



2017

# MiFID II EXECUTION QUALITY REPORT



## 1. Scope and Background

T. Rowe Price International Ltd (“TRPIL”) is an investment firm subject to the Markets in Financial Instruments Directive II (“MiFID II”). This document is intended to satisfy the requirements of Article 65(6) the Markets in Financial Instruments Directive II (“MiFID II”) and the Regulatory Technical Standard 28 (RTS 28): Investment firms shall publish for each class of financial instruments, a summary of the analysis and conclusions they draw from their detailed monitoring of the quality of execution obtained on the execution venues where they executed all client orders in the previous year.

T. Rowe Price International Ltd (“TRPIL”) provides portfolio management services to various funds and portfolios. TRPIL executes trades for these funds and portfolios through the trading desks of T. Rowe Price Associates, Inc. (“TRPA”), T. Rowe Price Hong Kong Limited (“TRPHK”), and/or T. Rowe Price International Ltd. (“TRPIL”), and the execution practices of these desks are governed by T. Rowe Price Group’s (“TRP”) global execution policy. The global execution policy documents the internal procedures regarding trade execution decisions, consistent with the principles of best execution, which may be defined as taking all sufficient steps to obtain, when executing orders, the best possible result for our clients, taking into account price, costs, speed, likelihood of execution and settlement, size, nature or any other consideration relevant to order execution. The policy and arrangements are reviewed on at least an annual basis or whenever a material change occurs that could impact our ability to provide best execution.

The scope of the transactions for this report include all orders raised for client accounts managed by TRPIL and all orders executed by TRPIL authorised traders from 1 January–31 December 2017.

Where orders have been delegated for execution to the TRPA or TRPHK execution desks, the execution tables reflect this delegation.

In addition to the required tables, TRPIL has included additional tables that provide transparency for over-the-counter transactions within Fixed Income, FX and Derivative products.

## 2.1 Equity, Equity Derivatives and Securitized Derivatives

**(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;**

The decision as to which underlying execution venue equity orders are routed and executed on is typically the responsibility of the broker to which the orders are sent. Monitoring the performance of these underlying execution venues also forms part of the best execution framework. Additionally, TRP monitors the quality of each execution as part of the firm’s internal transaction cost analysis (“TCA”) effort as more fully described herein.

Brokers were selected for equities based on the evaluation of a number of criteria by the traders, including but not limited to:

- Indications of interest: A message from a broker reflecting an indication to either buy or sell securities on behalf of a client or entering/exiting a position to principally facilitate a trade. Brokers may also advertise trading volume to indicate the presence of sizable trading activity
- Capital commitment or availability of principal risk: The ability to trade principally gives traders optionality for achieving best execution
- Trade history (minimisation of information leakage): We may wish to trade with the same broker for multiday orders to minimise information leakage to the market
- Trader votes on execution quality, market colour, sector insights and sales trader service received from the broker
- Price improvement/reduction of market impact: We examine transaction cost data to evidence reduced execution costs
- Access to electronic trading platform: Some trading protocols (i.e., alternative trading systems (ATSs) and block crossing networks) may lead to better execution performance by reducing market impact for larger trades
- Unique liquidity: Access to retail or principal liquidity that may otherwise not be accessible through another broker



The relative importance of the execution factors for equities are primarily a function of the order type—i.e., whether it is a low touch order, program order, or a high touch order. To the extent that these types of orders may involve any of the MiFID II classes of instruments for equities (shares and depository receipts).

## Low touch orders

All eligible low touch order flow is executed electronically using a variety of algorithmic strategies across a number of brokers. Broker selection criteria focuses on trade cost analysis, connectivity and a wider assessment of the overall quality of execution coverage (the flexibility and responsiveness of the algorithm platform, the ability to provide bespoke customisation, underlying execution venue selection, analysis to improve execution quality and a solid understanding of the nature of the flow).

While low touch orders can be executed across a number of instrument classes, from very liquid (2000+ trades per day) to low liquidity (0–79 trades per day), a typical ranking of execution factors would be:

1. Price
2. Order size
3. Nature of the order
4. Cost
5. Speed
6. Likelihood of execution
7. Likelihood of settlement

## Program orders

These are baskets of individual orders that are grouped together. Program trades typically have a benchmark associated with them. For example, a program trade with a close of day benchmark may be required to be executed as close to the close of day prices as possible. Special settlement instructions—for example, a program order may be tied to a specific date to invest cash flow received—are considered, alongside existing duplicate or contra orders already on the desk.

