

Annual Order Execution Quality Report 2019

Date: 30th June 2020

INTRODUCTION

The European Markets in Financial Instruments Directive II (MiFID II) requires BNP Paribas Asset Management UK Limited (BNPP AM UK) to provide annual reporting on the Top 5 Venues on which it executed transactions; and on the quality of that execution.

SCOPE

BNP Paribas Dealing Services UK Branch was integrated into BNPP AM UK as part of the Global Trading Function (GTF) on 1st December 2017. GTF UK provides dealing services for the following entities:

- BNPP AM UK
- BNP Paribas Dealing Services¹

The Top 5 Venue tables provided by this report also include executions made by GTF in other locations on behalf of UK based portfolio managers.

DISCLOSURES

MiFID II requires BNPP AM UK to provide the following additional information in relation to its trading activities:

- BNPP AM UK is a fully owned subsidiary of BNP Paribas Asset Management (BNPP AM). BNPP AM UK may use the BNP Paribas group's affiliated brokers, who are subject to the same selection and evaluation processes and rules as any third party counterparty;
- We do not have any specific arrangements with any execution venues regarding payments (made or received), discounts, rebates or non-monetary benefits;
- We provide services to professional clients only;
- We haven't used a Consolidated Tape Provider as this type of firm has not yet materialised in the market; and
- As the MiFID II RTS 27 Reports provided by Trading Venues on the quality of execution of transactions, are not yet consistent in terms of data or availability, we haven't yet incorporated this information into our monitoring processes.

COUNTERPARTY SELECTION

The list of counterparties used by GTF UK is co-ordinated by BNP Paribas Asset Management (BNPP AM). Selection is broadly based on:

- Ability to provide liquidity in the financial instruments traded;
- Expertise and intelligence in specific markets and financial instruments; and
- Use of technology that can provide value to the execution process.

BNPP AM conducts a quantitative assessment of each counterparty on a quarterly basis, reviewing information such as:

- Trading Cost Analysis (TCA);
- The quality and frequency of axes and indication of interest (IOI); and
- Hit ratios.

Our dealers also provide a qualitative assessment of each counterparty on a quarterly basis, on criteria such as:

- Financial instrument and market coverage;
- Ability to deliver the best service per execution strategy; and
- Quality of daily interactions.

¹ There is a delegation agreement in place between BNPP AM UK and BNP Paribas Dealing Services (BNPP DS) which allows BNPP DS to route orders from other BNPP AM entities for execution by BNPP AM UK.

Detailed feedback is then provided with to those counterparties with whom we have consistently traded during the period.

During 2019 we shortened our list of counterparties in relation to OTC derivatives, to concentrate on those providing the best access to liquidity and the most efficient process regarding legal documentation.

MONITORING

We use an external TCA provider to analyse our trading data for equities and forex against market prices and appropriate benchmarks. Deviations from these benchmarks are monitored according to pre-determined thresholds.

In relation to fixed income, we use the TCA service provided by a trading platform that provides benchmarks against which our data is compared.

A central team within BNPP AM manages the TCA process and provides a summary report, highlighting key trends, metrics and findings. GTF UK and BNPP AM UK Compliance also perform independent first and second level best execution controls.

TOP 5 VENUE AND EXECUTION REPORTS

In order to meet the requirements of MiFID II, BNPP AM UK must provide two sets of Top 5 Venue tables per class of financial instrument. The first in relation to transactions we have executed either directly with a trading venue or counterparty (known as Execution); and the second relating to orders placed with a counterparty, such as a broker, to execute in the market on BNPP AM UK's behalf (known as Reception and Transmission of Orders or RTO).

Where applicable, we have set out both sets of Top 5 Venue tables in this report and included a description of the trading strategies employed by our dealers to ensure they deliver a consistent level of best execution.

In certain circumstances we also use Trading Venues (also known as electronic platforms), such as Bloomberg and FXall, to trade. These platforms facilitate access to counterparties on a request for quote (RFQ) basis, which means we can obtain prices from a number of entities for the same transaction simultaneously. Where a platform appears in our Top 5 Execution and/or RTO tables we have also provided information about the underlying counterparties we have chosen to transact with, where available. This provides additional information about the sources of liquidity we have used and our order routing practices.

PASSIVE AND AGGRESSIVE ORDERS

In the tables below we are required to indicate whether our executions were Passive or Aggressive. A Passive order provides liquidity to the market (i.e. sell order); whereas an Aggressive order takes liquidity from the market (i.e. buy order).

The relevant columns have been populated where we have placed a trade using a counterparties' direct electronic access to a venue, and we have:

1. Specifically directed the trade to a particular venue which has an order book; and
2. Provided or taken liquidity.

BREXIT MITIGATION PLAN

In order to ensure operational continuity as we approached the first Brexit deadline (in March 2019) for the United Kingdom's departure from the European Union, we executed dealing contingency measures to change our workflow so that to be able to keep access to both UK and EUR market intermediaries' entities.

