

**NORTHERN TRUST SECURITIES LLP**

*For the period 1 January 2018 to 31 December 2018*

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Information on the identity of execution venues and on the quality of execution under Commission Delegated Regulation (EU) 2017/576 of 8 June 2016 ('RTS 28')

**a) Overview of NTS LLP's execution arrangements in 2018**

Northern Trust Securities LLP ('NTS LLP') is a MiFID Investment Firm authorised and regulated by the Financial Conduct Authority. NTS LLP provides agency brokerage services to institutional clients in equity and equity-like financial instruments (e.g. exchange traded funds) and debt instruments. NTS LLP provides the MiFID investment services of execution of orders on behalf of clients, and reception and transmission of orders in relation to one or more financial instruments. NTS LLP only provides investment services to Professional clients and Eligible counterparties and does not provide any services to Retail clients.

During 2018, NTS LLP executed the majority of the client orders it received by transmitting or placing all or part of the client order with one or more external brokers (the 'Order transmission destinations' or 'external brokers') who will then execute the order or placement on one or more organised trading venues (e.g. regulated market, multilateral trading facility or third country equivalent). Additionally, NTS LLP also executed client orders using its "off-book trading" membership of the London Stock Exchange, either by executing a client order away from the exchange's order book and then bringing it under the rules of the exchange through an "Off-book, On Exchange" trade report, or by executing transactions away from the exchange's order book (e.g. by way of a request-for-quote) with other members of the London Stock Exchange who act as market makers in London Stock Exchange listed or traded instruments.

The external brokers used by NTS LLP in 2018 were selected, and subsequently monitored, in accordance with the principles described in section 6 of The Northern Trust Company Order Execution Policy<sup>1</sup>. The primary objectives of NTS LLP when selecting external brokers are to ensure (a) access to the widest range of possible execution venues, (b) the ability of the external broker to manage complex orders and contribute to the overall performance of NTS LLP when executing client orders, and (c) their ability to provide NTS LLP's traders with as much direct and near real-time control over the execution of the client order or placement by as possible, ideally through the use of direct electronic access arrangements, smart order routers and algorithmic trading strategies. NTS LLP did not, as a matter of course, transmit any client orders to an external broker within the meaning of Article 26(4) of Regulation (EU) No 600/2014 ('transmission of orders') and therefore retained full responsibility for best execution to its clients.

As a result of the execution arrangements applied by NTS LLP in 2018 the majority of client orders were executed on organised trading venues (e.g. regulated markets and multilateral trading facilities) in the UK and EU and where appropriate, third country equivalents. In addition, a small percentage of volume was executed with EU Systematic Internalisers, which became more common in 2018 following the structural changes to the UK and EU financial market following the implementation of MiFID II. Finally, in contrast to 2017 where it was more common to execute client orders on an 'over-the-counter basis', only a very small percentage of the volume traded in each class of instrument was executed outside of an organised trading venue (i.e. on an "off-exchange" basis). This change is consistent with the systemic changes in the UK and EU financial markets required by MiFID II, which in particular imposed a trading obligation for shares limiting the potential for executing client orders away from trading venues.

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<sup>1</sup> See further: <https://www.northerntrust.com/documents/legal/mifid/nt-order-execution-policy.pdf>

NTS LLP therefore provides the following information on execution venues for each class of financial instrument, and where necessary sub-class of financial instrument, in which we executed client orders in 2018:

- (a) The identity of the top five execution venues (i.e. trading venues and counterparties) where client orders were executed in 2018; as required by Article 27(6) of Directive 2014/65/EU.
- (b) The identity of the top five receiving firms (i.e. external brokers) to which client orders were transmitted in 2018; as required by Article 65(6) Commission Delegated Regulation (EU) 2017/565.

**b) Top Five Execution Venues in 2018**

The following data tables have been prepared in accordance with the requirements of Article 27(6) of MiFID II and Article 3(1) of RTS 28 and show the top five venues on which client orders were executed in 2018 by NTS LLP for each class of financial instrument.

