

# INTEREST RATE BENCHMARKS REVIEW: First Half of 2020 and Second Quarter of 2020

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In the first half of 2020, traded notional of interest rate derivatives (IRD) referencing alternative risk-free rates (RFRs) increased to \$10.9 trillion and accounted for 7.6% of total IRD traded notional. In comparison, RFR-linked IRD traded notional equaled \$5.1 trillion in the second half of 2019, comprising 4.3% of total IRD traded notional. The number of IRD trades referencing RFRs increased to 16,387 in the first half of 2020 from 8,512 in the second half of 2019.

The ISDA Interest Rate Benchmarks Review analyzes the trading volumes of IRD transactions in the US referencing the Secured Overnight Financing Rate (SOFR) and other selected alternative RFRs, including the Sterling Overnight Index Average (SONIA), the Swiss Average Rate Overnight (SARON), the Tokyo Overnight Average Rate (TONA) and the Euro Short-Term Rate (€STR). In addition, the report analyzes IRD traded notional referencing LIBOR denominated in US dollars, sterling, Swiss franc, yen and euro, as well as EURIBOR and TIBOR.

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

## KEY HIGHLIGHTS FOR THE FIRST HALF OF 2020 AND THE SECOND QUARTER OF 2020

Traded notional of IRD referencing alternative RFRs increased by 112.9% to \$10.9 trillion in the first half of 2020 compared to \$5.1 trillion in the second half of 2019<sup>1</sup>. RFR-linked transactions accounted for 7.6% of total IRD traded notional in the first half of 2020 compared to 4.3% in the second half of 2019. The number of IRD trades referencing alternative RFRs increased to 16,387 in the first half of 2020 from 8,512 in the second half of 2019.

IRD traded notional referencing SOFR increased to \$488.9 billion in the first half of 2020 from \$272.5 billion in the second half of 2019. The number of SOFR-linked IRD transactions increased to 2,274 in the first half of 2020 from 1,020 in the second half of 2019. Despite this growth, the proportion of SOFR-linked IRD traded notional remained small and accounted for 0.6% and 0.3% of US dollar-denominated IRD and total IRD traded notional, respectively, in the first half of 2020. SOFR-linked swaps accounted for 4.5% of total IRD traded notional referencing alternative RFRs in the first half of 2020 (which include SOFR, SONIA, SARON, TONA and €STR).

Traded notional of IRD referencing SONIA increased to \$10.2 trillion in the first half of 2020 from \$4.7 trillion in the second half of 2019. The number of SONIA-linked IRD transactions increased to 13,587 from 7,139 over the same period. IRD traded notional referencing SONIA represented 93.7% of total IRD traded notional referencing RFRs in the first half of 2020<sup>2</sup>.

Trading volume in SOFR futures totaled \$24.3 trillion in the first half of 2020 compared with \$21.8 trillion in the second half of 2019. Open interest in SOFR futures declined to \$1.7 trillion at the end of June 2020 from \$2.1 trillion at the end of December 2019<sup>3</sup>.

<sup>1</sup> This data covers only transactions that are required to be disclosed under US regulations

<sup>2</sup> This is expected as SONIA has been and is currently used as the reference rate for sterling overnight index swaps (OIS), while as the effective federal funds rate (EFFR) is still widely used as the reference rate for US dollar OIS

<sup>3</sup> The analysis of trading activity in SOFR and SONIA exchange-traded futures is based on data from CME, ICE and LCH

Trading volume in SONIA futures totaled \$6.4 trillion in the first half of 2020 compared with \$4.5 trillion in the second half of 2019. Open interest in SONIA futures decreased to \$101.6 billion at the end of June 2020 from \$212.3 billion at the end of December 2019.

**In the first half of 2020:**

- Traded notional of IRD referencing SOFR increased by 79.4% compared with the second half of 2019 and totaled \$488.9 billion, including \$235.9 billion of basis swaps. Trade count increased by 122.9% over the same period and totaled 2,274, including 628 basis swaps<sup>4</sup>.
- SONIA-linked IRD traded notional increased by 120.1% to \$10.2 trillion, including \$130.8 billion of basis swaps. Trade count increased by 90.3% and totaled 13,587, including 878 basis swaps.
- SARON-linked IRD traded notional decreased by 16.0% to \$20.0 billion and trade count declined by 10.4% to 43.
- TONA-linked IRD traded notional declined by 6.0% to \$168.7 billion, including \$50 million of basis swaps. Trade count increased by 40.5% to 413, including two basis swaps.
- €STR-linked IRD traded notional and trade count was \$13.3 billion and 70, respectively.

Traded notional of IRD referencing LIBOR denominated in US dollars, sterling, Swiss franc, yen and euro, as well as EURIBOR and TIBOR, increased by 22.0% to \$85.7 trillion and represented 59.6% of total IRD traded notional compared with 59.1% in the second half of 2019.

\$37.8 trillion of IRD traded notional referencing LIBOR had a 2020 maturity, \$21.2 trillion had a 2021 maturity and \$26.7 trillion had a maturity after 2021, including \$17.3 trillion of traded notional based on US dollar LIBOR.

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<sup>4</sup> See the note below regarding why we track basis swaps separately for the alternative RFRs

### In the second quarter of 2020:

- IRD traded notional referencing alternative RFRs decreased by 69.3% to \$2.6 trillion compared to \$8.4 trillion in the first quarter of 2020 and accounted for 4.5% of total IRD traded notional compared with 9.6% in the first quarter of 2020. The number of IRD trades referencing alternative RFRs decreased to 6,327 from 10,060 in the first quarter of 2020. Total IRD traded notional fell by about 35.0% over the same period.
- Traded notional of IRD referencing SOFR decreased by 24.9% compared with the first quarter of 2020 and totaled \$209.6 billion, including \$101.9 billion of basis swaps. Trade count decreased by 33.5% over the same period and totaled 908, including 227 basis swaps.
- SONIA-linked IRD traded notional fell by 71.4% to \$2.3 trillion, including \$55.3 billion of basis swaps. Trade count decreased by 38.1% and totaled 5,196, including 359 basis swaps.
- SARON-linked IRD traded notional increased by 65.5% to \$12.4 billion and trade count grew by 52.9% to 26.
- TONA-linked IRD traded notional decreased by 47.9% to \$57.8 billion, including \$20 million of basis swaps. Trade count decreased by 36.1% and totaled 161, including one basis swap.
- €STR-linked IRD traded notional jumped by 111.7% to \$9.0 billion and trade count increased by 5.9% to 36.

Traded notional of IRD referencing LIBOR denominated in US dollars, sterling, Swiss franc, yen and euro, as well as EURIBOR and TIBOR, declined by 19.5% to \$38.2 trillion and represented 67.4% of total IRD traded notional compared with 54.5% in the first quarter of 2020.

