ISDA Research Note

Cross-Border Fragmentation of Global OTC Derivatives: An Empirical Analysis

January 2014

Summary

In December 2013, ISDA published *Footnote 88 and Market Fragmentation: An ISDA Survey* ("the Survey"). The Survey's findings revealed that the October 2, 2013 effective date for Swap Execution Facility (SEF) compliance, the definition of a US person and the Footnote 88 interpretation are clearly having a disruptive impact on OTC derivative trading volumes. Market participants reported that cross-border liquidity has fragmented along US person and non-US person lines. Continued regulatory uncertainty has resulted in greater price volatility and a shifting in the nature of trading from cleared to bilateral risk management.

This analysis builds on our earlier work and aims to empirically characterize the composition of and changes to cross-border pools of liquidity following the Oct 2, 2013 implementation date. To accomplish this, we use monthly 2013 clearing and reporting data for US dollar and Euro interest rate swaps ("IRS") for our use-case. These swaps were chosen given their regional significance, liquidity and price transparency attributes.

Our findings reveal:

- The market for Euro IRS has appeared to fragment significantly. Volumes of cleared Euro IRS between European and US dealers dropped 77% since October 2013 indicating a breakdown of cross-border trading relationships.
- Restricted access to US persons likely influenced changes to the trading process, such as reduced trading or a temporary shift to bilateral risk management, resulting in a 47% decrease in total Euro IRS cleared volume from January 2013.
- While changes in Euro IRS trading were pronounced, changes in US dollar trading of IRS were less evident.
- US dealers continued to trade US dollar IRS with European and US dealers in fairly consistent volumes throughout the 2013; European dealers traded the majority of their US dollar IRS with other European dealers throughout the year.
- Swap Execution Facilities (SEFs) are currently US-centric liquidity pools as reported US dollar IRS trades dominated over 70% of IRS volume traded on SEFs.

Defining Cross-Border Liquidity Pools

The global nature of the over-the-counter (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 by resulting in market fragmentation.[1] 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 order to understand changes to liquidity that are occurring within the OTC derivatives market we must first define the scope of this market. To do so, we compare two derivative types: Euro and US dollar interest rates swaps (IRS). We chose these swaps for our use-case given cross-border preferences, pricing transparency and liquidity.

The Market for Euro IRS

For the purposes of this study, the market for Euro IRS is defined as plain vanilla transactions being cleared from one dealer to another.[2] We chose the dealer-to-dealer ("inter-dealer") market as it is the broadest measure in terms of liquidity.

Within this inter-dealer market we can observe regional and cross-border trading behavior of Euro IRS on a monthly basis. Table 1 describes the percentage of European inter-dealer activity across counterparties located in three regions: Europe, the US and Canada from January 1, 2013 to December 27, 2013.

Table 1: Percent of European Inter-Dealer Regional Activity: Euro IRS
January 1, 2013 to December 27, 2013

	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
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%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%

Table 1 highlights a few notable trends. For example, European dealers primarily trade Euro IRS with other European dealers. From January 2013 through September 2013 an average of 75% of cleared Euro IRS was traded exclusively in Europe according to our sample. Transactions occurring between European dealers and other regions, primarily the US, account for 25% of activity, on average, over the same period.

[1] In 2009, the G20 committed to reforming the OTC derivatives market through mandatory clearing, increased margins (if non-cleared), and reporting requirements to global trade repositories (GTRs). One of the most challenging aspects of these reforms has been global coordination of national legislation. The US Commodity Futures Trading Commission (CFTC), European Securities and Markets Authority (ESMA) and the European Commission (EC) have been tasked to coordinate overlapping rules and pursue 'substitutive compliance' and 'mutual recognition'.

[2] LCH 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 (BIS) June 2013.

Following the October 2, 2013 SEF rule implementation date, clear shifts in trading behavior emerged. During the months of October, November and December (circled in red) we observe an increase in European-to-European inter-dealer activity coupled with a decrease in European-to-US inter-dealer activity. This data supports our Survey results where 68% of respondents indicated non-US persons have reduced or ceased trading activity with US persons.