Class of instrument			(a) Equities - Shares and Depository Receipts: (i) Tick size liquidity bands 5 and 6 (from 2,000 trades per day)					
Notification if < 1 average trade per business day in year			No					
Rank	MIC	Operator LEI	Execution Venue Name	% of VOLUME traded in class	% of ORDERS executed in class	% of PASSIVE orders*	% of AGGRESSIVE orders*	% of DIRECTED orders
1	XLON	213800D1E4B9WTWWD28	London Stock Exchange - Regulated Market	20.58%	5.72%	60.02%	39.98%	0.00%
2	CHIX	254900ERRPSKE7UZ711	Cboe Europe Equities MTF - CXE Integrated Book	8.63%	12.45%	63.50%	36.50%	0.00%
3	TRQM	2138006SKBMJUE2HV03	Turquoise MTF - Plato	7.80%	4.49%	76.94%	23.06%	0.00%
4	BATP	254900ERRPSKE7UZ711	Cboe Europe Equities MTF - BXE Periodic Auction Book	7.57%	6.43%	85.90%	14.10%	0.00%
5	XHKG	213800YTVSXYQN17BW16	Hong Kong Exchanges and Clearing Limited	5.78%	0.28%	93.48%	6.52%	0.00%
~	Remaining venues			49.63%	70.64%	62.83%	37.17%	0.00%
<b>Total</b>				<b>100%</b>	<b>100%</b>	<b>64%</b>	<b>36%</b>	<b>0%</b>

Class of instrument			(a) Equities - Shares and Depository Receipts: (ii) Tick size liquidity bands 3 and 4 (from 80 to 1,999 trades per day)					
Notification if < 1 average trade per business day in year			No					
Rank	MIC	Operator LEI	Execution Venue Name	% of VOLUME traded in class	% of ORDERS executed in class	% of PASSIVE orders*	% of AGGRESSIVE orders*	% of DIRECTED orders
1	XLON	213800D1E4B9WTWWD28	London Stock Exchange - Regulated Market	27.28%	4.78%	65.61%	34.39%	0.00%
2	XHKG	213800YTVSXYQN17BW16	Hong Kong Exchanges and Clearing Limited	19.95%	1.07%	78.94%	21.06%	0.00%
3	BATP	254900ERRPSKE7UZ711	Cboe Europe Equities MTF - BXE Periodic Auction Book	4.82%	4.55%	91.35%	8.65%	0.00%
4	XPOS	213800EEC95PRUCEUP63	ITG POSIT MTF - Dark	4.69%	1.92%	95.58%	4.42%	0.00%
5	XTKS	353800279ADEFKNTV65	Tokyo Stock Exchange	3.95%	2.48%	88.58%	11.42%	0.00%
~	Remaining venues			39.31%	85.20%	68.05%	31.95%	0.00%
<b>Total</b>				<b>100%</b>	<b>100%</b>	<b>70%</b>	<b>30%</b>	<b>0%</b>

Class of instrument			(a) Equities - Shares and Depository Receipts: (iii) Tick size liquidity bands 1 and 2 (from 0 to 79 trades per day)					
Notification if < 1 average trade per business day in year			No					
Rank	MIC	Operator LEI	Execution Venue Name	% of VOLUME traded in class	% of ORDERS executed in class	% of PASSIVE orders*	% of AGGRESSIVE orders*	% of DIRECTED orders
1	XHKG	213800YTVSXYQN17BW16	Hong Kong Exchanges and Clearing Limited	48.68%	5.89%	55.41%	44.59%	0.00%
2	XIDX	Not available	Indonesia Stock Exchange	7.13%	0.38%	44.87%	55.13%	0.00%
3	XLON	213800D1E4B9WTWWD28	London Stock Exchange - Regulated Market	5.39%	1.52%	40.58%	59.42%	0.00%
4	XTKS	353800279ADEFKNTV65	Tokyo Stock Exchange	5.38%	15.49%	52.63%	47.37%	0.00%
5	XPHS	Not available	Philippine Stock Exchange, Inc.	3.92%	0.21%	38.26%	61.74%	0.00%
~	Remaining venues			29.51%	76.51%	58.37%	41.57%	0.00%
<b>Total</b>				<b>100%</b>	<b>100%</b>	<b>57%</b>	<b>43%</b>	<b>0%</b>