These trades may be executed via broker's algorithms, with program trading desks, and utilising high touch orders.

Broker selection criteria are important to achieving the best possible outcome. For benchmarked program trades, the considerations include pre- and post-trade cost analysis, execution venue functionality, and connectivity.

However, a program trade with a market benchmark whereby each individual order is to be executed in accordance with prevailing market conditions typically has similar factor rankings to low touch orders. If appropriate, program trade components may be broken up and handled separately in accordance with the nature of the component parts. For example a very large program may include some particularly large instrument orders and those may be separated out and traded separately as high touch orders—see below.

As with low touch orders, program orders can occur across a number of instrument classes, from very liquid (2000+ trades per day) to low liquidity (0–79 trades per day). However, for program trades with a specific benchmark (3pm, close etc.), a typical ranking of execution factors would be:

1. Likelihood of execution
2. Order size
3. Price
4. Nature of the order
5. Cost
6. Speed
7. Likelihood of settlement

## High touch orders

The variety of order flow means there is no absolute execution factor ranking for orders that are executed through this channel. Price and size tend to feature highly in the consideration, although this will depend on the context of the order, alongside a wider appreciation of relative liquidity. Likelihood of settlement is relevant, but given the delivery vs. payment nature of equity markets, it does not normally warrant a high ranking. The other execution factors of speed, cost, and likelihood of execution can vary a great deal, and are generally a function of a wider appreciation of the nature of the order.

Broker selection remains absolutely key in seeking the best possible outcome. For high touch orders, the inputs into the decision-making process are more complex than they would be for a benchmarked program trade, for example. Some important inputs here that are less relevant for the other execution channels are indications of interest, the availability of principle risk, liquidity distribution potential of the platform, quality of market intelligence, and confidentiality. Low touch or algorithmic strategies also play an important role in sourcing liquidity and minimising impact.

## Equity options and futures admitted to trading on a trading venue

For index futures and index options liquidity is typically very high and because of the single venue model, market impact tends to be low. These trades can have benchmarks such as the close, or be limit orders or be market orders. A typical ranking of the relative importance of the execution factors for options and futures is:

1. Price
2. Size
3. Nature of the order
4. Cost
5. Speed
6. Likelihood of execution
7. Likelihood of settlement

## Swaps and other equity derivatives

A typical ranking of the relative importance of the execution factors for swaps and other equity derivatives (which are not options or futures) is:

1. Price
2. Size
3. Nature of the order
4. Cost
5. Speed
6. Likelihood of execution
7. Likelihood of settlement

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

TRPH Corporation, an affiliate of TRPIL, owns 4.9% of Luminex Trading & Analytics (Luminex). The Luminex trading platform is designed as an alternative trading system with specific minimum trading thresholds to allow institutional investors to trade large blocks of shares. We may transact with Luminex subject to identical criteria as we would with any other broker-dealer, including best execution obligations. Such trading is actively monitored by the T. Rowe Price Fund Board and T. Rowe Price's Global Trading Committee. A senior T. Rowe Price employee is a member of Luminex's Board of Directors.

TRP operate a global trading desk model and can chose to delegate executions via the MiFID II regulated TRPIL desk or via either of the affiliated trading desk entities TRPA or TRPHK.



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

There are no specific arrangements with any execution venues.

During 2017 TRPIL used brokerage commissions to acquire third party research and related services of brokers and independent research providers through commission sharing agreements (“CSAs”) on a limited basis. CSAs were used with a limited number of broker-dealers who were utilised for a percentage of T. Rowe Price’s “low touch” commission business. “Low touch” trading, including execution of program trades, were generally effected through electronic venues provided by broker dealers and other third parties. Trades which are very small relative to the average daily volume for that security were generally routed to such venues.

During 2017, TRP also used full service broker dealers that provided “bundled” proprietary broker-dealer research, subject to TRP best execution obligations; lower commissions may have been available from other broker-dealers that did not provide research.

TRP maintains a Code of Ethics and Conduct (Code) applicable to all T. Rowe Price affiliates. The Code places restrictions on the receipt of gifts, travel and entertainment opportunities by our personnel. Our personnel occasionally participate in entertainment opportunities that are for legitimate business purposes, subject to limitations set forth in the Code.

**(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;**

There were no material changes to the list of counterparties or execution venues during the period.

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

All clients of TRPIL are categorized as professional and are treated the same.