EQUITIES

SHARES AND DEPOSITARY RECEIPTS

Equities are classified according to their liquidity, there are three categories known as “bands”. As we have traded using both the Execution and RTO methods described above, we are publishing six separate Top 5 Venue tables for these types of equity.

Table 1 Execution: Equities – Shares and depositary receipts (Tick Size Liquidity Band 1 and 2)

Tick Size liquidity band 1 and 2											
Class of Instrument	1 - Equities - Shares & Depositary Receipts										
Notification if <1 average trade per business day in the previous Year	Y										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
LIQUIDNET SYSTEMS (LIQU)	69.08%	26,857,953	57.58%	19	71	63.38%	45	26.76%	19	0.00%	0
LIQUIDNET EUROPE LIMITED (213800ZIRB79BESXQM68)	22.30%	8,668,327	27.27%	9	16	0.00%	0	25.00%	4	0.00%	0
INVESTMENT TECHNOLOGY GROUP LTD (213800EEC95PRUCEUP63)	6.76%	2,628,320	6.06%	2	2	0.00%	0	0.00%	0	0.00%	0
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRHTR1V493)	1.36%	530,427	3.03%	1	26	0.00%	0	0.00%	0	0.00%	0
MORGAN STANLEY AND CO. INT PLC (4PQHN3JPF6NF3BB653)	0.32%	124,205	3.03%	1	9	0.00%	0	0.00%	0	0.00%	0
GOLDMAN SACHS INTERNATIONAL (W22LROWP2IHZNBB6K528)	0.17%	67,765	3.03%	1	5	40.00%	2	20.00%	1	0.00%	0

Table 2 Execution: Equities – Shares and depositary receipts (Tick Size Liquidity Band 3 and 4)

Tick Size liquidity band 3 and 4											
Class of Instrument	1 - Equities - Shares & Depositary Receipts										
Notification if <1 average trade per business day in the previous Year	Y										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
LIQUIDNET SYSTEMS (LIQU)	96.92%	57,669,723	87.50%	14	35	91.43%	32	0.00%	0	0.00%	0
LIQUIDNET EUROPE LIMITED (213800ZIRB79BESXQM68)	2.76%	1,640,746	6.25%	1	2	0.00%	0	100.00%	2	0.00%	0
POSIT MTF (ITGL)	0.32%	193,060	6.25%	1	12	58.33%	7	16.67%	2	0.00%	0

Table 3 Execution: Equities – Shares and depositary receipts (Tick Size Liquidity Band 5 and 6)

Tick Size liquidity band 5 and 6											
Class of Instrument	1 - Equities - Shares & Depositary Receipts										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
LIQUIDNET SYSTEMS (LIQU)	76.73%	185,590,974	81.42%	92	181	82.87%	150	4.97%	9	0.00%	0
CBQE Europ Equities (BCXE)	9.76%	23,598,538	2.65%	3	49	48.98%	24	24.49%	12	0.00%	0
POSIT MTF (ITGL)	8.73%	21,105,533	7.08%	8	1118	27.37%	306	47.85%	535	0.00%	0
LIQUIDNET EUROPE LIMITED (213800ZIRB79BESXQM68)	1.97%	4,773,662	2.65%	3	6	0.00%	0	33.33%	2	0.00%	0
INVESTMENT TECHNOLOGY GROUP LTD (213800EEC95PRUCEUP63)	1.38%	3,341,891	0.88%	1	1	100.00%	1	0.00%	0	0.00%	0

In 2019, the MTF Liquidnet Systems is ranked 1st for the 3 tick size liquidity bands. This trading platform allows us to match orders within the bid-offer spread, most usually in the middle of the spread, which reduces our trading costs. Furthermore, this MTF offers significant liquidity from both Buy Side and Sell Side firms, and matches interests on an anonymous basis. For all these reasons, we have exposed a large number of our flows to Liquidnet.

Compared to 2018, we have also significantly changed our trading style from aggressive to passive, in order to further minimize our market impact:

- For liquidity band 1 and 2, aggressive orders went from 82.76% to 26.76%, and passive orders from 17.24% to 63.38%.
- For liquidity band 3 & 4 and 5 & 6, passive orders stood at 91.43% and 82.87% respectively in 2019.