Class of instrument			(b) Debt Instruments (i) Bonds					
Notification if < 1 average trade per business day in year			No					
Rank	MIC	Operator LEI	Execution Venue Name	% of VOLUME traded in class	% of ORDERS executed in class	% of PASSIVE orders*	% of AGGRESSIVE orders*	% of DIRECTED orders
1	BMTF	549300ROEJDDAXM6LU05	Bloomberg Multilateral Trading Facility	91.39%	82.73%	n/a	n/a	0.00%
2	XOFF	549300EF8AZLRG0UC208	Off-Exchange Transactions - Listed Instruments	5.61%	7.58%	n/a	n/a	0.00%
3	JEFS	S5THZMDUJCTQZBTRV198	Jefferies International Limited - SI	0.91%	1.21%	n/a	n/a	0.00%
4	HSBC	MP615ZYZBEU3UXPYFY54	HSBC Bank plc - SI	0.66%	0.61%	n/a	n/a	0.00%
5	CBAL	MSFSBD3QN1GSN7Q6C537	Commonwealth Bank of Australia - SI	0.54%	0.30%	n/a	n/a	0.00%
~	Remaining venues			0.89%	7.58%	n/a	n/a	0.00%
<b>Total</b>				<b>100%</b>	<b>100%</b>	<b>n/a</b>	<b>n/a</b>	<b>0%</b>

Class of instrument				(k) Exchange Traded Products (Exchange Traded Funds, Exchange Traded Notes and Exchange Traded Commodities)				
Notification if < 1 average trade per business day in year				No				
Rank	MIC	Operator LEI	Execution Venue Name	% of VOLUME traded in class	% of ORDERS executed in class	% of PASSIVE orders*	% of AGGRESSIVE orders*	% of DIRECTED orders
1	BMTF	549300ROEJDDAXM6LU05	Bloomberg Multilateral Trading Facility	33.19%	7.39%	25.75%	74.25%	0.00%
2	TREU	2138001WXZQOPMPA3D50	Tradeweb Europe MTF	22.02%	5.03%	25.19%	74.81%	0.00%
3	XSES	549300IQ650PPXM76X03	Singapore Exchange	18.91%	1.46%	27.69%	72.31%	0.00%
4	XHKG	213800YTVSXYQN17BW16	Hong Kong Exchanges and Clearing Limited	5.20%	0.35%	42.95%	57.05%	0.00%
5	ARCX	Not available	NYSE Arca, Inc. - NYSE Arca	4.86%	2.37%	66.72%	33.28%	0.00%
-	Remaining venues			15.81%	83.39%	67.47%	32.53%	0.00%
<b>Total</b>				<b>100%</b>	<b>100%</b>	<b>63%</b>	<b>37%</b>	<b>0%</b>

**IMPORTANT NOTES – TOP FIVE EXECUTION VENUES**

**NOTE 1:** 'PASSIVE' and 'AGGRESSIVE' order values for classes of instrument (a) Equity - Shares and Depository Receipts and (k) Exchange Traded Products are determined based upon an assumption that for the purposes of Article 2 of Commission Delegated Regulation (EU) 2017/576 ('RTS 28') where an order is transmitted to a broker for execution rather than directly to a trading venue these values can be calculated using the execution price of each transaction instead of the order or placement itself on the basis of the following:

- (1) A transaction will be considered to be 'PASSIVE' where the execution price for that transaction is:
  - (a) for a BUY order, at a price equal to or less than the prevailing primary market MID at the time of execution; or,
  - (b) for a SELL order, at a price equal to or greater than the prevailing market MID at the time of execution.
- (2) A transaction will be considered to be 'AGGRESSIVE' where the execution price for that transaction is:
  - (a) for a BUY order, at a price greater than the prevailing primary market MID at the time of execution; or,
  - (b) for a SELL order, at a price less than the prevailing market MID at the time of execution.