**(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;**

TRPIL do not currently provide trading services to retail clients. All TRPIL clients are categorized as professional 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 [RTS 27];**

A third party product is utilised to evaluate the quality of the firm’s trade executions via a trade tracking system. This product traces equity investments from order entry by the portfolio manager to execution. The product compares the total and net transaction cost of the firms’ equity trade against an industry standard pre-trade estimate, as well as a peer universe of transactions from the third party provider’s subscriber base. Trade executions are analysed on a quarterly basis by TRP and consultations with the third party provider focus on practical recommendations for improving trade execution performance. These may include a review of average order size or speed of execution, i.e., are we trading too slow or too fast. A summary of the third party provider’s findings are reviewed by equity trading analysts with representatives from the third party provider on a quarterly basis.

TRP also has dedicated resources assigned to transaction costs analysis (“TCA”) and assesses all equity trades using both the third party product described above, along with in-house TCA analytics. T. Rowe Price measures implicit costs using a number of different benchmarks. These include comparing execution prices against the “arrival” price (the implementation shortfall approach) and the volume weighted average price (VWAP) while the order is active in the market. TRP’s internal analysis also evaluates trade executions throughout the trading lifecycle from portfolio manager entry through to broker selection and performance. Each trader receives a TCA report on a daily, weekly, and monthly basis. Trading management also receives summary reports on a daily basis. Comprehensive monthly reports are distributed to trading management. Quarterly reviews of trading costs are also provided to the Equity Best Execution Subcommittee. An equity trading analyst also meets with portfolio managers on a regular basis to review transaction costs incurred by strategy.

# MiFID II Execution Quality Report 2017

RTS 28 reports by Brokers, and RTS 27 reports by systematic internalisers, were not required to be published during the 2017 trading year so could not be consumed by the TRPIL trading team. Once published, TRPIL will consider the data as part of its process for monitoring execution quality.

## (h) where applicable, an explanation of how the investment firm has used output of a consolidated tape provider

There is currently no consolidated tape provider within Europe but the TRPIL trading team utilised multiple data sources during their price discovery process.

## 2.2 Equity, Equity Derivatives and Securitized Derivatives – Article 65(6) Tables

In accordance with ESMA guidance (Q7. ESMA Q&A On MiFID II and MiFIR investor protection and intermediaries topics, Part 1), equity instruments are reported in the Delegated Regulation Article 65(6) format, as the orders were placed with brokers for execution.

### 2.2.1 (a) Equities Shares & Depositary Receipts

Class of Instrument	(a) Equities—Shares and depositary receipts	
Notification if <1 average trade per business day in the previous year		N
<b>Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year”</b>	<b>Proportion of volume traded as a percentage of total in that class</b>	<b>Proportion of orders executed as percentage of total in that class</b>
<b>TRPHK</b> LEI: 549300J2AF74HTUGWG28	14%	14%
<b>TRPA</b> LEI: 7HTL8AEQSEDX602FBU63	12%	12%
<b>UBS INVESTMENT BANK</b> LEI: BFM8T61CT2L1QCEMIK50	9%	11%
<b>BANK OF AMERICA MERRILL LYNCH</b> LEI: GGDZP1UYGU9STUHRDP48	7%	8%
<b>MORGAN STANLEY &amp; COMPANY</b> LEI: 4PQUHN3JPFGFNF3BB653	7%	7%

### 2.2.2 (g) Equities Derivatives

Class of Instrument	(g) Equity derivatives (i) Options and Futures admitted to trading on a trading venue	
Notification if <1 average trade per business day in the previous year		Y
<b>Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year</b>	<b>Proportion of volume traded as a percentage of total in that class</b>	<b>Proportion of orders executed as percentage of total in that class</b>
<b>J P MORGAN CHASE HQ</b> LEI: 549300PF35PXTNDEAL74	97%	48%
<b>TRPA</b> LEI: 7HTL8AEQSEDX602FBU63	2%	25%
<b>MORGAN STANLEY &amp; COMPANY</b> LEI: 4PQUHN3JPFGFNF3BB653	0%	23%
<b>GOLDMAN SACHS &amp; COMPANY</b> LEI: W22LROWP2IHZNBB6K528	0%	1%
<b>CITIGROUP GLOBAL MARKETS</b> LEI: XKZZ2JZF41MRHTR1V493	0%	4%