\$14.1 trillion of IRD traded notional referencing LIBOR had a 2020 maturity, \$12.7 trillion had a 2021 maturity and \$11.4 trillion had a maturity after 2021, including \$7.4 trillion of traded notional based on US dollar LIBOR.

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

	Q2 2020		YTD Q2 2020	
	Traded Notional (US\$ billions)	Trade Count	Traded Notional (US\$ billions)	Trade Count
<b>USD LIBOR</b>	27,121.3	181,395	63,006.2	393,941
<b>SOFR</b>	107.7	681	253.0	1,646
<b>Basis Swaps: SOFR</b>	101.9	227	235.9	628
<b>GBP LIBOR</b>	3,703.2	33,751	7,871.2	65,501
<b>SONIA</b>	2,221.5	4,837	10,104.6	12,709
<b>Basis Swaps: SONIA</b>	55.3	359	130.8	878
<b>CHF LIBOR</b>	158.4	3,131	315.9	6,040
<b>SARON</b>	12.4	26	20.0	43
<b>Basis Swaps: SARON</b>	0.0	0	0.0	0
<b>JPY LIBOR</b>	1,003.6	9,059	2,009.2	19,710
<b>TIBOR/Euroyen TIBOR</b>	4.0	15	5.0	31
<b>TONA</b>	57.8	160	168.7	411
<b>Basis Swaps: TONA</b>	0.02	1	0.05	2
<b>EUR LIBOR</b>	0.5	16	1.1	30
<b>EURIBOR</b>	6,242.1	50,315	12,507.3	110,380
<b>€STR</b>	9.0	36	13.3	70
<b>Basis Swaps: €STR</b>	0.0	0	0.0	0
<b>Other*</b>	15,952.6	127,089	47,290.9	280,977
<b>Total**</b>	<b>56,751.4</b>	<b>411,098</b>	<b>143,932.9</b>	<b>892,997</b>

\*Other includes IRD with other reference rates and IBOR/non-RFR basis swaps  
\*\*This data includes only the transactions required to be disclosed under U.S. regulations and does not include any exchange-traded derivatives (futures)

Source: DTCC SDR

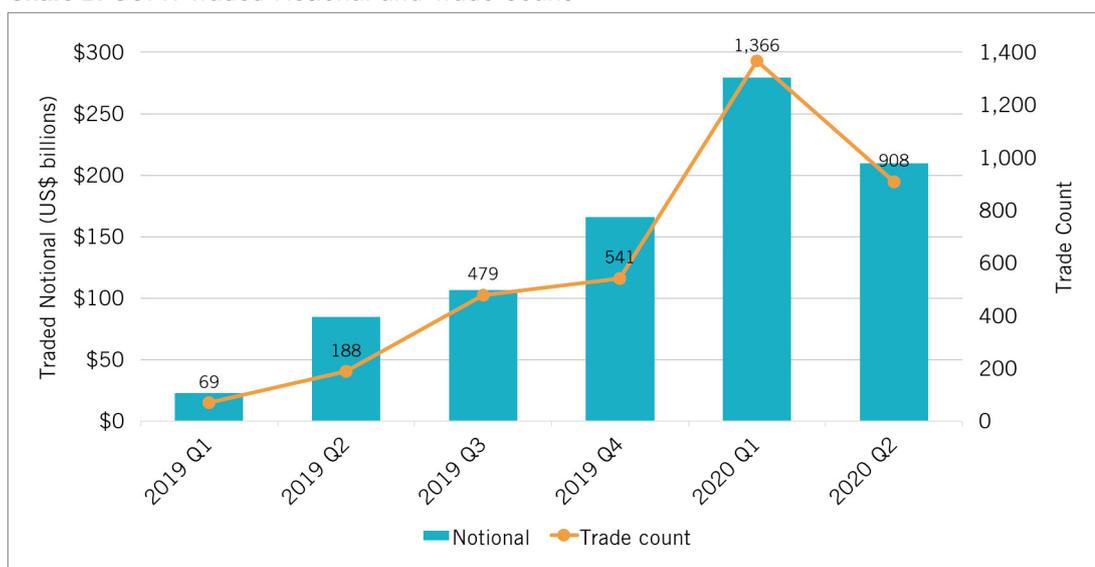
The RFR basis swap data covers all basis swaps with the relevant alternative RFR as one of the underlying assets. This includes alternative RFR/IBOR basis swaps. The IBOR data does not cover any basis swaps. The 'Other' category covers non-alternative RFR/IBOR basis swaps and IRD with reference rates 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 IBORs. A robust and liquid basis swaps market for the alternative RFRs will also support hedging during the transition from IBORs to alternative RFRs.

## SOFR

Trading activity in SOFR swaps declined in the second quarter of 2020 compared with the first quarter of 2020<sup>5</sup>. Traded notional of IRD referencing SOFR decreased by 24.9% to \$209.6 billion from \$279.3 billion in the first quarter of 2020. The number of SOFR-linked IRD transactions fell by 33.5% to 908 from 1,366 over the same period (see Chart 1).

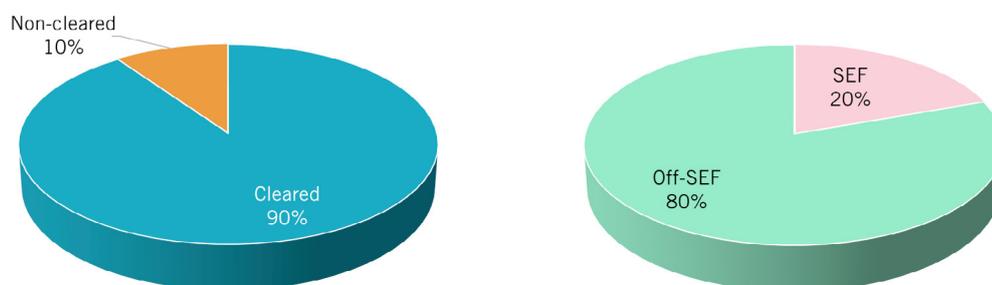
**Chart 1:** SOFR Traded Notional and Trade Count



Source: DTCC SDR

In the second quarter of 2020, \$189.1 billion of SOFR swaps was cleared, including \$93.0 billion of basis swaps. Cleared swaps accounted for 90.2% of total SOFR-linked IRD traded notional. \$41.0 billion of SOFR-linked IRD traded notional was traded on swap execution facilities (SEFs), representing 19.6% of total SOFR-based IRD traded notional. 158 out of 908 SOFR-linked IRD transactions were traded on SEFs (see Chart 2).

