

MbTrading Data Quality Report

Evaluate MbTrading historical and quote server data quality

Draft 0.1

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(working paper)

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1 Introduction

In this report I test the quality of MbTrading quotes and historical data by comparing it against other data sources and against each other.

2 Data collection method

We are using a self developed Java application that uses the MbTrading SDK and subscribes to whatever symbols are requested and records every round minute the last quote of every subscribed symbol. The time is obtained from the quote record itself so that the application is fully synchronized with MbTrading quote server.

3 Tested Data

The data for this experiment was obtained for 10/7/2008 between 5:56 PM and 7:32 PM (UTC).

4 Results

Significant differences were found between the three data sets. The following table summarizes the discrepancies for the symbol BLL in a period of 98 minutes. We compare all 3 possible pairs:

1. MbTrading Quote vs. MbTrading History Server
2. Trusted History data source vs. MbTrading History Server
3. Trusted History data source vs. MbTrading Quote

SYMBOL: BLL	Quote vs. History	Trusted vs. History	Trusted Vs. Quote
Average diff	-0.0222	-0.0137	0.0086
standard dev	0.0966	0.0780	0.1017
Average abs(diff)	0.0766	0.0569	0.0795
standard dev	0.0625	0.0549	0.0635
maximum diff	0.31	0.26	0.30
minimum diff	-0.23	-0.16	-0.20

5 Analysis of Volume Data

In this analysis we compare the 1-minute volume information of the MbT historical data server with the information that appears in Yahoo Finance and with the information of our reliable history data source. For this test we select the symbol SPY (Spider Trust ETF) as our test case and sum the total one-minute volume information. This total is compared against the Yahoo data to obtain the following results

DATE	MbT Volume	Yahoo Volume	Percent of Trade
10/09/08	34,639,161	534,485,200	6.48%
10/10/08	30,997,935	871,026,300	3.56%
10/13/08	23,312,078	455,584,000	5.12%
10/14/08	13,122,543	546,268,300	2.40%

Therefore, the MbTrading historical data server represents only a small fraction (between 2.4% and 6.48%) of the trade.

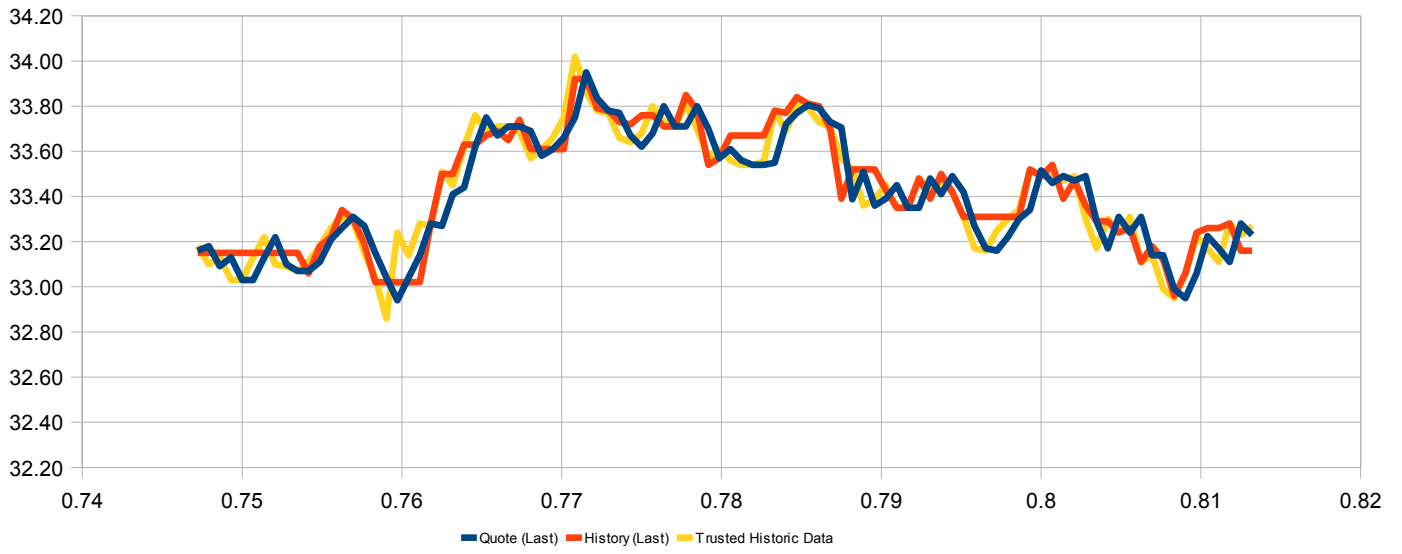
6 Conclusions

1. Using MbTrading History server data as a reference data to analyze high frequency trading strategies is not recommended due to significant differences when compared against both quote data and another (trusted) history data source.
2. The discrepancies between a trusted history data source and MbTrading quote is not exceptional, compared against other broker services.
3. From the volume data it can be concluded that the historical data server holds only a small fraction of the actual historical data.

