

Research Note

Trends in IRD Clearing and SEF Trading

The level of clearing in the US interest rate derivatives (IRD) market continued to grow during the third quarter of 2016, with nearly 85% of the total IRD volume reported to US trade repositories centrally cleared. Trading on swap execution facilities (SEFs), however, appears 'stuck' in a neutral gear. While a bit more than half (50%-55%) of the US IRD market is typically SEF-traded, this segment has declined slightly over the past year, even as overall trading volumes have increased.

To better understand the dynamics of this trend, ISDA analyzed cleared IRD data to discern what types of swaps trade on a SEF versus those that are not electronically executed. Doing so uncovers swap market characteristics that drive this decision. Major points of interest include:

- The percentage of IRD trading volume that has been deemed 'made available to trade' or MAT (which means it is legally required to trade on SEF) averages about 5% of total IRD trading volume reported to US trade repositories. MAT swaps make up approximately 17%-22% of cleared fixed-floating swaps, the only IRD product class, or taxonomy, with a MAT mandate.
- Most of the trading volume that occurs on SEFs is a result of the inclusion of Footnote 88 within the Commodity Futures Trading Commission's (CFTC) final SEF rules. Footnote 88 requires multiple-to-multiple trading venues used by US persons, such as those offered by interdealer brokers, to register as SEFs, even if the products they offer aren't subject to the execution mandate. As a result, instruments traded by the interdealer community may drive the level of SEF trading for the various IRD product taxonomies. For example, in the forward rate agreement (FRA) space, more than 80% of notional volume reported to US trade repositories occurs on a SEF. For fixed-floating swaps, which mostly consist of dealer-to-client volume, the percentage is 55%. For overnight indexed swaps (OIS), it is 31%. These three taxonomies account for upwards of 85% of total IRD trading volume.
- Although some fixed-floating swaps are 'MATable', there are a number of reasons why roughly half of the notional volume trades off-SEF. The analysis finds many transactions are denominated in a non-MAT currency, have a non-MAT start type, or have a non-MAT maturity. Combinations of non-MAT and MAT characteristics also contribute to off-SEF volume.

SWAPS CLEARING ON THE RISE, SEF TRADING NOT SO MUCH?

Since mandatory clearing of some interest rate derivatives began in the US for certain market participants on March 11, 2013, centrally cleared volume has steadily increased. This is evidenced by the fact that nearly 85% (\$35.6 trillion out of \$42.2 trillion) of IRD notional volume reported to US trade repositories was cleared during the third quarter of 2016.

About a year after the clearing mandate came into force, rules governing trade execution became effective in the US. In February 2014, certain fixed-floating swaps¹ – the largest and most liquid of the IRD taxonomies – were mandated to be traded on a SEF. As MAT instruments, they could no longer be legally executed on a bilateral basis.

In addition to MAT swaps, the inclusion of Footnote 88 within the CFTC's final SEF rules means other IRD transactions trade on SEFs. Footnote 88 requires multiple-to-multiple trading venues used by US persons, such as those offered by interdealer brokers, to register as SEFs, even if the products they offer aren't subject to the execution mandate². The rules essentially widen the spectrum of on-SEF instruments to include other fixed-floating swaps, as well as other IRD taxonomies.

Today, roughly half of the IRD market is executed on a SEF – 53.5%, or \$22.6 trillion out of \$42.2 trillion in the third quarter of 2016. This includes MAT and non-MAT transactions, as well as swaps that are centrally cleared and bilaterally risk-managed.

This report examines the dynamics of SEF trading by first analyzing which major interest rate derivatives products are traded on a SEF and which are not. We then dig deeper into the fixed-floating swap taxonomy (product class), as it is the only category of IRD that has been made available to trade on a SEF. In doing so, we are able to describe the economic characteristics that influence a swap to trade off-venue even though it is clearable.

¹ We will refer to the single currency fixed-to-floating interest rate swap taxonomy (commonly known as IRS) as 'fixed-floating swaps' throughout the report

