



2018 ORDER EXECUTION REPORT- DERIVATIVES

As part of the MiFID II Directive, which came into force on 3rd January 2018, NTGIL is required to summarise and make public on an annual basis, for each class of financial instruments as set out in the rules, the top five execution venues where client orders were executed, or transmitted to a broker for execution, and information on the quality of execution obtained.

This document sets out the relevant data and analysis for 2018 Derivative instruments, NTGIL's portfolio managers may utilise a variety of exchange traded derivative instruments from time to time as part of their investment policy, for efficient portfolio management or for hedging purposes. During 2018 transactions occurred only for instruments in the classes of Currency Derivatives¹ (Forwards and Non-Deliverable Forwards) and Equity Derivatives (Index Futures).

CURRENCY DERIVATIVES- FX FORWARDS

Forward currency contracts are primarily used to hedge against currency risk that results from assets held in a portfolio that are not in its base currency. NTGIL, may, for example, trade forward currency contracts by selling forward a foreign currency against the base currency to protect the portfolio from foreign exchange rate risk that has risen from holding assets in that currency. Trades are executed for both Fixed Income and Equities portfolios.

While all transactions in currency derivatives were executed through electronic trading platforms either FXall (operated by Thomson Reuters) or FX Connect (operated by State Street), executions occur bilaterally with banks acting as NTGIL's counterparties, either offering the best price achieved through requesting competing quotes or transmitted for execution at the relevant market's 4PM Fix rate (detailed further below) we have therefore included tables detailing both platforms and counterparties used, to provide a clear picture of where client orders were executed.

EXECUTION VENUES- PLATFORMS

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						No
Top Five Execution Venues ranked in terms of trading volumes (descending order)	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	
FXCONNECT (MFXC)	88.7%	94.7%	NA	NA	NA	
FXALL (FXAL)	11.3%	5.3%	NA	NA	NA	

¹ Spot FX instruments are excluded from the scope of 'Financial Instruments' as defined under MiFID and transactions are therefore not included for the purposes of the below data and analysis.

VENUE SELECTION

FXall is generally used for competitive quote transactions at the current market price, while FX Connect is generally for trading with the objective of achieving a price as close as possible to the relevant benchmark price e.g. WM Company/ Reuters 4PM benchmark rates '4PM fix'². Due to the primary purposes for which forwards are utilized and the passive management strategy of the majority of portfolios, significantly more volume is executed as aggregated trades using the latter method and benchmark, as a result FXConnect is utilized for the largest percentage of both volume and trades, therefore making up c.90% of volume traded and c.95% in terms of number of trades executed.

Both platforms offer the ability to trade by both means and could be used as a backup should the other be unavailable, the factors for choosing one platform over the other are based on the efficiency and ease of use for the different trading strategies, as well as FXall's competing quotes facility, which is utilized for at market price transactions- experience and analysis of executions does not demonstrate material differences in the competitiveness of execution terms such as price between the platforms.

Over the course of 2018 due to the way the FX exposure was managed for the funds, the vast majority of trades were sent to the US for execution at the 4pm close. This led to more transactions executed via FXConnect.

EXECUTION VENUES- COUNTERPARTIES

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					No
Top Five Execution Venues ranked in terms of trading volumes (descending order)	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
Northern Trust Investments, Inc. (BEL4B8X7EHJU845Y2N39)	88.7%	94.6%	NA	NA	NA
UBS AG London branch (BFM8T61CT2L1QCEMIK50)	7.8%	3.8%	NA	NA	NA
Citigroup Global Markets Limited (XKZZ2JZF41MRHTR1V493)	3.5%	1.3%	NA	NA	NA
BNY Mellon Capital Markets LLC (VJW2DOOHGDT6PR0ZRO63)	0.0%	0.2%	NA	NA	NA
The Toronto-Dominion Bank (PT3QB789TSUIDF371261)	0.0%	0.1%	NA	NA	NA

While transactions to trade at market price are mostly executed by NTGIL's trading desk, transactions for the same instruments to be traded to obtain that day's relevant benchmark price are aggregated and transmitted between NTGIL and its affiliates, Northern Trust Investments Inc. (NTI) and The Northern Trust Company Hong Kong (TNTCHK) Limited, for a trader in one of the firms to manage executions with banks that act as counterparty. While this involves NTGIL both sending and receiving orders, the larger size of NTI's trading desk and time zones covered result in a larger percentage of trades being transmitted to NTI to manage execution.

