

## Trading Summary

Value Traded: **SEK 2,107,008,170**

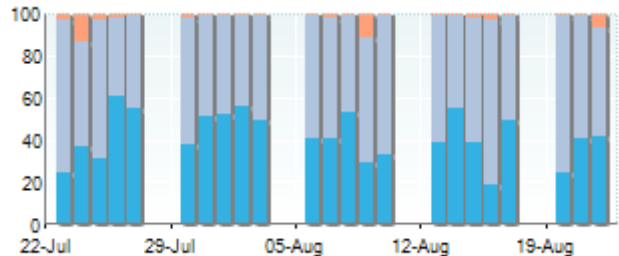
NumberOfTrades: **55,102**

Average Trade Size: **SEK 38,238**

Average On-book Spread: **10.74 BPS**

Distinct Instruments Traded: **134**

Daily percentage trades better/equal/worse than benchmark



## Performance Summary

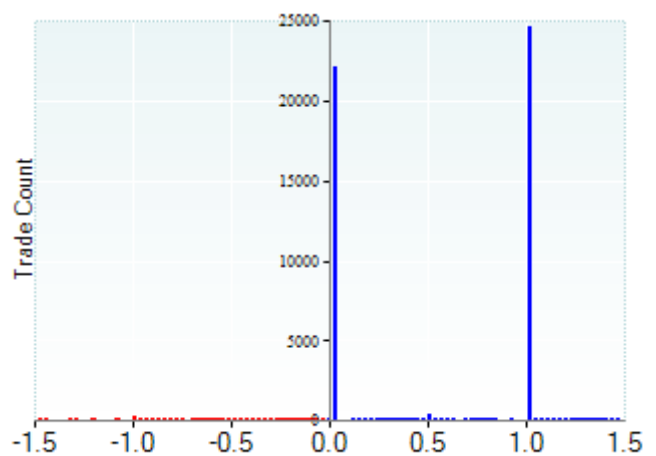
	% By # of Trades	% By Value Traded
Percentage Success	97.91%	<b>97.93%</b>
Percentage Better	46.22%	<b>39.67%</b>
Percentage Equal	51.12%	<b>57.26%</b>
Percentage Worse	2.09%	<b>2.07%</b>
Not Benchmarked (N/B)	0.58%	<b>1.00%</b>

Average Improvement/Shortfall Value: **3.57 BPS (SEK744,974)**

Spread Capture: **42.51%**

SOR Improvement Potential Value: **0.09 BPS (SEK19,765)**

Spread Capture Histogram



## Performance Breakdown by Execution Venue

Venue	# Trades	Value(SEK)	Val(%)	% Better	% Equal	% Success	% N/B	SOR (SEK)	SOR (BPS)	Imp(SEK)	Imp (BPS)	SC (%)	Spread (BPS)
Chi-X Europe	28,005	817,406,058	38.79%	61.03%	36.92%	<b>98.91%</b>	0.96%	4,007	0.05	387,287	<b>4.78</b>	68.54%	8.23
OMX Stockholm	18,707	917,842,897	43.56%	29.40%	68.12%	<b>97.87%</b>	0.35%	8,675	0.09	309,742	<b>3.39</b>	32.57%	13.08
Burgundy	5,206	231,484,630	10.99%	6.78%	87.60%	<b>95.93%</b>	1.55%	4,063	0.18	14,015	<b>0.61</b>	3.71%	10.08
BATS Europe	1,505	56,988,872	2.70%	1.79%	92.25%	<b>95.60%</b>	1.55%	1,436	0.26	-943	<b>-0.17</b>	-1.83%	9.73
Turquoise	975	26,003,202	1.23%	4.32%	84.89%	<b>90.58%</b>	1.37%	1,178	0.46	123	<b>0.05</b>	3.85%	12.15
Chi-Delta	332	28,000,524	1.33%	95.76%	4.24%	<b>100.00%</b>	0.00%	0	0.00	20,164	<b>7.20</b>	47.84%	13.28
XUBS	270	18,212,994	0.86%	92.41%	4.77%	<b>97.52%</b>	0.34%	193	0.11	8,622	<b>4.75</b>	47.83%	9.47
NORDIC@MID	58	5,984,480	0.28%	90.25%	0.17%	<b>93.82%</b>	3.40%	213	0.37	5,114	<b>8.85</b>	48.32%	17.28
FNSE	25	4,775,017	0.23%	0.00%	0.00%	<b>100.00%</b>	100.00%	0	0.00	0	<b>0.00</b>	0.00%	0.00
NYSE Arca Eur.	8	134,142	0.01%	87.31%	12.69%	<b>100.00%</b>	0.00%	0	0.00	86	<b>6.41</b>	74.48%	8.52
XNGM	8	50,199	0.00%	94.89%	0.81%	<b>100.00%</b>	4.30%	0	0.00	646	<b>134.39</b>	44.77%	331.22
NMTF	2	2,160	0.00%	0.00%	0.00%	<b>100.00%</b>	100.00%	0	0.00	0	<b>0.00</b>	0.00%	0.00
Turquoise Dark	1	122,995	0.01%	100.00%	0.00%	<b>100.00%</b>	0.00%	0	0.00	118	<b>9.57</b>	75.40%	12.69