**NOTE 2:** 'PASSIVE' and 'AGGRESSIVE' order values for class of instrument (b) Debt Instruments are not considered to be applicable due to the market structure for this class of instrument which is primarily based upon a 'request-for-quote' model rather than the 'order book' model more common in other classes of instrument, consequently values are not reported.

**c) Top Five Order Transmission Destinations in 2018**

The following data tables have been prepared in accordance with the requirements of Article 65(6) of Commission Delegated Regulation (EU) 2017/565 (the 'MiFID Org Regulation') in order to be consistent with the technical standards under Article 3(1) of RTS 28 and show the top five order transmission destinations (i.e. brokers) to which client orders were transmitted for execution in 2018 by NTS LLP for each class of financial instrument.

Class of instrument			(a) Equities - Shares and Depository Receipts: (i) Tick size liquidity bands 5 and 6 (from 2,000 trades per day)					
Notification if < 1 average trade per business day in year			No					
Rank	Broker Code	Broker LEI	Broker Name	% of VOLUME traded in class	% of ORDERS executed in class	% of PASSIVE orders*	% of AGGRESSIVE orders*	% of DIRECTED orders
1	ITGL	213800EEC95PRUCEUP63	Investment Technology Group Limited - London	39.60%	39.21%	72.13%	27.00%	0.00%
2	GSEU	W22LROWP2IHZNBB6K528	Goldman Sachs International	17.41%	17.81%	62.36%	36.41%	0.00%
3	EXBN	969500UP76J52A9OXU27	Exane SA	14.46%	13.97%	34.64%	64.30%	0.00%
4	AESE	DL6FFRRL74S01HE2M14	Credit Suisse Securities (Europe) Limited - EMEA DMA	10.65%	15.01%	67.87%	31.85%	0.00%
5	MEEEX	549300GX4FFMFF91RJ37	Macquarie Capital (Europe) Limited - Electronic Trading	6.89%	3.46%	99.11%	0.88%	0.00%
~	Remaining brokers			10.99%	10.54%	76.29%	23.54%	0.00%
<b>Total</b>				<b>100%</b>	<b>100%</b>	<b>64%</b>	<b>36%</b>	<b>0%</b>

Class of instrument			(a) Equities - Shares and Depository Receipts: (ii) Tick size liquidity bands 3 and 4 (from 80 to 1,999 trades per day)					
Notification if < 1 average trade per business day in year			No					
Rank	Broker Code	Broker LEI	Broker Name	% of VOLUME traded in class	% of ORDERS executed in class	% of PASSIVE orders*	% of AGGRESSIVE orders*	% of DIRECTED orders
1	ITGL	213800EEC95PRUCEUP63	Investment Technology Group Limited - London	23.13%	28.18%	67.46%	31.83%	0.00%
2	MSET	4PQUHN3JFFGFNF3BB653	Morgan Stanley & Co. International plc - Electronic Trading	14.16%	3.99%	78.15%	21.63%	0.00%
3	MEEEX	549300GX4FFMFF91RJ37	Macquarie Capital (Europe) Limited - Electronic Trading	14.02%	11.02%	91.56%	8.29%	0.00%
4	GSEU	W22LROWP2IHZNBB6K528	Goldman Sachs International	12.57%	13.41%	68.99%	30.14%	0.00%
5	NUMS	213800P3F4RT97WDSX47	Numis Securities Limited	5.64%	0.58%	47.37%	51.58%	0.00%
~	Remaining brokers			30.47%	42.82%	66.15%	32.86%	0.00%
<b>Total</b>				<b>100%</b>	<b>100%</b>	<b>70%</b>	<b>29%</b>	<b>0%</b>