7 Appendix: The data

Quote Vs. History

Chart: values of quote data, MbT history server and a trusted history server.



TIME (UTC)	Quote (Last)	History (Last)	Quote Difference	Trusted Historic Data	Trusted vs. History	Trusted Vs. Quote	Ask-Bid Spread
05:56:00 PM	33.16	33.15	0.01	33.18	0.03	0.02	0.05
05:57:00 PM	33.18	33.15	0.03	33.10	-0.05	-0.08	0.06
05:58:00 PM	33.09	33.15	-0.06	33.13	-0.02	0.04	0.04
05:59:00 PM	33.13	33.15	-0.02	33.03	-0.12	-0.10	0.06
06:00:00 PM	33.03	33.15	-0.12	33.03	-0.12	0.00	0.06
06:01:00 PM	33.03	33.15	-0.12	33.13	-0.02	0.10	0.08
06:02:00 PM	33.13	33.15	-0.02	33.22	0.07	0.09	0.06
06:03:00 PM	33.22	33.15	0.07	33.10	-0.05	-0.12	0.08
06:04:00 PM	33.10	33.15	-0.05	33.09	-0.06	-0.01	0.07
06:05:00 PM	33.07	33.15	-0.08	33.07	-0.08	0.00	0.02
06:06:00 PM	33.07	33.06	0.01	33.11	0.05	0.04	0.06
06:07:00 PM	33.11	33.18	-0.07	33.18	0.00	0.07	0.05
06:08:00 PM	33.21	33.22	-0.01	33.26	0.04	0.05	0.07
06:09:00 PM	33.26	33.34	-0.08	33.31	-0.03	0.05	0.05
06:10:00 PM	33.31	33.30	0.01	33.29	-0.01	-0.02	0.04
06:11:00 PM	33.27	33.19	0.08	33.15	-0.04	-0.12	0.04
06:12:00 PM	33.15	33.02	0.13	33.04	0.02	-0.11	0.05
06:13:00 PM	33.04	33.02	0.02	32.86	-0.16	-0.18	0.08
06:14:00 PM	32.94	33.02	-0.08	33.24	0.22	0.30	0.05
06:15:00 PM	33.04	33.02	0.02	33.14	0.12	0.10	0.11
06:16:00 PM	33.14	33.02	0.12	33.28	0.26	0.14	0.05
06:17:00 PM	33.28	33.28	0.00	33.27	-0.01	-0.01	0.05
06:18:00 PM	33.27	33.50	-0.23	33.51	0.01	0.24	0.02
06:19:00 PM	33.41	33.50	-0.09	33.45	-0.05	0.04	-0.03
06:20:00 PM	33.44	33.63	-0.19	33.62	-0.01	0.18	0.07
06:21:00 PM	33.62	33.63	-0.01	33.76	0.13	0.14	0.08
06:22:00 PM	33.75	33.67	0.08	33.69	0.02	-0.06	0.06
06:23:00 PM	33.67	33.69	-0.02	33.71	0.02	0.04	0.03
06:24:00 PM	33.71	33.65	0.06	33.71	0.06	0.00	0.06
06:25:00 PM	33.71	33.74	-0.03	33.69	-0.05	-0.02	0.05
06:26:00 PM	33.69	33.61	0.08	33.57	-0.04	-0.12	0.06
06:27:00 PM	33.58	33.61	-0.03	33.61	0.00	0.03	0.05
06:28:00 PM	33.61	33.61	0.00	33.66	0.05	0.05	0.05
06:29:00 PM	33.66	33.61	0.05	33.75	0.14	0.09	0.03
06:30:00 PM	33.75	33.92	-0.17	34.02	0.10	0.27	0.06
06:31:00 PM	33.95	33.92	0.03	33.86	-0.06	-0.09	0.05
06:32:00 PM	33.84	33.79	0.05	33.78	-0.01	-0.05	0.05
06:33:00 PM	33.78	33.78	0.00	33.77	-0.01	-0.01	0.05
06:34:00 PM	33.77	33.73	0.04	33.66	-0.07	-0.11	0.06
06:35:00 PM	33.67	33.72	-0.05	33.64	-0.08	-0.03	0.02
06:36:00 PM	33.62	33.76	-0.14	33.68	-0.08	0.06	0.08
06:37:00 PM	33.68	33.76	-0.08	33.80	0.04	0.12	0.05
06:38:00 PM	33.80	33.71	0.09	33.73	0.02	-0.07	0.03
06:39:00 PM	33.71	33.71	0.00	33.71	0.00	0.00	0.06
06:40:00 PM	33.71	33.85	-0.14	33.81	-0.04	0.10	0.05
06:41:00 PM	33.80	33.78	0.02	33.70	-0.08	-0.10	0.04

