



FOR IMMEDIATE RELEASE
September 16, 2019

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Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in Canada during April 2019

OTTAWA, ONTARIO—In April, the Bank of Canada and 52 other central banks and monetary authorities conducted the latest triennial survey of turnover activity in the foreign exchange (FX) and over-the-counter (OTC) derivatives markets in their respective countries. This worldwide effort was coordinated by the Bank for International Settlements (BIS) to obtain global, comprehensive and consistent information on the size and structure of the FX and OTC derivatives markets.

The Bank of Canada today released the summary results of its survey, as did many other participating central banks.¹ As well, the BIS issued a press release that summarizes highlights of the aggregated global turnover.² All dealers in Canada that are active in the wholesale FX and OTC derivatives markets were surveyed.³

With respect to FX, the survey covered spot transactions, outright forwards, FX swaps, currency swaps and OTC FX options.⁴ The interest rate products covered were forward-rate agreements, interest rate swaps, overnight index swaps and OTC interest rate options.

Highlights from the 2019 survey

- **Total turnover of FX transactions** rose from US\$1.8 trillion in April 2016 to almost US\$2.3 trillion in April 2019, an increase of 27.6 percent. Average daily turnover increased from US\$85.5 billion in 2016 to US\$109.1 billion in 2019 (Table 1).
- The increase was driven by FX swaps with all other product categories except for options experiencing turnover growth. The growth in FX turnover over the past three years is consistent with the trend in other major jurisdictions and is in line with changes in market activity that can be seen through the semi-annual Canadian Foreign Exchange Committee (CFEC) FX survey, with Canada's share of global turnover being unchanged at 1.3 percent.
- **Single-currency interest rate derivatives turnover** in April 2019 totalled almost US\$2.6 trillion, up by 274 percent from the US\$688.6 billion recorded in 2016 (Table 2). The increase was driven by forward rate agreements and interest rate swaps. There was also increased trading in overnight indexed swaps, which are now reported separately. The

¹ The reporting basis of the BIS survey is based on the location of the sales desk in Canada. The changes in the turnover activity could also represent changes in the organizational structure of the reporting banks; for example, moving the sales desk from one jurisdiction to another relative to the last reporting period in 2016.

² The BIS will publish the [global results of the survey](#).

³ Globally, almost 1,300 reporting dealers, mainly large commercial and investment banks, participated in the April 2019 triennial turnover survey. In Canada, 15 dealers participated.

⁴ Currency swaps involve the exchange of streams of interest payments and principal amounts, whereas foreign exchange swaps involve the exchange of principal amounts only.



large increase is similar to the trend in other major jurisdictions, with Canada's share of global turnover rising slightly from 1.1 percent in 2016 to 1.6 percent in 2019. Some of this increase is a result of structural changes to the Canadian derivatives operations of some of the reporting financial institutions.

- The composition of FX business by **type of instrument or product** and by **type of counterparty** is shown in Table 3. The proportion of FX and currency swaps rose while the proportion of all other product categories declined. The proportion of business going through reporting dealers and financial customer increased slightly while the share of non-financial customers declined.⁵
- Table 4 shows the **breakdown by currency** of foreign exchange market activity in Canada. There has been little change from 2016, with the US dollar, the Canadian dollar and the euro being the top three traded currencies.
- Tables 5 and 6 provide more detailed information on the turnover in foreign exchange products in Canada. Total FX turnover in the Canadian-dollar against the U.S.-dollar as well as other currency business against the US dollar increased while transactions in the Canadian dollar against currencies other than the US dollar, and all other currency pairs, declined.
- Table 7 provides a **maturity breakdown** for outright forwards and FX swaps. The trend is the same as in 2016:
 - almost 98 percent of these transactions being less than six months in duration
 - 61 percent being for one week or less.
- The survey includes an **execution methods table for foreign exchange contracts** (Table 8). There has been little change relative to 2016, with the share of FX transactions undertaken by way of voice direct⁶ (over the telephone) being unchanged. However, the share of single bank proprietary trading systems increased, and the share of other electronic venues declined.

⁵ Financial customers comprise financial institutions such as mutual funds, pension funds, hedge funds, currency funds, money market funds, leasing companies, insurance companies, financial subsidiaries of corporate firms, and central banks. Financial customers also include smaller commercial and investment banks that do not participate as reporting dealers in the triennial survey.

⁶ Most internal or related party trades are classified as having been executed by “voice direct” in the survey.