**Chart 2:** SOFR Traded Notional Q2 2020



Source: DTCC SDR

<sup>5</sup> SOFR swaps started trading in the third quarter of 2018

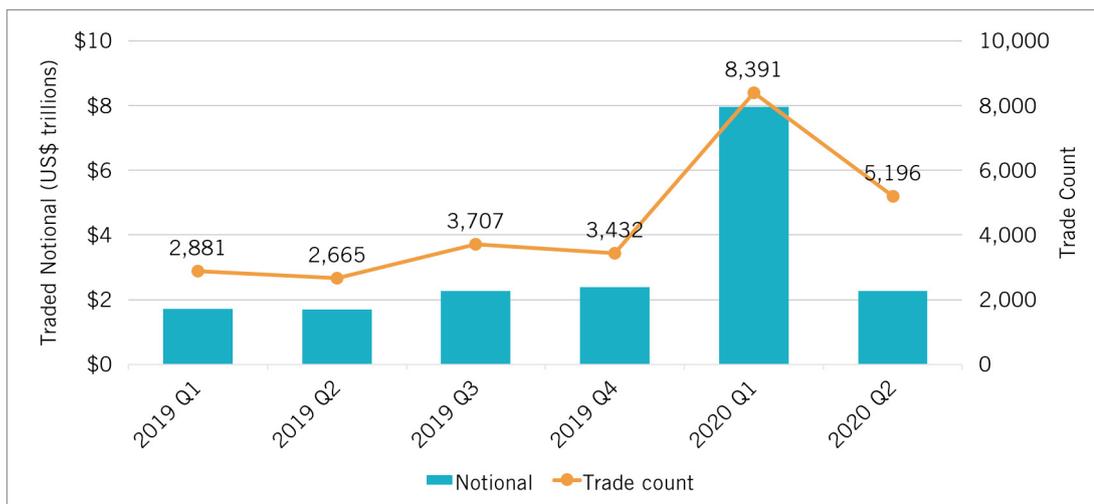
In the first half of 2020, traded notional of IRD referencing SOFR increased by 79.4% compared with the second half of 2019 and totaled \$488.9 billion, including \$235.9 billion of basis swaps. Trade count increased by 122.9% over the same period and totaled 2,274, including 628 basis swaps.

Cleared notional totaled \$437.3 billion in the first half of 2020 and accounted for 89.4% of total SOFR-linked traded notional. SEF-traded notional equaled \$88.8 billion and represented 18.2% of total SOFR-linked traded notional.

## SONIA

Traded notional of IRD referencing SONIA fell by 71.4% to \$2.3 trillion in the second quarter of 2020 from \$8.0 trillion in the first quarter of 2020. Trade count decreased by 38.1% to 5,196 from 8,391 over the same period (see Chart 3).

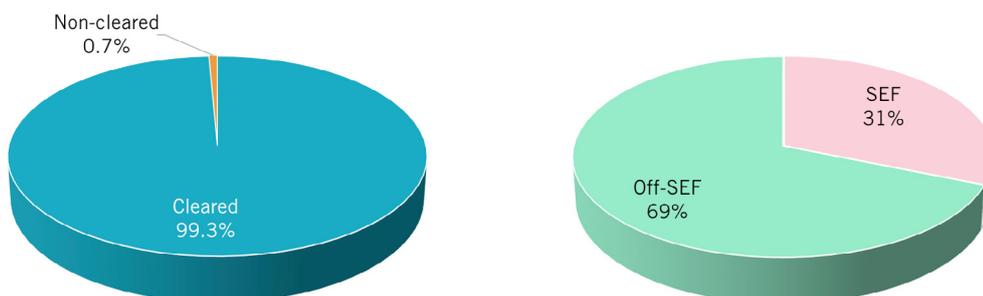
**Chart 3: SONIA Traded Notional and Trade Count**



Source: DTCC SDR

In the second quarter of 2020, \$2.3 trillion of SONIA swaps was cleared, including \$50.8 billion of basis swaps. Cleared transactions accounted for 99.3% of total SONIA-linked IRD traded notional. SEF traded notional equaled \$710.7 billion and represented 31.2% of total SONIA-linked IRD traded notional (see Chart 4).

**Chart 4: SONIA Traded Notional Q2 2020**



Source: DTCC SDR

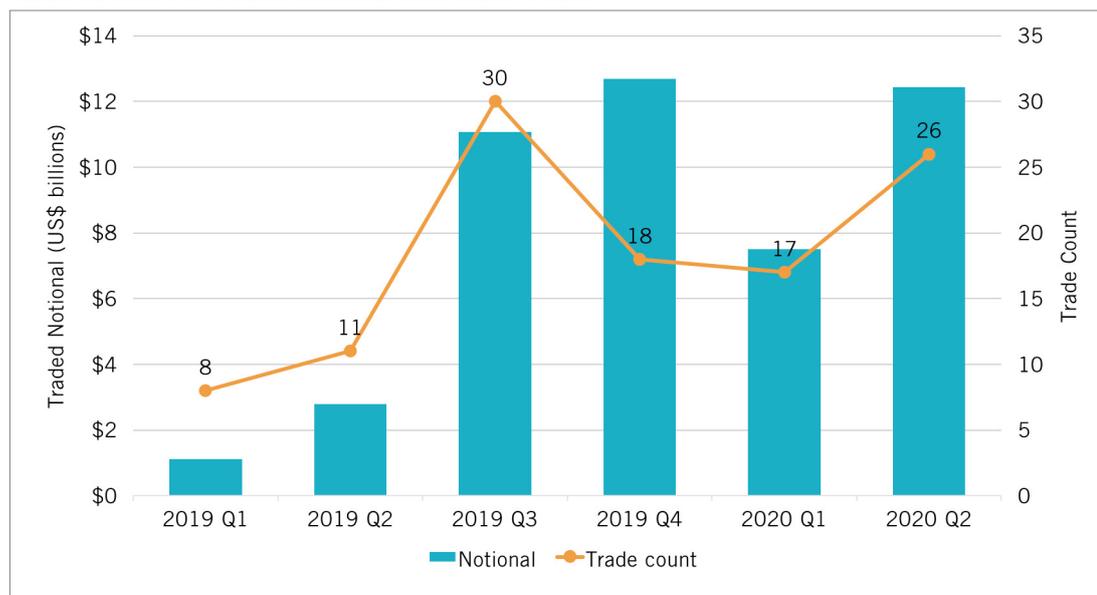
In the first half of 2020, SONIA-linked IRD traded notional increased by 120.1% compared with the second half of 2019 and totaled \$10.2 trillion, including \$130.8 billion of basis swaps. Trade count increased by 90.3% over the same period and totaled 13,587, including 878 basis swaps.

Cleared notional totaled \$10.2 trillion in the first half of 2020 and accounted for 99.4% of total SONIA-linked traded notional. SEF-traded notional equaled \$2.1 trillion and represented 20.1% of total SONIA-linked traded notional.

