

**ANNUAL TOP FIVE
EXECUTION VENUE REPORT 2023
TRADING YEAR 2022**

Contents

INTRODUCTION	3
CONTENT OF THE REPORT	3
Overview of the quantitative reports	3
Scope of the report	4
General disclosure about qualitative assessment	4
REPORTING BY INSTRUMENTS	7
Equities – Shares & Depositary Receipts	7
Debt instruments – Bonds	12
Debt instruments – Money market instruments	13
Interest Rates Derivatives – Futures and options admitted to trading on a trading venue	14
Interest Rates Derivatives – Swaps, forwards and other interest rates derivatives	15
Credit Derivatives – Other credit derivatives	16
Currency Derivatives – Futures and options admitted to trading on a trading venue	17
Currency Derivatives – Swaps, forwards and other currency derivatives	17
Equity Derivatives – Futures and options admitted to trading on a trading venue	19
Equity Derivatives – Swap and other equity derivatives	20
Securitized Derivatives	21
Contract For Difference	21
Exchange traded products	22
SECURITIES FINANCING TRANSACTIONS (SFT)	23
Repo and Reverse Repo	23
DISCLAIMER	25

INTRODUCTION

In accordance with Markets and Financial Instruments Directive and Regulation (MIFID II/MIFIR), BNPP PARIBAS Dealing Services (“Dealing Services”), as investment firm, is required to publish an annual report regarding the quality of execution top 5 venues in term of trading volumes for all executed clients orders per class of financial instruments.

This report is presenting the top 5 venue reports per class of instrument for the trading year 2022 as required and described in the Regulatory Technical Standard RTS 28 of MIFIR (Delegated regulation C(2016) 3337 final) and in the COMMISSION DELEGATED REGULATION (EU) 2017/576.

CONTENT OF THE REPORT

OVERVIEW OF THE QUANTITATIVE REPORTS

RTS 28 requires to report per class of instruments the top 5 venues and display the following data:

- venue name and identifier;
- volume of client orders executed on that execution venue expressed as a percentage of total executed volume;
- number of client orders executed on that execution venue expressed as a percentage of total executed orders;
- percentage of the executed orders that were passive and aggressive orders;
- percentage of orders that were directed orders;
- Confirmation of whether it has executed an average of less than one trade per business day in the previous year in that class of financial instruments.

Dealing Services provides both the services of execution and reception-transmission of orders depending on the type of instrument and /or the type of order and/or the parameters of the order. One report must be produced per instrument and per type of investments services provided by Dealing Services.

The following table shows all classes of instruments handled by Dealing Services in 2022 and the type of services provided by Dealing Services (execution and/or transmission):

ESMA Class of financial instruments		Service of execution	Service of transmission
Equities – Shares & Depository Receipts	Tick Size liquidity band 1 to 2	YES	YES
	Tick Size liquidity band 3 to 4	YES	YES
	Tick Size liquidity band 5 to 6	YES	YES
Debt instruments	Bonds	YES	
	Money market	YES	
Interest rates derivatives	Futures and options admitted to trading on a trading venue	YES	YES
	Swaps, forwards, and other interest rates derivatives	YES	
Credit derivatives	Futures and options admitted to trading on a trading venue		
	Other credit derivatives	YES	
Currency derivatives	Futures and options admitted to trading on a trading venue	YES	YES
	Swaps, forwards, and other currency derivatives	YES	
Structured finance instruments			
Equity derivatives	Options and Futures admitted to trading on a trading venue	YES	YES
	Swaps and other equity derivatives	YES	
Securitized derivatives	Warrants and Certificate Derivatives		YES
	Other securitized derivatives		
Commodity derivatives and emission allowances Derivatives	Options and Futures admitted to trading on a trading venue		YES
	Other commodities derivatives and emission allowances derivatives		
Contract for Difference		YES	YES
Exchange traded products	Exchange traded funds, exchange traded notes and exchange traded commodities	YES	YES
Emission allowances			
Other instruments			
SFT	repo/reverse repo	YES	

N.B 1: If the line is grey, it means that Dealing Services has not traded these instruments in 2022.

Equity instruments must be classified according to their liquidity as determined under the tick size regime as set out in Directive 2014/65/EU of the European Parliament and the Council. There are three liquidity categories known as “bands”. As Dealing Services has traded shares of the three bands either executing or transmitting, six separate Top 5 Venue tables are published in this document.

SCOPE OF THE REPORT

The report includes

- all transactions executed or transmitted by Dealing Services in 2022
- all transactions delegated to BNP PARIBAS AM UK, BNP PARIBAS AM ASIA and BNPP AM US and that have been executed or transmitted by the local dealing desk of these entities on behalf of Dealing Services orders in 2022

GENERAL DISCLOSURE ABOUT QUALITATIVE ASSESSMENT

The RTS 28 requires, for each class of instruments, a summary of the analysis and conclusions Dealing Services draw from its detailed monitoring of the quality of execution obtained on the execution venues where it has executed all client orders in 2022.

Some of the requirements apply to all instruments and are commented below. Some will be detailed instruments by instruments.

- (a) an explanation of the relative importance the firm gave to the execution factors of price, costs, speed, likelihood of execution or any other consideration including qualitative factors when assessing the quality of execution;

A major part of Dealing Services trading activity of Dealing Services is directly performed under the European Union regulations; as such, traders have to comply with MiFID requirements, especially those related to best selection and execution. In all local trading desks of BNP PARIBAS Asset Management entities to which Dealing Services can delegate the execution of orders (BNPP AM UK, BNPP AM Asia and BNPP AM US), MiFID requirements will be respected throughout these entities as long as they are not in contradiction with local regulations.

As principles defined by its execution policies to meet MiFID II best execution requirements, executing clients' orders using either trading venues or counterparties and brokers authorised by its clients, BNP Paribas Dealing Services generally takes into account several parameters which can be combined or not and may vary according to the instrument types, as described below :

- ⇒ Price of the instrument
- ⇒ Potential market impact
- ⇒ Market liquidity & conditions
- ⇒ Order size & order type
- ⇒ Likelihood of execution
- ⇒ Speed of execution
- ⇒ Likelihood of settlement
- ⇒ Direct and/or indirect transaction costs
- ⇒ Specific client instructions
- ⇒ Counterparties trading capacities combined with competitive pricing & qualitative coverage as per their overall performances defined by our detailed ranking (cf. point (d) below)
- ⇒ Legal documentation

Transactions are executed with the pre-selected intermediaries that are the best match for these criteria, which are ranked differently depending on the financial instrument and the order type.