Table 1: Foreign exchange turnover in Canada
Summary of surveys

Billions of US dollars in April

	Foreign exchange turnover ¹						Number of business days	Average daily turnover	Percent change
	Spot	Outright forwards	FX swaps	Currency swaps	Options	Total			
1983	44.3	5.2	53.7			103.2	20	5.2	
1986	81.5	11.2	98.5			191.2	20	9.6	84.6
1989	123.9	14.1	161.9			299.9	20	15.0	56.3
1992	162.1	17.6	281.2			460.9	21	21.9	46.0
1995	228.5	47.9	290.1	1.0	15.0	582.5	19	30.7	40.2
1998	226.5	30.0	516.2	5.8	18.2	796.7	21	37.9	23.5
2001	217.3	45.0	570.6	7.1	44.9	884.9	20	44.2	16.6
2004	385.7	83.4	663.4	12.6	100.4	1245.5	21	59.3	34.2
2007	273.1	86.1	837.3	32.1	52.0	1280.6	20	64.0	7.9
2010	383.9	132.0	710.9	26.0	46.9	1299.7	21	61.9	-3.3
2013	329.0	221.2	782.1	26.8	67.5	1426.5	22	64.8	4.7
2016	355.0	270.2	1009.8	60.2	101.0	1796.3	21	85.5	31.9
2019	379.7	293.5	1451.3	87.2	79.7	2291.5	21	109.1	27.6

¹ Currency swaps and options were not included in the survey until 1995.



Table 2: Single-currency interest rate derivatives turnover in Canada
Summary of surveys

Billions of US dollars in April

	Single-currency interest rate derivatives						Number average daily turnover	Percent change
	Forward rate agreements	Interest rate swaps ¹	Overnight indexed swaps	Options	Total	Number of business days		
1995	56.7	20.2		5.6	82.5	19	4.3	
1998	51.0	61.4		22.0	134.4	21	6.4	48.8
2001	57.7	121.5		19.2	198.4	20	9.9	54.7
2004	71.5	152.6		30.4	254.5	21	12.1	22.2
2007	123.8	215.5		72.3	411.6	20	20.6	70.2
2010	137.3	725.6		12.6	875.5	21	41.7	102.4
2013	149.0	554.1		44.4	747.4	22	34.0	-18.5
2016	54.4	616.2		17.9	688.6	21	32.8	-3.5
2019	688.5	1479.6	340.4	65.9	2574.4	21	122.6	273.9

¹ Starting in 2019, Overnight Indexed Swaps are reported as a separate category. In prior surveys, it was reported as a part of Interest Rate Swaps.



Table 3: Reported foreign exchange turnover in Canada by instrument and by counterparty
Summary of surveys
Billions of US dollars (and percent shares)

	Instrument ¹										Counterparty ²					
	Spot		Outright forwards		Foreign exchange swaps		Currency swaps		Options		Reporting dealers		Customers			
													Financial ³		Non-financial	
1983	44	(43)	5	(5)	54	(52)					75	(73)	8	(8)	19	(19)
1986	82	(43)	11	(6)	98	(51)					131	(69)	24	(12)	36	(19)
1989	124	(41)	14	(5)	162	(54)					217	(72)	25	(8)	58	(20)
1992	162	(35)	18	(4)	281	(61)					360	(76)	32	(7)	79	(17)
1995	229	(39)	48	(8)	290	(50)	1	(0)	15	(3)	347	(61)	141	(25)	79	(14)
1998	227	(28)	30	(4)	516	(65)	6	(1)	18	(2)	550	(71)	123	(16)	100	(13)
2001	217	(25)	45	(5)	571	(64)	7	(1)	45	(5)	534	(64)	198	(24)	101	(12)
2004	386	(31)	83	(7)	663	(53)	13	(1)	100	(8)	704	(62)	318	(28)	110	(10)
2007	273	(21)	86	(7)	837	(65)	32	(3)	52	(4)	661	(55)	422	(35)	113	(9)
2010	384	(29)	132	(10)	711	(55)	26	(2)	47	(4)	660	(54)	465	(38)	102	(8)
2013	329	-(23)	221	-(16)	782	-(55)	27	-(2)	67	-(5)	892	-(63)	365	-(26)	169	-(12)
2016	355	(20)	270	(15)	1010	(56)	60	(3)	101	(6)	1142	(64)	452	(25)	203	(11)
2019	380	(17)	294	(13)	1451	(63)	87	(4)	80	(3)	1501	(66)	644	(28)	146	(6)

¹ Currency swaps and options were not included in the survey until 1995.

