

Appendix B — Data Sources

The best situation would be to use the same data for development as for trading. Unfortunately, that is unlikely.

The bid, ask, and execution prices available on your broker's screen are provided by your broker for your convenience. The broker's business is brokerage, not data distribution. Under normal circumstances you can expect a reputable broker to display the best bid and ask and a stream of transaction records in near real time. When there is a resource limitation—such as saturated communications—the brokerage data stream will be reduced to fit the available capacity. The trade history recorded from a single broker is nearly certain to be incomplete and will not agree with the historical trade data downloaded some time after those trades were made.

Be aware of the possible problems associated with broker-supplied data for use in trading system development.

Data supplied by a data service that is not a broker is more likely to be complete, but it cannot be directly traded.

My suggestion is a compromise:

- For development, use high quality data obtained from a source whose stated purpose is to distribute complete and accurate data.
- For trading:
 - * Feed your trading system program from the same source used for development.
 - * Generate the buy and sell signals from the trading system running in the development platform.
 - * Verify on your broker's screen that the broker's quotations are accurate.
 - * Place your trades using your broker's utilities.

The sections that follow identify and briefly discuss several sources of price data. Some provide only historical data—end-of-day data some time after the markets close, or intra-day data reported after a delay of some time. Others distribute real-time data, reported as soon after the data was created as possible. Most have a range of products and services at a range of prices, allowing you to select what you need. The completeness of the data provided varies with vendor—do enough research to satisfy yourself that the data provided meets your needs.

All are data vendors, and all are currently in business as this is written. You should expect changes as new vendors enter the business and others drop out. Join the user groups and discussion forums for the platform you use and the data vendors you are using or considering using.

You have some choices to make related to the data you will use for development.

- The source—where the data will come from.
 - * Free.
 - * Subscription.
- Database location.
 - * Locally, on your own computer.
 - * On the data server's computer, downloading what you need when you need it.
- Database maintenance.
 - * The data vendor corrects errors and adjusts for splits and distributions. (In most cases, you are unable to make modifications to the vendor-maintained database.)
 - * You maintain the database.

csi

<http://www.csidata.com/>

End-of-day historical data for US and Canadian stocks, world futures, Forex, indexes, government rates, ETFs, mutual funds. Subscription. Data is stored on your computer in a proprietary format. Data is maintained by the vendor.

dtn.iq

<http://www.interquote.com/>

Real-time, tick-by-tick streaming data for stocks, futures, options. Subscription. Your software requires a “client process” to receive the quotes, functions to interpret the data, and functions to store it to your local database (if you want to record the data for future use).

eoddata

<http://www.eoddata.com/>

End-of-day and one minute-based intra-day data for stocks, ETFs, mutual funds, commodities on markets around the world. A limited amount is available free, most require a subscription. Data is downloaded to your computer and stored in one of a number of formats, including ASCII, MetaStock, and several specific to trading system development platforms.

eSignal

<http://www.esignal.com/>

Real-time, tick-by-tick, streaming data for stocks, futures, options. Subscription. Uses eSignal and third-party software.

Google

<https://www.google.com/finance>

End-of-day historical data for stocks, indexes, mutual funds for US and many world markets. Real-time data for stocks using beta-test data feed. Free. API procedures for direct feed to your application are available for many development platforms. Or download in csv format and store in your local database.

Interactive Brokers

<https://www.interactivebrokers.com/ind/en/main.php>

A broker whose data service is high quality. End-of-day and intra-day historical, and real-time streaming, data through the TWS (Trader Work Station). Some free, some subscription. Download in csv format and store in your local database. Direct access to live trading applications through the TWS API.

msn money

<http://money.msn.com/>

End-of-day historical data for stocks, indexes, mutual funds for US and many world markets. Free. Download in csv format and store in your local database.

nasdaq

<http://www.nasdaq.com/quotes/historical-quotes.aspx>

End-of-day data for stocks and ETFs listed on the all US exchanges. Free. Download historical data in csv format. Intra-day prices, including pre-market and after-hours, are available for view—some real-time, some with 20 minute delay. Historical commodity prices viewable but not downloadable.

Norgate Premium Data

<http://www.premiumdata.net/>

End-of-day historical data for stocks, futures, Forex for US and many world markets. Subscription. Vendor maintains a database (in several formats including MetaStock, ASCII, and the preferred proprietary) on your computer, updating content with each download. Extensive historical data, including survivorship adjusted data, is available.

Quandl

<http://www.quandl.com/>

A large number of end-of-day datasets for global markets, including indexes, commodities, stocks, interest rates. Some free, some subscription. Extensive historical data download in csv, Excel, json, R, or xml format. Free API for direct access of Quandl by AmiBroker, Python, C/C++/C#, Excel, Java, Maple, Matlab, R, Stata, and more. Quandl is a data aggregator and redistributor. Their premium data is available shortly after market close. Intra-day historical data, but not real-time data, is available via subscription.

US Treasury

www.treasury.gov/

Daily T-Bill, T-Note, T-Bond, and yield-curve spread rates. Free. Copy and paste to your spreadsheet. Store in your local database.

Yahoo! Finance

<http://finance.yahoo.com/>

End-of-day historical data for stocks, indexes, mutual funds for US and many world markets. Free. API procedures for direct feed to your application are available for many development platforms. Or download in csv format and store in your local database.