

2018 ORDER EXECUTION REPORT- FIXED INCOME

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 in terms of trading volumes 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 Debt Instruments, broken down into the classes of Bonds and Money Market Instruments.

BONDS

NTGIL's Fixed Income portfolio management team use a combination of electronic dealing systems, through which the majority of transactions are executed through trading platforms and conventional voice contact by telephone with brokers to execute trades, primarily in government and corporate debt securities but also including some other instruments, such as asset backed and mortgage backed securities.

For each instrument NTGIL executes orders on behalf of clients, NTGIL has selected venues that enable the best possible execution result on a consistent basis.

The generic term 'execution venue' is used to describe execution counterparties i.e. brokers, systems and trading venues (mainly multi-lateral trading facilities (MTFs), though the platforms obtained such status at different times during the year in advance of MiFID II implementation) that NTGIL's fixed income portfolio management team may use/access when executing orders in fixed income instruments.

The data for this security is based on trades executed until July 2018. After this date portfolios trading bonds, which were being managed by NTGIL, were migrated to our US affiliate to be managed by Northern Trust Investments Inc. For the remaining period of 2018 no portfolio management or trading of securities in this instrument class was carried out by NTGIL.

EXECUTION VENUES – PLATFORMS

CLASS OF INSTRUMENT		(B) DEBT INSTRUMENTS, (I) BONDS				
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 % of total in that class	Proportion of orders executed as % of total in that class	% of passive orders	% of aggressive orders	% of directed orders	
TRADEWEB EUROPE LIMITED (TREU)	76.4%	79.2%	NA	NA	NA	
BLOOMBERG TRADING FACILITY LIMITED (BMTF)	11.2%	5.4%	NA	NA	NA	
MARKETAXESS EUROPE LIMITED (MAEL)	1.8%	11.8%	NA	NA	NA	

VENUE SELECTION

The appropriate trading venue will largely be a function of the venues which the portfolio manager believes display the better liquidity characteristics for the securities in question.

Broadly speaking transactions are executed through TradeWeb for government issued securities/rates markets, MarketAxess for corporate bonds/credit with Bloomberg as a back-up venue or to enable access to quotes from brokers who do not provide coverage through the other platforms.

The largest portion of fixed income assets under management by NTGIL are Government debt securities. Mandates for the management of corporate debt are smaller and experience less frequent flows, therefore higher percentages in terms of volume and trades were executed through TradeWeb compared to Bloomberg and MarketAxess in 2018. Bloomberg saw increased activity due to unavailable brokers on MarketAxess for trades relating to corporate debt and better execution of covered bonds.

Beyond the use of MTFs to route client orders, direct bilateral negotiation, (including with debt issuers and including primary issuance) voice trading (including transactions carried out for cash funds in short term debt instruments, many of which do not meet the definition of 'Money Market Instruments' under MiFID, which is based on their time to maturity when issued rather than when purchased) and transmission of orders to brokers to be executed off venue on market close (with the objective of achieving a price as close as possible to that of the benchmark index) for securities traded in jurisdictions outside European market hours such as Australian, New Zealand and Japanese government bonds, may also be used to execute client orders.

The remaining percentage of transactions were not executed on a trading venue through the platforms listed and were transacted bilaterally with the issuer or with a counterparty 'Over-the-counter'. Prior to the implementation of MiFID II a large number of bonds were only available for trading through these means. However with the widening of the systematic internaliser regime and application of pre and post trade transparency to non-equity securities, a larger percentage of bond trading during 2018 occurred on execution venues.

Transactions in some non-European securities are often transmitted for execution at market close, due to platform limitations preventing orders from being kept open overnight and the time zones in which these transactions take place, the trades are executed bilaterally with a broker. As part of implementation work to reflect changes under MiFID II, the workflow for these trading flows was reviewed and procedures updated in order to ensure NTGIL could comply with post trade transparency requirements, such that these transactions are now traded through MTFs.