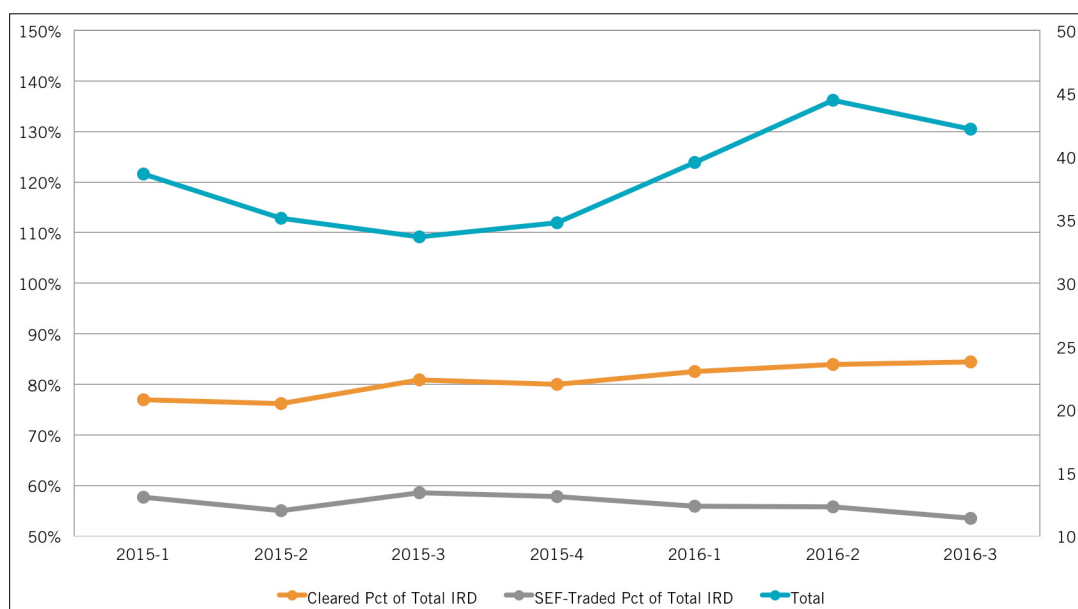
² Because multiple-to-multiple platforms must be registered as SEFs, all transactions that are executed on these venues are considered to be SEF-traded. This is the case even if the venue plays no role in forming or negotiating the transaction and the SEF's role is limited to trade execution and reporting. For more information: <http://www.cftc.gov/idc/groups/public/@lrfederalregister/documents/file/2013-12242a.pdf>

THE DYNAMICS OF SEF TRADING

Figure 1 shows recent trends in IRD trading, clearing and SEF trading in the US. Overall, trading volumes in IRD have increased since the beginning of 2015 (blue line, right axis). Within this growing market, the percentage of transactions that are cleared has also increased (orange line, left axis).

However, SEF-traded volume (grey line, left axis) accounts for a slightly smaller percentage of total trading over the series.

Figure 1: Total IRD Volume (US\$ trillions) and % of Cleared and SEF-traded Swaps (Q1 2015-Q3 2016)



What accounts for the diverging trends that separate overall IRD and cleared IRD trading volumes from SEF trading volumes? To better understand this dynamic, it is important to first explore the major differences in the regulatory mandates for each.

The CFTC clearing mandate in its original form included a broad array of IRD taxonomies, such as fixed-floating swaps, OIS, FRAs and basis swaps. The characteristics of these in-scope instruments included several currencies with varying tenors, forward-starting types and floating rate reference indices. On October 14, 2016, additional currencies were added to the mandate as the pace of clearing accelerated³.

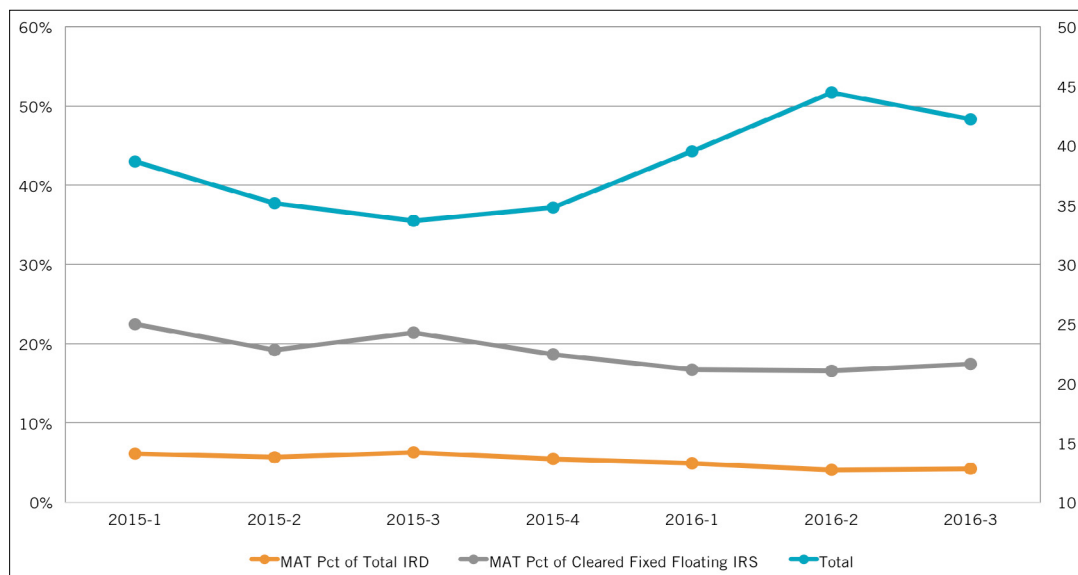
Swaps that have been made available to trade – which must be transacted electronically on SEFs – account for a smaller segment of the overall clearable market. These MAT swaps have fairly standardized characteristics that currently include three currencies (US dollar, euro and sterling) in a single taxonomy (fixed-floating swaps) with certain underlying economic features. They must be traded on a SEF using a request-for-quote or an order book process⁴.

