



Class of Instrument		Equity derivatives Options and futures admitted to trading on a trading venue				
Notification if <1 average trade per business day in the previous year		Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Legal Entity Identifier	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
BofA Securities, Inc.	549300HN4UKV1E2R3U73	63%	67%	N/A	N/A	0%
JB Drax Honore (UK) Limited	549300WYFIFDMB6POR04	34%	31%	N/A	N/A	0%
Tullett Prebon (Securities) Limited	549300BMVW85YF9FGN67	2%	2%	N/A	N/A	0%
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Class of Instrument		Commodities derivatives Futures and options admitted to trading on a trading venue				
Notification if <1 average trade per business day in the previous year		Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Legal Entity Identifier	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
JP Morgan Securities LLC	ZBUT11V806EZRVTWT807	100%	100%	N/A	N/A	0%
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Class of Instrument		Other instruments				
Notification if <1 average trade per business day in the previous year		Yes				
Top five execution venues ranked in terms of trading volumes (descending order)	Legal Entity Identifier	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
JPMorgan Chase Bank, National Association	7H6GLXDRUGOFU57RNE97	89%	74%	N/A	N/A	0%
BofA Securities, Inc.	549300HN4UKV1E2R3U73	9%	22%	N/A	N/A	0%
Barclays Bank PLC	G5GSEF7VJP5I7OUK5573	3%	4%	N/A	N/A	0%
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Class of Instrument		Securities finance Repurchase & reverse repurchase agreements				
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)	Legal Entity Identifier	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
Barclays Bank PLC	G5GSEF7VJP5I7OUK5573	22%	32%	N/A	N/A	0%
BNP Paribas	R0MUWSPU8MPRO8K5P83	17%	10%	N/A	N/A	0%
J.P. Morgan Securities PLC	K6Q0W1PS1L1O4IQL9C32	13%	13%	N/A	N/A	0%
Nomura International PLC	DGQCSV2PHVF7I2743539	9%	11%	N/A	N/A	0%
RBC Europe Limited	TXDSU46SXBWIGJ8G8E98	9%	7%	N/A	N/A	0%

There are twenty-two (22) classes of financial instruments for the purpose of the annual quantitative disclosure. The firm does not trade in all 22 classes of financial instruments. As the firm does not facilitate transactions for retail clients, information regarding retail clients are not included in this report. The information contained in this disclosure was prepared by a third party and is believed to be accurate.