- (b) a description of any close links, conflicts of interests, and common ownerships with respect to any execution venues used to execute orders;

Dealing Service is fully owned subsidiary of BNP Paribas Asset Management. Dealing Services may use BNP Paribas group's affiliated brokers/counterparties. According to internal compliance procedures, the in-house brokers will be subject to the same broker selection and evaluation process and rules as any other broker/counterparties, and receives no preferential consideration.

Dealing Services does not have any links or conflict of interest with trading venues.

- (c) a description of any specific arrangements with any execution venues regarding payments made or received, discounts, rebates or non-monetary benefits received;

Dealing Services does not have any specific arrangements with any execution venues regarding payments made or received discounts, rebates or non-monetary benefits. Dealing Services may receive minor material non-monetary benefits from execution venues and these are only accepted after Dealing Services have made consideration in line with its regulatory obligations and with its own internal procedures.

- (d) an explanation of the factors that led to a change in the list of execution venues listed in the firm's execution policy, if such a change occurred;

Trading Platforms:

Platforms to be used are selected based on the following criteria:

- ⇒ Traded products
- ⇒ Operational efficiency
- ⇒ Liquidity access

Hereafter is a non-exhaustive list of the main platforms currently used within Dealing Services trading desks:

- ⇒ Liquidnet (Equity and Fixed Income)
- ⇒ ITG POSIT (Equity)
- ⇒ Tradeweb (Equity and Fixed Income)
- ⇒ TSOX (Fixed Income)
- ⇒ MarketAccess (Fixed Income)
- ⇒ FXAll (Forex)
- ⇒ CBOE / LIS (Equity, added in 2018 to have a better access to the available buy side liquidity)

Counterparties and brokers:

Dealing Services does not determine the list of Counterparties and Brokers with which it is authorised to work; the clients give the list.

Twice a year, Dealing Services evaluates the quality of the execution services provided by the brokers and the counterparties with whom it has worked. Each intermediary is evaluated and noted according to a set of quantitative and qualitative criteria (electronic offer, market coverage and instruments, proposed prices, liquidity provided, post trade follow-up...). This evaluation is communicated to clients.

The results of this execution vote are used, among other criteria, on a daily basis as part of the best selection of the brokers/counterparties and the best execution processes.

Brexit

To answer the Brexit challenges, Dealing Services has switched gradually in 2020 trading with UK market intermediaries to their EUR based entities. This is why several entities of a same corporate group can appear in the top 5 venues reports, displacing other brokers/counterparties that are used on a regular basis on the 6th or 7th rank.

In that case, so as to provide additional information on the other market intermediaries chosen for execution that are deemed relevant to Dealing Services' order execution practices, the report will list the top 6 or top 7 venues.

For the trading platforms, which have also been migrated to the EUR based entities, executions done on both UK and EUR platforms have been gathered to show the actual part of execution done on platforms.

- (e) an explanation of how order execution differs according to client categorisation, where the firm treats categories of clients differently and where it may affect the order execution arrangements;

- ⇒ All Dealing Services' clients are professional clients. All clients' orders are dealt with the same diligence.

- (f) an indication that other criteria have been favoured, or not, over the price and the immediate costs of executing orders from retail clients, and an explanation of how these other criteria have been decisive in achieving the best possible result in terms of total cost for the customer.

- ⇒ Dealing Service has no retail client.

- (g) an explanation of how the investment firm has used any data or tools relating to the quality of execution, including any data published under Delegated Regulation (EU) 2017/575.

- ⇒ Will be detailed instrument by instruments.

- (h) where applicable, an explanation of how the investment firm has used output of a consolidated tape provider established under Article 65 of Directive 2014/65/EU.
 - ⇒ Dealing Services does not use output of a consolidated tape provider.
- (i) where applicable, disclose the identity of the main venues investment firm commonly selects via DEA arrangements and the existence of any close links and specific arrangements with such execution venues.
 - ⇒ Dealing Services does not select venue via DEA arrangements.

REPORTING BY INSTRUMENTS

EQUITIES – SHARES & DEPOSITARY RECEIPTS

The traders who determine which execution factors are most important and, therefore the strategy to employ in order to obtain the best possible result assess each order.

With the aim of getting the best execution price, Dealing Services traders takes into account, the execution cost (brokerage costs) agreed between the clients and their brokers.

After the nature of the order, the price (including implicit cost) is usually the execution factor the traders consider to be most important when dealing in equities, although speed is also an important factor when they want to take advantage of a particular price observed in the market, or to avoid an adverse market impact if the order is large in size or the market is volatile.

The execution factors are generally driven by the price and order size, and then the likelihood of execution (market liquidity and conditions), speed of execution and the settlement arrangements.

The vast majority of shares orders handled by Dealing Services are transmitted to brokers and will appear in the transmission reports of the different liquidity bands.

The shares orders that are executed directly by the trading desks corresponds to less liquid shares or larger sizes that may be executed on conditionnel venues that matches interests on an anonymous basis or are bilaterally executed with a broker(s) that has published Indication Of Interest, who has the reverse interests and who offers the best execution conditions.

It is up to the negotiator to use the different modes of execution offered by brokers and counterparties (blocks, trading algorithms, program trading...)

For the three liquidity bands and for execution and transmission services, Dealing Services uses TCA (Transaction Cost Analysis) analysis to monitor its execution performance and control execution quality. For each transaction, execution price is compared to a benchmark price value provided by an independent TCA data provider. Reference benchmarks have been selected by order type to obtain the most effective, fair and coherent benchmarking results. Deviations from benchmarks above pre-determined threshold are all justified by traders.

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.

1. Execution reports

Liquidity band 5 to 6 corresponds to an average daily number of transactions from 2000 trades per day (as defined under the tick size regime as set out in Directive 2014/65/EU).