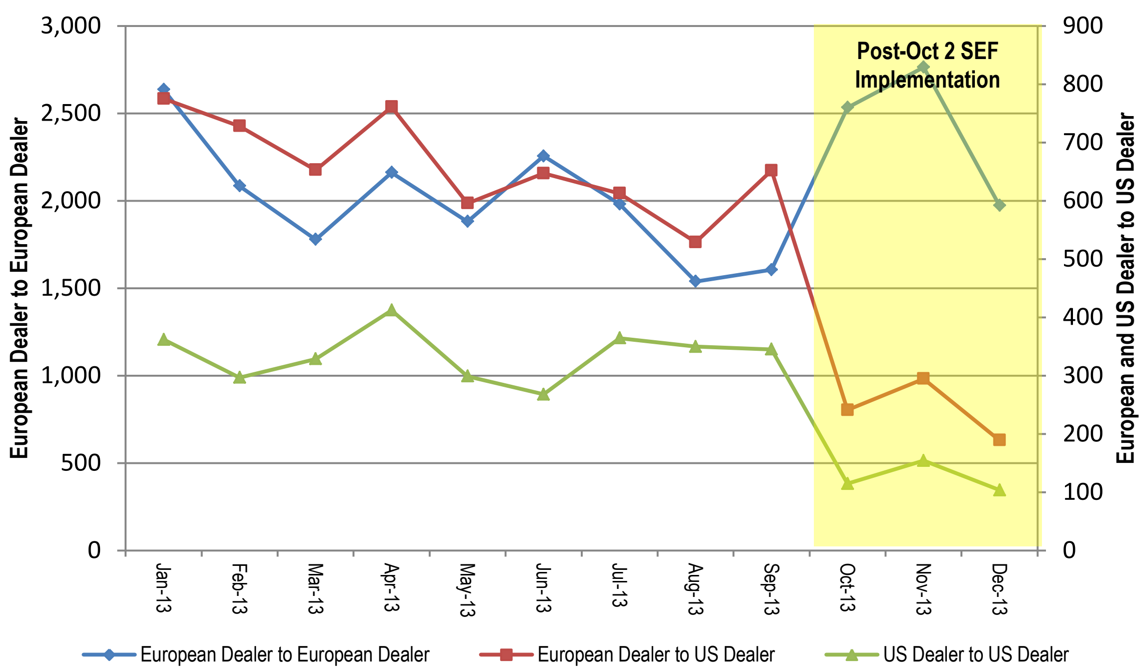
Table 2 describes the percentage of US inter-dealer activity across the same three regions in 2013. Interestingly, US dealers appear to trade the majority of Euro IRS with European dealers. However, this trading has been consistent throughout 2013 with no noticeable shifts following the Oct 2, 2013 SEF rule date (circled in red). US dealer-to-US dealer and US dealer-to-European dealer activity remained fairly consistent each month throughout the year.

Table 2: Percent of US Inter-Dealer Regional Activity: Euro IRS
January 1, 2013 to December 27, 2013

	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
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	2%	1%	1%	1%	1%	1%	1%	0%	0%	1%	1%	1%

Chart 1 graphs the monthly notional volume of Euro IRS transactions occurring in 2013. European-to-European dealer activity increased while European-to-US activity decreased following the October 2, 2013 SEF rule implementation which we highlighted in yellow.