² WM/Reuters FX Benchmarks: Over a five minute fix period snapshots of the quoted rates are taken from Thomson Reuters. These are extracted at 15 second intervals from 2 minutes 30 seconds before to 2 minutes 30 seconds after the fix time. The median bid and offer rates are independently calculated from the individual snapshots for each currency. These bid and offer rates are validated prior to publication, against currency specific thresholds and this may result in expert judgement being applied.

All trading, whichever desk is managing for that day, is executed through FX Connect and with external third parties as counterparties, with NTGIL's orders facing an EEA affiliate of the relevant bank. NTI acts as NTGIL's agent, does not operate its own trading book and does not operate as an execution venue. To provide a fuller picture of executions by NTGIL's trading desk, we have included an additional table recalculating the data for 2018 transactions based on the banks NTGIL entered into transactions with.

CURRENCY DERIVATIVE TRANSACTIONS- TOP FIVE COUNTERPARTIES FACING NTGIL		
Broker	Volume	Trades
UBS AG London branch (BFM8T61CT2L1QCCEMIK50)	69.3%	70.5%
Citigroup Global Markets Limited (XKZZ2JZF41MRHTR1V493)	30.6%	24.6%
BNY Mellon Capital Markets LLC (VJW2DOOHGDT6PR0ZRO63)	0.1%	3.3%
The Toronto-Dominion Bank (PT3QB789TSUIDF371261)	0.0%	1.6%

COUNTERPARTY SELECTION

Filtering out transactions where NTI acts as agent, the percentage of transactions with banks acting as counterparties to trades for daily benchmarks is explained by which bank is more frequently offering the lowest percentage charge (or fee)/ smallest spread from the mid-point of the relevant 4PM fix for each currency pair. NTGIL maintains a list of which banks are offering the most competitive terms and will look to arrange transactions for all accounts where clients permit the counterparty to be traded with. On a periodic basis this list will be updated if the terms offered by banks become more or less competitive for particular instruments.

Where a client restricts NTGIL from trading with certain counterparties, the trades will be arranged with the bank offering the most competitive terms with which NTGIL is permitted to enter into transactions, in accordance with the client's instructions. While clients may restrict NTGIL from using some banks, NTGIL retain discretion over which banks to enter into transactions with subject to these restrictions and such orders are not therefore considered client directed.

While the majority of orders are executed for the benchmark price, orders may also be transmitted through FXall to be traded at current market rates. These orders are not aggregated and quotes are requested from up to as many banks as are available and quoting prices to execute the trades, (in accordance with client restrictions) with a minimum of three quotes requested. NTGIL's trader selects the best price received from those banks which respond.

The vast majority for FX flow is out of scope for this report as they are spot transactions. The remainder in forward transactions is a very small percentage of our overall activity and is largely for one client.

This client allows us to get competitive quotes from two banks (UBS and Citi) and transactions are completed with them on a competing tender at the point of execution.

EXECUTION ANALYSIS

Completed trade times and rates are recorded at the point of execution. Most such trades NTGIL concludes were executed at the relevant regulated benchmark price e.g. WM/Reuters 4pm closing rate. For these trades the business verifies that the actual rate is given by the counterparty with which we execute and any outliers are queried and rectified.

In limited circumstances we will not actively seek rates from brokers through the methods described, but will take the rates given by the client's custodian (which may be a Northern Trust affiliate). Circumstances which may give rise to

such instances include, but are not limited to, where a transaction involves a restricted currency, or a trade is small in size that it would cost more to execute through a bank acting as counterparty.