As seen in Figure 2, MAT swaps (orange line, left axis) account for about 5% of total IRD trading and 17%-22% of cleared fixed-floating swap activity (grey line, left axis).

³ <http://www.cftc.gov/idc/groups/public/@Irfederalregister/documents/file/2016-23983a.pdf>

⁴ We estimate that roughly \$1.8 trillion fixed-floating swaps included MAT characteristics during the third quarter of 2016. Total SEF-traded fixed-floating swap volume was \$5.8 trillion at that time.

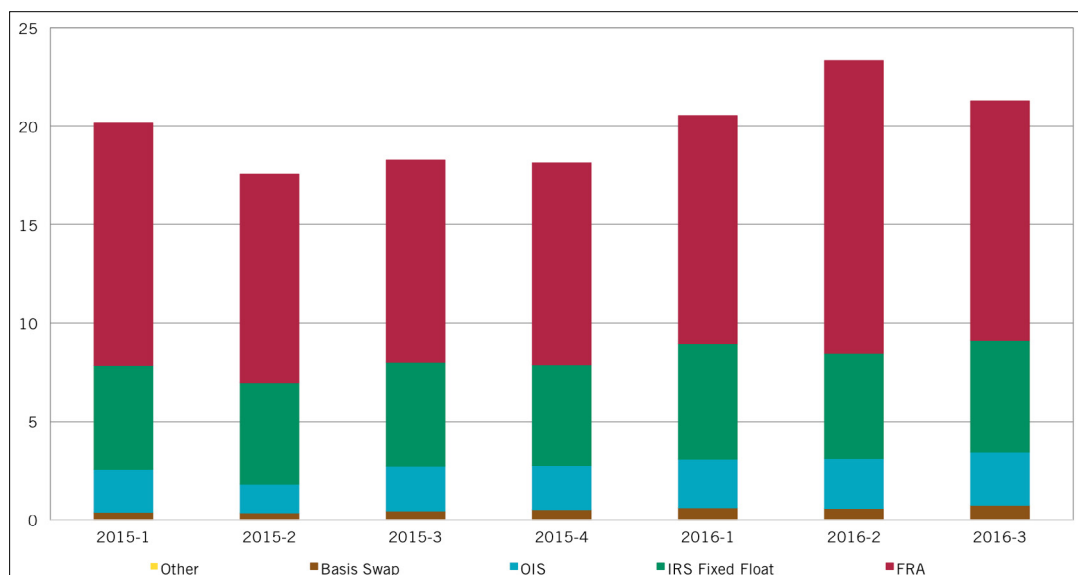
Figure 2: Total IRD Volume (US\$ trillions), MAT as a % of Total, and MAT as a % of Cleared Fixed-Floating Swaps (Q12015-Q32016)



In addition to MAT trades, other products also trade on SEFs, the result of Footnote 88 that requires multiple-to-multiple trading venues used by US persons to register as SEFs. The volume of these swaps – which cuts across all of the major IRD product taxonomies – is actually larger than the volume of MAT trades.

Figure 3 compares trends in taxonomies of cleared swaps that are traded on a SEF. As can be seen in the chart, SEF volumes have mostly trended higher on an absolute basis (while slightly declining as a percentage of overall volume). FRAs (red bars) and OIS swaps (blue bars) comprise a substantial percentage of SEF trading volume, even though they have not received a MAT determination⁵.

