NYSE Euronext Monthly Market Quality Statistics

FEBRUARY 2013

Market Quality indicators

	Market Centre	CAC 40	AEX-Index	BEL 20	PSI 20	Blue Chips[1]	Domestic SMEs[2]
Presence time at EBBO (%)	NYSE EURONEXT	**75%**	**79%**	**68%**	**82%**	**73%**	**90%**
	MTF AVERAGE[3]	**46%**	**47%**	**37%**	**27%**	**37%**	**21%**
	BATS EUROPE	38%	39%	24%	22%	27%	13%
	CHI-X	76%	76%	61%	43%	63%	27%
	EQUIDUCT	15%	13%	11%	3%	9%	18%
	TURQUOISE	56%	61%	51%	42%	50%	25%
	TOM MTF	NA	NA	NA	NA	NA	NA
EBBO with greatest size (%)	NYSE EURONEXT	**40%**	**48%**	**32%**	**59%**	**39%**	**86%**
	MTF AVERAGE[3]	**2%**	**1%**	**3%**	**1%**	**2%**	**1%**
	BATS EUROPE	0%	0%	0%	0%	0%	0%
	CHI-X	6%	4%	6%	2%	6%	2%
	EQUIDUCT	0%	0%	0%	0%	0%	0%
	TURQUOISE	1%	1%	5%	2%	3%	2%
	TOM MTF	NA	NA	NA	NA	NA	NA
EBBO Setter (%)	NYSE EURONEXT	**70%**	**74%**	**57%**	**77%**	**64%**	**86%**
	MTF AVERAGE[3]	**7%**	**6%**	**11%**	**6%**	**9%**	**7%**
	BATS EUROPE	2%	2%	2%	1%	2%	1%
	CHI-X	20%	16%	20%	12%	20%	9%
	EQUIDUCT	1%	1%	4%	0%	1%	8%
	TURQUOISE	7%	7%	17%	12%	13%	9%
	TOM MTF	NA	NA	NA	NA	NA	NA
Spread (bps)	NYSE EURONEXT	**5.73**	**6.30**	**7.11**	**31.11**	**7.56**	
	MTF AVERAGE[3]	**14.21**	**17.45**	**29.77**	**96.54**	**20.93**	
	BATS EUROPE	13.03	12.39	17.85	42.75	16.32	
	CHI-X	6.62	6.81	9.16	23.02	8.37	
	EQUIDUCT	30.01	41.91	78.96	289.87	48.46	
	TURQUOISE	7.18	8.68	13.12	30.53	10.57	
	TOM MTF	NA	NA	NA	NA	NA	
Displayed Market Depth (EUR)	NYSE EURONEXT	**53,753**	**68,117**	**44,120**	**211,360**	**54,156**	
	MTF AVERAGE[3]	**16,853**	**22,702**	**18,224**	**21,496**	**16,214**	
	BATS EUROPE	11,268	16,620	13,934	10,753	11,637	
	CHI-X	21,856	31,092	16,388	10,154	20,097	
	EQUIDUCT	17,822	21,565	26,227	39,791	17,862	
	TURQUOISE	16,465	21,531	16,348	25,284	15,260	
	TOM MTF	NA	NA	NA	NA	NA	
Volatility (%)	MARKET[4]	**20%**	**15%**				

Reference period: 1 February to 28 February 2013
Source: TAG Audit - NYSE Euronext

1 Blue Chips: Blue Chips are classed as those securities that belong to the AEX-Index, AMX-Index, BEL 20, CAC40, PSI 20, and SBF120 indices.

2 Domestic SMEs: small and mid-caps. More than 1,000 domestic SMEs are listed and traded on NYSE Euronext, of which between 10 and 150 are also traded on BATS Europe, Chi-X, Equiduct, TOM MTF and Turquoise. Due to the wide range in product scope for domestic SMEs, the comparison of indicators across market centres must need to be done cautiously. For example, the average presence time at EBBO across MTFs depends on the securities available.

3 MTF average: takes into account only Chi-X, Turquoise, BATS and Equiduct. TOM MTF is not included as its product scope is not comparable with the other alternative trading venues.

4 Market: CAC 40 Volatility Index and AEX Volatility Index on Bloomberg at end of month

General Methodology

TAG Audit, an independent and unbiased provider of trade performance and market quality assessment for the securities industry, uses a snapshot methodology to reproduce the European electronic order book by taking the quotes from various venues based on one time stamp. The daily market quality indicator of one security is the simple average of the indicator for each millisecond.

Currency: the statistics published in this report are based on the Euro.

Index: the market quality indicators for indices or pool of indices are calculated using the same methodology across all the stocks included in those indices, to the millisecond. The market quality indicators are **weighted** by volume traded for the month per venue (since April 2012).

Blue chips and small & mid-caps: the statistics on spreads and market depth are weighted by daily volumes for the month, per venue. More specifically, the daily indicators are weighted by the daily security market share on the total monthly volume of the compartments per venue. Blue chips are classed as those securities that belong to the AEX-Index, AMX-Index, BEL 20, CAC 40, PSI 20, and SBF120 indices.

Market Quality Indicators used:

Presence time at EBBO (European Best Bid and Offer): measures the percentage time during the trading session when a venue quotes the best European bid and ask across all venues referenced in TAG. The indicator is the average of the presence time at European best bid and at European best ask.
Example: *If NYSE Euronext's presence time at EBBO on the CAC 40 is 80%, it means that on average, NYSE Euronext quoted the best bid and best ask among all the other European trading venues for 80% of the time for the whole trading day on all stocks in the CAC 40.*

Quoted spreads in basis points: measures the difference between best bid and offer on the trading venue. Please note that it is difficult to compare spreads between different trading venues as spreads are highly dependent on the population of stocks, which may be interlinked between venues.

Market depth: measures the displayed average amount available in Euro on both sides, bid and ask, iceberg orders excluded.
Example: *If NYSE Euronext's market depth on AEX is €44,000, it means that market investors can access at least €44,000 on both the bid and ask sides on NYSE Euronext for the stocks in the AEX-Index.*

EBBO with greatest market size: measures the percentage time during the trading session when a venue has simultaneously the best bid and the best ask (EBBO), with the greatest market depth on both sides. It is thus the best choice that any market can offer.
Example: *if NYSE Euronext's presence time at EBBO with greatest market size is 36% on the CAC 40, it means that on average, NYSE Euronext quoted the best bid and best ask with the highest market depth among all the other trading venues 36% of the time for the whole trading day on all stocks in the CAC 40. Thus, 36% of the time, investors will not find a venue better than NYSE Euronext to execute their orders.*

EBBO Setter: measures the percentage time during the trading session when a venue is the first one who set the best bid and the best ask (EBBO). The indicator is the average of the presence time at European best bid and at European best ask.
Example: *if NYSE Euronext's presence time at EBBO Setter is 62% on the CAC 40, it means that on average, NYSE Euronext is the first venue who quoted the best bid and best ask among all the other trading venues 62% of the time for the whole trading day on all stocks in the CAC 40.*

Volatility: captures implied volatility embedded in the prices of out-of-the-money index call and put options available on the NYSE Liffe European derivatives market. It is calculated in a transparent manner, using only one external parameter, the risk-free interest rate. The volatility has a great impact on the presence time at EBBO and on spreads. If the volatility rises, the presence time at EBBO on all venues will decrease.