## 2.2.3 (h) Securitized Derivatives

Class of Instrument	(h) Securitized derivatives (i) Warrants and certificate derivatives	
Notification if <1 average trade per business day in the previous year	Y	
Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class
UBS INVESTMENT BANK LEI: BFM8T61CT2L1QCEMIK50	100%	100%

*Additional Trader Commentary for Equities, Equity Derivatives and Securitized Derivatives:*

- The highest volume brokers during the period had significant volumes primarily due to:
  - Industry leading brokers that provide a wide range of access to liquidity
  - Ability to deal with large ticket sizes
  - Provide specialty liquidity coverage
- Low touch trading represents a significant portion of the TRPIL desks trading and the broker pool that provides services in for this execution strategy is limited. Certain brokers listed provide industry leading low touch services, which partially explains the reason they are in the top 5 tables
- The equity derivatives table is distorted due to low volumes, and the blending of futures and options together in one table has had an impact on the figures (for example the options tickets were low principle amount but high ticket count relative to futures)
- As expected, the top 5 is primarily populated by a number of bulge bracket institutions, given their ability to provide liquidity across the asset class range and support large ticket sizes. However, the TRPIL trading team has access to a wide range of brokers that provide a variety of generalist and specialist liquidity across a number of instrument types
- In line with expectations, TRPA and TRPHK appear as top volume venues given TRP's global trading desk model. Executions allocated to these affiliated trading desks are subject to the same global execution policy and oversight governance framework as the MiFID II regulated entity

## 3.1 Fixed Income & FX:

**(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;**

### Execution Factors

Price, cost, and likelihood of execution are usually of high importance, whereas the relative importance of speed and size as execution factors varies depending on the underlying sector and specifics of the trade.

Order size is a greater consideration when trades involve less liquid securities. A number of factors impact bond liquidity including issuer frequency, security complexity, issue size and age. Bonds issued by companies that come to market infrequently or in small size typically have lower liquidity. Further, when a bond has a complex structure (such as trading restrictions or specific covenants) or is issued in limited size the market for buyers and sellers may be more limited. Finally, as bonds increase in age since issue, there is a less actively quoted market for trading.

Speed of execution may be of greater importance depending on market conditions. During a period where the market is significantly volatile or moving against the order a trader may favour a method of execution that will result in a trade more quickly.

Likelihood of settlement is evaluated at the enterprise level and tends to be a lesser focus on a trade-by-trade basis as a result. Likelihood of settlement is typically of lower concern than other factors with the exception of instruments with longer settlement periods such as bank loans and some derivatives due to their non-“DVP” nature and the risk that the counterparty’s financial strength could erode between trade and settlement date. In these cases, adverse market conditions may contribute to heightened concerns about counterparty risk.

## Execution venue selection

Trading platforms and other execution venues are selected for each sector based on a number of characteristics including but not limited to:

- Market share: Platforms are initially considered based on their ability to supplement existing sources of liquidity. If a platform captures significant market share, indicating a robust group of market participants, it would be subject to review. For newly/recently established platforms, we not only consider overall market share (which may be small in the initial stages) but evidence of consistent market share growth over time as evidence of increasing adoption
- Price improvement: In reviewing a new platform, we examine the likelihood that use of the platform will lead to price improvement over existing platforms. Price improvement may be achieved through new trading protocols or access to new sources of liquidity. Where possible, we examine execution data to evidence reduced trading costs
- Trading fees: As part of our consideration of overall trading costs, we examine the fee schedule for each platform and view trade prices net of any embedded fees
- Reduction of market impact (minimisation of information leakage): Related to our consideration of price improvement, some trading protocols (i.e., dark crossing networks) may reduce market impact for large trades by reducing information leakage and thereby leading to price improvement
- Platform metrics: Where available, we request information on broker performance and “hit rates” for trades on the venue. Hit rates quantify for each inquiry, the number of prices received back and the number of trades executed vs. the number of orders entered on the system. This helps measure the quality of the liquidity provided on the platform
- Unique liquidity or market expertise: When considering adding a new systematic internaliser, we may consider whether the broker has an expertise in a particular fixed income sector

The relative importance of the above characteristics will vary based on market conditions and the specific facts and circumstances. Within the over-the-counter markets, a trade may be executed with a broker, via a voice protocol (typically a request for quote or “RFQ”), or using an electronic trading platform. The decision about whether or not to use an electronic trading venue is dependent on the availability of electronic trading platforms for that market sector and the potential for market impact.