## Performance Breakdown by TradeSize

Trade Size	# Trades	Value(SEK)	Val(%)	% Better	% Equal	% Success	% N/B	SOR (SEK)	SOR (BPS)	Imp(SEK)	Imp (BPS)	SC (%)	Spread (BPS)
1: Tiny (0-1k)	1,357	636,904	0.03%	53.92%	43.64%	98.33%	0.77%	5	0.08	366	5.79	60.29%	19.59
2: Small (1-5k)	4,557	13,724,646	0.65%	45.69%	51.95%	97.98%	0.34%	152	0.11	6,411	4.69	52.38%	14.52
3: Medium (5-10k)	8,953	76,436,853	3.63%	64.46%	34.24%	98.93%	0.23%	443	0.06	41,441	5.43	72.90%	10.71
4: Medium II (10-25k)	15,774	243,038,078	11.53%	46.35%	50.61%	97.52%	0.57%	2,888	0.12	98,827	4.09	51.82%	11.66
5: Large (25-50k)	11,968	437,252,639	20.75%	40.10%	56.81%	97.48%	0.56%	5,333	0.12	144,533	3.32	43.04%	10.87
6: Large II (50-100k)	9,015	618,925,514	29.37%	37.34%	59.22%	97.45%	0.89%	6,886	0.11	183,343	2.99	40.58%	9.92
7: Block (100k +)	3,478	716,993,534	34.03%	36.39%	60.66%	98.65%	1.59%	4,057	0.06	270,052	3.83	37.40%	10.98

## Performance Breakdown by Trading Day

Trading Day	# Trades	Value(SEK)	Val(%)	% Better	% Equal	% Success	% N/B	SOR (SEK)	SOR (BPS)	Imp(SEK)	Imp (BPS)	SC (%)	Spread (BPS)
22-Aug-12	1,025	45,424,099	2.16%	39.25%	48.59%	93.49%	5.65%	1,635	0.38	49,518	11.55	42.05%	24.90
21-Aug-12	1,473	56,443,459	2.68%	40.11%	57.84%	98.58%	0.63%	279	0.05	25,938	4.62	43.89%	17.46
20-Aug-12	581	40,860,235	1.94%	24.03%	72.38%	98.76%	2.34%	301	0.08	11,863	2.97	21.24%	11.88
17-Aug-12	1,728	85,360,441	4.05%	48.99%	50.05%	99.20%	0.16%	274	0.03	38,714	4.54	52.38%	10.33
16-Aug-12	5,477	229,262,322	10.88%	18.17%	78.59%	97.04%	0.28%	2,612	0.11	41,093	1.80	19.30%	12.71
15-Aug-12	2,796	133,858,063	6.35%	38.51%	58.83%	97.74%	0.40%	814	0.06	44,830	3.36	41.78%	10.19
14-Aug-12	972	55,741,899	2.65%	51.69%	41.91%	98.82%	5.22%	125	0.02	30,447	5.76	62.20%	11.46
13-Aug-12	2,196	91,225,543	4.33%	38.04%	60.49%	99.60%	1.07%	130	0.01	30,381	3.37	44.79%	10.22
10-Aug-12	2,204	127,170,555	6.04%	32.16%	66.53%	99.65%	0.97%	181	0.01	33,391	2.65	37.82%	7.94
09-Aug-12	337	12,280,422	0.58%	29.01%	59.51%	88.70%	0.18%	645	0.53	1,949	1.59	19.72%	11.54
08-Aug-12	3,078	157,923,060	7.50%	52.74%	46.87%	99.84%	0.23%	42	0.00	82,193	5.22	58.87%	10.71
07-Aug-12	2,458	97,032,873	4.61%	39.93%	55.35%	97.50%	2.22%	1,757	0.19	37,127	3.91	41.90%	12.11
06-Aug-12	1,728	51,206,584	2.43%	40.07%	58.80%	99.67%	0.80%	91	0.02	15,128	2.98	44.12%	11.04
03-Aug-12	2,232	61,611,944	2.92%	49.40%	49.35%	98.75%	0.00%	314	0.05	21,140	3.43	48.75%	8.27
02-Aug-12	3,148	79,780,207	3.79%	55.68%	43.62%	99.30%	0.00%	198	0.02	38,099	4.78	57.91%	10.16