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
LIQUIDNET SYSTEMS (LIQU)	46.05%	36.03%	66.46%	18.23%	0.00%
POSIT MTF (ITGL)	22.77%	30.63%	56.29%	19.18%	0.00%
OPTIVER V.O.F (7245009KRY SAYB2QCC29)	5.88%	6.75%	0.00%	100.00%	0.00%
J.P. Morgan SE (549300ZK53CNGEEI6A29)	4.94%	6.96%	0.00%	92.75%	0.00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	3.44%	1.97%	0.00%	0.00%	0.00%

The MTF (Multilateral Trading Platform) "Liquidnet System" is ranked first in the report. This trading platform being a platform that matches interests on an anonymous basis to minimize the possible impact of orders in the market, the only counterparty that Dealing Services is facing is Liquidnet EU limited (entity opened for Brexit purpose).

For this category, compare to last year, Liquidnet and Posit have been used to trade larger blocks that might have an impact in the market. We have access with these two platforms to sell side and buy side liquidity pools. In this category, we have exposed a large range of our flows Large caps and Small & Mid-caps.

This year, Liquinet is still the platform that we use for a large part of our orders included in this category. POSIT MTF ranks the second place as for Liquinet a majority of passive orders. It has clearly progressed in particularly for aggressive orders. OPTIVER V.O.F is in third place.

Top 5 counterparties on Liquinet

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	Proportion Total Exec
LIQUIDNET SYSTEMS (LIQU)	46.05%	36.03%
LIQUIDNET EU LIMITED (2138005N5TO2UJR67I36)	100.00%	36.03%

We only deal with the European entity Liquinet. Its volume continued to increase compared to last year.

Top 5 counterparties on Posit

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	Proportion Total Exec
POSIT MTF (ITGL)	22.77%	30.63%
VIRTU ITG EUROPE LIMITED (213800EEC95PRUCEUP63)	56.17%	10.70%
J.P. Morgan SE (549300ZK53CNGEEI6A29)	18.98%	9.97%
EXANE (969500UP76J52A9OXU27)	8.11%	3.22%
BARCLAYS BANK IRELAND PLC (2G5BKIC2CB69PRJH1W31)	5.05%	1.25%
CITIGROUP GLOBAL MARKETS EUROPE AG	3.67%	2.28%

Regarding the POSIT MTF, The VIRTU ITG EUROPE liquidity pool was the most active, the other four brokers represent around 35% of the volumes traded.

Liquidity band 3 to 4 corresponds to an average daily number of transactions from 80 trades to 1999 trades per day (as defined under the tick size regime as set out in Directive 2014/65/EU).

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
LIQUIDNET SYSTEMS (LIQU)	40.80%	37.01%	72.52%	12.40%	0.00%
POSIT MTF (ITGL)	23.47%	24.51%	47.87%	24.91%	0.00%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)	6.60%	6.74%	17.07%	7.98%	0.00%
CREDIT SUISSE BANK (EUROPE), S.A. (959800TMGPWX7NYM4R72)	4.33%	2.80%	56.30%	12.95%	0.00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	3.89%	1.81%	57.33%	25.33%	0.00%

The MTF (Multilateral Trading Platform) "Liquinet System" is ranked 1 in the report. This trading platform being a platform that matches interests on an anonymous basis to minimize the possible impact of orders in the market. The only counterparty that Dealing Services is facing is Liquinet EU limited (EU based entity opened for Brexit purpose/ European entity created following Brexit).



In 2022, we have diversified our execution venues, using Liquidnet, POSIT MTF, Bofa Securities, Credit Suisse Bank and Goldman Sachs International for passive strategies for the execution orders with lower liquidity than the previous category.

Top 5 counterparties on Liquidnet

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	Proportion Total Exec
LIQUIDNET SYSTEMS (LIQU)	40.80%	37.01%
LIQUIDNET EU LIMITED (2138005N5TO2UJR67I36)	100.00%	37.01%

We only deal with the European entity Liquidnet

Top 5 counterparties on Posit

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	Proportion Total Exec
POSIT MTF (ITGL)	23.47%	24.51%
VIRTU ITG EUROPE LIMITED (213800EEC95PRUCEUP63)	57.03%	11.68%
J.P. Morgan SE (549300ZK53CNGEEI6A29)	11.89%	1.81%
BARCLAYS BANK IRELAND PLC (2G5BKIC2CB69PRJH1W31)	9.58%	2.96%
EXANE (969500UP76J52A9OXU27)	5.35%	1.32%
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	3.96%	0.99%

Regarding POSIT MTF, we have dealt more than 20% of orders in this category. VIRTU is the most active venue with nearly 60% of volumes traded, J.P Morgan, Barclays, Exane et Société Générale for around 30% of the volumes traded on POSIT.

Liquidity band 1 to 2 corresponds to an average daily number of transactions less than 80 trades per day (as defined under the tick size regime as set out in Directive 2014/65/EU).

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
LIQUIDNET SYSTEMS (LIQU)	47.05%	48.99%	61.76%	23.00%	0.00%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)	9.16%	6.48%	65.19%	21.52%	0.00%
POSIT MTF (ITGL)	8.82%	4.05%	52.39%	7.58%	0.00%
CBOE Europ Equities (BCXE)	8.71%	8.91%	3.70%	96.30%	0.00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	7.05%	4.86%	40.28%	22.22%	0.00%

For the last category, Liquidnet is this year the first counterparty with a majority of passive orders as BOFA, the second broker of the list used as part of a passive strategy. CBOE ranked in fourth position had the largest part of orders executed aggressively.



Top 5 counterparties on Liquidnet System :**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	Proportion Total Exec
LIQUIDNET SYSTEMS (LIQU)	47.05%	48.99%
LIQUIDNET EU LIMITED (2138005N5TO2UJR67I36)	100.00%	48.99%

We only deal with the European entity Liquidnet. The volume has slightly decreased compared to 2021.

Top 5 counterparties on POSIF MTF**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	Proportion Total Exec
POSIT MTF (ITGL)	8.82%	4.05%
CITIGROUP GLOBAL MARKETS EUROPE AG	85.04%	0.81%
VIRTU ITG EUROPE LIMITED (213800EEC95PRUCEUP63)	11.75%	2.02%
J.P. Morgan SE (549300ZK53CNGEEI6A29)	2.54%	0.81%
SANFORD C. BERNSTEIN IRELAND LTD (549300W30847BJ1LD502)	0.68%	0.40%

POSIT MTF totals less than 9% of orders for this category with the leading group Citigroup, Virtu et J.P. Morgan for about 97 % of volumes, then Sanford for just less than 3%.