Table 4 RTO: Equities – Shares and depositary receipts (Tick Size Liquidity Band 1 and 2)

Tick Size liquidity band 1 and 2											
Class of Instrument	1 - Equities - Shares & Depositary Receipts										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
CREDIT SUISSE SECURITIES (USA) LLC (1V8Y6QCX6YMJ20ELI46)	17.20%	176,799,955	9.77%	102	12,150	15.41%	1,872	8.23%	1,000	0.00%	0
MERRILL LYNCH INTERNATIONAL (GGDZP1UYGU9STUHRDP48)	14.41%	148,139,888	10.73%	112	14,984	0.01%	2	0.00%	0	0.00%	0
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRHTR1V493)	12.63%	129,782,183	15.71%	164	15,758	0.84%	133	1.28%	201	0.00%	0
JPMORGAN SECURITIES LLC (ZBUT11V806EZRVWT807)	12.07%	124,109,492	6.80%	71	10,001	82.05%	8,206	16.95%	1,695	0.00%	0
BOFA SECURITIES, INC. (549300HN4UKV1E2R3U73)	10.69%	109,919,599	8.43%	88	6,664	64.02%	4,266	31.69%	2,112	0.00%	0

Compared to 2018, Credit Suisse went from 4th to 1st and Merrill Lynch from 3rd to 2nd. Even if Morgan Stanley has fallen off the top 5, volume have been more evenly distributed in 2019. Overall, the trading style has been more passive as well, with JPM standing at 82% of passive orders.

Table 5 RTO: Equities – Shares and depositary receipts (Tick Size Liquidity Band 3 and 4)

Tick Size liquidity band 3 and 4											
Class of Instrument	1 - Equities - Shares & Depositary Receipts										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
JPMORGAN SECURITIES PLC (K6Q0W1PS1L104IQL9C32)	24.38%	66,190,844	15.15%	30	2,057	55.71%	1,146	22.41%	461	0.00%	0
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRHTR1V493)	16.42%	44,566,274	18.69%	37	1,623	19.59%	318	1.85%	30	0.00%	0
MORGAN STANLEY AND CO. INT PLC (4PQUHN3JPF6FN3BB653)	14.14%	38,383,904	15.66%	31	2,488	31.75%	790	61.74%	1,536	0.00%	0
MERRILL LYNCH INTERNATIONAL (GGDZP1UYGU9STUHRDP48)	13.40%	36,360,743	15.66%	31	722	16.34%	118	9.42%	68	0.00%	0
GOLDMAN SACHS INTERNATIONAL (W22LR0WP2IHZNB6K528)	7.47%	20,283,236	4.04%	8	262	44.66%	117	26.34%	69	0.00%	0

For liquidity band 3 & 4, JPM has significantly increased its market share from 7.83% to 24.38% in 2019, taking the lead of the top 5. Goldman Sachs is the new entrant in the category as Credit Suisse ranked 6th

Table 6 RTO: Equities – Shares and depositary receipts (Tick Size Liquidity Band 5 and 6)

Tick Size liquidity band 5 and 6												
Class of Instrument		1 - Equities - Shares & Depositary Receipts										
Notification if <1 average trade per business day in the previous Year		N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)		Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
MORGAN STANLEY AND CO. INT PLC (4PQUHN3JPFQFN3BB653)		21.02%	846,909,378	16.21%	636	19,289	37.86%	7,302	43.86%	8,460	0.00%	0
JPMORGAN SECURITIES PLC (K6Q0W1PS1L104IQL9C32)		18.03%	726,361,431	14.10%	553	11,554	47.53%	5,492	34.59%	3,997	0.00%	0
GOLDMAN SACHS INTERNATIONAL (W22LR0WP2IHZNBB6K528)		11.71%	471,956,290	10.35%	406	8,642	62.31%	5,385	21.57%	1,864	0.00%	0
MERRILL LYNCH INTERNATIONAL (GGDZP1UYGU9STUHRDP48)		10.91%	439,695,562	9.36%	367	12,410	69.20%	8,588	19.57%	2,429	0.00%	0
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRHTR1V493)		7.11%	286,491,214	5.33%	209	20,463	47.07%	9,632	7.03%	1,439	0.00%	0

In 2019, compared to 2018, Credit Suisse and ITG fell out of the top 5 place while JP Morgan and Goldman Sachs made their way in. Morgan Stanley has remained in the first place but has seen its market share falling by 2%, while having increased its percentage of aggressive orders from 24.43% to 43.86%.

Each order is assessed by the Dealers who determine which execution factors are the most important and therefore the strategy to employ in order to obtain the best possible result.

Price (including implicit cost) is usually the execution factor we consider to be most important when dealing in equities.

Liquidity is also an important factor and counterparties can be incorporated into trades on the basis of the relevant Indications Of Interest (IOI) they present to our dealers.

Dealers will use all the tools available to them to fulfill their Best Execution mandate, including electronic platforms to access counterparty algorithm offerings. Depending on markets conditions, dealers will assess the most suitable algorithm strategies to achieve the best possible result.