Figure 3: Cleared IRD SEF-Traded Volume (US\$ trillions) by Taxonomy (Q12015-Q32016)

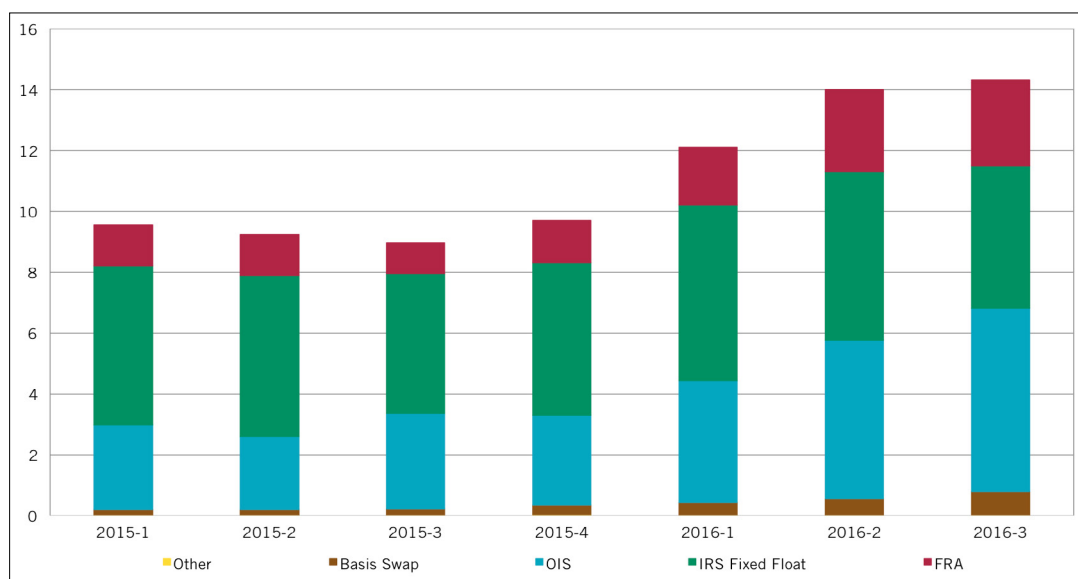


⁵ Fixed-floating swaps, FRAs, OIS and basis swaps accounted for 95.2% (\$21.5 trillion out of \$22.6 trillion) of total SEF volume at end-September 2016

Cleared volume transacted off-SEF has also increased since the beginning of 2015 (on an absolute basis, as well as a relative basis).

Figure 4 shows the composition of cleared swaps that do not trade on a SEF. The chart reveals most OIS swaps (blue bars) are not SEF-traded (\$6.1 trillion off-SEF versus \$2.7 trillion on-SEF). We also observe a substantial number fixed-floating swaps transacted away from a SEF (green bars)⁶.

Figure 4: Cleared IRD Off-SEF Volume (US\$ trillions) by Taxonomy (Q12015-Q32016)



Looking at Figure 3 and Figure 4 in more detail, there are several general trends we can point to. For example, clearing may be driving swap volumes higher as taxonomies that are mandated to be cleared have shown a clear uptick in SEF-traded volume, as well as off-venue trading.

Below, we describe key trends with regards to overall volume, cleared volume and SEF trading volume for three main segments of the rates derivatives market:

FRA

- FRAs are the largest segment (in terms of trading volume) of the IRD market, generally representing slightly more than a third of total IRD trading activity. Recently, they comprised 36.5% of volume, or \$15.4 trillion out of \$42.2 trillion.
- Nearly all (97.4%) of the FRA market was cleared during the third quarter of this year.
- While FRAs are not MAT transactions, about 81.1% (\$12.2 trillion out of \$15.0 trillion) of total cleared FRA activity is traded on a SEF. Additionally, cleared FRAs make up the largest component of total SEF-traded activity (red bars, Figure 3), most recently accounting for 53.8% of total volume (or \$12.2 trillion out of \$22.6 trillion).
- Cleared FRA volume has been growing as a percentage of the off-SEF market (red bars, Figure 4), and currently accounts for 14.5% of the total (\$2.8 trillion out of \$19.6 trillion).

⁶ Off-SEF executed swaps totalled \$19.6 trillion during the third quarter of 2016. FRAs, OIS, fixed-floating swaps and basis swaps accounted for 86.6% (\$17.0 trillion out of \$19.6 trillion) of total volume transacted at this time.