² Beginning in 2013, the counterparty breakdown is based on all five foreign exchange products, not just traditional foreign exchange turnover (spot, outright forwards and foreign exchange swaps).

³ A more detailed breakdown of financial customers or other financial institutions is provided in Table 3a.

Table 3a: Breakdown of the other financial institutions counterparty category
April 2019

Billions of US dollars (and percent shares)

	Spot		Outright forwards		Foreign exchange swaps		Currency swaps		Options		Total	
Total Other Financial Institutions	122.4	(100)	169.6	(100)	312.0	(100)	23.8	(100)	15.9	(100)	643.8	(100)
Non-reporting banks	56.2	(46)	27.9	(16)	156.1	(50)	9.4	(40)	0.1	(1)	249.8	(39)
Institutional investors	36.2	(30)	94.7	(56)	90.7	(29)	6.6	(28)	4.3	(27)	232.6	(36)
Hedge funds & proprietary trading firms	14.5	(12)	27.6	(16)	17.4	(6)	5.0	(21)	5.7	(36)	70.3	(11)
Official sector financial institutions	1.5	(1)	3.5	(2)	16.3	(5)	1.2	(5)	4.2	(27)	26.7	(4)
Others	13.9	(11)	16.0	(9)	31.5	(10)	1.5	(7)	1.6	(10)	64.5	(10)
Undistributed	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)



Table 4: Reported foreign exchange turnover in Canada by currency
Summary of surveys ¹

Percent shares

Currency	April 1983	March 1986	April 1989	April 1992	April 1995	April 1998	April 2001	April 2004	April 2007	April 2010	April 2013	April 2016	April 2019
U.S. dollar	99.0	99.4	99.2	96.3	96.6	96.8	96.0	95.3	95.6	94.2	92.5	94.3	96.0
Canadian dollar	75.7	68.2	66.2	65.2	69.6	70.2	61.8	55.5	67.8	69.7	61.2	60.1	56.7
Euro ²	--	--	--	--	--	--	15.7	17.7	11.7	12.8	17.3	14.4	15.7
German mark ²	10.7	13.4	12.9	17.0	16.0	14.9	--	--	--	--	--	--	--
U.K. pound	6.8	8.3	6.3	6.9	4.4	4.6	7.8	7.8	6.9	4.3	7.9	12.6	14.4
Japanese yen	2.9	4.2	7.3	5.8	6.0	7.3	8.7	9.4	5.4	4.5	6.2	6.0	5.1
Australian dollar ³	--	--	--	--	--	1.0	2.3	4.2	3.5	2.8	3.7	2.9	3.9
Mexican peso ³	--	--	--	--	--	--	0.5	1.9	3.9	2.6	3.1	2.5	1.8
Swiss franc	2.9	4.7	5.6	5.0	4.4	2.3	4.2	4.5	2.6	1.1	1.5	2.3	2.0
Swedish krona ³	--	--	--	--	--	--	--	--	--	--	1.4	1.3	0.4
Hong Kong dollar ³	--	--	--	--	--	--	0.2	1.4	0.5	0.4	0.2	0.4	0.4
Other currencies	2.0	1.8	2.5	3.8	3.0	2.9	2.8	2.3	2.0	7.4	4.8	3.2	3.7
All currencies ⁴	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0

¹ Beginning in 2013, the currency breakdown is based on all five foreign exchange products, not just traditional foreign exchange turnover (spot, outright forwards and foreign exchange swaps).

² On January 1, 1999, the euro replaced 11 European currencies including the German mark.

³ "--" indicates the currency was not broken out and reported separately.

⁴ Since every foreign exchange transaction involves two currencies, the reporting of all currencies necessarily sums to 200 per cent.



Table 5: Total reported foreign exchange turnover in Canada
Millions of US dollars