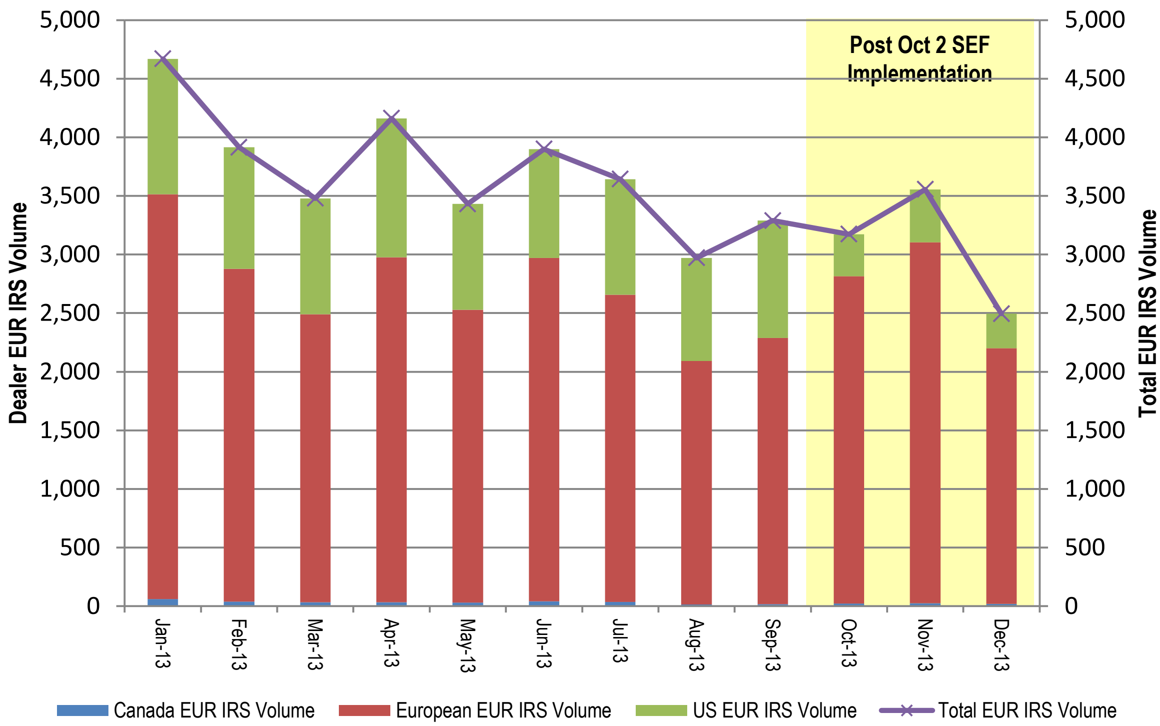
Chart 1: Monthly Regional Inter-Dealer Euro IRS Activity
Notional Volume (EUR bln), 1/1/2013 – 12/27/2013



Source: LCH SwapClear

Summing all of the regional monthly transactional data reveals other important observations about the cleared market for Euro IRS as shown in Chart 2.

Chart 2: Total Inter-Dealer Euro IRS Activity
Notional Volume (EUR bln), 1/1/2013 – 12/27/2013



Source: LCH SwapClear

Since the beginning of 2013, it appears that total cleared Euro IRS volumes have trended lower. It is possible that the decline in cleared volume resulted from lower trading activity or a temporary shift to bilateral risk management. Comments to our Survey suggested trading has been reduced given confusion over CFTC rules.

Chart 2 also underscores Tables 1 and 2, revealing more overall participation in Euro IRS trading by European dealers and less by US dealers in October, November and December. 60% of Survey participants indicated a fragmentation in liquidity resulted in separate pools for US and non-US persons. Thus, this change indicates a possible unwillingness of European dealers to transact with US dealers, creating an exclusively European inter-dealer pool that is separate from other sources of liquidity.

The Market for US Dollar IRS

The market for US dollar IRS is also defined as plain vanilla transactions being cleared from one dealer to another. Table 3 describes the percentage of European inter-dealer activity across counterparties located in our three regions: Europe, the US and Canada from January 1, 2013 to December 27, 2013.

Table 3: Percent of European Inter-Dealer Regional Activity: US dollar IRS
January 1, 2013 to December 27, 2013

	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
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%

Like Euro IRS, European dealers also primarily trade US dollar IRS with other European dealers albeit to a lesser degree. From January 2013 through September 2013 an average of 52% of cleared Euro 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, we again observe clear shifts in trading behavior. During the months of October, November and December (circled in red) we view an increase in European-to-European inter-dealer activity coupled with a decrease in European-to-US inter-dealer activity. The shift is more subtle than changes in Euro IRS. This may be because the market for US IRS is a US-centric market, whereas the market for Euro IRS has a more global character and is thus more prone to fragmentation.