## SARON

IRD traded notional referencing SARON increased by 65.5% to \$12.4 billion in the second quarter of 2020 from \$7.5 billion in the first quarter of 2020. Trade count increased to 26 from 17 over the same period (see Chart 5).

**Chart 5:** SARON Traded Notional and Trade Count



Source: DTCC SDR

Cleared notional totaled \$12.4 billion in the second quarter of 2020 and accounted for 100% of total SARON-linked IRD traded notional. SEF traded notional equaled \$30 million and represented 0.2% of total SARON traded notional.

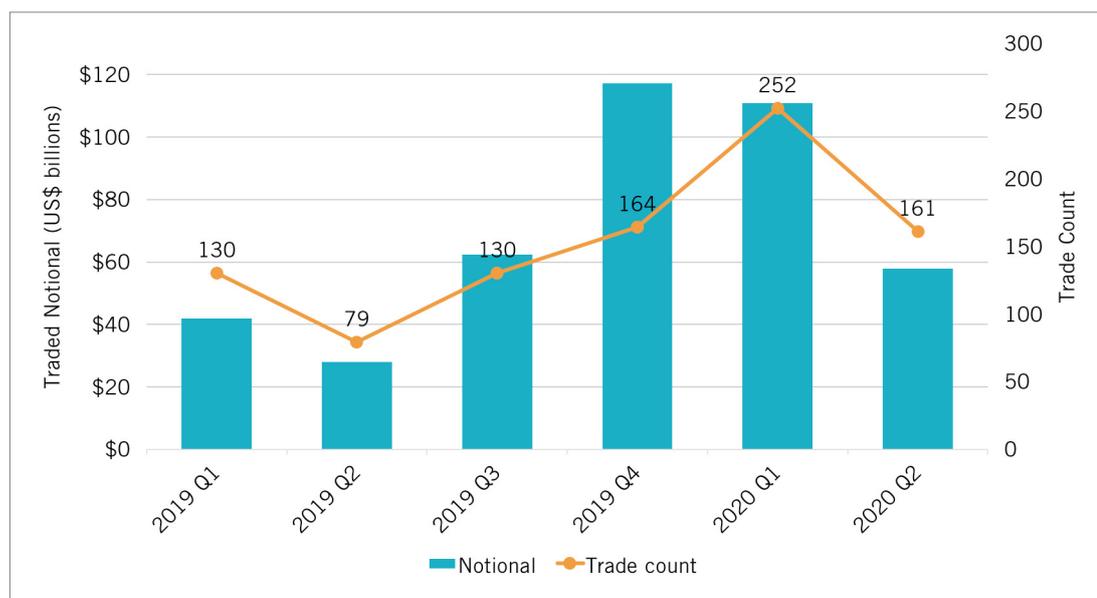
In the first half of 2020, SARON-linked IRD traded notional and trade count decreased by 16.0% and 10.4%, respectively, compared with the second half of 2019 and totaled \$20.0 billion and 43, respectively.

Cleared notional was \$20.0 billion in the first half of 2020, accounting for 100% of total SARON traded notional. SEF traded notional equaled \$30 million and represented 0.1% of total SARON traded notional.

## TONA

Traded notional of IRD referencing TONA decreased by 47.9% to \$57.8 billion in the second quarter of 2020 from \$110.9 billion in the first quarter of 2020. Trade count decreased to 161 from 252 over the same period (see Chart 6).

**Chart 6:** TONA Traded Notional and Trade Count



Source: DTCC SDR

In the second quarter of 2020, \$57.1 billion of TONA swaps was cleared, which accounted for 98.7% of total TONA-linked IRD traded notional. SEF traded notional equaled \$43.3 billion and represented 74.8% of total TONA-linked IRD traded notional.

In the first half of 2020, TONA-linked IRD traded notional declined by 6.0% compared with the second half of 2019 and totaled \$168.7 billion, including \$50 million of basis swaps. Trade count increased by 40.5% over the same period and totaled 413, including two basis swaps.

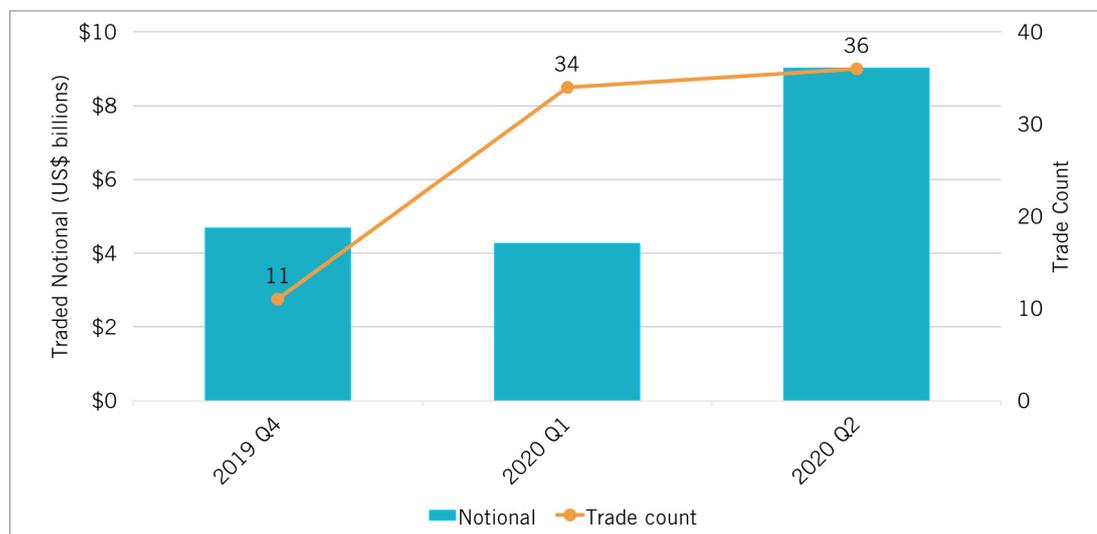
Cleared notional totaled \$164.8 billion in the first half of 2020 and accounted for 97.7% of total TONA traded notional. SEF traded notional equaled \$126.0 billion and represented 74.7% of total TONA traded notional.

## €STR

€STR-linked IRD traded notional increased to \$9.0 billion in the second quarter of 2020 from \$4.3 billion in the first quarter of 2020<sup>6</sup>. Trade count increased to 36 from 34 over the same period (see Chart 7).

<sup>6</sup>€STR swaps started trading in the fourth quarter of 2019

**Chart 7: €STR Traded Notional and Trade Count**



Source: DTCC SDR

In the second quarter of 2020, \$2.3 billion of €STR transactions was cleared, which accounted for 25.8% of total €STR-linked IRD traded notional. There were no €STR-linked IRD trades executed on SEFs.