SECURITIZED DERIVATIVES – WARRANTS AND CERTIFICATE DERIVATIVES AND OTHER SECURITIED DERIVATIVES

Table 7 RTO: Securitized Derivatives

Class of Instrument		9 - Securitized derivatives										
Notification if <1 average trade per business day in the previous Year		Y										
Top 5 Execution venues ranked in terms of trading volumes (descending order)		Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
MERRILL LYNCH INTERNATIONAL (GGDZP1UYGU9STUHRDP48)		39.73%	7,856,703	31.43%	11	11	0.00%	0	0.00%	0	0.00%	0
JPMORGAN SECURITIES PLC (K6Q0W1PS1L104IQL9C32)		22.64%	4,476,522	2.86%	1	1	0.00%	0	0.00%	0	0.00%	0
INVESTMENT TECHNOLOGY GROUP LTD (213800EEC95PRUCEUP63)		16.34%	3,231,291	31.43%	11	11	0.00%	0	0.00%	0	0.00%	0
UBS LIMITED (REYPIEJN7XHSUI0N355)		11.20%	2,214,645	31.43%	11	11	0.00%	0	0.00%	0	0.00%	0
GOLDMAN SACHS INTERNATIONAL (W22LR0WP2IHZNBB6K528)		10.09%	1,994,483	2.86%	1	1	0.00%	0	0.00%	0	0.00%	0

Compared to 2018, we have diversified the number of counterparties to trade Securitized derivatives. Overall, the volume traded for this asset class on a yearly basis remains low.

CONTRACTS FOR DIFFERENCE

Table 8 Execution: CFD's

Class of Instrument	11 - Contracts for difference										
Notification if <1 average trade per business day in the previous Year	Y										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
JPMORGAN CHASE BK NA (7H6GLXDRUGQFUS7RNE97)	86.66%	5,800,037	25.00%	1	1	0.00%	0	0.00%	0	0.00%	0
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRHTR1V493)	9.78%	654,472	50.00%	2	177	66.67%	118	9.60%	17	0.00%	0
MORGAN STANLEY AND CO. INT PLC (4PQUHN3JPFQFN3BB653)	3.56%	238,260	25.00%	1	26	88.46%	23	0.00%	0	0.00%	0

Most of the CFD trading is executed in RTO mode, where volume is the most relevant.

Table 9 RTO: CFD's

Class of Instrument	11 - Contracts for difference										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
MORGAN STANLEY AND CO. INT PLC (4PQUHN3JPFQFN3BB653)	39.68%	119,710,082	52.57%	215	3,957	20.57%	814	14.66%	580	0.00%	0
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRHTR1V493)	30.37%	91,626,722	34.72%	142	3,322	54.91%	1,824	11.98%	398	2.11%	3
MORGAN STANLEY & CO. LLC (9R7GPTS07KV3UQJZQ078)	8.21%	24,772,105	2.93%	12	12	0.00%	0	0.00%	0	0.00%	0
CITIGROUP GLOBAL MARKETS INC. (MNUM2BPD07J8LYG310)	7.60%	22,916,372	3.67%	15	15	0.00%	0	0.00%	0	0.00%	0
JPMORGAN SECURITIES PLC (K6Q0WIPS1L104IQL9C32)	6.32%	19,057,748	1.47%	6	101	10.89%	11	84.16%	85	0.00%	0
JPMORGAN SECURITIES LLC (ZBUT11V806EZRVTWT807)	4.99%	15,046,605	3.18%	13	13	0.00%	0	0.00%	0	0.00%	0
JPMORGAN CHASE BK NA (7H6GLXDRUGQFUS7RNE97)	2.85%	8,595,264	1.47%	6	6	0.00%	0	0.00%	0	16.67%	1

In 2019, our top 3 counterparties have remained the same. Morgan Stanley has seen its market share decreasing slightly to 47.89% from 62.60% the previous year.

EXCHANGE TRADED PRODUCTS – EXCHANGE TRADED FUNDS, EXCHANGE TRADED NOTES AND EXCHANGE TRADED COMMODITIES

Table 10 Execution: Exchange Traded Product

Class of Instrument	12 - Exchange traded products										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
TRADEWEB (TREU)	53.43%	1,439,745,058	86.03%	388	388	0.00%	0	0.00%	0	0.00%	0
JANE STREET FINANCIAL LIMITED (549300ZHEHX8M31RP142)	26.87%	724,113,455	4.88%	22	22	0.00%	0	0.00%	0	0.00%	0
MERRILL LYNCH INTERNATIONAL (GGDZP1UYGU9STUHRDP48)	6.62%	178,365,897	0.89%	4	4	0.00%	0	0.00%	0	0.00%	0
FLOW TRADERS B.V. (549300CLJ19XDH12XV51)	5.13%	138,132,979	2.22%	10	10	0.00%	0	0.00%	0	0.00%	0
BNP PARIBAS (R0MUMSFPUB8MPR08K5P83)	3.70%	99,741,237	2.22%	10	10	0.00%	0	0.00%	0	0.00%	0

Executions on Exchange Traded Products are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement. A part of the ETP orders are transmitted to brokers. Depending on the parameters of the orders, traders may have to execute and in this case they perform an RFQ process to get the best possible results. This is the case, in particular, for ETF with the type of order "NAV guaranteed".

To perform its controls for ETF, Dealing Services uses a 'RFQ' report highlighting competing quotes received from counterparties (including justifications when execution prices differ from best quotes or if there have been insufficient number of quotes).