Class of instrument			(a) Equities - Shares and Depository Receipts: (iii) Tick size liquidity bands 1 and 2 (from 0 to 79 trades per day)					
Notification if < 1 average trade per business day in year			No					
Rank	Broker Code	Broker LEI	Broker Name	% of VOLUME traded in class	% of ORDERS executed in class	% of PASSIVE orders*	% of AGGRESSIVE orders*	% of DIRECTED orders
1	MSET	4PQUHN3JFFGFNF3BB653	Morgan Stanley & Co. International plc - Electronic Trading	39.13%	14.28%	56.23%	43.40%	0.00%
2	MEEEX	549300GX4FFMFF91RJ37	Macquarie Capital (Europe) Limited - Electronic Trading	31.55%	43.69%	48.56%	50.58%	0.00%
3	MQPT	549300GX4FFMFF91RJ37	Macquarie Capital (Europe) Limited - Portfolio Trading	6.15%	3.46%	62.52%	36.70%	0.00%
4	ITGY	213800EEC95PRUCEUP63	Investment Technology Group Limited - DMA/ALGO	5.75%	10.52%	59.51%	39.33%	0.00%
5	NTRC	3CHSO99JSPHD9HGNVJ46	Northern Trust Securities, Inc.	4.05%	14.84%	63.37%	36.02%	0.00%
~	Remaining brokers			13.37%	13.20%	54.31%	45.14%	0.00%
<b>Total</b>				<b>100%</b>	<b>100%</b>	<b>56%</b>	<b>43%</b>	<b>0%</b>

Class of instrument			(b) Debt Instruments (i) Bonds					
Notification if < 1 average trade per business day in year			N/A - No orders transmitted to an external broker for execution					
Rank	Broker Code	Broker LEI	Broker Name	% of VOLUME traded in class	% of ORDERS executed in class	% of PASSIVE orders*	% of AGGRESSIVE orders*	% of DIRECTED orders
1	N/A	N/A	N/A	0.00%	0.00%	n/a	n/a	0.00%
2	N/A	N/A	N/A	0.00%	0.00%	n/a	n/a	0.00%
3	N/A	N/A	N/A	0.00%	0.00%	n/a	n/a	0.00%
4	N/A	N/A	N/A	0.00%	0.00%	n/a	n/a	0.00%
5	N/A	N/A	N/A	0.00%	0.00%	n/a	n/a	0.00%
~	Remaining brokers			0.00%	0.00%	n/a	n/a	0.00%
<b>Total</b>				<b>0%</b>	<b>0%</b>	<b>n/a</b>	<b>n/a</b>	<b>0%</b>

Class of instrument				(k) Exchange Traded Products (Exchange Traded Funds, Exchange Traded Notes and Exchange Traded Commodities)					
Notification if < 1 average trade per business day in year				No					
Rank	Broker Code	Broker LEI	Broker Name	% of VOLUME traded in class	% of ORDERS executed in class	% of PASSIVE orders*	% of AGGRESSIVE orders*	% of DIRECTED orders	
1	JANE	549300ZHEHX8M31RP142	Jane Street Financial Limited	15.05%	15.33%	17.60%	81.60%	0.00%	
2	MEEX	549300GX4FFMFF91RJ37	Macquarie Capital (Europe) Limited - Electronic Trading	12.76%	6.27%	41.92%	56.69%	0.00%	
3	NTRC	3CHSO99JSFH9HGNYJ46	Northern Trust Securities, Inc.	11.19%	13.45%	69.16%	29.76%	0.00%	
4	COBL	851WYGNLUQLFZBSYGB56	Commerzbank AG - Equity	9.25%	7.80%	25.36%	67.39%	0.00%	
5	FLOW	549300CLJBXDH12XV51	Flow Traders B.V.	8.80%	6.34%	23.71%	76.29%	0.00%	
-	Remaining brokers			42.95%	50.80%	59.01%	40.94%	0.00%	
<b>Total</b>				<b>100%</b>	<b>100%</b>	<b>62%</b>	<b>37%</b>	<b>0%</b>	