EXECUTION VENUES - COUNTERPARTIES

CLASS OF INSTRUMENT	(B) DEBT INSTRUMENTS, (I) BONDS				
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 % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
BARCLAYS BANK PLC (G5GSEF7VJP517OUK5573)	35.6%	29.9%	NA	NA	NA
CITIGROUP GLOBAL MARKETS LIMITED (XKZZ2JZF41MRHTR1V493)	13.9%	13.2%	NA	NA	NA
MIZUHO INTERNATIONAL PLC (213800HZ54TG54H2KV03)	10.9%	3.0%	NA	NA	NA
RBC EUROPE LTD (TXDSU46SXBWIGJ8G8E98)	6.0%	3.3%	NA	NA	NA
ROYAL BANK OF SCOTLAND PLC (RR3QWICWWIPCS8A4S074)	4.0%	5.0%	NA	NA	NA

All approved counterparties are hard coded into the appropriate order management systems to ensure no trading can be conducted unless a counterparty has been approved in accordance with NTGIL's Order Execution Policy and credit approval process.

The brokers indicated as the top five to which orders were transmitted reflect those that provided the most competitive terms for transactions in instruments traded during 2018, with some specific circumstances resulting in the inclusion of particular brokers. However in general those brokers indicated make up larger percentages of volumes/ trades than others on NTGIL's approved broker list on the basis of consistently competitive terms and/or wider coverage of instruments relative to others.

Barclays Bank Plc represents the largest broker to which orders were transmitted in 2018; this is primarily due to orders which are transmitted to them (acting as NTGIL's broker) for execution on market close. The majority of these client orders are traded at month end as part of rebalances to reflect benchmark changes. Barclays at the time orders during 2018 were traded were the only approved broker which provides pricing for such orders to be transacted through these means. In order to test and validate best execution is being achieved; smaller intra month flows to be executed during market hours are utilised as tests, to ensure terms being received are the most competitive available.

Transactions relating to Japanese Government Bonds over the year represent a large proportion of the orders transmitted to Mizuho for execution during 2018, as noted above; such orders were typically traded over the counter rather than through an electronic platform due to the timing of the Nikkei market close.

EXECUTION ANALYSIS AND ARRANGEMENTS

NTGIL use an aggregated electronic price service for the majority of its executions in active fixed income instruments. This service enables NTGIL to achieve the best possible execution result, as multiple prices can be discovered at a single point in time. NTGIL then selects the best available price from those presented. This electronic price service provides a full audit trail for the execution process. For passive fixed income, trading may also be conducted via

telephone and trade files. Executions are monitored against the relevant benchmark, and are also referenced against pre-trade dealer quotes.

Execution factors of price, costs, speed, and likelihood of execution or any other relevant consideration are taken into account when dealing government and corporate bonds. In the event the portfolio manager has identified a price target for a specified security, while placing more importance on the price sought than the speed in executing the order, it remains incumbent on the portfolio manager to obtain the best possible price available at the time of trade and complete the transaction within any timeframe required (by client restrictions or to meet timely execution requirements).

When trading certain instruments, particularly illiquid securities, or when dealing in a large volume, greater importance may be placed on sourcing liquidity and likelihood of execution, in which case the order may be executed as a limit trade placed with an individual broker at a specified price. NTGIL conducts post trade analysis to monitor the results of such trading to confirm that best execution is achieved on a continuous basis.

Transaction cost analysis is carried out and regular scrutiny of brokers is carried out to ensure best execution continues to be achieved. Where possible, transactions are subject to periodic monitoring based on the variance of the price achieved compared to an appropriately determined benchmark (due to the current lack of transparency in the fixed income market, not all securities have sufficient trading data to determine a reliable benchmark price). Outliers are investigated by Compliance and escalated to the Head of the Fixed Income Portfolio Management team, for review and appropriate intervention where required.

The quality of execution obtained from each counterparty which acts as a 'broker' (defined as a third party which NTGIL faces in execution of a transaction is a debt security other than its own) is monitored both by the portfolio management team and compliance, with any materially poor performance escalated. The result of investigation of poor execution results obtained, for a trade or consistently by a particular broker, may result in escalation with the broker, cancellation or amendment of transactions, changes in the volume or types of order that may be sent or the removal of a broker from NTGIL's approved broker list.