Top 5 counterparties on CBOE Europ Equities**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	Proportion Total Exec
CBOE Europ Equities (BCXE)	8.71%	8.91%
EXANE (969500UP76J52A9OXU27)	38.06%	3.64%
INSTINET GERMANY GMBH (213800A7BEQATAOUAN40)	19.24%	1.21%
LIQUIDNET EU LIMITED (2138005N5TO2UJR67I36)	13.09%	0.40%
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	11.53%	1.21%
MORGAN STANLEY EUROPE SE (54930056FHWP7GIWYY08)	7.15%	1.21%

CBOE totals less than 9% of orders for this category with the leading group Exane, Instinet and Liquidnet for about 70% of volumes followed by Société Générale for just less than 12%.



2. Transmission reports

Tick Size liquidity band 5 and 6

Class of Instrument		1 - Equities - Shares & Depository 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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH		10.94%	8.58%	45.62%	24.92%	0.00%
J.P. Morgan SE (549300ZK53CNGEEI6A29)		10.44%	9.38%	40.36%	28.97%	0.00%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)		9.98%	9.20%	58.83%	24.52%	0.00%
CITIGROUP GLOBAL MARKETS EUROPE AG		9.31%	8.93%	43.95%	16.76%	0.00%
BARCLAYS BANK IRELAND PLC (2G5BKIC2CB69PRJH1W31)		7.32%	6.95%	56.36%	21.28%	0.00%

We can observe that the first five counterparties total more than 50% of the volumes traded with a greater proportion of passive orders than aggressive orders, in particular for BOFA.

Tick Size liquidity band 3 and 4

Class of Instrument		1 - Equities - Shares & Depository 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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)		11.97%	10.37%	53.05%	31.51%	0.00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH		10.94%	10.29%	43.76%	30.65%	0.00%
UBS EUROPE SE (5299007QVIQ7IO64NX37)		10.19%	9.42%	39.26%	31.20%	0.00%
J.P. Morgan SE (549300ZK53CNGEEI6A29)		9.47%	8.87%	41.71%	31.50%	0.00%
BARCLAYS BANK IRELAND PLC (2G5BKIC2CB69PRJH1W31)		9.12%	10.50%	55.36%	24.13%	0.00%

Same observation, more than 50% of the volumes dealt by the first five venues. There are three counterparties present from last year ranking (Barclays, J.P. Morgan, UBS). We can notice the entry of BOFA in the first position.

The proportion of passive orders is always higher than the aggressive orders.

Tick Size liquidity band 1 and 2

Class of Instrument		1 - Equities - Shares & Depository 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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH		12.86%	8.06%	43.28%	23.53%	0.00%
J.P. Morgan SE (549300ZK53CNGEEI6A29)		12.81%	9.93%	45.97%	26.96%	0.00%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)		8.61%	10.53%	64.22%	28.98%	0.00%
CREDIT SUISSE BANK (EUROPE), S.A. (959800TMGPWX7NYM4R72)		7.54%	10.80%	37.08%	32.60%	0.00%
UBS EUROPE SE (5299007QVIQ7IO64NX37)		6.38%	6.10%	32.48%	17.19%	0.00%

For the less liquid order category, a predominance of Goldman Sachs and Anglo saxon banks with even more passive orders than aggressive orders.

DEBT INSTRUMENTS – BONDS

1. Execution report

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	Proportion of Orders Executed	Nbr Exec	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
Bloomberg Multilateral Trading Facility (BMTF)	29.96%	21.21%	14,673	0.00%	0.00%	0.00%
TRADEWEB (TREU)	18.67%	23.92%	16,548	0.00%	0.00%	0.00%
BNP PARIBAS (R0MUW5FPU8MPRO8K5P83)	5.16%	3.58%	2,478	0.00%	0.00%	0.00%
MARKETAXESS EUROPE LIMITED (MAEL)	2.96%	6.62%	4,578	0.00%	0.00%	0.00%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)	2.92%	5.95%	4,116	0.00%	0.00%	0.00%

The MTF Bloomberg TSOX is ranked first. This trading venue enables to perform electronic STP (Straight Through Processing) Request For Quotes to a broad range of counterparties that are authorized by the clients. The use of trading platforms minimizes operational errors, enhances the access to liquidity and the execution quality.

Trading is conducted following the RFQ process. Executions on Debt instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

In order to complete orders, liquidity may become the most important factor. This is relevant when the order is of a large size for the market or for a security with limited availability. The composition of the top 5 trading venues changed this year to include MarketAxess. We use Tradeweb and Bloomberg MTF to trade electronically a broad range of debts such T-bills and bonds in secondary markets.

Tradeweb and TSOX keep their place. These both platforms total around 50% of volumes traded. BNP Paribas, MarketAxess and Bank of America total 11% of the volumes. Our traders have a broad range of eligible Counterparties to trade within this classification of delivery versus payment (DVP) instruments.

As our Counterparties capacity to provide competitive prices (liquidity) changes over time, our traders adapt their Counterparty selection and thus we would expect the composition and order of the top 5 venues to be also dynamic. Our Execution policy provides traders 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 a 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.

Less liquid bonds, orders with larger size or other specific orders may have to be traded off venue (telephone or IB Chat) as they require more interaction between the traders and the counterparties. As much as possible, the traders perform an RFQ process if it doesn't lead to information leakage on the market.

In some cases, Dealing Services may not be in a position to organise a request for quotes or may consider that it is inappropriate to do so in the client's interests, which provides a de facto justification that the price criterion has been adhered to.

Without drawing up a comprehensive list, this may occur in the following circumstances:

- ⇒ a need to guarantee maximum confidentiality;
- ⇒ the illiquidity of the financial instrument;
- ⇒ any situation where the request for quotes is contrary to the clients' interests.

For Bonds, Dealing Services uses two kinds of report to perform controls and monitor its execution performance.

- ⇒ A 'RFQ' report highlighting competing quotes received from counterparties and justifications when execution prices differ from best quotes or if there have been insufficient number of quotes.
- ⇒ A report based on TCA (Transaction Cost Analysis) analysis. For each transaction, execution price is compared to a benchmark price value provided by an independent TCA data provider.

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.