**IMPORTANT NOTES – TOP FIVE ORDER TRANSMISSION DESTINATIONS**

**NOTE 1: 'PASSIVE' and 'AGGRESSIVE' order values for classes of instrument (a) Equity - Shares and Depository Receipts and (k) Exchange Traded Products are determined based upon an assumption that for the purposes of Article 2 of Commission Delegated Regulation (EU) 2017/576 ('RTS 28') where an order is transmitted to a broker for execution rather than directly to a trading venue these values can be calculated using the execution price of each transaction instead of the order or placement itself on the basis of the following:**

- (1) A transaction will be considered to be **'PASSIVE'** where the execution price for that transaction is:
  - (a) for a BUY order, at a price equal to or less than the prevailing primary market MID at the time of execution; or,
  - (b) for a SELL order, at a price equal to or greater than the prevailing market MID at the time of execution.
- (2) A transaction will be considered to be **'AGGRESSIVE'** where the execution price for that transaction is:
  - (a) for a BUY order, at a price greater than the prevailing primary market MID at the time of execution; or,
  - (b) for a SELL order, at a price less than the prevailing market MID at the time of execution.

**NOTE 2: 'PASSIVE' and 'AGGRESSIVE' order values for class of instrument (b) Debt Instruments are not considered to be applicable due to the market structure for this class of instrument which is primarily based upon a 'request-for-quote' model rather than the 'order book' model more common in other classes of instrument, consequently values are not reported.**

**d) Information on the quality of execution**

The following information is provided in accordance with the requirements of Article 3(3) of RTS 28 and summarises the analysis and conclusions drawn from the monitoring of the quality of execution obtained on the execution venues and through the brokers used by NTS LLP in 2018, unless otherwise stated the information covers all classes of financial instrument.

**(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;**

In 2018, NTS LLP continued to view the execution price achieved as the most significant execution factor when assessing the quality of execution. As an agency broker executing orders on behalf of institutional clients, we also considered the availability of sufficient liquidity and the speed and likelihood of execution on potential execution venues as an important factor; in this respect potential opportunities for block trading or trading at large-in-scale sizes were a key factor considered. Finally, we always consider any order handling instructions provided by the client as an important factor when assessing the quality of execution because such instructions can influence the execution strategy employed by NTS LLP's traders and also potentially restrict our ability to choose alternative strategies. Consequently the vast majority of client orders were executed on multiple execution venues across a range of lit and dark order books.

For equity and equity-like instruments, it was most likely that those execution venues were one of a range of multilateral trading facilities, or the primary regulated market for the financial instrument in question. For the more illiquid equities and certain exchange traded funds, market makers trading under the rules of the London Stock Exchange and Systematic Internalisers, or their third country equivalents, were also relevant execution venues.

For debt instruments the range of trading venues in the EU continues to be small and focused on a specialised group, which NTS LLP leverage throughout 2018 when executing client orders. Due to MiFID II, Systematic Internalisers became more important as execution venues in this class of instruments many sell-side dealers were reclassified into this category of execution venue.

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

NTS LLP does not have any close links, conflicts of interests or common ownerships with any trading venue on which a client order was executed in 2018.

NTS LLP is affiliated with the broker, Northern Trust Securities, Inc. ('NTSI'), through the common ownership of The Northern Trust Company. NTS LLP transmits client orders in US-listed financial instruments and financial instruments traded on other markets in the Americas to NTSI for execution on local trading venues. NTS LLP does not have any other close links, conflicts of interests or common ownerships with any other broker through which a client order was executed in 2018.

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

NTS LLP does not receive any payments, discounts, rebates or non-monetary benefits from the execution venues on which client orders were executed in 2018.