Instrument and counterparty	Canadian dollar against US dollar			US dollar against other currencies			Canadian dollar against currencies other than the US dollar			All other currency pairs			All currencies		
	April 2016	April 2019	Percent growth	April 2016	April 2019	Percent growth	April 2016	April 2019	Percent growth	April 2016	April 2019	Percent growth	April 2016	April 2019	Percent growth
Spot	172,535	203,562	18.0	142,584	131,238	-8.0	30,203	29,430	-2.6	9,724	15,437	58.8	355,045	379,666	6.9
Reporting dealers	113,318	119,928	5.8	101,635	75,082	-26.1	6,557	16,248	147.8	7,254	10,645	46.8	228,763	221,903	-3.0
Financial customers	38,895	55,964	43.9	36,565	52,496	43.6	20,915	9,585	-54.2	2,333	4,307	84.6	98,708	122,351	24.0
Non-financial customers	20,322	27,670	36.2	4,384	3,660	-16.5	2,731	3,597	31.7	137	486	254.6	27,574	35,413	28.4
Outright forwards	135,916	151,854	11.7	97,485	108,573	11.4	32,812	27,659	-15.7	4,026	5,438	35.1	270,238	293,525	8.6
Reporting dealers	34,796	34,032	-2.2	53,825	53,038	-1.5	2,970	5,611	89.0	1,754	1,946	11.0	93,344	94,627	1.4
Financial customers	82,423	97,132	17.8	38,330	50,454	31.6	26,636	18,941	-28.9	1,706	3,119	82.9	149,095	169,646	13.8
Non-financial customers	18,697	20,691	10.7	5,330	5,081	-4.7	3,206	3,107	-3.1	566	373	-34.1	27,799	29,252	5.2
o/w Non-deliverable forwards	--	--	0.0	21,771	39,930	83.4	339	0	-100.0	176	12	-93.0	22,286	39,943	79.2
FX swaps	580,083	741,009	27.7	401,511	671,032	67.1	23,949	15,937	-33.5	4,215	23,363	454.3	1,009,758	1,451,341	43.7
Reporting dealers	379,841	523,247	37.8	311,506	550,514	76.7	5,020	2,404	-52.1	689	10,248	1387.4	697,056	1,086,412	55.9
Financial customers	127,986	170,402	33.1	42,881	116,360	171.4	16,822	12,797	-23.9	997	12,467	1150.4	188,686	312,026	65.4
Non-financial customers	72,256	47,360	-34.5	47,124	4,158	-91.2	2,107	736	-65.1	2,529	649	-74.4	124,016	52,903	-57.3
Currency swaps	44,942	75,609	68.2	9,841	11,202	13.8	5,432	403	-92.6	20	30	49.8	60,235	87,244	44.8
Reporting dealers	24,292	36,284	49.4	8,294	6,773	-18.3	5,222	56	-98.9	8	30	274.4	37,816	43,143	14.1
Financial customers	8,957	19,474	117.4	509	4,199	725.0	208	121	-41.8	12	0	-100.0	9,686	23,795	145.7
Non-financial customers	11,693	19,851	69.8	1,038	230	-77.8	2	226	11178.7	0	0		12,733	20,306	59.5
OTC options	45,741	35,645	-22.1	52,504	27,760	-47.1	999	788	-21.1	1,778	2,386	34.2	101,020	79,675	-21.1
Reporting dealers	36,171	24,263	-32.9	46,247	29,039	-37.2	662	633	-4.3	1,599	1,229	-23.1	84,677	55,163	-34.9
Financial customers	2,231	6,896	209.1	3,074	7,848	155.3	0	112		0	0		5,332	15,934	198.8
Non-financial customers	7,339	4,487	-38.9	3,183	3,968	24.7	337	42	-87.6	152	80	-47.6	11,011	8,577	-22.1
Total reporting dealers	588,417	737,753	25.4	521,506	714,445	37.0	20,429	24,952	22.1	11,303	24,098	113.2	1,141,655	1,501,249	31.5
Total customers	390,799	469,926	20.2	182,418	248,455	36.2	70,234	45,667	-35.0	8,432	21,480	154.7	654,641	790,203	20.7
Financial	260,492	349,867	34.3	121,359	231,358	90.6	64,581	41,556	-35.7	5,048	19,893	294.1	451,507	643,751	42.6
Non-financial	130,307	120,059	-7.9	61,059	17,098	-72.0	5,653	4,111	-27.3	3,384	1,587	-53.1	203,134	146,451	-27.9
Local	463,664	624,245	34.6	104,759	137,319	31.1	75,882	52,791	-30.4	7,424	23,088	211.0	651,729	837,443	28.5
Cross border	515,552	583,434	13.2	599,165	825,582	37.8	17,512	21,426	22.3	12,338	23,567	91.0	1,144,567	1,454,008	27.0
Total turnover	979,216	1,207,679	23.3	703,924	949,805	34.9	93,394	74,216	-20.5	19,762	46,655	136.1	1,796,296	2,291,451	27.6