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

There are no specific arrangements, close links, conflicts of interests or common ownership to note for Fixed Income and FX venues.

TRP operate a global trading desk model and can chose to delegate executions via the MiFID II regulated TRPIL desk or via either of the affiliated trading desk entities TRPA or TRPHK.

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

There are no specific arrangements with any execution venue. TRP maintains a Code of Ethics and Conduct (Code) applicable to all T. Rowe Price affiliates. The Code places restrictions on the receipt of gifts, travel and entertainment opportunities by our personnel. Our personnel occasionally participate in entertainment opportunities that are for legitimate business purposes, subject to limitations set forth in the Code.



**(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;**

There were no material changes to the list of counterparties during the period.

**(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 clients of TRPIL are categorized as professional and are treated the same.

**(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;**

TRPIL do not currently provide trading services to retail clients. All TRPIL clients are categorized as professional 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 [RTS 27];**

TRPIL use independent analytics and data providers, to evaluate foreign exchange and fixed income trades based on various sources of pre- and post-trade market data that are available given the fragmented nature of the market. TRPIL consistently monitor execution venues and brokers quality and operate a robust governance framework to ensure

RTS 27 reports by venues, and RTS 28 reports by brokers were not required to be published during the 2017 trading year so could not be consumed by the TRPIL trading team. Once published, TRPIL will consider the data as part of the monitoring of execution quality of venues and brokers.

**(h) where applicable, an explanation of how the investment firm has used output of a consolidated tape provider**

There is currently no consolidated tape provider within Europe but the TRPIL trading team utilises multiple data sources during their price discovery process.

## 3.2 Fixed Income & FX:

In accordance with ESMA guidance (Q7. ESMA Q&A On MiFID II and MiFIR investor protection and intermediaries topics, Part 1), fixed income and FX instruments are reported in the RTS 28 format as the orders were executed via a venue. However, '(d) Credit Derivatives (i) Futures and Options traded on a trading venue' were placed with brokers to execute, therefore these instruments are reported in the Delegated Regulation Article 65(6) format.

In addition to the required tables, TRPIL has included additional tables that provide transparency for over-the-counter transactions within Fixed Income, FX and Derivative products.

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## 3.2.1 (b) Debt Instruments

Class of Instrument	(b) Debt instruments (i) Bonds				
Notification if <1 average trade per business day in the previous year	N				
Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders	Percentage of aggressive orders	Percentage of directed orders
<b>TRPA</b> LEI: 7HTL8AEQSEDX602FBU63	56%	67%	N/A	N/A	N/A
<b>TRPHK</b> LEI: 549300J2AF74HTUGWG28	19%	8%	N/A	N/A	N/A
<b>MARKETAXESS</b> LEI: 549300TTHIODYMGND828	18%	15%	N/A	N/A	N/A
<b>TRADEWEB</b> LEI: 2138001WXZQOPMPA3D50	7%	11%	N/A	N/A	N/A

Class of Instrument	(b) Debt instruments (ii) Money market instruments				
Notification if <1 average trade per business day in the previous year	N				
Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year"	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders	Percentage of aggressive orders	Percentage of directed orders
<b>TRADEWEB</b> LEI: 2138001WXZQOPMPA3D50	71%	65%	N/A	N/A	N/A
<b>TRPHK</b> LEI: 549300J2AF74HTUGWG28	19%	19%	N/A	N/A	N/A
<b>TRPA</b> LEI: 7HTL8AEQSEDX602FBU63	7%	13%	N/A	N/A	N/A
<b>MARKETAXESS</b> LEI: 549300TTHIODYMGND828	3%	3%	N/A	N/A	N/A

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## Class of Instrument

## (b) Debt instruments—Bonds—OTC additional table

Notification if <1 average trade per business day in the previous year

N

Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders	Percentage of aggressive orders	Percentage of directed orders
<b>TRPA</b> LEI: 7HTL8AEQSEDX602FBU63	33%	32%	N/A	N/A	N/A
<b>CITIGROUP GLOBAL MARKETS</b> LEI: XKZZ2JZF41MRHTR1V493	18%	19%	N/A	N/A	N/A
<b>HSBC SECURITIES</b> LEI: MP6I5YZBECU3UXPYFY54	9%	9%	N/A	N/A	N/A
<b>BARCLAYS CAPITAL</b> LEI: AC28XWWI3WIBK2824319	7%	7%	N/A	N/A	N/A
<b>CREDIT SUISSE</b> LEI: 549300ECVPNB3VQOQ826	7%	7%	N/A	N/A	N/A