In the first half of 2020, €STR-linked IRD traded notional and trade count was \$13.3 billion and 70, respectively. Cleared notional totaled \$6.6 billion and accounted for 49.6% of total €STR-linked traded notional. SEF traded notional equaled \$0.1 billion and represented 1% of total €STR-linked traded notional.

**Table 2: Interest Rate Benchmarks Traded Notional and Trade Count Q2 2020 vs. Q1 2020**

	Q2 2020		Q1 2020		Q2 2020 vs. Q1 2020	
	Traded Notional (US\$ billions)	Trade Count	Traded Notional (US\$ billions)	Trade Count	Traded Notional	Trade Count
USD LIBOR	27,121.3	181,395	35,884.9	212,546	-24.4%	-14.7%
SOFR	209.6	908	279.3	1,366	-24.9%	-33.5%
GBP LIBOR	3,703.2	33,751	4,168.0	31,750	-11.2%	6.3%
SONIA	2,276.8	5,196	7,958.6	8,391	-71.4%	-38.1%
CHF LIBOR	158.4	3,131	157.5	2,909	0.5%	7.6%
SARON	12.4	26	7.5	17	65.5%	52.9%
JPY LIBOR	1,003.6	9,059	1,005.6	10,651	-0.2%	-14.9%
TIBOR/Euroyen TIBOR	4.0	15	1.0	16	312.2%	-6.3%
TONA	57.8	161	110.9	252	-47.9%	-36.1%
EUR LIBOR	0.5	16	0.6	14	-25.7%	14.3%
EURIBOR	6,242.1	50,315	6,265.1	60,065	-0.4%	-16.2%
€STR	9.0	36	4.3	34	111.7%	5.9%
Other*	15,952.6	127,089	31,338.3	153,888	-49.1%	-17.4%
<b>Total**</b>	<b>56,751.4</b>	<b>411,098</b>	<b>87,181.5</b>	<b>481,899</b>	<b>-34.9%</b>	<b>-14.7%</b>

\*Other includes IRD with other reference rates and IBOR/non-RFR basis swaps  
\*\*This data includes only the transactions required to be disclosed under US regulations and does not include any exchange-traded derivatives (futures)

Source: DTCC SDR

**Table 3:** Interest Rate Benchmarks Traded Notional and Trade Count H1 2020 vs. H2 2019

	H1 2020		H2 2019		H1 2020 vs. H2 2019	
	Traded Notional (US\$ billions)	Trade Count	Traded Notional (US\$ billions)	Trade Count	Traded Notional	Trade Count
<b>USD LIBOR</b>	63,006.2	393,941	53,308.3	337,734	18.2%	16.6%
<b>SOFR</b>	488.9	2,274	272.5	1,020	79.4%	122.9%
<b>GBP LIBOR</b>	7,871.2	65,501	4,643.2	46,576	69.5%	40.6%
<b>SONIA</b>	10,235.4	13,587	4,650.6	7,139	120.1%	90.3%
<b>CHF LIBOR</b>	315.9	6,040	287.3	4,272	10.0%	41.4%
<b>SARON</b>	20.0	43	23.8	48	-16.0%	-10.4%
<b>JPY LIBOR</b>	2,009.2	19,710	1,663.4	18,501	20.8%	6.5%
<b>TIBOR/Euroyen TIBOR</b>	5.0	31	4.4	51	12.5%	-39.2%
<b>TONA</b>	168.7	413	179.6	294	-6.0%	40.5%
<b>EUR LIBOR</b>	1.1	30	1.1	6	-2.8%	400.0%
<b>EURIBOR</b>	12,507.3	110,380	10,346.2	106,123	20.9%	4.0%
<b>€STR*</b>	13.3	70	4.7	11	183.2%	536.4%
<b>Other**</b>	47,290.9	280,977	43,404.5	228,282	9.0%	23.1%
<b>Total***</b>	<b>143,932.9</b>	<b>892,997</b>	<b>118,789.7</b>	<b>750,057</b>	<b>21.2%</b>	<b>19.1%</b>

\*Other includes IRD with other reference rates and IBOR/non-RFR basis swaps  
\*\*This data includes only the transactions required to be disclosed under US regulations and does not include any exchange-traded derivatives (futures)

Source: DTCC SDR

**Table 4:** Interest Rate Benchmarks Cleared and Non-cleared Notional

	Q2 2020		YTD Q2 2020	
	Cleared Notional (US\$ billions)	Non-cleared Notional (US\$ billions)	Cleared Notional (US\$ billions)	Non-cleared Notional (US\$ billions)
<b>USD LIBOR</b>	25,096.5	2,024.8	58,150.9	4,855.3
<b>SOFR</b>	96.1	11.6	216.6	36.4
<b>Basis Swaps: SOFR</b>	93.0	8.9	220.7	15.2
<b>GBP LIBOR</b>	3,492.8	210.4	7,294.6	576.6
<b>SONIA</b>	2,209.8	11.7	10,056.4	48.2
<b>Basis Swaps: SONIA</b>	50.8	4.6	121.3	9.4
<b>CHF LIBOR</b>	155.6	2.7	312.5	3.4
<b>SARON</b>	12.4	0.0	20.0	0.0
<b>Basis Swaps: SARON</b>	0.0	0.0	0.0	0.0
<b>JPY LIBOR</b>	953.6	50.1	1,872.8	136.4
<b>TIBOR/Euroyen TIBOR</b>	1.3	2.7	1.8	3.2
<b>TONA</b>	57.0	0.7	164.8	3.9
<b>Basis Swaps: TONA</b>	0.02	0.0	0.02	0.03
<b>EUR LIBOR</b>	0.2	0.2	0.6	0.4
<b>EURIBOR</b>	5,520.3	721.8	10,959.0	1,548.2
<b>€STR</b>	2.3	6.7	6.6	6.7
<b>Basis Swaps: €STR</b>	0.0	0.0	0.0	0.0
<b>Other*</b>	13,833.9	2,118.7	41,676.4	5,614.5
<b>Total**</b>	<b>51,575.8</b>	<b>5,175.6</b>	<b>131,075.0</b>	<b>12,857.9</b>

\*Other includes IRD with other reference rates and IBOR/non-RFR basis swaps  
\*\*This data includes only the transactions required to be disclosed under U.S. regulations and does not include any exchange-traded derivatives (futures)