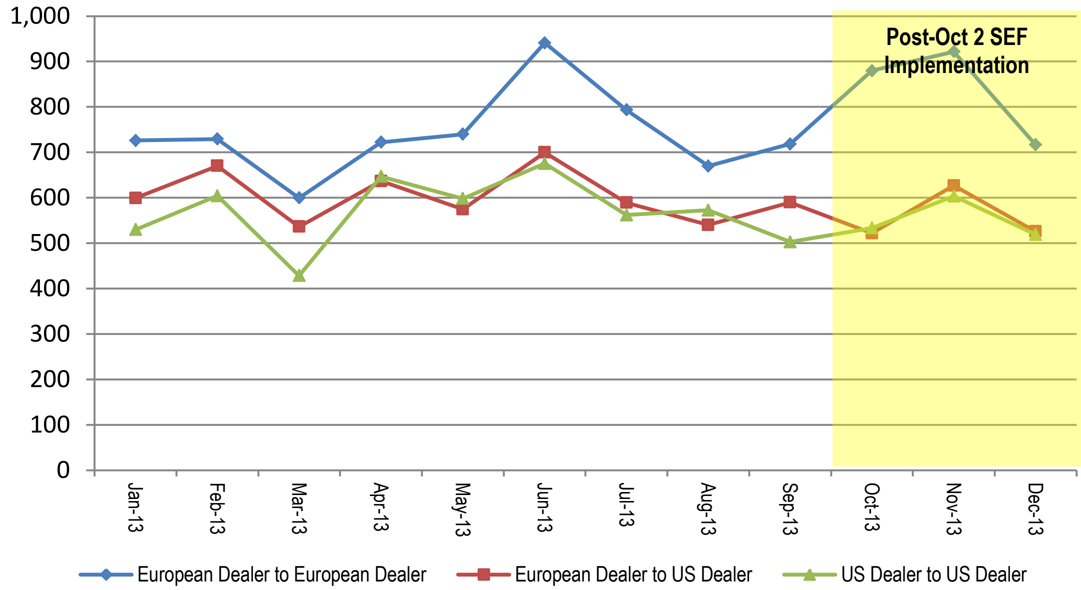
Table 4 describes the percentage of US inter-dealer activity across the same three regions in 2013. Interestingly, US dealers appear to trade US IRS consistently with other US dealers and European dealers. This pattern remains intact even after the Oct 2, 2013 SEF rule implementation date which further 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 US Inter-Dealer Regional Activity: US dollar IRS
January 1, 2013 to December 27, 2013

	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
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%

Chart 3 graphs the monthly notional volume of US dollar IRS transactions occurring in 2013. Here we again observe an increase in European-to-European dealer activity while European-to-US activity remains consistent following the October 2, 2013 SEF rule implementation which we highlighted in yellow.

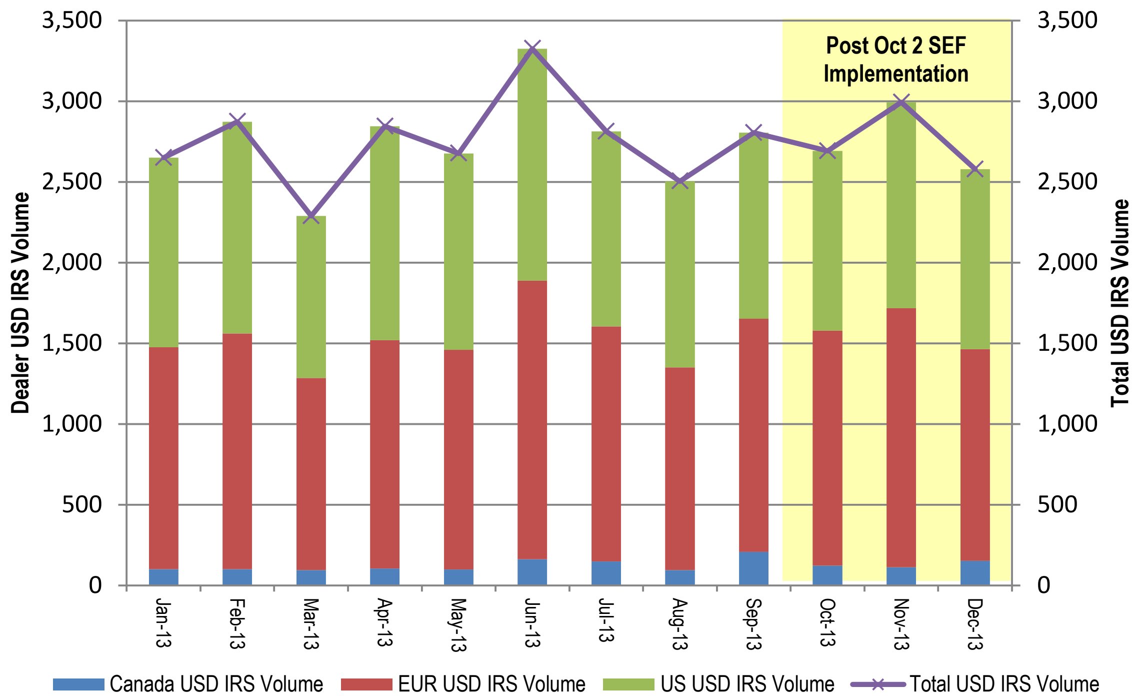
Chart 3: Monthly Regional Inter-Dealer US Dollar IRS Activity
Notional Volume (USD bln), 1/1/2013 – 12/27/2013