## Class of Instrument

## (b) Debt instruments—Money markets—OTC additional table

Notification if <1 average trade per business day in the previous year

N

Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders	Percentage of aggressive orders	Percentage of directed orders
<b>TRPA</b> LEI: 7HTL8AEQSEDX602FBU63	23%	22%	N/A	N/A	N/A
<b>HSBC SECURITIES</b> LEI: MP6I5YZBECU3UXPYFY54	16%	16%	N/A	N/A	N/A
<b>TRPHK</b> LEI: 549300J2AF74HTUGWG28	12%	16%	N/A	N/A	N/A
<b>CITIGROUP GLOBAL MARKETS</b> LEI: XKZZ2JZF41MRHTR1V493	10%	11%	N/A	N/A	N/A
<b>ROYAL BANK OF SCOTLAND</b> LEI: RR3QWICWWIPCS8A4S074	10%	3%	N/A	N/A	N/A

### Debt instruments additional Trader Commentary:

- Bloomberg was the primary venue for transaction over-the-counter but the communication platforms within the tool were not classified as venues during the 2017 trading year, therefore TRPIL have added additional transparency around these transactions with the additional OTC tables
- The highest volume OTC brokers during the period had significant volumes primarily due to:
  - Strong coverage across a number of instrument class
  - Solid liquidity in more specialist markets (e.g. Emerging Markets)
  - Ability to deal with large ticket sizes

- As expected, the top 5 is primarily populated by a number of bulge bracket institutions, given their ability to provide liquidity across the asset class range and support large ticket sizes. However, the TRPIL trading team also has access to a wide range of brokers that provide a variety of generalist and specialist liquidity across a number of instrument types.
- In line with expectations, TRPA and TRPHK appear as top volume venues given TRP's global trading desk model. Executions allocated to these affiliated trading desks are subject to the same global execution policy and oversight governance framework as the MiFID II regulated entity

### 3.2.2 (c) Interest Rate Derivatives

Class of Instrument	(c) Interest Rate Derivatives (ii) Swaps, forwards, and other interest rate derivatives				
Notification if <1 average trade per business day in the previous year	Y				
Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders	Percentage of aggressive orders	Percentage of directed orders
BLOOMBERG SEF LEI: 5493003IUYOH354SNS58	58%	78%	N/A	N/A	N/A
TRPA LEI: 7HTL8AEQSEDX602FBU63	42%	21%	N/A	N/A	N/A
TRPHK LEI: 549300J2AF74HTUGWG28	0%	1%	N/A	N/A	N/A
Class of Instrument	(c) Interest Rate Derivatives—Swaps, forwards, and other interest rate derivatives—Additional OTC table				
Notification if <1 average trade per business day in the previous year	Y				
Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders	Percentage of aggressive orders	Percentage of directed orders
TRPHK LEI: 549300J2AF74HTUGWG28	64%	42%	N/A	N/A	N/A
CITIGROUP GLOBAL MARKETS LEI: XKZZ2JZF41MRHTR1V493	20%	29%	N/A	N/A	N/A
BANK OF AMERICA MERRILL LYNCH LEI: GGDZP1UYGU9STUHRDP48	11%	15%	N/A	N/A	N/A
BNP PARIBAS SECURITIES LEI: ROMUWSFPU8MPRO8K5P83	2%	3%	N/A	N/A	N/A
TRPA LEI: 7HTL8AEQSEDX602FBU63	2%	8%	N/A	N/A	N/A



## Additional Trader Commentary:

- The highest volume OTC brokers during the period had significant volumes primarily due to:
  - Strong coverage across a number of asset classes
  - Solid liquidity in more specialist markets (e.g. Emerging Markets)
  - Ability to deal with large ticket sizes
  - Providing strong liquidity for instruments that the trading team were not mandated to execute via a Swap Execution Facility (SEF)
- As expected, the top 5 is primarily populated by a number of bulge bracket institutions, given their ability to provide liquidity across the asset class range and support large ticket sizes. However, the TRPIL trading team has access to a wide range of brokers, beyond those listed in the above tables, which provide a variety of generalist and specialist liquidity across multiple instrument types
- In line with expectations, TRPA and TRPHK appear as top volume venues given TRP's global trading desk model. Executions allocated to these affiliated trading desks are subject to the same global execution policy and oversight governance framework as the MiFID II regulated entity