Source: DTCC SDR

**Table 5:** Interest Rate Benchmarks SEF and Off-SEF Traded Notional

	Q2 2020		YTD Q2 2020	
	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>	22,743.7	4,377.6	50,869.0	12,137.1
<b>SOFR</b>	6.6	101.0	23.9	229.1
<b>Basis Swaps: SOFR</b>	34.4	67.6	64.9	171.0
<b>GBP LIBOR</b>	2,780.2	923.1	5,098.6	2,772.6
<b>SONIA</b>	703.7	1,517.8	2,049.5	8,055.1
<b>Basis Swaps: SONIA</b>	7.0	48.4	12.3	118.5
<b>CHF LIBOR</b>	88.7	69.6	151.1	164.8
<b>SARON</b>	0.03	12.4	0.03	19.9
<b>Basis Swaps: SARON</b>	0.0	0.0	0.0	0.0
<b>JPY LIBOR</b>	729.8	273.8	1,277.8	731.4
<b>TIBOR/Euroyen TIBOR</b>	0.0	4.0	0.0	5.0
<b>TONA</b>	43.3	14.5	126.0	42.7
<b>Basis Swaps: TONA</b>	0.0	0.02	0.0	0.05
<b>EUR LIBOR</b>	0.1	0.3	0.2	0.8
<b>EURIBOR</b>	3,505.6	2,736.5	6,735.5	5,771.7
<b>€STR</b>	0.0	9.0	0.1	13.2
<b>Basis Swaps: €STR</b>	0.0	0.0	0.0	0.0
<b>Other*</b>	7,121.9	8,830.7	17,388.7	29,902.1
<b>Total**</b>	<b>37,764.9</b>	<b>18,986.5</b>	<b>83,797.7</b>	<b>60,135.2</b>

\*Other includes IRD with other reference rates and IBOR/non-RFR basis swaps  
\*\*This data includes only the transactions required to be disclosed under U.S. regulations and does not include any exchange-traded derivatives (futures)

Source: DTCC SDR

Most IRD transactions referencing alternative RFRs had a tenor up to one year<sup>7</sup>. For example, out of \$209.6 billion SOFR-linked IRD traded notional in the second quarter of 2020, \$146.7 billion (70.0%) had a tenor up to one year, \$57.1 billion (27.2%) was between one and five years and only \$5.9 (2.8%) billion had a tenor over five years.

<sup>7</sup> Tenor is calculated as the difference between the effective date and the maturity date

**Table 6:** RFR Traded Notional and Trade Count by Tenor

	Q2 2020		YTD Q2 2020	
	Traded Notional (US\$ billions)	Trade Count	Traded Notional (US\$ billions)	Trade Count
<b>SOFR</b>	209.6	908	488.9	2,274
Up to 1 year	146.7	229	337.7	553
Over 1 year and up to 5 years	57.1	516	134.3	1,306
Over 5 years	5.9	163	16.9	415
<b>SONIA</b>	2,276.8	5,196	10,235.4	13,587
Up to 1 year	2,050.2	1,104	9,730.9	4,768
Over 1 year and up to 5 years	127.5	1,066	269.9	2,200
Over 5 years	99.1	3,026	234.6	6,619
<b>SARON</b>	12.4	26	20.0	43
Up to 1 year	12.0	19	19.2	32
Over 1 year and up to 5 years	0.3	3	0.5	5
Over 5 years	0.2	4	0.3	6
<b>TONA</b>	57.8	161	168.7	413
Up to 1 year	52.1	97	156.1	258
Over 1 year and up to 5 years	4.3	24	8.6	49
Over 5 years	1.4	40	4.0	106
<b>€STR</b>	9.0	36	13.3	70
Up to 1 year	7.3	9	9.5	15
Over 1 year and up to 5 years	1.0	14	1.8	22
Over 5 years	0.7	13	1.9	33

This data includes only the transactions required to be disclosed under US regulations and does not include any exchange-traded derivatives (futures)

Source: DTCC SDR

The majority of RFR-linked IRD traded notional comprised basis swaps and overnight index swaps (OIS). For example, out of 908 SOFR-based contracts traded in the second quarter of 2020, 653 were OIS transactions, 227 were basis swaps, 26 were fixed-for-floating interest rate swaps and two were exotic products.

Table 7: RFR Traded Notional and Trade Count by Product

	Q2 2020		YTD Q2 2020	
	Traded Notional (US\$ billions)	Trade Count	Traded Notional (US\$ billions)	Trade Count
<b>SOFR</b>	209.6	908	488.9	2,274
<b>OIS</b>	105.6	653	246.8	1,583
<b>Basis Swaps</b>	101.9	227	235.9	628
<b>Fixed-for-Floating IRS</b>	0.9	26	1.5	43
<b>Cross Currency IRS</b>	0.0	0	0.0	0
<b>Exotic</b>	1.1	2	4.3	18
<b>Swaption</b>	0.0	0	0.3	2
<b>SONIA</b>	2,276.8	5,196	10,235.4	13,587
<b>OIS</b>	2,220.4	4,803	10,063.9	12,606
<b>Basis Swaps</b>	55.3	359	130.8	878
<b>Fixed-for-Floating IRS</b>	0.0	0	38.4	43
<b>Cross Currency IRS</b>	0.2	3	0.2	3
<b>Exotic</b>	0.9	31	2.2	57
<b>Swaption</b>	0.0	0	0.0	0
<b>SARON</b>	12.4	26	20.0	43
<b>OIS</b>	12.4	26	20.0	43
<b>Basis Swaps</b>	0.0	0	0.0	0
<b>Fixed-for-Floating IRS</b>	0.0	0	0.0	0
<b>Cross Currency IRS</b>	0.0	0	0.0	0
<b>Exotic</b>	0.0	0	0.0	0
<b>Swaption</b>	0.0	0	0.0	0
<b>TONA</b>	57.8	161	168.7	413
<b>OIS</b>	57.8	160	167.2	409
<b>Basis Swaps</b>	0.02	1	0.05	2
<b>Fixed-for-Floating IRS</b>	0.0	0	0.0	0
<b>Cross Currency IRS</b>	0.0	0	0.0	0
<b>Exotic</b>	0.0	0	1.5	2
<b>Swaption</b>	0.0	0	0.0	0
<b>€STR</b>	9.0	36	13.3	70
<b>OIS</b>	9.0	36	13.3	70
<b>Basis Swaps</b>	0.0	0	0.0	0
<b>Fixed-for-Floating IRS</b>	0.0	0	0.0	0
<b>Cross Currency IRS</b>	0.0	0	0.0	0
<b>Exotic</b>	0.0	0	0.0	0
<b>Swaption</b>	0.0	0	0.0	0

This data includes only the transactions required to be disclosed under US regulations and does not include any exchange-traded derivatives (futures)