Execution quality is regularly reviewed by Dealing Services desks (first level controls), Compliance teams (second level controls) and with the client's investments strategy teams.

In 2019, Deutsche Bank and Societe Generale were replaced by Tradeweb and Merrill Lynch in the Top 5. The MTF Tradeweb is ranked 1st in the report.

Table 11 RTO: Exchange Traded Products

Class of Instrument	12 - Exchange traded products										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
OPTIVER V.O.F (7245009KRYSAYB2QCC29)	25.74%	142,243,838	8.29%	33	33	0.00%	0	0.00%	0	0.00%	0
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	19.48%	107,647,253	13.07%	52	52	0.00%	0	0.00%	0	0.00%	0
JANE STREET FINANCIAL LIMITED (549300ZHEHX8M31RP142)	13.98%	77,237,248	13.82%	55	55	0.00%	0	0.00%	0	0.00%	0
FLOW TRADERS B.V. (549300CLJ19XDH12XV51)	11.66%	64,444,444	16.08%	64	64	0.00%	0	0.00%	0	0.00%	0
COMMERZBANK AG (851WYGNLUQLFZB5YGB56)	10.21%	56,439,186	30.40%	121	121	0.00%	0	0.00%	0	0.00%	0

In RTO mode, Susquehanna and Natixis have been replaced by Optiver and Jane Street in 2019. Flow Traders has seen its market share falling from 31.67% to 11.66%. Optiver was ranked 1st with 25.74% market share.

Our execution is limited to Exchange Traded Funds (ETF's), which are traded on a Request for Quote (RFQ) basis. Once RFQ's have been received, our dealers will select the best price before proceeding to trade.

LISTED DERIVATIVES

EQUITY DERIVATIVES – OPTIONS AND FUTURES ADMITTED TO TRADING ON A TRADING VENUE

Table 12 Execution: Equity Derivatives

Class of Instrument	8 - Equity derivatives - Listed										
Notification if <1 average trade per business day in the previous Year	Y										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
TRADITION SECURITIES AND FUTURES (969500ULC0Y1IG0A4072)	23.08%	1,238,894,653	29.17%	70	125	0.00%	0	0.00%	0	0.00%	0
AUREL BGC (SRJTDGZG4559ESIYLD31)	14.28%	766,656,651	12.50%	30	32	18.75%	6	0.00%	0	0.00%	0
CREDIT SUISSE SEC (EUROPE) LIMITED (DL6FFRRL74S01HE2M14)	12.10%	649,386,524	5.00%	12	12	0.00%	0	0.00%	0	0.00%	0
SOCIETE GENERALE SA (02RNE8IBXP4R0TD8PU41)	11.97%	642,576,272	12.08%	29	36	0.00%	0	0.00%	0	0.00%	0
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	9.98%	535,910,352	11.67%	28	44	0.00%	0	0.00%	0	0.00%	0

We mainly trade in equity indices and options, where price is again the key driver. Our dealers aim to identify liquidity pools with a view to approaching at least three counterparties (usually banks) to enter an RFQ process. Counterparties are chosen on the basis of previous performance and market liquidity.

Occasionally, if a portfolio manager has requested a particularly illiquid instrument, our dealers will suggest an alternative where the underlying is a close substitute in a more liquid market.

Where we trade away from the listed order book for block trades or options, liquidity is an additional factor. Our dealers will execute with the counterparty which has shown the best price from their selection of market makers.

In 2019, Deutsche Bank has fallen out of the Top 5 venues for execution, while Credit Suisse and Societe Generale provided competitive pricing to make it into the Top 5.

Table 13 RTO: Equity Derivatives

Class of Instrument	8 - Equity derivatives - Listed										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
BNP PARIBAS (R0MUWSPU8MPRO8K5P83)	34.55%	877,396,840	36.50%	377	1,726	8.34%	144	14.02%	242	0.00%	0
DEUTSCHE BANK AG (7LTFWZYICNSX8D621K86)	18.02%	457,618,658	20.62%	213	1,415	0.28%	4	0.00%	0	0.00%	0
TRADITION SECURITIES AND FUTURES (969500ULC0Y1IG0A4072)	16.72%	424,631,827	10.36%	107	184	8.70%	16	7.61%	14	0.00%	0
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	11.03%	280,028,615	11.62%	120	421	0.00%	0	0.00%	0	0.00%	0
AUREL BGC (5RJTDGZG4559ESIYLD31)	5.16%	131,124,411	2.23%	23	38	36.84%	14	0.00%	0	0.00%	0

Speed and price are the most important factors when selecting which counterparty to use to place orders into the listed order book of a trading venue.

BNP Paribas has remained our top counterparty while Societe Generale has replaced JP Morgan in 2019 for RTO. The activity has been transferred to Paris during summer.