## Performance Breakdown by Hour Of Day

Hour Of Day	# Trades	Value(SEK)	Val(%)	% Better	% Equal	% Success	% N/B	SOR (SEK)	SOR (BPS)	Imp(SEK)	Imp (BPS)	SC (%)	Spread (BPS)
08:00 -09:00	3,034	112,023,831	5.32%	49.66%	48.01%	98.57%	0.90%	353	0.03	58,427	5.26	53.74%	12.49
09:00 -10:00	6,176	243,819,043	11.57%	44.78%	51.05%	95.97%	0.14%	4,572	0.19	100,226	4.12	46.93%	11.44
10:00 -11:00	6,310	236,205,907	11.21%	37.64%	60.56%	99.14%	0.94%	553	0.02	74,804	3.20	42.13%	8.95
11:00 -12:00	5,367	167,534,284	7.95%	46.47%	51.13%	98.06%	0.46%	1,623	0.10	63,967	3.84	47.27%	10.02
12:00 -13:00	5,728	195,268,033	9.27%	41.27%	56.17%	97.56%	0.12%	2,261	0.12	67,059	3.44	43.74%	10.12
13:00 -14:00	7,982	317,218,350	15.06%	40.23%	58.77%	99.13%	0.12%	1,464	0.05	110,287	3.48	42.03%	9.93
14:00 -15:00	9,374	363,482,594	17.25%	37.13%	59.27%	96.46%	0.05%	5,811	0.16	110,416	3.04	38.25%	10.77
15:00 -16:00	8,291	333,464,135	15.83%	39.43%	58.14%	98.36%	0.79%	2,601	0.08	133,096	4.02	40.78%	12.03
16:00 -17:00	2,840	137,991,993	6.55%	21.50%	68.17%	99.24%	9.56%	526	0.04	26,693	2.14	32.45%	11.82

## LiquidMetrix Calculation Methodology

### Benchmark Prices

All results shown in this LiquidMetrix report are obtained by comparing the price of each trade versus a **benchmark price** that reflects the best possible price a participant could have got by routing a single aggressive order to the trading venue with the best price available at the time the trade executed.

Benchmark Prices are calculated by the following process:

- For each trade, based on the ISIN and CCY of the instrument traded, a list is compiled of all lit venues where that instrument could have been traded at the time of trade.
- The **benchmark price** calculated is the best price that could have been obtained by routing an **aggressive** order to that venue. Volume is taken into account; so if necessary the simulated aggressive order will match up the order book of a venue to obtain an average execution value.
- It is possible for a **price improvement** to be measured in cases where customer orders are executed via passive limit orders placed on lit books or on dark midpoint matching venues, have been traded off-book via broker crossing networks or similar. In such cases the benchmark price for the best possible on-book aggressive order may be worse than the actual price achieved by the customer.

### Details by Section

#### Trading Summary Section

- **Value Traded** : The sum of all the notional values of all trades in the reporting period.
- **Number Of Trades**: Number of distinct trades (fills) analysed.
- **Average Trade Size**: Average notional value of each trade (fill).
- **Average On-book Spread**: This is calculated by measuring, at the exact instant of each trade, the on-book bid/offer spread of the lit venue with the tightest spread. These values are averaged over all trades (weighted by trade value). This measure gives an indication if the trades are in liquid, low spread stocks (small number) or less liquid, high spread stocks (larger number).
- **Distinct Instruments Traded**: Number of distinct ISIN/CCY instruments for which trades are included in this report.
- The graph on the right shows one of four things:
  - The total number of trades performed each day.
  - The total value traded each day.
  - A summary of the percentage of times each day (based on trade count) that trades were better than (dark blue), equal to (light blue) or worse than (red) the benchmark price.
  - A daily value traded summary where the bar is sectioned according to value traded at better than benchmark prices (blue), value traded at exactly benchmark prices (light blue) and value traded at worse than benchmark prices (red).