Source: DTCC SDR

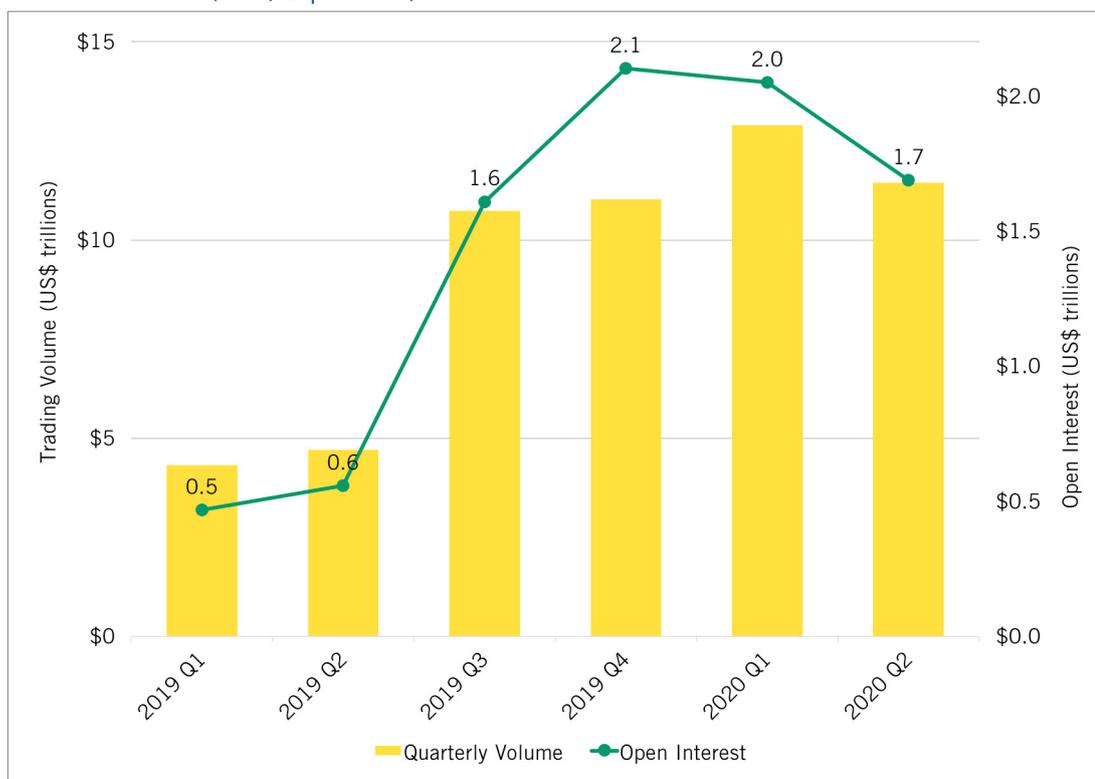
## SOFR and SONIA Futures

Trading volume in SOFR futures decreased by 11.2% to \$11.4 trillion in the second quarter of 2020 from \$12.9 trillion in the first quarter of 2020 (see Chart 8).

Trading volume in SOFR futures totaled \$24.3 trillion in the first half of 2020 compared with \$21.8 trillion in the second half of 2019.

Open interest in SOFR futures declined to \$1.7 trillion at the end of June 2020 compared to \$2.0 trillion at the end of March 2020 and \$2.1 trillion at the end of December 2019<sup>8</sup>.

**Chart 8:** SOFR Futures Quarterly Trading Volume and Open Interest (Implied Notional in Over-the-counter (OTC) Equivalent)



Source: CME and ICE

Trading volume in SONIA futures increased to \$4.2 trillion in the second quarter of 2020 from \$2.2 trillion in the first quarter of 2020<sup>9</sup> (see Chart 9).

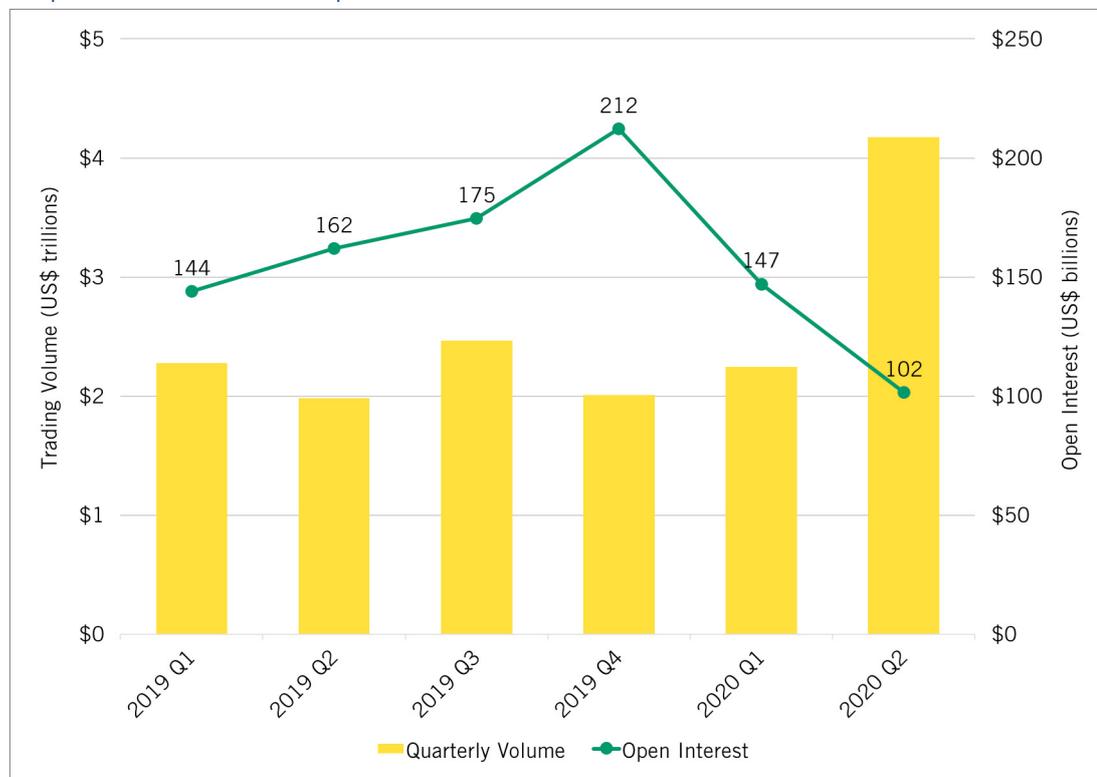
Trading volume in SONIA futures totaled \$6.4 trillion in the first half of 2020 compared with \$4.5 trillion in the second half of 2019.

Open interest declined to \$101.6 billion at the end of June 2020 compared with \$147.1 billion at the end of March 2020 and \$212.3 billion at the end of December 2019.