Fixed-Floating Swaps

- Fixed-floating swaps represent the second largest slice of the overall IRD market. The taxonomy represented 27.4% of all IRD volume (\$11.6 trillion out of \$42.2 trillion) in the 2016 third quarter.
- About 89.2% (\$10.3 trillion out of \$11.6 trillion) of total fixed-floating activity was cleared at the end of September 2016.
- Of the cleared volume, approximately 54.9% (\$5.7 trillion out of \$10.3 trillion) is traded on a SEF. While this figure may seem low given the SEF mandate, it is important to keep in mind that the MAT designation only applies to a portion of the fixed-floating swaps segment (in a later section of this paper, we analyze and discuss the characteristics that define what is SEF-traded and what is not in this segment).
- The percentage of cleared fixed-floating swaps that is SEF-executed has stayed relatively stable over time, accounting for about one-quarter of total SEF volume (green bars, Figure 3).
- Off-venue (green bars, Figure 4) cleared fixed-floating swaps have fallen as a percentage of total volume and currently represent 23.7% (\$4.7 trillion out of \$19.6 trillion) of the total.

OIS

- OIS volume has grown in relation to total IRD volume, and most recently accounted for 23.6% (\$10.0 trillion out of \$42.2 trillion) of the IRD market.
- Most of the OIS taxonomy is being cleared – 88.2% during the most recent quarter.
- About one-third, or 31.2% (\$2.7 trillion out of \$8.8 trillion), of cleared OIS volume trades on SEF.
- Most recently, cleared OIS accounted for 12.1% of total SEF volume (\$2.7 trillion out of \$22.6 trillion), up from 9.7% (\$2.2 trillion out of \$22.3 trillion) during the start of the series (blue bars, Figure 3).
- Off-venue (blue bars, Figure 4) cleared OIS volume as a percentage of total volume has nearly doubled, rising from 17.0% (\$2.8 trillion out of \$16.4 trillion) during the first quarter of 2015 to 30.9% (\$6.2 trillion out of \$19.6 trillion) most recently.

WHY ARE SO MANY FIXED-FLOATING SWAPS TRADED OFF-VENUE?

As noted earlier, overall SEF trading of cleared fixed-floating swaps accounted for nearly 55% (\$5.7 trillion out of \$10.3 trillion) of notional volume traded during the third quarter of 2016. Historically, about one-fifth of these swaps have been made available to trade and must be transacted on a SEF. Most recently, 17.4%, or \$1.8 trillion, of electronically transacted volume was MATable. The remaining balance – 45%, or \$4.7 trillion – of the taxonomy was executed off-venue during this time.

In this section, we describe the characteristics that led such fixed-floating swaps to be cleared, but not executed on a SEF. Looking to the standardized details of MATable swaps, we explore several attributes associated with the designation: currency, maturity, forward start period and floating reference index type. In doing so, we are able to break down the economic variables of non-SEF fixed-floating swaps.

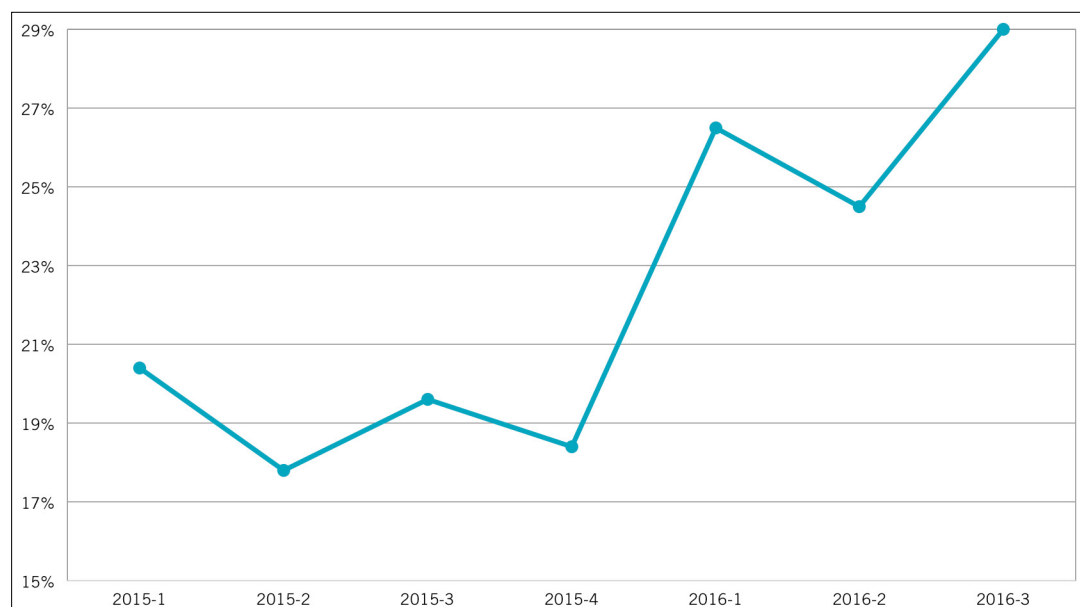
NON-MAT CURRENCIES

As discussed, only three denominations of fixed-floating swaps have been made available to trade on a SEF: US dollar, euro and sterling. These three currencies also account for 71.0% (\$3.3 trillion of \$4.7 trillion) of all off-venue IRD volume.