## 3.2.3 (d) Credit Derivatives

Class of Instrument	(d) Credit derivatives (i) Futures & options admitted to trading on a trading venue	
Notification if <1 average trade per business day in the previous year	Y	
Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class
GOLDMAN SACHS & COMPANY LEI: W22LROWP2IHZNBB6K528	48%	56%
TRPA LEI: 7HTL8AEQSEDX602FBU63	31%	28%
TRPHK LEI: 549300J2AF74HTUGWG28	19%	11%
J P MORGAN CHASE HQ LEI: 549300PF35PXTNDEAL74	2%	5%

Class of Instrument	(d) Credit derivatives (ii) Other credit derivatives				
Notification if <1 average trade per business day in the previous year	Y				
Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders	Percentage of aggressive orders	Percentage of directed orders
TRPA LEI: 7HTL8AEQSEDX602FBU63	73%	49%	N/A	N/A	N/A
BLOOMBERG SEF LEI: 5493003IUYOH354SNS58	27%	51%	N/A	N/A	N/A

# MiFID II Execution Quality Report 2017

## Class of Instrument

## (d) Credit derivatives—Other credit derivatives—Additional OTC table

Notification if <1 average trade per business day in the previous year

Y

Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders	Percentage of aggressive orders	Percentage of directed orders
<b>TRPA</b> LEI: 7HTL8AEQSEDX602FBU63	56%	51%	N/A	N/A	N/A
<b>BARCLAYS CAPITAL</b> LEI: AC28XWWI3WIBK2824319	16%	17%	N/A	N/A	N/A
<b>BANK OF AMERICA MERRILL LYNCH</b> LEI: GGDZP1UYGU9STUHRDP48	12%	8%	N/A	N/A	N/A
<b>TRPHK</b> LEI: 549300J2AF74HTUGWG28	9%	9%	N/A	N/A	N/A
<b>MORGAN STANLEY &amp; COMPANY</b> LEI: 4PQUHN3JPFGNF3BB653	3%	0%	N/A	N/A	N/A

### Credit derivatives additional trader commentary:

- The highest volume OTC brokers during the period had significant volumes primarily due to:
  - Strong coverage across a number of asset classes
  - Solid liquidity in more specialist markets (e.g. Emerging Markets)
  - Ability to deal with large ticket sizes
  - Providing strong liquidity for instruments that the trading team were not mandated to execute via a Swap Execution Facility (SEF)
- As expected, the top 5 is primarily populated by a number of bulge bracket institutions, given their ability to provide liquidity across the asset class range and support large ticket sizes. However, the TRPIL trading team has access to a wide range of brokers, beyond those listed in the above tables, which provide a variety of generalist and specialist liquidity across multiple instrument types
- In line with expectations, TRPA and TRPHK appear as top volume venues given TRP's global trading desk model. Executions allocated to these affiliated trading desks are subject to the same global execution policy and oversight governance framework as the MiFID II regulated entity



### 3.2.4 (e) Currency Derivatives

Class of Instrument	(e) Currency derivatives (ii) Swaps, forwards, and other currency derivatives				
Notification if <1 average trade per business day in the previous year	N				
Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders	Percentage of aggressive orders	Percentage of directed orders
FX CONNECT MIC: MFXC	78%	38%	N/A	N/A	N/A
FX ALL MIC: TRAL	18%	2%	N/A	N/A	N/A
TRPA LEI: 7HTL8AEQSEDX602FBU63	2%	44%	N/A	N/A	N/A
TRPHK LEI: 549300J2AF74HTUGWG28	1%	16%	N/A	N/A	N/A

Class of Instrument	(e) Currency derivatives—Futures & options—Additional OTC table				
Notification if <1 average trade per business day in the previous year	N				
Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders <sup>"</sup>	Percentage of aggressive orders	Percentage of directed orders
CITIGROUP GLOBAL MARKETS LEI: XKZZ2JZF41MRHTR1V493	31%	26%	N/A	N/A	N/A
TRPHK LEI: 549300J2AF74HTUGWG28	20%	23%	N/A	N/A	N/A
TRPA LEI: 7HTL8AEQSEDX602FBU63	15%	13%	N/A	N/A	N/A
STANDARD CHARTERED GLOBAL MARKETS LEI: RILFO74KP1CM8P6PCT96	10%	8%	N/A	N/A	N/A
BARCLAYS CAPITAL LEI: AC28XWWI3WIBK2824319	6%	10%	N/A	N/A	N/A