Top 5 counterparties on Bloomberg TSOX :

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	Proportion Total Exec
Bloomberg Multilateral Trading Facility (BMTF)	29.96%	21.21%
CITIGROUP GLOBAL MARKETS EUROPE AG	10.44%	1.67%
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	9.51%	1.63%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	7.58%	1.47%
J.P. Morgan SE (549300ZK53CNGEEI6A29)	7.11%	1.42%
BARCLAYS BANK IRELAND PLC (2G5BKIC2CB69PRJH1W31)	6.77%	1.20%

The top five counterparties total a little less than 41% of the volume, with a fairly close distribution of volumes.

Two counterparties join the top 5 this year: Citigroup and J.P.Morgan. Goldman Sachs and Barclays remain in the ranking with a slight decline.

Top 5 counterparties on Tradeweb :

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	Proportion Total Exec
TRADEWEB (TREU)	18.67%	23.92%
JANE STREET NETHERLANDS B.V. (549300AE0DWETJDYFB29)	17.54%	7.40%
DEUTSCHE BANK AG (7LTWFZYICNSX8D621K86)	7.95%	1.52%
MORGAN STANLEY EUROPE SE (54930056FHWP7GIWYY08)	7.78%	4.21%
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	7.51%	1.41%
J.P. Morgan SE (549300ZK53CNGEEI6A29)	7.02%	1.16%

As for the previous platform the counterparties have a fairly close distribution of volumes with Jane Street as an exception recording 17% of the volumes traded. We note the entries of Jane Street, Deutsche Bank, Morgan Stanley et J.P Morgan in this top five.

Top 5 counterparties on MARKETAXESS EUROPE Limited:

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	Proportion Total Exec
MARKETAXESS EUROPE LIMITED (MAEL)	2,96%	6,62%
JANE STREET NETHERLANDS B.V. (549300AE0DWETJDYFB29)	7,83%	0,69%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)	7,82%	0,41%
BARCLAYS BANK IRELAND PLC (2G5BKIC2CB69PRJH1W31)	7,75%	0,31%
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	7,40%	0,36%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	6,71%	0,38%

As for the previous platform the counterparties have a fairly close distribution of volumes around 7%.



DEBT INSTRUMENTS – MONEY MARKET INSTRUMENTS

1. Execution report

Class of Instrument	3 - Debt Instruments - Money Market				
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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
BARCLAYS BANK IRELAND PLC (2G5BKIC2CB69PRJH1W31)	18.79%	12.37%	0.00%	0.00%	0.00%
UBS EUROPE SE (5299007QVIQ7IO64NX37)	9.13%	4.82%	0.00%	0.00%	0.00%
BRED BANQUE POPULAIRE (NICH5Q04ADUV9SN3Q390)	8.41%	12.30%	0.00%	0.00%	0.00%
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	7.85%	6.69%	0.00%	0.00%	0.00%
COÖPERATIEVE RABOBANK U.A. (DG3RU1DBUFHT4ZF9WN62)	6.19%	4.48%	0.00%	0.00%	0.00%

Similar to last year BNP Paribas, BRED and Barclays are still on the top five. Cooperatieve Rabobank entered in the top five this year.

Executions on Money Market instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

Main activity is done off venue (telephone, IB Chat), due to the nature of the Money Markets instruments. As much as possible, the traders perform an RFQ process if it doesn't lead to information leakage on the market.

In some cases, Dealing Services may not be in a position to organise a request for quotes or may consider that it is inappropriate to do so in the client's interests, which provides a de facto justification that the price criterion has been adhered to.

Without drawing up a comprehensive list, this may occur in the following circumstances:

- ⇒ a need to guarantee maximum confidentiality;
- ⇒ the illiquidity of the financial instrument;
- ⇒ any situation where the request for quotes is contrary to the clients' interests.

To perform its controls for Money Market, 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.

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

Executions on Interest Rates Listed Derivatives instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

The majority of Interest Rates Listed Futures and Options are transmitted to brokers for execution.

Execution services done by the traders correspond to the case when the trader has to rollover a position: depending on different factors, the dealer may organize an RFQ process to get the best possible results.



1. Execution report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	27.85%	28.96%	42.98%	22.20%	0.00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	14.31%	16.15%	0.00%	0.00%	0.00%
TRADITION SECURITIES AND FUTURES	9.64%	3.39%	0.00%	0.00%	0.00%
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	8.94%	7.90%	32.30%	34.99%	0.00%
BARCLAYS BANK IRELAND PLC (2G5BKIC2CB69PRJH1W31)	8.24%	11.11%	0.00%	0.00%	0.00%

We are trading for this category with a mix of Banks and Brokers. The majority of the volumes was traded with Brokers. This year, Goldman Sachs, Société Générale et Barclays replaced Aurel BGC, UBS and BOFA.

2. Transmission report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	24.50%	34.19%	30.64%	61.45%	0.00%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)	18.77%	13.50%	33.40%	35.05%	0.00%
GOLDMAN SACHS & CO. LLC (FOR8UP27PHTHYVLBNG30)	11.78%	3.35%	1.28%	2.97%	0.00%
TRADITION SECURITIES AND FUTURES	8.14%	6.02%	13.62%	32.82%	0.00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	8.12%	7.59%	0.55%	0.49%	0.00%

We are trading for this category with a mix of Banks and Brokers. This year, Goldman Sachs & Co and Goldman Sachs International replaced UBS and Aurel BGC.

INTEREST RATES DERIVATIVES – SWAPS, FORWARDS AND OTHER INTEREST RATES DERIVATIVES

1. Execution report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
HSBC CONTINENTAL EUROPE (F0HUI1NY1AZMJMD8LP67)	14.82%	12.58%	0.00%	0.00%	0.00%
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	12.02%	12.78%	0.00%	0.00%	0.00%
CITIGROUP GLOBAL MARKETS EUROPE AG	10.11%	13.94%	0.00%	0.00%	0.00%
BARCLAYS BANK IRELAND PLC (2G5BKIC2CB69PRJH1W31)	9.29%	8.37%	0.00%	0.00%	0.00%
J.P. Morgan SE (549300ZK53CNTEEI6A29)	9.27%	11.54%	0.00%	0.00%	0.00%

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

Our traders 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.

You will notice a concentration of volumes traded on the five counterparties with a predominance of HSBC followed by BNP Paribas and Citigroup which total around 22% of volumes. We find the same counterparties as the previous year with a significant decline for J.P Morgan. Citigroup and Barclays replaced Goldman Sachs and Société Générale.