Going beyond these currencies, 20 other denominations of cleared fixed-floating swaps are transacted away from an electronic venue. Since the first quarter of 2015, the percentage of volume contributed by these non-MAT currencies has increased from 20.4% (\$1.1 trillion out of \$5.2 trillion) to 29.0% (\$1.4 trillion out of \$4.7 trillion), as shown in Figure 5.

Three currencies – Japanese yen, Australian dollar and Canadian dollar – made up 61.8% (\$836.0 billion out of \$1.4 trillion) of non-MAT market share in the most recent quarter.

Figure 5: Cleared Fixed-Floating Swap Volume by Non-MAT Currency (% of Total Off-SEF Volume, Q12015 – Q32016)



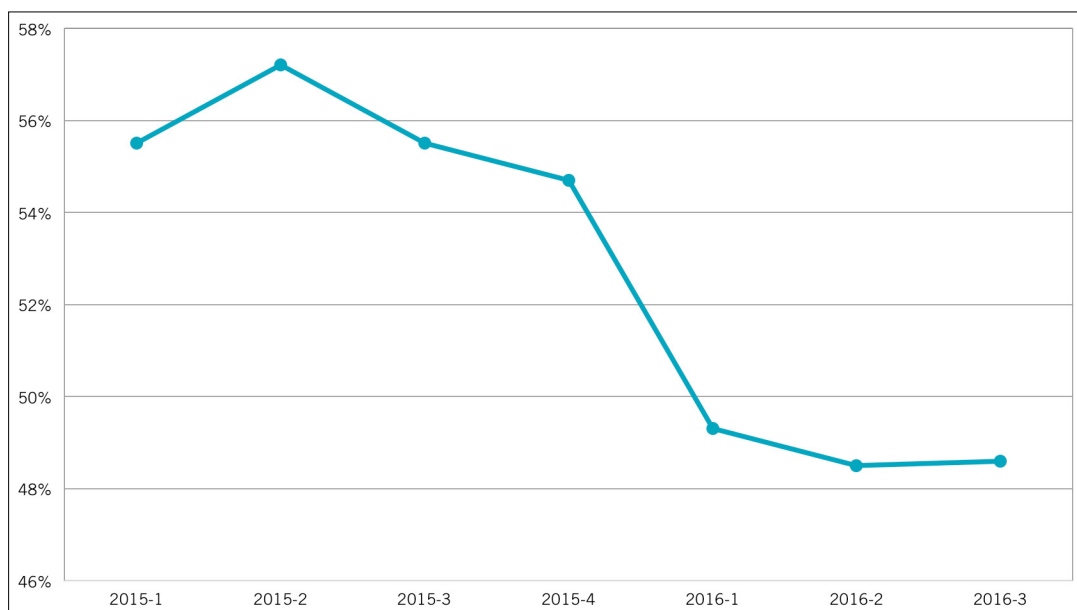
NON-MAT MATURITIES

Clearable fixed-floating swaps of major currencies in several maturities were designated to be SEF-traded. These swaps vary by fixed rate and currency. For example, US dollar, euro and sterling par swap tenors maturing in two, three, four, five, six, seven, 10, 15, 20 and 30 years must be traded on SEF (assuming other economic characteristics are satisfied). Twelve-year US dollar par swaps are also in-scope. US dollar standard coupon or market agreed coupon (MAC) swaps with one-, two-, three-, four-, five-, seven-, 10-, 15-, 20- and 30-year maturities must also be traded electronically.

Maturities that fall outside these terms, as well as those that are broken-dated – meaning the difference between the swap’s end date and effective date is a fraction of a year or years – are not required to be traded on a SEF, although many are clearable.

Figure 6 describes the percentage of non-MAT cleared, fixed-floating swap maturities over time. Since the beginning of the series, this percentage has decreased from 55.5% (\$2.9 trillion out of \$5.2 trillion) to 48.6% (\$2.3 trillion out of \$4.7 trillion). The remaining maturities that are MATable are mostly denominated in a non-MAT currency or have other non-MAT underlying economic characteristics⁷.