In 2018 NTS LLP continued to receive commission rebates from certain third country brokers as payment from the client for the services provided by NTS LLP in bringing about the execution of the client's order. These are paid to NTS LLP by the third country broker from commissions paid by the client to that broker,

because NTS LLP is not able to directly settle the transaction(s) in the local market and must therefore give-up the order and client relationship for settlement. All such commission rebates are pre-agreed with the client. NTS LLP did not maintain any arrangements which constitute payment for order flow.

**(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;**

As an agency broker the list of execution venues in the Northern Trust Order Execution Policy is primarily determined by (a) client orders and the financial instruments and range of potential execution venues on which they are traded, (b) the range of execution venues supported by our panel of external brokers and (c) changes in market infrastructure, such as those arising in the UK and EU following the implementation of MiFID II.

In 2018, client orders were executed by NTS LLP and its panel of external brokers on over 200 different execution venues across all classes of instrument. Over the course of 2018 NTS LLP added a range of periodic auction and auction on demand venues (e.g. ITG Posit MTF – Periodic Auction), and a range of Systematic Internalisers, to its list of execution venues. The main factor driving these additions were the changes in the UK and EU's market infrastructure following the implementation of MiFID II on 3 January 2018.

MiFID II contains a number of obligations and features that have led to a rise in the importance of the periodic auction/auction-on-demand model for share trading as a way of assisting market participants such as NTS LLP in complying with (i) certain MiFID II transparency requirements such as the double-volume cap ('DVC') which restricted the availability of dark trading for a range of liquid instruments in 2018 and (ii) the MiFIR trading obligation for shares, which restricts 'over-the-counter' trading, because such venues are both pre-trade transparent and compliant with the trading obligation. NTS LLP's approach to managing its execution venues meant that we were closely following this change and able to access these venues through our panel of external brokers. Additionally, MiFID II has also prompted many sell-side principal dealers that had previously traded on an 'over-the-counter' basis, to register as Systematic Internalisers. This is of particular note for exchange traded funds and in the debt instruments market.

Finally, it is worth noting that in 2018 (compared to 2017) the MiFIR trading obligation for shares has led to a significant reduction NTS LLP executing client orders on an over-the-counter basis (i.e. executions away from a trading venue). In order to ensure compliance with this obligation NTS LLP has employed a range of measures, which include "Off-book, On-exchange" transactions through our membership of the London Stock Exchange. These measures are described more fully in Appendix 1 of the Northern Trust Order Execution Policy.

**(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;**

NTS LLP does not differentiate between categories of clients when executing their orders. To the extent that orders from different clients are comparable they are generally executed in the order in which they were received unless it is possible to aggregate the orders to the advantage of all clients concerned, whereupon they will be executed concurrently.

**(f) An explanation of whether other criteria were given precedence over immediate price and cost when executing retail client orders and how these other criteria were instrumental in delivering the best possible result in terms of the total consideration to the client;**

Not applicable, NTS LLP does not provide investment services to Retail clients.



**(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;**

Throughout 2018, and in accordance with the best execution obligation under Article 27 of MiFID II, NTS LLP measured the performance of client orders through the use of third party transaction cost analysis ('TCA') tools, and where available, the TCA reports provided by the brokers to which client orders were transmitted. The TCA tools and reports used by NTS LLP measured the performance of client orders primarily through the use of order and placement level benchmarks, such as implementation shortfall, percentage weighted participation and price reversion. In addition, the panel of external brokers and their execution performance were subject to ongoing monitoring and oversight in accordance with the principles described in the Northern Trust Order Execution Policy.

NTS LLP did not specifically make use of any data published under Delegated Regulation (EU) 2017/575 ('RTS 27') by execution venues, and continued to rely upon its execution performance and transaction cost analysis tools.

**(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.**

NTS LLP did not use a consolidated tape provider established under Article 65 of Directive 2014/65/EU in 2018.

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