INTEREST RATE DERIVATIVES – FUTURES AND OPTIONS ADMITTED TO TRADING ON A TRADING VENUE

Table 14 Execution: Interest Rate Derivatives - Listed

Class of Instrument	4 - Interest rates Derivatives - Listed										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
BNP PARIBAS (R0MUWSPU8MPRO8K5P83)	39.36%	5,002,520,636	49.54%	482	2579	1.43%	37	4.19%	108	0.00%	0
DEUTSCHE BANK AG (7LTFWZYICNSX8D621K86)	13.54%	1,721,504,758	7.09%	69	5107	0.18%	9	0.00%	0	0.00%	0
TRADITION SECURITIES AND FUTURES (969500ULC0Y1IG0A4072)	12.80%	1,626,657,385	20.25%	197	233	0.00%	0	0.00%	0	0.00%	0
UBS EUROPE SE (5299007QVIQ7I064NX37)	10.81%	1,373,734,589	4.93%	48	106	0.00%	0	0.00%	0	0.00%	0
JPMORGAN CHASE BK NA (7H6GLXDRUGQF57RNE97)	8.99%	1,142,647,505	2.36%	23	23	0.00%	0	0.00%	0	0.00%	0

Price is the most important execution factor we consider in relation to trading in credit derivatives. In order to complete orders, liquidity can be a factor in relation to less liquid swaps or large in size orders.

Our top 5 counterparties has not changed in 2019 with BNP Paribas and Deutsche Bank our 2 best counterparties in terms of competitive pricing. This reflects a shift in our activity to trade more Emerging Markets Credit derivatives where BNP Paribas have provided competitive prices and where Societe Generale SA are not as active.

Table 15 Execution: Interest Rate Derivatives - OTC

Class of Instrument	4 - Interest rates Derivatives - OTC										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRHTR1V493)	28.38%	2,327,711,161	23.83%	127	127	0.00%	0	0.00%	0	0.00%	0
BNP PARIBAS (R0MUMSFPU8MPRO8K5P83)	22.26%	1,825,642,633	32.83%	175	175	0.00%	0	0.00%	0	0.00%	0
JPMORGAN SECURITIES PLC (K6Q0W1PS1L104IQL9C32)	12.41%	1,017,837,615	20.08%	107	107	0.00%	0	0.00%	0	0.00%	0
J.P. MORGAN AG (549300ZK53CNGEEI6A29)	9.31%	763,198,048	4.69%	25	25	0.00%	0	0.00%	0	0.00%	0
CITIGROUP GLOBAL MARKETS EUROPE AG (6TJCK1B7E7UTXP528Y04)	7.97%	653,955,737	4.32%	23	23	0.00%	0	0.00%	0	0.00%	0
GOLDMAN SACHS INTERNATIONAL (W22LROWP2IHZNBB6K528)	7.68%	629,887,832	5.82%	31	31	0.00%	0	0.00%	0	0.00%	0
MORGAN STANLEY EUROPE SE (54930056FHW7GIWYY08)	4.39%	359,837,504	1.69%	9	9	0.00%	0	0.00%	0	0.00%	0

We traded over the counter (OTC) swaps and swaptions in this category of financial instrument.

Our dealers focus mainly on price, and request RFQ's from different counterparties depending on where they expect liquidity to be available. In order to complete orders, liquidity can be a factor in relation to less liquid swaps or large in size orders. Cost is also an important factor, as fees need to be incorporated into the overall execution result.

In the top 5 venues, Citigroup remains our top counterparty followed by BNP Paribas and JP Morgan. BAML has fallen outside the top 5 in 2019 replaced by Morgan Stanley. This reflects a higher percentage of our interest rate swaps trading volumes over 2019 being focused in Emerging Markets where Morgan Stanley have provided competitive prices.

As with other OTC products, our list of authorised OTC derivative Counterparts comprises major banks that have satisfied our criteria to protect clients from settlement risk and includes the execution of ISDA/CSA documentation to support Bilateral trading or Clearing agreements.

We have adapted our trading architecture so that we are ready to meet modified US and European regulations which require changes to how we clear, trade, report and record eligible derivative contracts. We have identified and incorporated a specific electronic trading venue for OTC derivatives into our suite of trading applications and we will review our arrangements in this as we do with all other venues.

Table 16 RTO: Interest Rate Derivatives – Listed

Class of Instrument	4 - Interest rates Derivatives - Listed										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders
BNP PARIBAS (R0MUMSFPU8MPRO8K5P83)	60.87%	6,641,871,239	50.25%	907	3,094	5.91%	183	14.48%	448	0.00%	0
DEUTSCHE BANK AG (7LTFWZYICNSX8D621K86)	11.62%	1,267,903,499	10.53%	190	639	11.11%	71	0.00%	0	0.00%	0
SOCIETE GENERALE SA (02RNE8IBXP4R0TD8PU41)	7.10%	774,713,180	13.41%	242	449	0.00%	0	0.00%	0	0.00%	0
TRADITION SECURITIES AND FUTURES (969500ULC0Y1IG0A4072)	5.27%	575,517,660	9.92%	179	270	2.59%	7	11.85%	32	0.00%	0
JPMORGAN SECURITIES PLC (K6Q0W1PS1L104IQL9C32)	4.19%	457,753,743	5.71%	103	131	19.85%	26	17.56%	23	0.00%	0

Speed and price are the most important factors when selecting which counterparty to use to place orders into the listed order book of a trading venue.