Figure 6: Cleared Fixed-Floating Swap Volume by Non-MAT Maturity (% of Total Off-SEF Volume, Q12015 – Q32016)



⁷ Some swaps have underlying economic characteristics, such as trade size, payment/reset frequency, day count convention and optionality, which may disqualify them from falling into the MAT scope, even though they may be clearable

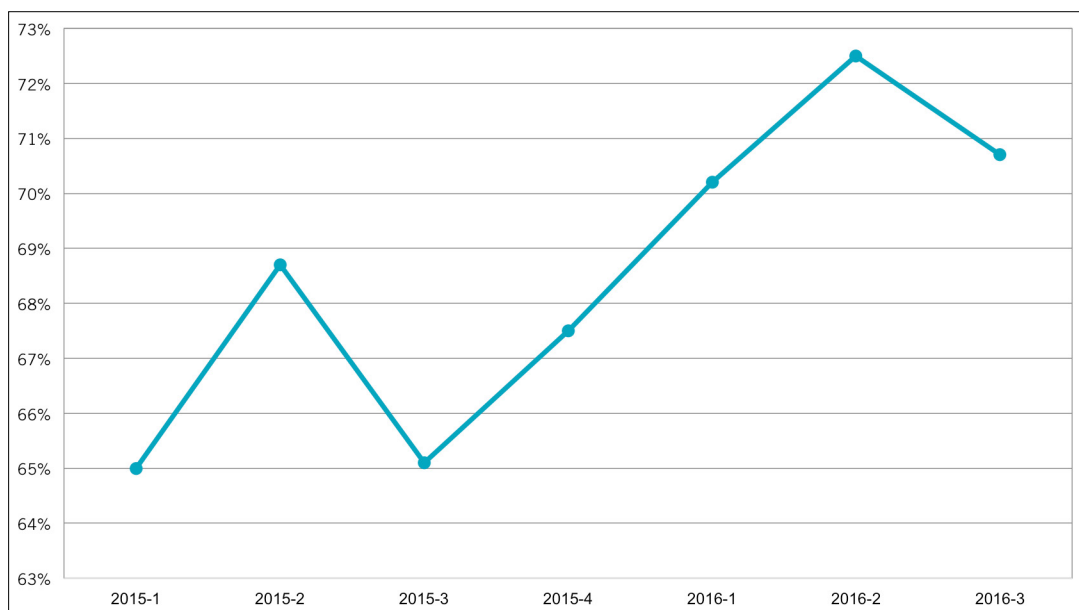
NON-MAT FORWARD START PERIOD

MATable fixed-floating US dollar swaps with either spot-starting or IMM effective dates (up to two IMM periods from the date the swap is transacted) are required to be traded on a SEF. Other MAT swaps denominated in euro and sterling are required to be traded electronically if they have a spot-starting effective date⁸.

Non-MAT forward starting periods – which are defined as the difference between the effective date and trade date – characterized over 70% (\$3.3 trillion out of \$4.7 trillion) of cleared swaps dealt off-venue during the third quarter of this year, as shown in Figure 7. This figure has increased since the first quarter of 2015, when 65.0% (\$3.4 trillion out of \$5.2 trillion) of fixed-floating swaps fell outside of MAT specifications.

The remaining swaps dealt off-venue (26.8%, or \$1.2 trillion out of \$4.7 trillion) were mostly spot-starting. Although this is a MAT characteristic, most were denominated in a non-MAT currency and/or were characterized by other non-MAT economic features.

Figure 7: Cleared Fixed-Floating Swap Volume by Non-MAT Forward Starting Period (% of Total Off-SEF Volume, Q12015 – Q32016)



⁸ Spot-starting effective dates vary by swap denomination. US dollar- and euro-denominated spot-starting swaps are T+2, while sterling-denominated swaps are T+0

