

# INTEREST RATE BENCHMARKS REVIEW: Full Year 2018 and the Fourth Quarter of 2018

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This report provides an analysis of trading volumes of interest rate derivatives (IRD) transactions in the US referenced to the Secured Overnight Financing Rate (SOFR) and other selected alternative risk-free rates (RFRs), including the Sterling Overnight Index Average (SONIA), the Swiss Average Rate Overnight (SARON) and the Tokyo Overnight Average Rate (TONA). ISDA expects to add the Euro Short-Term Rate (ESTER) to its analysis once it is published and traded. In addition, the report analyzes IRD traded notional referencing the London Interbank Offered Rate (LIBOR) denominated in US dollar, sterling, Swiss franc, yen and euro, as well as EURIBOR and TIBOR.

This report uses data from the Depository Trust & Clearing Corporation (DTCC) and Bloomberg swap data repositories (SDRs). It therefore only covers trades that are required to be disclosed under US regulations.

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## KEY HIGHLIGHTS FOR THE FULL YEAR 2018 AND THE FOURTH QUARTER OF 2018

Transactions referencing alternative RFRs accounted for less than 5% of total IRD traded notional during the full year 2018. SONIA swaps represented the majority of the transactions referencing RFRs, which is expected as SONIA is currently used as the reference rate for sterling overnight index swaps (OIS). Trading volumes of IRD referencing SOFR (the first of which were executed in the third quarter of 2018) were negligible. This is also expected, as the effective federal funds rate (EFFR), not SOFR, is still widely used as the reference rate for US dollar OIS, and SOFR was not published until the second quarter of 2018.

ISDA will continue to monitor trading volumes of IRD referencing alternative RFRs and major IBORs and report on trends as the market transitions from interbank offered rates (IBORs) to alternative RFRs. During this time, volumes of IRD referencing alternative RFRs are expected to increase, while volumes referencing major IBORs are expected to decrease. ESTER will be added once it is published and traded<sup>1</sup>.

### In the full year 2018:

IRD traded notional referencing alternative RFRs, including SOFR, SONIA, SARON and TONA, totaled \$8.1 trillion and accounted for 3.4% of total IRD traded notional. The number of trades referencing RFRs was 8,630, which accounted for 0.7% of total IRD trade count.

- SOFR traded notional totaled \$6.3 billion, including \$2.5 billion of basis swaps. Trade count totaled 52, including 28 basis swaps<sup>2</sup>.
- SONIA traded notional was \$8.0 trillion, including \$134.1 billion of basis swaps. Trade count totaled 8,215, including 813 basis swaps.
- SARON traded notional and trade count was \$2.5 billion and 16, respectively.

<sup>1</sup> The European Central Bank has indicated that it will publish ESTER prior to October 2019, and trading is expected to commence sometime after its publication

<sup>2</sup> See the note below regarding why basis swaps are tracked separately for the alternative RFRs

- TONA traded notional totaled \$103.6 billion, including \$2.1 billion of basis swaps. Trade count totaled 347, including eight basis swaps.

IRD traded notional referencing IBORs totaled \$148.2 trillion and represented 63% of total IRD traded notional. \$111.5 trillion of IRD traded notional was based on US dollar LIBOR, accounting for 47% of total IRD traded notional.

**In the fourth quarter of 2018:**

IRD traded notional referencing alternative RFRs, including SOFR, SONIA, SARON and TONA, totaled \$2.2 trillion and represented 3.8% of total IRD traded notional. The number of trades referencing alternative RFRs was 2,963, which accounted for 0.9% of total IRD trade count.

- SOFR traded notional totaled \$4.7 billion, including \$1.1 billion of basis swaps. Trade count totaled 37, including 16 basis swaps.
- SONIA traded notional was \$2.1 trillion, including \$55.3 billion of basis swaps. Trade count totaled 2,785, including 252 basis swaps.
- SARON traded notional and trade count was \$1.3 billion and six, respectively.
- TONA traded notional totaled \$40.5 billion, including \$1.0 billion of basis swaps. Trade count totaled 135, including four basis swaps.

IRD traded notional referencing IBORs totaled \$35.3 trillion and represented 62% of total IRD traded notional. \$26.8 trillion of IRD traded notional was based on US dollar LIBOR, accounting for 47% of total IRD traded notional.