<sup>8</sup> The analysis of trading activity in SOFR and SONIA exchange-traded futures is based on data from CME, ICE and LCH

<sup>9</sup> Trading volume for Q1 2020 has been revised based on updated data

**Chart 9:** SONIA Futures Quarterly Trading Volume and Open Interest (Implied Notional in OTC Equivalent)



Source: CME, ICE and LCH

## IBORs

Traded notional of IRD referencing LIBOR denominated in US dollars, sterling, Swiss franc, yen and euro, as well as EURIBOR and TIBOR, equaled \$38.2 trillion and represented 67.4% of total IRD traded notional in the second quarter of 2020. The number of IRD trades referencing IBORs totaled 277,682, accounting for 67.5% of total IRD trade count.

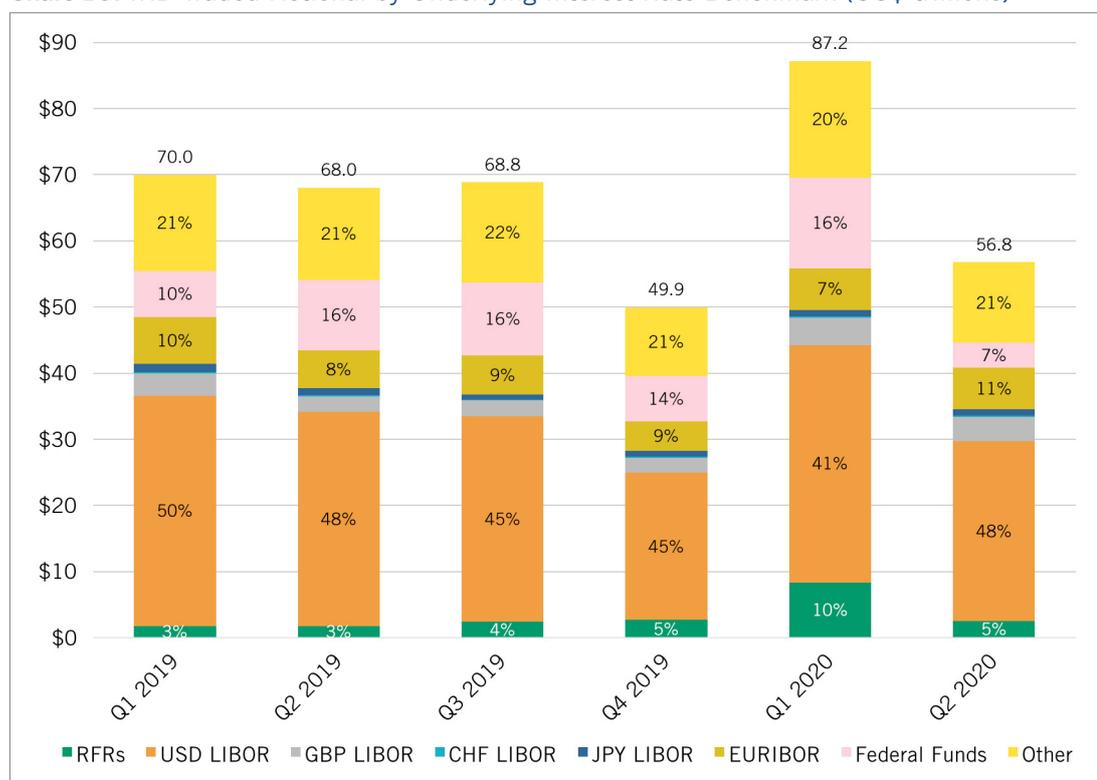
\$27.1 trillion of IRD traded notional was based on US dollar LIBOR, accounting for 47.8% of total IRD traded notional in the second quarter of 2020 (see Chart 10). EURIBOR and sterling LIBOR traded notional was \$6.2 trillion and \$3.7 trillion, respectively. IRD traded notional referencing the effective federal funds rate (EFFR) totaled \$3.8 trillion and accounted for 6.7% of IRD traded notional.

In comparison, traded notional of IRD referencing LIBOR denominated in US dollar, sterling, Swiss franc, yen and euro, as well as EURIBOR and TIBOR, equaled \$47.5 trillion and represented 54.5% of total IRD traded notional in the first quarter of 2020.

In the first half of 2020, IRD traded notional referencing IBORs totaled \$85.7 trillion and represented 59.6% of total IRD traded notional. The number of trades referencing IBORs totaled 595,633 comprising 66.7% of total IRD trade count.

\$63.0 trillion of IRD traded notional was based on US dollar LIBOR, accounting for 43.8% of total IRD traded notional in the first half of 2020. EURIBOR and sterling LIBOR traded notional was \$12.5 trillion and \$7.9 trillion, respectively. IRD traded notional referencing the EFRR totaled \$17.5 trillion and accounted for 12.1% of IRD traded notional.

**Chart 10: IRD Traded Notional by Underlying Interest Rate Benchmark (US\$ trillions)**



Source: DTCC SDR

In the second quarter of 2020, \$14.1 trillion of IRD traded notional referencing LIBOR had a 2020 maturity, including \$11.1 trillion based on US dollar LIBOR, \$1.7 trillion based on EURIBOR and \$1.0 trillion based on sterling LIBOR (see Chart 11).

\$12.7 trillion of IRD traded notional referencing LIBOR had a 2021 maturity, including \$8.7 trillion based on US dollar LIBOR, \$2.0 trillion based on EURIBOR and \$1.6 trillion based on sterling LIBOR. \$11.4 trillion of LIBOR-linked IRD traded notional had a maturity after 2021, including \$7.4 trillion based on US dollar LIBOR.

In the first half of 2020, \$37.8 trillion of IRD traded notional referencing IBORs had a 2020 maturity, including \$30.7 trillion of traded notional based on US dollar LIBOR, \$3.8 trillion based on EURIBOR and \$2.8 trillion referencing sterling LIBOR. \$21.2 trillion of traded notional had a 2021 maturity, including \$15.0 trillion based on US dollar LIBOR, \$3.2 trillion based on EURIBOR and \$2.4 trillion based on sterling LIBOR. \$26.7 trillion of LIBOR-linked IRD traded notional had a maturity after 2021, including \$17.3 trillion based on US dollar LIBOR.

**Chart 11: IBOR IRD Traded Notional by Maturity Q2 2020 (US\$ trillions)**



Source: DTCC SDR



ISDA has published other recent research papers:

- ***Key Trends in the Size and Composition of OTC Derivatives Markets in the Second Half of 2019, June 2020***

<https://www.isda.org/a/BAQTE/Key-Trends-in-Size-and-Composition-of-OTC-Derivatives-Markets-in-2H-2019.pdf>

- ***IRD Block Trading Activity in the First Quarter of 2020, June 2020***

<https://www.isda.org/a/qybTE/IRD-Block-Trading-Activity-in-the-First-Quarter-of-2020.pdf>

- ***Interest Rate Benchmarks Review: First Quarter of 2020, April 2020***

<https://www.isda.org/a/k6qTE/Interest-Rate-Benchmarks-Review-First-Quarter-of-2020.pdf>

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