Where we trade away from the listed order book for block trades or options, liquidity is an additional factor. Our dealers will execute with the counterparty which has shown the best price from their selection of market makers. In 2019, Goldman went off the Top 5 in favour of Societe Generale.

CREDIT DERIVATIVES – OTHER CREDIT DERIVATIVE

Table 17 Execution: Credit Derivatives

Class of Instrument		5 - Credit derivatives OTC										
Notification if <1 average trade per business day in the previous Year		N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders	
BNP PARIBAS (R0MUWSFP08MPRO8K5P83)	24.56%	1,150,829,823	16.11%	73	73	0.00%	0	0.00%	0	0.00%	0	
MORGAN STANLEY AND CO. INT PLC (4PQUHN3JPF6FNF3BB653)	14.49%	679,143,568	15.01%	68	68	0.00%	0	0.00%	0	0.00%	0	
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRHTR1V493)	11.84%	554,537,682	13.02%	59	59	0.00%	0	0.00%	0	0.00%	0	
GOLDMAN SACHS INTERNATIONAL (W22LROWP2IHZNBB6K528)	11.82%	553,866,916	15.45%	70	70	0.00%	0	0.00%	0	0.00%	0	
JPMORGAN SECURITIES PLC (K6Q0W1PS1L104IQL9C32)	10.46%	490,050,093	8.83%	40	40	0.00%	0	0.00%	0	0.00%	0	

Price is the most important execution factor we consider in relation to trading in credit derivatives. In order to complete orders, liquidity can be a factor in relation to less liquid swaps or large in size orders. On Credit derivative OTC, BNP Paribas is also our top venue as for the previous year and Societe Generale with its competitive pricing has replaced Citigroup.

FOREIGN EXCHANGE

CURRENCY DERIVATIVES – SWAPS, FORWARDS, AND OTHER CURRENCY DERIVATIVES

Table 18 Execution: Currency Derivatives – Listed

Class of Instrument		6 - Currency derivatives - Listed										
Notification if <1 average trade per business day in the previous Year		Y										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive ordres	Percentage of directed orders	Nbr Directed Orders	
JPMORGAN CHASE BK NA (7H6GLXDRUGQF57RNE97)	40.21%	1,470,447,306	22.29%	37	38	0.00%	0	0.00%	0	0.00%	0	
JPMORGAN SECURITIES PLC (K6Q0W1PS1L104IQL9C32)	34.08%	1,246,354,487	18.67%	31	37	21.62%	8	8.11%	3	0.00%	0	
BNP PARIBAS (R0MUWSFP08MPRO8K5P83)	13.88%	507,418,144	45.78%	76	93	0.00%	0	0.00%	0	0.00%	0	
DEUTSCHE BANK AG (7LTFWZYICNSX8D621K86)	5.18%	189,342,335	4.82%	8	8	0.00%	0	0.00%	0	0.00%	0	
UBS EUROPE SE (5299007QVIQ7IO64NX37)	5.00%	182,984,194	3.01%	5	5	0.00%	0	0.00%	0	0.00%	0	
GOLDMAN SACHS INTERNATIONAL (W22LROWP2IHZNBB6K528)	1.48%	53,976,792	3.61%	6	6	0.00%	0	0.00%	0	0.00%	0	

Price is the most important factor when executing listed currency derivatives. We usually put 3 counterparties in our RFQ in order to obtain the best possible price.

Table 19 Execution: Currency Derivatives – OTC

Class of Instrument	6 - Currency derivatives - OTC						
Notification if <1 average trade per business day in the previous Year	N						
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	% Total Exec	Nbr of Execs	Global Nbr of Execs	Nbr Of Fills	Global Nbr of Fills
<i>FXALL Multilateral Trading Facility (TRAL)</i>	72.44%	102,245,713,376	93.86%	29,209	31,120	29,231	31,150
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	15.02%	21,199,815,475	18.92%	5,887	31,120	5,892	31,150
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	9.74%	13,743,099,834	12.72%	3,960	31,120	3,963	31,150
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRH)	8.64%	12,196,433,217	6.01%	1,871	31,120	1,874	31,150
GOLDMAN SACHS INTERNATIONAL (W22LROWP2IHZNBB6K5)	8.29%	11,707,172,110	13.89%	4,322	31,120	4,325	31,150

We predominantly execute transactions in foreign exchange forwards, swaps, non-deliverable forwards and OTC currency options using an RFQ process. Price is usually the most important factor when we select which counterparty to trade with. For Fixing orders each counterparty has to offer the same price, hence cost is the most important factor.