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**Table 1:** Interest Rate Benchmarks Traded Notional and Trade Count

	Q4 2018		Full Year 2018	
	Traded Notional (US\$ billions)	Trade Count	Traded Notional (US\$ billions)	Trade Count
<b>USD LIBOR</b>	26,824.0	156,220	111,476.0	633,142
<b>SOFR</b>	3.6	21	3.8	24
<b>Basis Swaps: SOFR</b>	1.1	16	2.5	28
<b>GBP LIBOR</b>	2,353.8	19,381	9,809.6	78,098
<b>SONIA</b>	2,049.1	2,533	7,849.5	7,402
<b>Basis Swaps: SONIA</b>	55.3	252	134.1	813
<b>CHF LIBOR</b>	109.7	1,614	473.5	6,767
<b>SARON</b>	1.3	6	2.5	16
<b>Basis Swaps: SARON</b>	0.0	0	0.0	0
<b>JPY LIBOR</b>	918.7	10,417	3,546.5	37,293
<b>TIBOR/Euroyen TIBOR</b>	0.2	20	2.2	76
<b>TONA</b>	39.5	131	101.5	339
<b>Basis Swaps: TONA</b>	1.0	4	2.1	8
<b>EUR LIBOR</b>	0.0	0	2.9	60
<b>EURIBOR</b>	5,046.8	35,473	22,884.5	162,482
<b>ESTER</b>	0.0	0	0.0	0
<b>Other*</b>	19,516.9	95,139	80,122.7	398,569
<b>Total</b>	<b>56,920.9</b>	<b>321,227</b>	<b>236,414.0</b>	<b>1,325,117</b>

\*Other includes IRD with other reference rates and IBOR/non-RFR basis swaps

Source: DTCC and Bloomberg SDRs

The alternative RFRs basis swap data covers all basis swaps with the relevant alternative RFR as one of the underlying assets. This includes alternative RFR/IBOR basis swaps. The IBOR data does not cover any basis swaps. The 'Other' category covers non-alternative RFR/IBOR basis swaps and IRDs with reference rates that are not otherwise covered.

Basis swaps with the relevant alternative RFR as one of the underlying assets are tracked separately because market participants have specifically identified a robust basis swaps market as key to understanding the economic differences between the alternative RFRs and other rates, including the IBORs. A robust and liquid basis swaps market for the alternative RFRs will also support hedging during the transition from IBORs to the alternative RFRs.

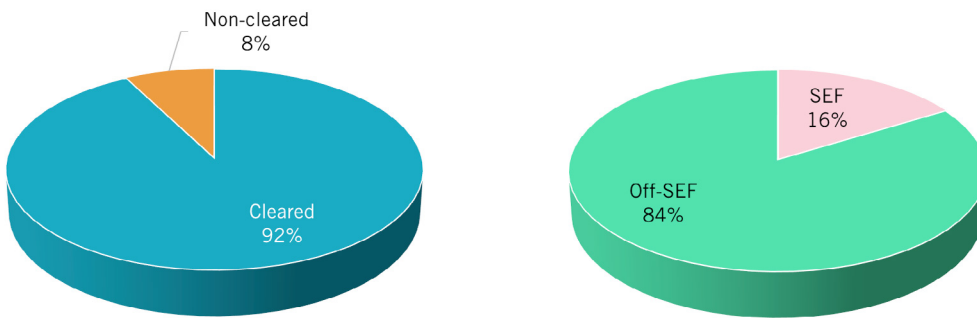
## SOFR

SOFR swaps started trading in the third quarter of 2018. During the fourth quarter of 2018, there were 37 SOFR trades, including 16 basis swaps. Total traded notional was \$4.7 billion, including \$1.1 billion of basis swaps traded notional.

\$4.3 billion of SOFR swaps was cleared, including \$3.4 billion of OIS and \$0.9 billion of basis swaps. Cleared swaps accounted for 92% of total SOFR traded notional.

Thirteen out of 37 transactions were traded on swap execution facilities (SEFs). SEF-traded notional totaled \$0.8 billion and represented 16% of total SOFR traded notional.

**Chart 1:** SOFR Traded Notional Q4 2018



Source: DTCC and Bloomberg SDRs

In the full year 2018, SOFR traded notional was \$6.3 billion, including \$2.5 billion of basis swaps. Total trade count was 52, including 28 basis swaps. Cleared notional totaled \$5.0 billion and accounted for 80% of total traded notional. SEF-traded notional totaled \$1.2 billion and represented 20% of total traded notional.

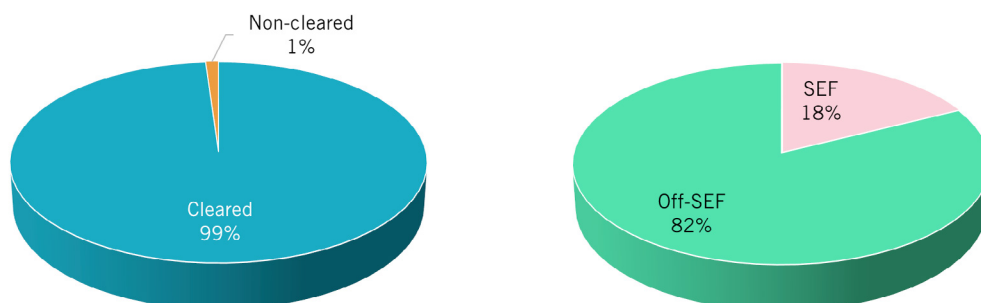
## SONIA

During the fourth quarter of 2018, there were 2,785 SONIA trades, including 252 basis swaps. Total traded notional was \$2.1 trillion, including \$55.3 billion of basis swaps.