As with other OTC products, our list of authorized 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.

Executions on Interest Rates Derivatives instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

All the trading activity is done off venue (telephone, IB Chat), due to the nature of the instruments. As much as possible, the traders perform an RFQ process if it doesn't lead to information leakage on the market.

In some cases, Dealing Services may not be in a position to organise a request for quotes or may consider that it is inappropriate to do so in the client's interests, which provides a de facto justification that the price criterion has been adhered to.

Without drawing up a comprehensive list, this may occur in the following circumstances:

- ⇒ a need to guarantee maximum confidentiality;
- ⇒ the illiquidity of the financial instrument;
- ⇒ any situation where the request for quotes is contrary to the clients' interests.

CREDIT DERIVATIVES – OTHER CREDIT DERIVATIVES

1. Execution report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	23,45%	21,63%	0,00%	0,00%	0,00%
MORGAN STANLEY EUROPE SE (54930056FHWP7GIWYY08)	19,57%	4,84%	0,00%	0,00%	0,00%
CITIGROUP GLOBAL MARKETS EUROPE AG	19,29%	21,63%	0,00%	0,00%	0,00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	12,14%	18,00%	0,00%	0,00%	0,00%
J.P. Morgan SE (549300ZK53CNGEI6A29)	11,71%	20,57%	0,00%	0,00%	0,00%

Compared to 2021, the top 5 counterparties remain unchanged in 2022. However, we can notice a greater concentration of volumes on this top 5, with a sharp drop in JP Morgan's market share compared to 2021.

Executions on Credit Derivatives instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

All the trading activity is done off venue (telephone, IbChat), due to the nature of the instruments. As much as possible, the traders perform an RFQ process if it doesn't lead to information leakage on the market.

In some cases, Dealing Services may not be in a position to organise a request for quotes or may consider that it is inappropriate to do so in the client's interests, which provides a de facto justification that the price criterion has been adhered to.

Without drawing up a comprehensive list, this may occur in the following circumstances:

- ⇒ a need to guarantee maximum confidentiality;
- ⇒ the illiquidity of the financial instrument;
- ⇒ any situation where the request for quotes is contrary to the clients' interests.



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

Executions on Currency Listed Derivatives instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

The majority of Currency Listed Futures and Options are transmitted to brokers for execution.

Execution services done by the traders correspond to the case when the trader has to rollover a position: depending on different factors, the dealer may organize an RFQ process to get the best possible results.

1. Execution report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
TRADITION SECURITIES AND FUTURES (969500ULCOY1IG0A4O72)	38,79%	10,00%	0,00%	0,00%	0,00%
BNP PARIBAS (ROMUWSFPU8MPRO8K5P83)	26,83%	52,86%	0,00%	0,55%	0,00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH (W22LROWP2IHZNBB6K528)	20,36%	4,29%	0,00%	0,00%	0,00%
DEUTSCHE BANK AG (7LTWFZYICNSX8D621K86)	4,65%	10,00%	0,00%	0,00%	0,00%
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	4,55%	17,14%	0,00%	0,00%	0,00%

The top three counterparties represent more than 89% of the volume traded, BNP Paribas for around 50% of the volume and more than 45% for the proportion of the orders, followed by BOFA with 20.03% of the volumes and 14.92% of the executed orders. Then, we have Goldman Sachs with 19.44% of the volumes and 17.29% of orders executed.

2. Transmission report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
BNP PARIBAS (ROMUWSFPU8MPRO8K5P83)	35.45%	37.61%	39.50%	58.35%	0.00%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)	14.54%	16.47%	31.18%	58.85%	0.00%
UBS EUROPE SE (5299007QVIQ7IO64NX37)	9.06%	19.58%	0.00%	0.00%	0.00%
GOLDMAN SACHS & CO. LLC (FOR8UP27PHTHYVLBNG30)	8.49%	2.56%	0.00%	36.67%	0.00%
TRADITION SECURITIES AND FUTURES (969500ULCOY1IG0A4O72)	6.44%	3.96%	15.56%	52.22%	0.00%

For the transmission report, BNP Paribas is still the number one with around 35% of the volumes and more than 37% of the orders, BOFA with 14.54% of the volumes and 16.47% of the orders. Then, we have UBS with 9.06% of the volumes and 19.58% of the executed orders and Goldman Sachs with 8.49% of volumes and 2.56% of the executed orders.

CURRENCY DERIVATIVES – SWAPS, FORWARDS AND OTHER CURRENCY DERIVATIVES

1. Execution report



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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	24.92%	23.55%	0.00%	0.00%	0.00%
FXALL Multilateral Trading Facility (TRAL)	20.88%	8.90%	0.00%	0.00%	0.00%
J.P. Morgan SE (549300ZK53CNGEEI6A29)	12.07%	16.43%	0.00%	0.00%	0.00%
CITIGROUP GLOBAL MARKETS EUROPE AG	10.70%	10.66%	0.00%	0.00%	0.00%
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	8.45%	10.62%	0.00%	0.00%	0.00%

In comparison to 2021, the top five remains unchanged.

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 authorized 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.

Executions on Forex instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

In the top 5 venues, BNP Paribas account for around 25% of the traded volumes followed by the trading venue FX ALL (a Multilateral Trading Platform) with 21%. J.P Morgan is ranked third with 12%.

This trading venue enables to perform electronic STP (Straight Through Processing) . The use of trading platforms minimizes operational errors and enhances the access to liquidity and the execution quality.

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.

Less liquid currency pairs, orders with larger size or other specific orders may have to be traded off venue (telephone, IB Chat) as they requires more interaction between the traders and the counterparties. As much as possible, the traders do an RFQ process if it doesn't lead to information leakage on the market.

In some cases, Dealing Services may not be in a position to organise a request for quotes or may consider that it is inappropriate to do so in the client's interests, which provides a de facto justification that the price criterion has been adhered to.

Without drawing up a comprehensive list, this may occur in the following circumstances:

- ⇒ a need to guarantee maximum confidentiality;
- ⇒ the illiquidity of the financial instrument;
- ⇒ any situation where the request for quotes is contrary to the clients' interests.

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.

For Currency OTC derivatives, Dealing Services uses two kinds of report to perform controls and monitor its execution performance.