#### Performance Summary Section

The percentage success summary table shows the percentage of times over the reporting period that trades were:

- **Successful**: The price achieved was better than or equal to the benchmark price
- **Better**: The price achieved was better than the benchmark price.
- **Equal**: The price achieved was equal to the benchmark price.
- **Worse**: The price achieved was worse than the benchmark price.
- **Not Benchmarked (N/B)**: The trade was illiquid and / or could not be benchmarked. This might be because
  - The trade occurred at a time when there was no continuous trading on lit venues, i.e. before or after normal trading hours.
  - The trade occurred at a time that continuous trading was suspended on the main market or the market was in 'auction' mode.
  - No lit venue had sufficient volume to fully execute the size of the trade.
  - The ISIN/CCY reported did not match an ISIN/CCY in the LiquidMetrix Database.

Percentage values are reported based on both number of trades and by value traded.

Below this there are some summary performance values

- **Average Improvement / Shortfall** : The total value of price improvement (or shortfall) achieved over all trades executed in the reporting period. If all trades were executed at exactly the benchmark value this number would be 0. A positive value implies overall price improvement versus benchmark prices. A negative value indicates an overall shortfall. Numbers are reported both as a total summed monetary value and as a BPS (0.01%) fraction of total value traded.
- **Spread Capture** : For each trade a 'spread capture' value is the price of the trade relative to the bid/offer spread on the venue with the best lit prices. A spread capture of zero would indicate that the trade occurred at exactly the best aggressive price available on the market. A spread capture of 100% would indicate that a trade occurred at the 'far' touch, 50% would indicate a mid-point match. The value reported here is the average spread capture achieved over all trades in the reporting period, weighted by the value of each trade.
- **SOR Improvement Potential** : This metric focuses solely on those trades that were executed at prices **worse** than benchmark. For such trades the value is calculated as the total value lost by not executing at the best price available. By adding up these values over all trades, we arrive at the maximum possible improvement that might be expected if all trades had been routed to the best venue. The value is reported in terms of an absolute amount and as a BPS fraction of the total value traded.

The graph on the right shows a frequency histogram of trades occurring at different **spread captures** (see definition above). Spikes at a value of 0.0 will indicate trades occurring at exactly the market benchmark price. A spike at 0.5 indicates mid-point matches occurring. Spikes at 1.0 indicate trades achieving far touch benchmark prices. Trades that happen at prices worse than benchmark appear as values less than zero to the left in red. This graph can give a useful insight into what type of price improvement/shortfalls are occurring.

#### Aggregate Performance Breakdown Tables

These tables summarise trading activity and performance split by different characteristics of the trade such as execution venue, instrument traded, trade size, country traded, etc.

Each table has the same structure with the following table columns [not all will appear in all reports].

- **[Aggregate]** : The first column shows the 'value' for which trades are being aggregated in each row. It is different for each table shown.
- **[# Trades]** : The number of trades for this row of data.
- **[Value(CCY)]** : The total value traded for the trades in this row of data.
- **[% Better]** : The percentage number of trades that executed at a price better than benchmark price.
- **[% Equal]** : The percentage number of trades that executed at a price equal to benchmark price.
- **[% Worse]** : The percentage number of trades that executed at a price worse than benchmark price.
- **[% Success]** : The percentage number of trades that executed at or better than the benchmark price.
- **[% N/B]** : The percentage number of trades for which a benchmark price was not calculated (see the performance summary section for details on what kinds of trades are not benchmarked).
- **SOR (CCY)** : The total value obtained adding all shortfalls (trade prices worse than market) for all trades on this row (see performance summary section for more detail).
- **SOR(BPS)** : The SOR value above as a BPS fraction of total value traded.
- **Imp(CCY)** : The total value of all price improvements, averaged over all trades in this row (see performance summary section for more detail).
- **Imp(BPS)** : Price improvement value above as a BPS fraction of total value traded.
- **SC (%)** : The average spread capture in % over all trades in this row.
- **Spread (BPS)** : The average on-book spread in BPS over all trades in this row.