TIME (UTC)	Quote (Last)	History (Last)	Quote Difference	Trusted Historic Data	Trusted vs. History	Trusted Vs. Quote	Ask-Bid Spread
06:42:00 PM	33.70	33.54	0.16	33.57	0.03	-0.13	0.05
06:43:00 PM	33.57	33.57	0.00	33.61	0.04	0.04	0.10
06:44:00 PM	33.61	33.67	-0.06	33.56	-0.11	-0.05	0.01
06:45:00 PM	33.56	33.67	-0.11	33.54	-0.13	-0.02	0.03
06:46:00 PM	33.54	33.67	-0.13	33.54	-0.13	0.00	0.11
06:47:00 PM	33.54	33.67	-0.13	33.56	-0.12	0.02	0.07
06:48:00 PM	33.55	33.78	-0.23	33.78	0.00	0.23	0.06
06:49:00 PM	33.72	33.77	-0.05	33.69	-0.08	-0.03	0.06
06:50:00 PM	33.77	33.84	-0.07	33.81	-0.04	0.03	0.06
06:51:00 PM	33.81	33.81	-0.01	33.79	-0.02	-0.02	0.03
06:52:00 PM	33.79	33.80	-0.01	33.73	-0.07	-0.06	0.05
06:53:00 PM	33.73	33.70	0.03	33.71	0.00	-0.02	0.03
06:54:00 PM	33.71	33.39	0.31	33.57	0.18	-0.13	0.06
06:55:00 PM	33.39	33.52	-0.13	33.52	0.00	0.13	0.05
06:56:00 PM	33.51	33.52	-0.01	33.36	-0.16	-0.15	0.06
06:57:00 PM	33.36	33.52	-0.16	33.39	-0.13	0.03	0.08
06:58:00 PM	33.39	33.43	-0.04	33.45	0.02	0.06	0.10
06:59:00 PM	33.45	33.35	0.10	33.35	0.00	-0.10	0.04
07:00:00 PM	33.35	33.35	0.00	33.35	0.00	0.00	0.02
07:01:00 PM	33.35	33.48	-0.13	33.48	0.00	0.13	0.05
07:02:00 PM	33.48	33.39	0.09	33.44	0.05	-0.04	0.10
07:03:00 PM	33.41	33.50	-0.09	33.46	-0.04	0.05	0.07
07:04:00 PM	33.49	33.42	0.07	33.42	0.00	-0.07	0.02
07:05:00 PM	33.42	33.31	0.11	33.31	0.00	-0.11	0.05
07:06:00 PM	33.27	33.31	-0.04	33.17	-0.14	-0.10	0.06
07:07:00 PM	33.17	33.31	-0.14	33.16	-0.15	-0.01	0.05
07:08:00 PM	33.16	33.31	-0.15	33.25	-0.06	0.09	0.04
07:09:00 PM	33.22	33.31	-0.09	33.30	-0.01	0.08	0.05
07:10:00 PM	33.30	33.31	-0.01	33.34	0.03	0.04	0.06
07:11:00 PM	33.34	33.52	-0.18	33.52	-0.01	0.17	0.05
07:12:00 PM	33.52	33.49	0.02	33.49	0.00	-0.02	0.03
07:13:00 PM	33.46	33.54	-0.08	33.49	-0.05	0.03	0.04
07:14:00 PM	33.49	33.39	0.10	33.47	0.08	-0.02	0.03
07:15:00 PM	33.47	33.47	0.00	33.49	0.02	0.02	0.09
07:16:00 PM	33.49	33.36	0.13	33.30	-0.06	-0.19	0.05
07:17:00 PM	33.29	33.29	0.00	33.17	-0.12	-0.12	0.04
07:18:00 PM	33.17	33.29	-0.12	33.30	0.01	0.13	0.07
07:19:00 PM	33.31	33.24	0.07	33.24	0.00	-0.07	0.07
07:20:00 PM	33.24	33.26	-0.02	33.31	0.05	0.07	0.05
07:21:00 PM	33.31	33.11	0.20	33.11	0.00	-0.20	0.03
07:22:00 PM	33.14	33.18	-0.04	33.14	-0.04	0.00	0.03
07:23:00 PM	33.14	33.12	0.02	32.99	-0.13	-0.15	0.05
07:24:00 PM	32.99	32.96	0.03	32.95	-0.01	-0.04	0.05
07:25:00 PM	32.95	33.06	-0.11	33.06	0.00	0.11	0.06
07:26:00 PM	33.06	33.24	-0.18	33.22	-0.02	0.16	0.04
07:27:00 PM	33.22	33.26	-0.04	33.17	-0.09	-0.05	0.07
07:28:00 PM	33.17	33.26	-0.09	33.11	-0.15	-0.06	0.02
07:29:00 PM	33.11	33.28	-0.17	33.28	0.00	0.17	0.06
07:30:00 PM	33.28	33.16	0.12	33.23	0.07	-0.05	0.00
07:31:00 PM	33.23	33.16	0.07	33.27	0.11	0.04	0.06
07:32:00 PM	33.27	33.36	-0.09	33.34	-0.02	0.07	0.05