- ⇒ A 'RFQ' report highlighting competing quotes received from counterparties and justifications when execution prices differ from best quotes or if there have been insufficient number of quotes
- ⇒ A report based on TCA (Transaction Cost Analysis) analysis. For each transaction (except for OTC currency Options), execution price is compared to a benchmark price value provided by an independent TCA data provider. Deviations from benchmark are monitored according to pre-determined thresholds.

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.

Top 5 counterparties on FXALL

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	Proportion Total Exec
FXALL Multilateral Trading Facility (TRAL)	20.88%	8.90%
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	22.34%	2.87%
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	16.12%	1.63%
CITIGROUP GLOBAL MARKETS EUROPE AG (6TJCK1B7E7UTXP528Y04)	15.15%	1.19%
J.P. Morgan SE (549300ZK53CNGEEI6A29)	15.13%	0.87%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)	7.82%	0.58%

This year, BOFA joined the top 5 execution venues and replaced Morgan Stanley.

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

Executions on Equity Listed Derivatives instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

The majority of Equity Listed Futures and Options are transmitted to brokers for execution.

Execution services done by the traders correspond to the case when the trader has to rollover a position: depending on different factors, the dealer may organize an RFQ process to get the best possible results.

1. Execution report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	28.52%	31.15%	28.43%	29.54%	0.00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	14.72%	6.66%	0.33%	0.00%	0.00%
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	12.08%	7.41%	2.36%	59.06%	0.00%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)	10.56%	13.87%	19.98%	11.48%	0.00%
TRADITION SECURITIES AND FUTURES (969500ULC0Y1IG0A4O72)	7.42%	3.81%	3.21%	57.05%	0.00%

BNP Paribas is the first in the top five with around 29% of the volumes and 31% of executed orders, followed by Goldman Sachs with 14.72% of the volumes and around 6.66% of the executed orders. Société Générale, BOFA and Tradition represent around 30% of the volumes and around 25% of the executed orders.



2. Transmission report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
BNP PARIBAS (ROMUWSFPU8MPRO8K5P83)	25.74%	27.34%	48.45%	38.42%	0.00%
CREDIT SUISSE BANK (EUROPE), S.A. (959800TMGPWX7NYM4R72)	15.17%	12.31%	5.04%	0.43%	0.00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	10.38%	6.27%	0.00%	0.30%	0.00%
UBS EUROPE SE (5299007QVIQ7IO64NX37)	9.68%	22.44%	0.61%	10.56%	0.00%
BOFA SECURITIES EUROPE SA (549300FH0WJAPEHTIQ77)	7.39%	6.21%	26.13%	55.33%	0.00%

For the transmission report in this category, BNP Paribas is the first counterparty with 25.74% of the volumes, followed in volumes by Crédit Suisse for more than 15%, and respectively Goldman Sachs 10.38%, UBS 9.68% and BOFA 7.39%. Regarding the number of executed orders, BNP Paribas is also first with more than 27%, then 22.44% for UBS, Crédit Suisse with 12.31% and Goldman Sachs and BOFA for 6.27% and 6.21% respectively.

EQUITY DERIVATIVES – SWAP AND OTHER EQUITY DERIVATIVES

Executions on Equity Derivatives instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

All the trading activity is done off venue (telephone, IB Chat), due to the nature of the instruments. As much as possible, the traders perform an RFQ process if it doesn't lead to information leakage on the market.

In some cases, Dealing Services may not be in a position to organise a request for quotes or may consider that it is inappropriate to do so in the client's interests, which provides a de facto justification that the price criterion has been adhered to.

Without drawing up a comprehensive list, this may occur in the following circumstances:

- ⇒ a need to guarantee maximum confidentiality;
- ⇒ the illiquidity of the financial instrument;
- ⇒ any situation where the request for quotes is contrary to the clients' interests.

1. Execution report

Class of Instrument	8 - Equity derivatives - OTC				
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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Aggressive Orders	Proportion of Directed Orders
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	48.62%	55.10%	0.00%	0.00%	0.00%
J.P. Morgan SE (549300ZK53CNGEEI6A29)	19.45%	24.49%	0.00%	0.00%	0.00%
BNP PARIBAS (ROMUWSFPU8MPRO8K5P83)	19.07%	6.12%	0.00%	0.00%	0.00%
SOCIETE GENERALE SA (O2RNE8IBXP4R0TD8PU41)	7.38%	6.12%	0.00%	0.00%	0.00%
MORGAN STANLEY EUROPE SE (54930056FHWP7GIWYY08)	5.48%	8.16%	0.00%	0.00%	0.00%

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

Our traders 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.

In the top 5 execution venues, Goldman Sachs is the first counterparty with more than 48% of volume and 55% of the executed orders, JP Morgan dealt with 19.45% of the volumes and 24.49% of the orders. BNP Paribas with almost 19% of volumes and 6.12% of orders, Société Générale with 7.38% of volumes and 6.12% of orders, Morgan Stanley had less 6% of volumes but 8.16% of the executed orders.

As with other OTC products, our list of authorized 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.

SECURITIZED DERIVATIVES

Executions on Securitized Derivatives instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

All Securitized Derivatives are transmitted to brokers for execution.

1. Transmission report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
GOLDMAN SACHS INTERNATIONAL (W22LROWP2IHZNBB6K528)	99,62%	52,38%	0,00%	0,00%	0,00%
MAYBANK INVESTMENT BANK BERHAD (254900M5DG9AKERWWZ42)	0,17%	19,05%	0,00%	0,00%	0,00%
UBS SECURITIES ASIA LIMITED (549300Y35FCB6270R069)	0,16%	14,29%	0,00%	0,00%	0,00%
CITIGROUP GLOBAL MARKETS EUROPE AG (6TJCK1B7E7UTXP528Y04)	0,05%	9,52%	0,00%	0,00%	0,00%
J.P. MORGAN SECURITIES PLC (K6Q0W1PS1L1O4IQL9C32)	0,00%	4,76%	0,00%	0,00%	0,00%

This year, we dealt with Goldman Sachs for 100% of both the volumes and of the executed orders.

CONTRACT FOR DIFFERENCE

Executions on CFD instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

Depending on the parameters of the orders (Buy, Sell, Open or Close of position), traders may have to deal with the prime brokers.