Source: LCH SwapClear

Finally, summing all of the regional monthly transactional data reveals other important observations about the cleared market for US dollar IRS as shown in Chart 4.

Chart 4: Total Inter-Dealer US Dollar IRS Activity
Notional Volume (USD bln), 1/1/2013 – 12/27/2013



Source: LCH SwapClear

Since the beginning of 2013, total US dollar IRS volumes have been fairly consistent and have not trended lower like Euro IRS volumes. Chart 4 underscores Tables 3 and 4, again revealing consistent trading patterns by both European dealers and US dealers and the likely presence of a shared liquidity pool.

SEF Euro and US Dollar Liquidity

We now turn to Swap Execution Facility (SEF) volumes of Euro and US dollar IRS 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, inter-dealer flows also dominate SEF trading[3].

In early 2014, US regulation will mandate that any OTC derivative trades subject to a made-available-to –trade (MAT) determination involving a US person must be traded on a registered SEF platform. As such, it is not surprising that over 70% of interest rate swap volume on SEFs was denominated in US dollars during the months of October, November and December once the October 2, 2013 rule was implemented.

Table 5 compares the percentage of US dollar IRS volume with Euro IRS and all other reported currencies over this period. While, on average, US dollar SEF trades account for approximately 35% of total reported (cleared and non-cleared) US dollar IRS trading activity, Euro IRS SEF trading only accounts for 22% of total volume.

Table 5: UD Dollar and Euro IRS Trading as a Percent of Total SEF Trading

	Oct-13	Nov-13	Dec-13
US Dollar	70%	71%	72%
Euro	13%	15%	12%
Other	17%	14%	15%

Source: DTCC Global Trade Repository (GTR)

Given the relatively small impact of non-US trading occurring on SEF versus the overall market, we believe the majority of this liquidity is likely shared exclusively by US dealers. Our Survey's findings support this assumption as 84% of participants believe non-US persons are choosing not to trade on SEF platforms.

Post Oct 2 SEF Rule Liquidity Pool Composition

The following charts attempt to illustrate what post-SEF liquidity pools may look like based on our sample data and information obtained through the DTCC's GTR. Chart 5 describes the market for Euro IRS while Chart 6 describes the market for US dollar IRS. As is evident in both charts, some liquidity has become exclusive as a consequence of the SEF mandate, Footnote 88 and confusion over the definition of a US person. Many participants in our Survey provided comments stating that the upcoming February MAT date and a lack of regional coordination will further fragment markets.