Table 6: Reported foreign exchange turnover in Canada in April 2019 by currency pair
Millions of US dollars

Instrument and counterparty	Directly against the US dollar					All other currency pairs	Total
	Canadian dollar	Euro	UK pound	Japanese yen	Other		
Spot							
With reporting dealers	119,928	25,902	11,220	9,211	28,749	26,892	221,903
Local	44,877	4,861	2,269	387	1,877	5,876	60,147
Cross-border	75,051	21,041	8,951	8,824	26,872	21,017	161,756
With financial customers	55,964	14,991	7,442	5,834	24,228	13,892	122,351
Local	40,006	5,694	2,154	1,925	5,982	9,670	65,431
Cross-border	15,958	9,298	5,288	3,909	18,247	4,222	56,920
With non-financial customers	27,670	1,490	462	153	1,555	4,083	35,413
Local	25,581	751	232	103	579	3,790	31,037
Cross-border	2,089	739	230	50	976	293	4,376
Outright forwards and FX swaps							
With reporting dealers	557,278	179,172	203,098	57,635	163,647	20,209	1,181,039
Local	195,593	22,398	12,460	6,189	14,633	11,679	262,951
Cross-border	361,686	156,774	190,638	51,446	149,014	8,530	918,088
With financial customers	267,533	57,662	40,208	22,459	46,485	47,324	481,672
Local	196,219	12,766	7,342	2,969	12,462	38,545	270,304
Cross-border	71,315	44,897	32,866	19,490	34,023	8,779	211,368
With non-financial customers	68,051	3,484	1,427	484	3,844	4,865	82,155
Local	57,173	1,716	677	90	1,486	4,102	65,244
Cross-border	10,878	1,768	750	394	2,358	763	16,911
Currency swaps and Options							
With reporting dealers	60,547	15,512	8,150	8,410	3,740	1,948	98,307
Local	28,831	2,432	957	904	1,022	746	34,891
Cross-border	31,716	13,080	7,193	7,506	2,718	1,202	63,415
With financial customers	26,370	5,827	147	2,632	3,441	1,311	39,728
Local	13,721	3,201	56	1,133	2,579	1,124	21,815
Cross-border	12,649	2,627	91	1,499	862	186	17,914
With non-financial customers	24,338	1,784	668	410	1,337	347	28,884
Local	22,243	1,382	205	360	1,087	347	25,624
Cross-border	2,095	402	463	50	250	0	3,260
Summary by instruments							
Total spot	203,562	42,384	19,124	15,198	54,532	44,867	379,666
(Currency share, per cent)	(53.6)	(11.2)	(5.0)	(4.0)	(14.4)	(11.8)	(100.0)
Total outright forwards and FX swaps	892,863	240,318	244,733	80,578	213,976	72,398	1,744,866
(Currency share, per cent)	(51.2)	(13.8)	(14.0)	(4.6)	(12.3)	(4.1)	(100.0)
Total currency swaps and options	111,254	23,123	8,964	11,453	8,517	3,606	166,919
(Currency share, per cent)	(66.7)	(13.9)	(5.4)	(6.9)	(5.1)	(2.2)	(100.0)
Summary by counterparty							
Reporting dealers							
Spot	119,928	25,902	11,220	9,211	28,749	26,892	221,903
Outright forwards and FX swaps	557,278	179,172	203,098	57,635	163,647	20,209	1,181,039
Currency swaps and options	60,547	15,512	8,150	8,410	3,740	1,948	98,307
Total reporting dealers	737,753	220,587	222,468	75,256	196,135	49,050	1,501,249
(Currency share, per cent)	(49.1)	(14.7)	(14.8)	(5.0)	(13.1)	(3.3)	(100.0)
Customers							
Spot	83,634	16,481	7,904	5,987	25,783	17,974	157,764
Outright forwards and FX swaps	335,585	61,146	41,635	22,943	50,329	52,189	563,827
Currency swaps and options	50,708	7,611	814	3,043	4,778	1,658	68,612
Total customer	469,926	85,239	50,354	31,973	80,890	71,821	790,203
(Currency share, per cent)	(59.5)	(10.8)	(6.4)	(4.0)	(10.2)	(9.1)	(100.0)
Total turnover	1,207,679	305,825	272,822	107,229	277,025	120,871	2,291,451
(Currency share, per cent)	(52.7)	(13.3)	(11.9)	(4.7)	(12.1)	(5.3)	(100.0)



Table 7: Reported foreign exchange market turnover in Canada by maturity¹
Millions of US dollars