\$2.1 trillion of SONIA swaps was cleared, including \$52.8 billion of basis swaps. Cleared transactions accounted for 99% of total SONIA traded notional.

SEF-traded notional totaled \$371.2 billion and represented 18% of total SONIA traded notional.

**Chart 2:** SONIA Traded Notional Q4 2018



Source: DTCC and Bloomberg SDRs

In the full year 2018, SONIA traded notional was \$8.0 trillion, including \$134.1 billion of basis swaps. Total trade count was 8,215, including 813 basis swaps. Cleared notional totaled \$7.9 billion and accounted for 99% of total traded notional. SEF-traded notional totaled \$1.5 trillion and represented 19% of total traded notional.

## SARON

During the fourth quarter of 2018, there were six SARON trades with total traded notional of \$1.3 billion.

Cleared notional totaled \$1.2 billion and accounted for 97% of total traded notional.

SEF-traded notional totaled \$1.2 billion and represented 96% of total traded notional.

In the full year 2018, SARON traded notional was \$2.5 billion and trade count totaled 16. Cleared notional was \$2.4 billion, accounting for 94% of total traded notional. SEF-traded notional totaled \$2.2 billion and represented 88% of total traded notional.

## TONA

During the fourth quarter of 2018, there were 135 TONA trades, including four basis swaps. Total traded notional was \$40.5 billion, including \$1.0 billion of basis swaps.

\$39.5 billion of TONA swaps was cleared, which accounted for 97% of total TONA traded notional.

SEF-traded notional totaled \$24.8 billion and represented 62% of total TONA traded notional.

In the full year 2018, TONA traded notional was \$103.6 billion, including \$2.1 billion of basis swaps. Total trade count was 347, including eight basis swaps. Cleared notional totaled \$100.8 billion and accounted for 97% of total traded notional. SEF-traded notional totaled \$79.1 billion and represented 76% of total TONA traded notional.

**Table 2:** Interest Rate Benchmarks Cleared and Non-Cleared Notional

	Q4 2018		Full Year 2018	
	Traded Notional (US\$ billions)	Non-cleared Notional (US\$ billions)	Cleared Notional (US\$ billions)	Non-cleared Notional (US\$ billions)
<b>USD LIBOR</b>	24,207.0	2,617.0	100,822.2	10,653.8
<b>SOFR</b>	3.4	0.1	3.6	0.1
<b>Basis Swaps: SOFR</b>	0.9	0.2	1.3	1.2
<b>GBP LIBOR</b>	2,166.4	187.4	8,881.2	928.4
<b>SONIA</b>	2,028.4	20.7	7,767.9	81.5
<b>Basis Swaps: SONIA</b>	52.8	2.5	122.0	12.1
<b>CHF LIBOR</b>	109.3	0.4	471.8	1.7
<b>SARON</b>	1.22	0.04	2.4	0.2
<b>Basis Swaps: SARON</b>	0.00	0.00	0.0	0.0
<b>JPY LIBOR</b>	846.5	72.1	3,225.7	320.8
<b>TIBOR/Euroyen TIBOR</b>	0.0	0.2	1.1	1.1
<b>TONA</b>	39.5	0.1	100.8	0.7
<b>Basis Swaps: TONA</b>	0.0	1.0	0.0	2.1
<b>EUR LIBOR</b>	0.0	0.0	2.2	0.8
<b>EURIBOR</b>	4,443.3	603.5	19,972.4	2,912.1
<b>ESTER</b>	0.0	0.0	0.0	0.0
<b>Other*</b>	16,599.2	2,917.6	66,918.3	13,204.4
<b>Total</b>	<b>50,498.0</b>	<b>6,422.9</b>	<b>208,292.9</b>	<b>28,121.1</b>