NON-MAT FLOATING RATE REFERENCE INDICES

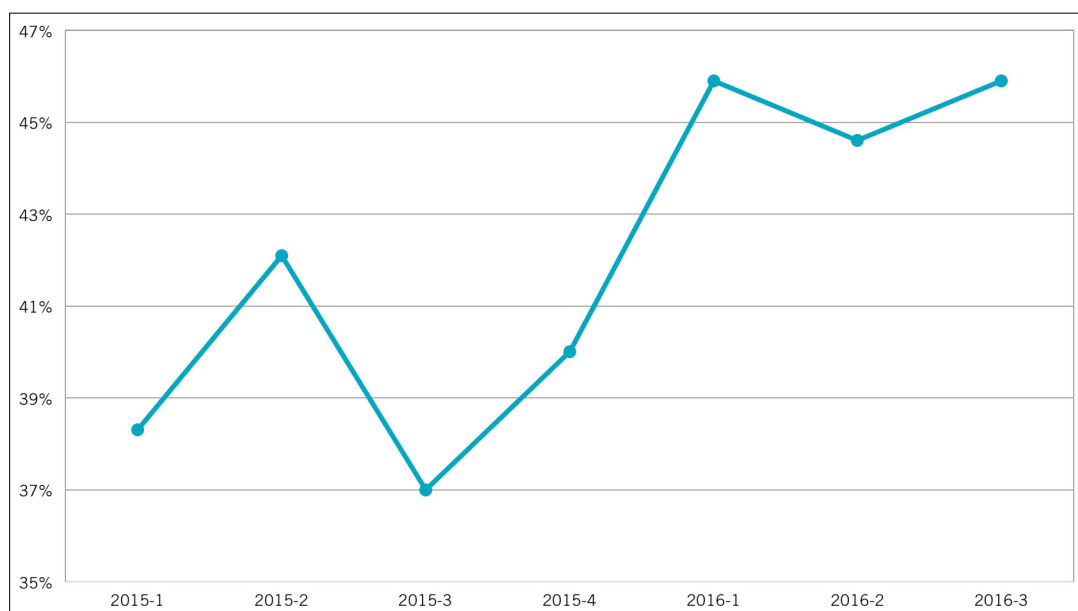
One of the defining characteristics of a fixed-floating swap is its reference index. While the fixed rate, or swap rate, remains consistent throughout the life of the swap, the interest rate benchmark used to establish the floating interest rate of the contract resets periodically, therefore affecting the value of the instrument.

Each country, and therefore each denomination of fixed-floating swap, will typically reference its own interest benchmark(s). As such, the floating legs of non-MAT currency swaps are usually tied to non-MAT benchmarks. Several non-LIBOR US benchmarks are also commonly traded.

Most recently, 45.9% (\$2.1 trillion out of \$4.7 trillion) of total off-SEF executed volume consisted of non-MAT floating rate reference indices, as shown in Figure 8. More than half (approximately \$1.4 trillion) were tied to a non-MAT currency. These figures have increased since the beginning of the series.

The remaining portion of MATable floating rate indices represents 54.1% (\$2.5 trillion out of \$4.7 trillion) of the total, of which nearly one-third (29.4%, or \$1.4 trillion out of \$4.7 trillion) is denominated in US dollars. Most of this is traded with a non-MAT forward start period or maturity, or is comprised of other non-standard economic underliers.

Figure 8: Cleared Fixed-Floating Swap Volume by Non-MAT Floating Rate Reference Index (% of Total Off-SEF Volume, Q12015 – Q32016)



CONCLUSION

The level of clearing in the US IRD market continued to grow during the third quarter of 2016, with nearly 85% of total IRD volume reported to US repositories centrally cleared. Trading on SEFs, however, remained steady. While a bit more than half (50%-55%) of the US IRD market is typically SEF-traded, this segment has declined slightly over the past year, even as overall trading volumes have increased.

This report analyzes trading dynamics of major interest rate derivatives products that are cleared. Findings reveal that most SEF-traded volume is driven by the inclusion of Footnote 88 in the final CFTC rules for SEFs. Product taxonomies that fall under MAT rules, such as certain fixed-floating swaps, account for 5% of overall IRD trading volume and 17%-22% of cleared fixed-floating swap volume.

Unique economic characteristics that underlie interest rate swaps – such as non-MAT currencies, maturities, forward-starting periods, floating reference indices, as well as other factors – explain why many cleared fixed-floating swaps do not trade on SEFs.



ISDA has published other recent research papers:

- ***SwapsInfo Second Quarter 2016 Review***, August 2016

<http://www2.isda.org/attachment/ODY0Nw==/Swaps%20review%20August%202016%20FINAL.pdf>

- ***Derivatives Market Analysis: Interest Rate Derivatives***, July 2016

<http://www2.isda.org/attachment/ODU2NA==/OTC%20Derivatives%20Market%20Analysis%20-%20July%202016-V3.pdf>

- ***Cross-Border Fragmentation of Global Interest Rate Derivatives: Second Half 2015 Update***, May 2016

<http://www2.isda.org/attachment/ODM4NQ==/Fragmentation%20FINAL1.pdf>

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