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

Chart 5: Post-SEF Euro IRS Liquidity Pool

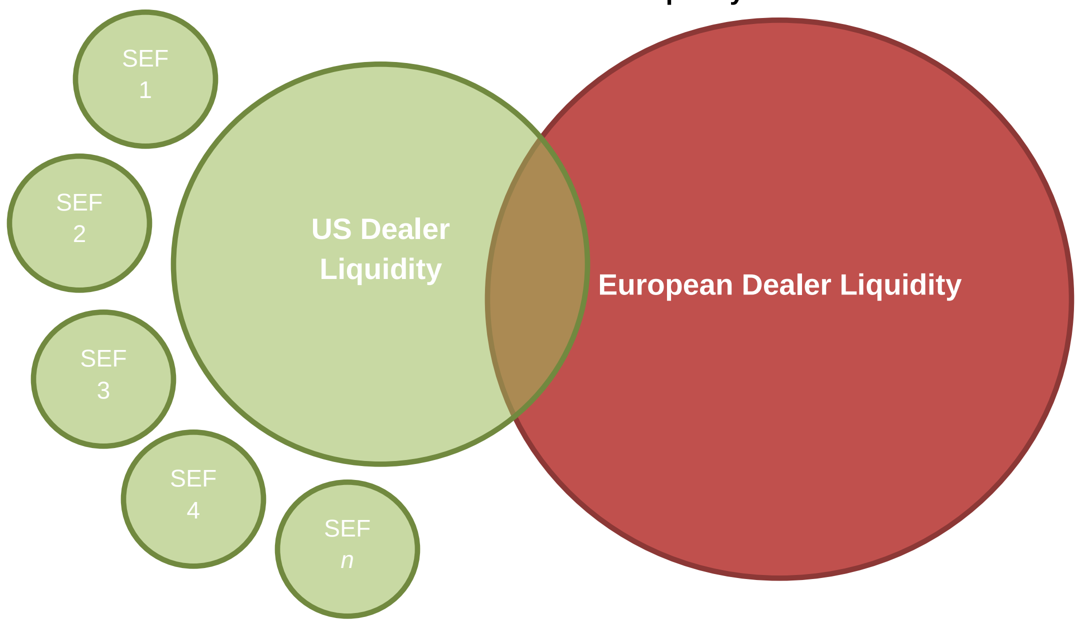
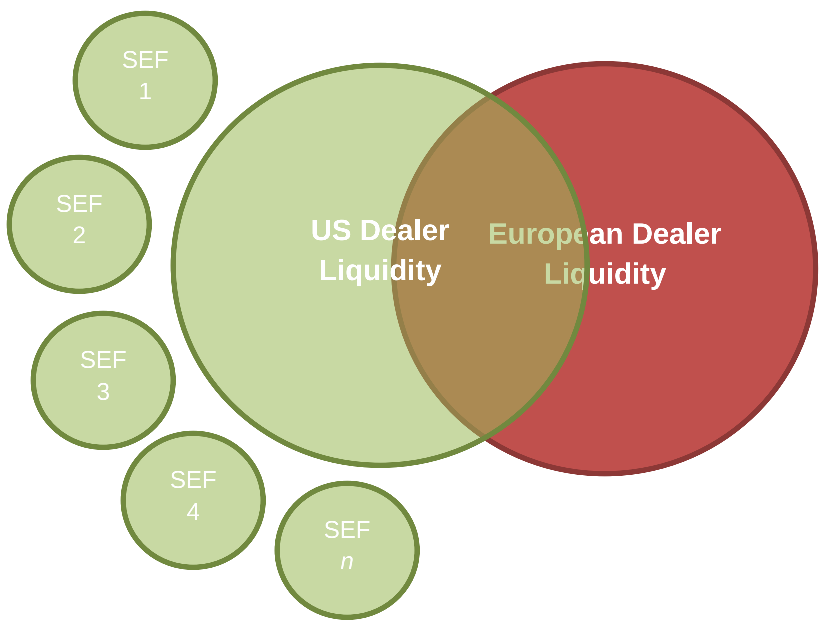


Chart 6: Post-SEF US Dollar IRS Liquidity Pool



Conclusion

The October 2 effective date for SEF compliance and the Footnote 88 interpretation are clearly having an impact on trading relationships in the OTC derivatives markets. Our empirical analysis supports recent ISDA Survey findings indicating that liquidity has fragmented. 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 amongst European dealers.

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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 60 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.

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