NTGIL conducts monitoring of foreign exchange counterparties performance for competitive trades and those executed at a regulated benchmark price i.e. 4PM fix. The review includes, monitoring of key performance criteria like the counterparty's response rate to request-for-quotes, their propensity to win RFQs and provide competitive rates, and the number of quotes received for each trade. Oversight and escalation is provided through the relevant management committee, which may then decide on any number of actions considering recommendations, including putting that counterparty on watch, restricting or terminating order flow and removing or adding counterparties.

EQUITY DERIVATIVES- INDEX FUTURES

Exchange traded index futures are used primarily for efficient portfolio management purposes, mainly to "equitise" cash contributions into a portfolio, hedge index exposure for limited periods when immediate purchase/sale of the underlying is not feasible or in the best interests of the client and gain short-term exposure to securities, where appropriate, to enhance value.

Exchange-traded index futures positions are typically unwound simultaneously with the purchase or sale of the underlying equity position.

NTGIL policy on the execution of derivatives trades is similar to that as described in the Equities report, the Equity derivatives traded during 2018 were Index Futures, all are traded through transmission to brokers acting as NTGIL's counterparty, all transactions are traded on exchange as instructed (i.e. at market, or at a given point in time to coincide with the close of an equity market).

TRANSMISSION TO BROKERS- INDEX FUTURES

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						No
Top Five Execution Venues ranked in terms of trading volumes (descending order)	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	
Northern Trust Investments, Inc. (BEL4B8X7EHJU845Y2N39)	40.1%	28.3%	NA	NA		NA
Citigroup Global Markets Limited (XKZZ2JZF41MRHTR1V493)	25.7%	42.1%	NA	NA		NA
The Northern Trust Company of Hong Kong Limited (549300EHFNROFBP5JG29)	19.1%	14.9%	NA	NA		NA
UBS Limited (REYPIEJN7XZHSUI0N355)	7.1%	6.0%	NA	NA		NA
Merrill Lynch International (GGDZP1UYGU9STUHRDP48)	5.2%	2.9%	NA	NA		NA

Similarly to NTGIL's process for trading Equities, NTGIL's trading desk executes trades for futures based on European, Middle Eastern and African (EMEA) markets, with futures for other indices (for which the relevant market close is out of normal UK working hours) transmitted to NTI (for Americas markets) and TNTCHK (for Asia Pacific markets) to transmit the orders to brokers for execution acting as NTGIL's agent

Our analysis shows American securities make up c.60% of MSCI World index constituents and Asia Pacific made up c.75% of Emerging Market indices, the volume and portion of futures transmitted to our affiliates is larger than those NTGIL's trading desk receives from them.

We have therefore included an additional table to detail data based on the brokers to which NTGIL transmits Index Future trades to for execution directly.

COUNTERPARTY SELECTION

INDEX FUTURE TRANSACTIONS- TOP FIVE COUNTERPARTIES FACING NTGIL		
Broker	Volume	Trades
Citigroup Global Markets Limited (XKZZ2JZF41MRHTR1V493)	63.0%	74.1%
UBS Limited (REYPIEJN7XZHSUI0N355)	17.4%	10.6%
Merrill Lynch International (GGDZP1UYGU9STUHRDP48)	12.9%	5.2%
J.P. Morgan Securities PLC (K6Q0W1PS1L1O4IQL9C32)	4.9%	6.1%
Goldman Sachs International (W22LROWP2IHZNBB6K528)	1.9%	4.1%

EXECUTION ANALYSIS

The objective when trading index futures is to achieve execution at the relevant exchange close, at a price as close as possible to the exchange close price minus a commission which is standard across banks. NTGIL transmits orders to the clearing bank for the client account the trade relates to, as this arrangement does not require give up agreements to be put in place and is therefore most efficient operationally. The figures indicated above are therefore illustrative of the five largest clearing brokers in terms assets held in client accounts managed by NTGIL during 2018.

The trading desk monitor executed trades to ensure close prices are achieved consistently and query and outliers/ issues with the relevant broker.

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