It is a fiduciary responsibility to protect our Clients from FX settlement risk. Our list of authorised Counterparts comprises major banks that have met specific requirements we have set out in terms of acceptable financial strength, proven market share, and price competitiveness. As a result, our list of Counterparts for these financial instruments is purposefully selective. In order to complete orders, liquidity can be a factor for less liquid currency pairs or where market conditions are challenging. Having pre-arranged credit lines or limits in place can also be a factor in precluding some client orders from trading at the best price provided by the RFQ process.

Where we employ algorithms to achieve the best result, counterparties are chosen given the strategy and suitability of the algorithm.

In the top 5 venues, we traded the majority of our orders using the trading venue FX ALL. When we use electronic trading venues, we are able to ask a greater number of our Counterparties for quotes at the same time and then select the best price. Using this process is a more efficient way to deliver best execution which explains the high percentage of orders traded using the FX ALL platform. BNP Paribas and Societe Generale, who have proven to show competitive prices in G7 Currency swaps, have joined the top 5 group.

As a part of our trading framework, we monitor our trading efficiency by employing continuous trade cost analysis (TCA) and by conducting periodic reviews of Counterparties which incorporate hit ratio competitiveness studies.

Table 20 RTO: Currency Derivatives – Listed

Class of Instrument	6 - Currency derivatives - Listed										
Notification if <1 average trade per business day in the previous Year	N										
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	Proportion of orders executed as percentage of total in that class	Nbr Exec	Nbr Fills	Percentage of passive orders	Nbr passive Orders	Percentage of aggressive orders	Nbr aggressive orders	Percentage of directed orders	Nbr Directed Orders
JPMORGAN CHASE BK NA (7H6GLXDRUGQFUS7RNE97)	25.46%	301,997,218	31.98%	157	159	0.00%	0	0.00%	0	0.00%	0
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	23.59%	279,824,891	35.23%	173	453	7.95%	36	9.05%	41	0.00%	0
JPMORGAN SECURITIES PLC (K6Q0W1PS1L104IQL9C32)	19.68%	233,516,978	14.46%	71	78	12.82%	10	37.18%	29	0.00%	0
DEUTSCHE BANK AG (7LTFZYICNSX8D621K86)	16.35%	194,011,740	5.30%	26	42	0.00%	0	0.00%	0	0.00%	0
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	9.61%	114,028,177	6.72%	33	56	0.00%	0	0.00%	0	0.00%	0
GOLDMAN SACHS INTERNATIONAL (W22LROWP2IHZNBB6K528)	2.28%	27,052,755	2.65%	13	13	0.00%	0	0.00%	0	0.00%	0

DEBT INSTRUMENTS

Table 21 Execution: Bonds

Class of Instrument	2 - Debt Instruments - Bonds						
Notification if <1 average trade per business day in the previous Year	N						
Top 5 Execution venues ranked in terms of trading volumes (descending order)	Proportion of volume traded as a percentage of total in that class	Volume	% Total Exec	Nbr of Execs	Global Nbr of Execs	Nbr Of Fills	Global Nbr of Fills
<i>Bloomberg Multilateral Trading Facility (BMTF)</i>	17.47%	3,370,637,345	17.97%	2,229	12,404	2,229	12,404
GOLDMAN SACHS INTERNATIONAL (W22LROWP2IHZNBB6K5)	1.50%	288,437,590	1.23%	152	12,404	152	12,404
NOMURA INTERNATIONAL PLC (DGQCSV2PHVF7I2743539)	1.28%	246,549,349	1.02%	126	12,404	126	12,404
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRH)	1.12%	216,035,925	1.37%	170	12,404	170	12,404
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	0.95%	182,695,737	0.64%	80	12,404	80	12,404

Trading is conducted following the RFQ process. Price is the most important factor when we select a counterparty. In order to complete orders, liquidity may become the most important factor. This is relevant where the order is of a large size for the market or for the security with limited availability.

The composition of the top 5 trading venues changed to include Goldman, Nomura and Societe Generale in 2019, which have provided more competitive prices this year. JP Morgan, Barclays and HSBC have left the group. Our Traders have a broad range of eligible Counterparties with which to trade in this classification of delivery versus payment (DVP) instruments. As our Counterparts capacity to providing competitive prices (liquidity) changes over time, so our Traders will adapt their Counterparty selection and thus we would expect the composition and order of the top 5 venues to also be dynamic. Our Global Best Execution policy provides Dealers with a framework in terms of selecting an appropriate number of Counterparts given the characteristics of the order and a requirement to document a reason on our audit trail which justifies executions where less than 3 quotes have been recorded. This is particularly relevant in parts of the market where specific bonds have reached a point in their maturity so that they are no longer widely quoted or traded. Our Traders have access to trading tool which consolidates and sorts Counterparty bond axes in real time. The tool identifies axed Banks or Brokers which can be incorporated into Counterparty selection for any given trade, providing the Trader with the opportunity to negotiate a super execution price.