\*Other includes IRD with other reference rates and IBOR/non-RFR basis swaps

Source: DTCC and Bloomberg SDRs

**Table 3:** Interest Rate Benchmarks SEF and Off-SEF Traded Notional

	Q4 2018		Full Year 2018	
	SEF Traded Notional (US\$ billions)	Off-SEF Traded Notional (US\$ billions)	SEF Traded Notional (US\$ billions)	Off-SEF Traded Notional (US\$ billions)
<b>USD LIBOR</b>	19,087.0	7,737.0	81,577.7	29,898.3
<b>SOFR</b>	0.0	3.6	0.1	3.7
<b>Basis Swaps: SOFR</b>	0.8	0.3	1.1	1.4
<b>GBP LIBOR</b>	1,058.3	1,295.5	5,026.3	4,783.3
<b>SONIA</b>	369.3	1,679.8	1,529.4	6,320.1
<b>Basis Swaps: SONIA</b>	1.8	53.4	7.3	126.9
<b>CHF LIBOR</b>	54.7	55.0	175.2	298.3
<b>SARON</b>	1.2	0.05	2.2	0.3
<b>Basis Swaps: SARON</b>	0.0	0.00	0.0	0.0
<b>JPY LIBOR</b>	561.9	356.8	2,231.8	1,314.7
<b>TIBOR/Euroyen TIBOR</b>	0.0	0.2	0.0	2.2
<b>TONA</b>	24.8	14.8	79.1	22.4
<b>Basis Swaps: TONA</b>	0.0	1.0	0.0	2.1
<b>EUR LIBOR</b>	0.0	0.0	0.0	2.9
<b>EURIBOR</b>	2,256.7	2,790.1	11,592.1	11,292.4
<b>ESTER</b>	0.0	0.0	0.0	0.0
<b>Other*</b>	6,505.5	13,011.4	29,749.1	50,373.6
<b>Total</b>	<b>29,922.1</b>	<b>26,998.8</b>	<b>131,971.5</b>	<b>104,442.5</b>

\*Other includes IRD with other reference rates and IBOR/non-RFR basis swaps

Source: DTCC and Bloomberg SDRs

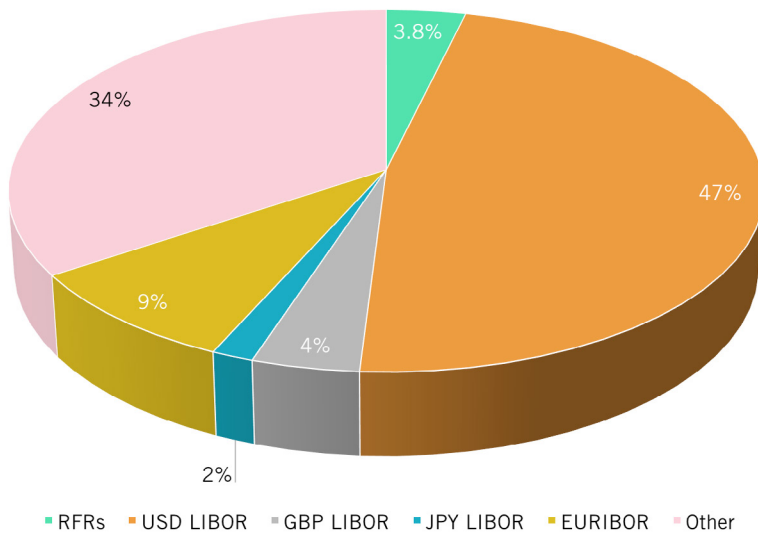
## IBORs

During the fourth quarter of 2018, traded notional of IRD referencing LIBOR denominated in US dollar, sterling, Swiss franc, yen and euro, as well as EURIBOR and TIBOR, totaled \$35.3 trillion and represented 62% of total IRD traded notional. The number of trades referencing IBORs totaled 223,125, accounting for 69% of total IRD trade count.

\$26.8 trillion of IRD traded notional was based on US dollar LIBOR, accounting for 47% of total IRD traded notional in the fourth quarter of 2018. EURIBOR and sterling LIBOR traded notional was \$5.1 trillion and \$2.4 trillion, respectively.



**Chart 3:** IRD Traded Notional Q4 2018



Source: DTCC and Bloomberg SDRs

In the full year 2018, traded notional of IRD referencing IBORs totaled \$148.2 trillion and represented 63% of total IRD traded notional. The number of trades referencing IBORs totaled 917,918, accounting for 69% of total IRD trade count.

In the full year 2018, \$111.5 trillion of IRD traded notional was based on US dollar LIBOR, accounting for 47% of total IRD traded notional. EURIBOR and sterling LIBOR traded notional was \$22.9 trillion and \$9.8 trillion, respectively.



ISDA has published other recent research papers:

- ***SwapsInfo Full Year 2018 and Fourth Quarter of 2018 Review***

<https://www.isda.org/a/OigME/Swaps-review-FY-2018.pdf>

- ***Key Trends in the Size and Composition of OTC Derivatives Markets, December 2018***

<https://www.isda.org/a/gmGEE/Key-Trends-in-the-Size-and-Composition-of-OTC-Derivatives-Markets.pdf>

- ***Interest Rate Benchmarks Review: Q3 2018 and Nine Months Ended Sep 30, 2018, November 2018***

<https://www.isda.org/2018/11/08/interest-rate-benchmarks-review-3q-2018-and-nine-months-endedsep-30-2018/>

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