1. Transmission report

Class of Instrument	11 - CFD				
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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
GOLDMAN SACHS & CO. LLC (FOR8UP27PHTHYVLBNG30)	41.32%	11.88%	56.23%	40.23%	0.00%
GOLDMAN SACHS INTERNATIONAL - PARIS BRANCH	31.92%	9.78%	59.10%	33.32%	0.00%
MORGAN STANLEY EUROPE SE (54930056FHWP7GIWYY08)	17.60%	73.35%	32.97%	37.21%	0.00%
CITIGROUP GLOBAL MARKETS EUROPE AG	4.62%	3.94%	48.99%	30.81%	0.00%
CITIGROUP GLOBAL MARKETS INC. (MNUM2BPBDO7JBLYG310)	2.23%	0.40%	44.65%	50.90%	0.00%

For this chart, we have traded again with prime brokers. Goldman Sachs & Co. LLC is the first counterparty with more 41% of the volumes and 11.88% of the executed orders, Goldman Sachs International with 31.92% of volumes and 9.78% of the executed orders. Morgan Stanley is the third with 17.6% of the volumes and about 73% of executed orders.

EXCHANGE TRADED PRODUCTS

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.

1. Execution report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
TRADEWEB (TREU)	94.80%	98.89%	0.00%	0.00%	0.00%
UBS EUROPE SE (5299007QVIQ7IO64NX37)	2.35%	0.06%	0.00%	0.00%	0.00%
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	1.88%	0.29%	0.00%	0.00%	0.00%
JANE STREET NETHERLANDS B.V. (549300AE0DWETJDYFB29)	0.86%	0.47%	0.00%	0.00%	0.00%
FLOW TRADERS B.V. (549300CLJI9XDH12XV51)	0.10%	0.17%	0.00%	0.00%	0.00%

Tradeweb is the number one with around 95% of volumes and 99% of executed orders being the main platform for RFQs. The other counterparties provided axes, which helped us to supply efficiently with liquidity.

Top 5 counterparties on Tradeweb

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	Proportion Total Exec
TRADEWEB (TREU)	94,80%	98,89%
JANE STREET NETHERLANDS B.V. (549300AE0DWETJDYFB29)	29,67%	37,59%
BNP PARIBAS (R0MUWSFPU8MPRO8K5P83)	20,95%	20,05%
FLOW TRADERS B.V. (549300CLJI9XDH12XV51)	19,64%	16,58%
OPTIVER V.O.F (7245009KRYSA2QCC29)	17,82%	14,43%
CITIGROUP GLOBAL MARKETS EUROPE AG	7,56%	3,35%

Jane Street with almost 30% of the volumes has increased this year its market share and number of trades, BNP Paribas along with Flow Traders have increased. Their market shares in volumes and the proportion of executed orders total around 21% and 20% of orders for BNP Paribas whereas Flow Traders reached 20% and 16.5% respectively.

The other specialized Market Makers in ETD, Flow Traders and Optiver represent 37% of the remaining volume and 31% of the executions.

2. Transmission report

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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
CITIGROUP GLOBAL MARKETS EUROPE AG	45.91%	52.67%	2.59%	7.46%	0.00%
KEPLER CHEUVREUX (9695005EOZG9X8IRJD84)	19.18%	21.52%	26.90%	0.00%	0.00%
FLOW TRADERS B.V. (549300CLJI9XDH12XV51)	17.72%	16.48%	0.00%	0.00%	0.00%
CREDIT SUISSE SECURITIES (USA) LLC (1V8Y6QCX6YMJ2OELI46)	6.09%	1.33%	0.00%	51.16%	0.00%
UBS EUROPE SE (5299007QVIQ7IO64NX37)	4.04%	0.67%	96.24%	1.50%	0.00%

For the transmission report, Citigroup keeps the first rank with 45.91% in terms of volumes and 52.67% in terms number of executed orders. Kepler is only at around 19% of volumes and 22% of executed orders. There are two newcomers: Flow Traders and Crédit Suisse also participated in the reception and transmission of orders.

Despite a rise of volumes this year UBS remains in the last position of this top five.

SECURITIES FINANCING TRANSACTIONS (SFT)

REPO AND REVERSE REPO

1. Execution report

Class of Instrument	13 - Repo / Reverse Repo				
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	Proportion of Orders Executed	Proportion of Passive Orders	Proportion of Agressive Orders	Proportion of Directed Orders
CREDIT AGRICOLE CORPORATE AND INVESTMENT BANK	53.33%	10.06%	0.00%	0.00%	0.00%
BNP PARIBAS (ROMUWSFPU8MPRO8K5P83)	46.67%	89.94%	0.00%	0.00%	0.00%

This year on Repo / Reverse Repo, the only counterparties represented in this template are Crédit Agricole Corporate and BNP Paribas. Crédit Agricole Corporate is the first counterparty and has concentrated more than 53% of the volumes with more only 10% in terms of orders executed. The portion of volume traded by BNP Paribas amounted 47% while the number of executed orders is 90%.

Executions on Repo/Reverse repo instruments are generally driven by the price and order size, and then market liquidity and conditions, speed of execution and likelihood of settlement.

All the activity is done off venue (telephone, IB Chat), due to the nature of the instruments. As much as possible, the traders do an RFQ process if it does not lead to information leakage on the market.

In some cases, Dealing Services may not be in a position to organise a request for quotes or may consider that it is inappropriate to do so in the client's interests, which provides a de facto justification that the price criterion has been adhered to.

Without drawing up a comprehensive list, this may occur in the following circumstances:

- a need to guarantee maximum confidentiality;
- the illiquidity of the financial instrument;
- any situation where the request for quotes is contrary to the clients' interests.

To perform its controls on repo/reverse repo transactions, 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.

DISCLAIMER

BNP Paribas Dealing Services, a French limited company (“société anonyme”) registered with the Paris Trade and Companies Register under number 454 084 237, is authorised and supervised by the Autorité de Contrôle Prudentiel et de Résolution (“ACPR”) and the Autorité des Marchés Financiers (“AMF”).

This material is issued and has been prepared by BNP Paribas Dealing Services.

This material is produced for information purposes only and does not constitute:

An offer to buy nor a solicitation to sell, nor shall it form the basis of or be relied upon in connection with any contract or commitment whatsoever or an investment advice.

The information about the passive or aggressive nature of an order is provided by the brokers and counterparties. The quality of these information cannot be verified by Dealing Services which shall not be responsible or liable in any way for the content of these information.