Instrument	1998		2001		2004		2007		2010		2013		2016	
	Amounts	% share	Amounts	% share	Amounts	% share	Amounts	% share	Amounts	% share	Amounts	% share	Amounts	% share
Outright forwards														
Up to 7 days	10,045	30.5	18,103	38.4	28,679	33.7	35,172	37.1	46,297	32.8	101660.0	40.1	100,026	33.4
Over 7 days and up to 1 year	20,224	61.4	27,675	58.8	52,377	61.6	57,853	61.0	91,290	64.6	148571.0	58.6	194,696	65.0
Over one year	2,656	8.1	1,306	2.8	3,995	4.7	1,851	2.0	3,677	2.6	3215.0	1.3	5,003	1.7
Total	32,925	100.0	47,084	100.0	85,051	100.0	94,876	100.0	141,264	100.0	253446.0	100.0	299,725	100.0
Foreign exchange swaps														
Up to 7 days	458,098	72.2	445,261	70.1	548,093	76.6	699,368	74.8	573,787	70.6	566641.0	65.1	706,236	62.9
Over 7 days and up to 1 year	168,461	26.6	177,050	27.9	160,716	22.5	231,368	24.8	232,868	28.7	288801.0	33.2	402,469	35.9
Over one year	7,668	1.2	12,793	2.0	6,605	0.9	4,042	0.4	5,847	0.7	15467.0	1.8	13,478	1.2
Total	634,227	100.0	635,104	100.0	715,414	100.0	934,778	100.0	812,502	100.0	870909.0	100.0	1,122,183	100.0

¹ Not adjusted for local double counting.

Table 7: Reported foreign exchange market turnover in Canada by maturity¹
Millions of US dollars

Instrument	2019	
	Amounts	% share
Outright forwards		
Seven days or less	108,525	34.7
Over 7 days and up to 1 month	88,308	28.3
Over 1 month and up to 3 months	68,741	22.0
Over 3 months and up to 6 months	37,905	12.1
Over 6 months	9,036	2.9
Total	312,514	100.0
Foreign exchange swaps		
Seven days or less	1,122,128	66.2
Over 7 days and up to 1 month	225,317	13.3
Over 1 month and up to 3 months	239,257	14.1
Over 3 months and up to 6 months	82,024	4.8
Over 6 months	26,573	1.6
Total	1,695,299	100.0

¹ Not adjusted for local double counting.



Table 8: Execution methods for foreign exchange contracts
Percentage share of total transactions, April 2019

	Voice		Electronic				Total
	Direct ¹	Indirect ²	Direct ¹		Indirect ²		
			Single-bank proprietary trading systems	Other	Anonymous venues	Disclosed venues	
Spot — Total	39	4	16	23	11	7	100
with reporting dealers	44	3	17	17	15	3	100
local	69	2	17	3	8	1	100
cross-border	25	5	18	28	20	5	100
with other financial institutions	22	6	14	38	5	15	100
with non-financial customers	54	4	14	19	4	7	100
Outright forwards — Total	40	8	13	10	12	16	100
with reporting dealers	63	8	21	4	2	2	100
local	54	5	35	3	1	1	100
cross-border	68	10	13	4	3	2	100
with other financial institutions	20	9	10	14	19	28	100
with non-financial customers	63	8	5	13	6	6	100
FX swaps — Total	37	12	23	4	15	8	100
with reporting dealers	33	13	28	3	19	5	100
local	69	10	5	2	13	2	100
cross-border	13	15	41	4	22	6	100
with other financial institutions	46	12	8	9	3	21	100
with non-financial customers	78	1	0	14	0	6	100
Currency swaps — Total	59	29	8	0	3	2	100
with reporting dealers	50	34	10	0	4	2	100
local	46	33	13	0	5	3	100
cross-border	60	38	1	0	0	0	100
with other financial institutions	62	30	5	0	2	1	100
with non-financial customers	84	9	5	0	2	1	100
OTC options — Total	29	19	27	1	18	5	100
with reporting dealers	18	23	30	1	24	4	100
local	30	20	20	2	15	13	100
cross-border	13	24	33	1	28	0	100
with other financial institutions	58	8	19	1	3	11	100
with non-financial customers	58	11	24	2	0	5	100
Total	38	11	20	8	14	8	100

¹ Direct means not intermediated by a third party.

² Indirect means intermediated by a third party.

³ Multi-bank dealing systems in which various banks provide liquidity to the system.