk management practices and processes, and engages constructively with policymakers and legislators around the world to advance the understanding and treatment of derivatives as a risk management tool.

Today, ISDA has over 800 member institutions from 64 countries. These members include a broad range of OTC 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 including exchanges, clearinghouses and repositories, as well as law firms, accounting firms and other service providers.

ISDA's work in three key areas – reducing counterparty credit risk, increasing transparency, and improving the industry's operational infrastructure – show the strong commitment of the Association toward its primary goals; to build robust, stable financial markets and a strong financial regulatory framework.