# MiFID II Execution Quality Report 2017

## Class of Instrument

### (e) Currency derivatives—Swaps, forwards, and other currency derivatives—Additional OTC table

Notification if <1 average trade per business day in the previous year

N

Top five execution venues ranked in terms of trading volumes (descending order) trade per business day in the previous year	Proportion of volume traded as a percentage of total in that class	Proportion of orders executed as percentage of total in that class	Percentage of passive orders	Percentage of aggressive orders	Percentage of directed orders
<b>TRPA</b> LEI: 7HTL8AEQSEDX602FBU63	46%	36%	N/A	N/A	N/A
<b>J P MORGAN CHASE HQ</b> LEI: 549300PF35PXTNDEAL74	27%	15%	N/A	N/A	N/A
<b>TRPHK</b> LEI: 549300J2AF74HTUGWG28	13%	15%	N/A	N/A	N/A
<b>HSBC SECURITIES</b> LEI: MP615YZBEU3UXPYFY54	7%	15%	N/A	N/A	N/A
<b>BNP PARIBAS SECURITIES</b> LEI: ROMUWSFPU8MPRO8K5P83	2%	8%	N/A	N/A	N/A

#### Additional Trader Commentary:

- The highest volume OTC brokers during the period had significant volumes primarily due to:
  - Strong historical record and are industry leaders within the space
  - Solid liquidity in particular regional markets (e.g. APAC)
  - For swap positions, certain liquidity providers can collateralize trades which leads to them offering more aggressive pricing
- As expected, the top 5 is primarily populated by a number of bulge bracket institutions, given their ability to provide liquidity across the asset class range and support large ticket sizes. However, the TRPIL trading team has access to a wide range of brokers, beyond those listed in the above tables, which provide a variety of generalist and specialist liquidity across multiple instrument types
- In line with expectations, TRPA and TRPHK appear as top volume venues given TRP's global trading desk model. Executions allocated to these affiliate trading desks are subject to the same global execution policy and oversight governance framework as the MiFID II regulated entity
- Although FX spot positions are out of scope for MiFID II, in line with regulatory guidance the spot leg of the in-scope currency swap positions have been included in the formulation of the relevant tables



## NOTES

The scope of the transactions for this report include all orders raised for client accounts managed by TRPIL and all orders executed by TRPIL authorised traders from 1 January–31 December 2017.

Where orders have been delegated for execution to the TRPA or TRPHK execution desks, the execution tables reflect this delegation.

In addition to the required tables, TRPIL has included additional tables that provide transparency for over-the-counter transactions in Fixed Income, FX and Derivative products.

Tables have not been included where TRPIL have not raised an order, nor executed an order, in the relevant instrument class during the period.

RTS 28 requires firms to provide a view of how an entity has accessed liquidity via an order book, either passively (order provided liquidity) or aggressively (order took liquidity). The tables do not contain a breakdown of passive or aggressive since the nature of our order flow is such that in placing an equity order with a broker, TRPIL neither provides nor takes liquidity, nor does it instruct the broker to trade aggressively or passively. The broker with whom the order is placed has discretion as to which venue to execute the order. In executing fixed income or FX orders, we do not utilise the order book protocol that requires a firm to provide a breakdown of passive or aggressive indicators.

The tables do not contain a breakdown of directed orders as TRPIL do not accept directed orders from clients and have full discretion over order flow.

TRPIL neither raises nor executes orders directly for securities financing transactions ("SFTs"), rather its affiliate, TRPA, operates some liquidity funds that TRPIL funds may utilise to manage cash. Therefore, there are no tables for SFT transactions.

Although FX spot positions are out of scope for MiFID II, in line with regulatory guidance the spot leg of the in-scope currency swap positions have been included in the formulation of the relevant tables.

All values have been converted into US Dollar (\$) before calculating the percentages for the tables.

LEIs were not required to be captured during the 2017 trading year. TRPIL has assessed the legal entities we traded with during this period and made a reasonable determination to reflect the appropriate LEI. In a limited number of circumstances, where brokers operate multiple LEIs within Europe, we have made a determination on a case by case basis as to which LEI is the most appropriate.

A machine readable version of the data from this document can be accessed in the same location as this file. The file format is .CSV and contains the required tables to comply with the regulation followed by the additional OTC tables that TRPIL has added for transparency.