MONEY MARKET INSTRUMENTS

Money Market Instruments (1) are primarily traded for cash funds and cash collateral reinvestment (securities lending), managed by NTGIL's Fixed Income portfolio managers. The instruments are typically bespoke and a large percentage of money market instruments are purchased through primary issuance, either directly from the issuer or through a broker.

1. ¹ Defined as described in the Markets in Financial Instruments Directive: "...shall include treasury bills, certificates of deposits, commercial papers and other instruments with substantively equivalent features where they have the following characteristics: (a) they have a value that can be determined at any time; (b) they are not derivatives; (c) they have a maturity at issuance of 397 days or less."

EXECUTION WITH BROKERS

CLASS OF INSTRUMENT	(B) DEBT INSTRUMENTS, (I) MONEY MARKET INSTRUMENTS				
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 % of total in that class	Proportion of orders executed as % of total in that class	% of passive orders	% of aggressive orders	% of directed orders
RABOBANK NEDERLAND (LONDON BRANCH) (DG3RU1DBUFHT4ZF9WN62)	30.0%	31.6%	NA	NA	NA
BGC FINANCIAL LP (Eurobrokers) 549300NP4MIDUNET0550	13.4%	9.4%	NA	NA	NA
ICAP SECURITIES LIMITED (213800NMEZS3MD2IUP33)	8.6%	5.1%	NA	NA	NA
TRADITION LONDON CLEARING LIMITED 549300035Z3DHK2T4A54	6.7%	4.0%	NA	NA	NA
BARCLAYS BANK PLC (G5GSEF7VJP5I7OUK5573)	6.5%	3.5%	NA	NA	NA

The highest percentage of money market instruments were traded through Rabobank due to the width of coverage and competitive terms offered. BGC Partners has increased in volume throughout 2018 since establishing the relationship in 2017. This increase can be attributed to more competitive pricing vs peers on our preferred issuers. In addition, we have seen a decrease in focus from some Banks on selling Money Market securities, shifting their attention to reverse repurchase agreements.

As the majority of money market instruments are bespoke, purchases generally occur in the primary market and are not traded on venues while sales typically take place over the counter (OTC), while a new form of execution venue, Organised Trading Facilities, (OTFs) were created by MiFID II changes, we have not seen large volumes of instruments being admitted to trading through such venues. Additionally, those instruments we have seen admitted to trading may not be listed by the counterparty through which we purchased the security in the primary market. In the event our portfolio managers decide to sell such securities, there is currently no 'golden source' of information available to give a clear pre trade indication that the instrument is admitted to trading on a trading venue, or provide transparency on pricing available through such venues; our trading may continue to occur bilaterally.

EXECUTION ANALYSIS AND ARRANGEMENTS

Cash is invested into various short term fixed income instruments and money market funds. Money Market Funds are managed by fixed income portfolio managers who are experts in dealing in such instruments. Due to the nature of the (OTC) short duration fixed income markets, liquidity and price will ordinarily merit a high relative importance in achieving the best possible execution result.

Importantly, unless dealt on the secondary market, money market instruments are bespoke investments created at the time of execution. Therefore while portfolio managers still seek to obtain the best available price for an instrument, the competing quote method is not an appropriate execution strategy in most circumstances.

Due to the limited supply of these bespoke securities speed of execution often ranks highly in the priority of execution factors for money market instruments. In particular there may be multiple venues offering differing indicative prices on the same security. Often the underlying indicative pricing is swap driven.

Practically, the process of requesting the indicative price, receiving a firm price significantly higher (we are invariably buying) than indicated and then repeating the process at a different venue can result in a lost opportunity whereby the limited supply has traded away. Therefore portfolio manager experience and knowledge of which venue/ broker is reflecting consistently reliable indicative pricing is a major aspect of the execution process.

The portfolio managers will deal in suitable money market instruments with due regard to individual client cash positions and portfolio construction considerations whilst adhering to applicable client guidelines, credit policies and NTAM's internal requirement.

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