



## FTS DOW School Case (DJIA Stocks) Project: How Securities Are Traded

**Question:** How are stocks traded in the secondary markets?

Stocks are first issued in a “Primary Market,” for example through an IPO (initial public offering). Once issued, they are traded in “Secondary Markets.” These include organized exchanges such as the New York Stock Exchange (NYSE) and over-the-counter (OTC) markets. In any of these markets, buyers and sellers negotiate a price through a process called *price discovery* and then trade at the negotiated price. For example, on the NASD, price discovery is initiated by dealers who post bids and offers. On the NYSE, price discovery is initiated by investors, but orders above a certain size are matched by a specialist who can also trade on their personal account. Other markets, referred to as third and fourth markets, trade exchange listed securities and are pure order driven markets, where price discovery is initiated by investors and all matching of buyers and sellers is via an electronic network.

Common to these markets are various order types. The two most popular are **market orders**, and **limit orders**. Market orders are “buy” or “sell” orders for a specified quantity at the best currently available prices (the highest current bid and the lowest current ask). In a **limit order** traders specify both the price and quantity they want to trade. A buy order is executed if the ask drops to the price, and a sell order is executed if the bid rises to the price. A variation known as a **stop order** lets traders lock in profits or limit losses on existing positions.

Two other important institutional details are known as **short sales** and **buying on margin**. Short sales allow traders to sell securities they do not currently own. To sell short, a trader is required to borrow the securities from a broker and then sell the borrowed security; when they cover their short position, the shares have to be returned. When buying on margin a trader borrows money from a broker to buy the stock. Interest is charged on the loan, and has to be repaid when the stock is sold. If the value of the stock falls sufficiently, the broker can make a margin call, which requires the trader to either deposit more money or sell the stock.

The FTS Real Time Client allows you to implement these orders using real world institutional details. Limit and stop orders are automatically monitored by the system in real time and all positions are marked-to-market twice daily; the marking to market can trigger off automatic cash transfers to cover margin calls. All the accounting is performed automatically for you and the details of this accounting are available at any time via the “Reports” menu item.

In this project you will learn how stocks are traded in the secondary markets and the details of these order types using the DJIA stocks. To keep things interesting you will first form a simple price view for three stocks in the DJIA index. A view is simply whether you expect a particular stock to increase or decline in price. You can form your view in any way, e.g. thinking about short term economic trends, looking at some price charts, or even just flipping a coin if nothing else leads to a prediction. In practice, traders use many methods to develop their views, including technical analysis, news, and fundamental analysis. In this project, it does not matter whether your view is correct.



Given your price view for the three stocks, complete the following five steps:

1. On day 1 implement the following trades for the three stocks: Cash Purchase, Margin Purchase and Short Sale, each for at least 100 shares in each stock.
2. After 5 days (or longer), close out the transactions implemented on day 1. That is, reverse your trades by conducting a Cash Sale, Margin Sale and Short Cover respectively so you are now left with no stocks either short or long.
3. Your cash account has now either increased or decreased over this time period. In this step, reconcile how the transactions above changed your total cash. Pay particular attention to interest paid on margin and short sale accounts and any margin calls.
4. Next, implement a limit order/stop order strategy. Given your price view of three stocks, implement the following three trades: Limit Cash Purchase, Limit Margin Purchase and a Limit Short Sale. After you observe your limit orders have been executed then you should also put on the following “Stop Loss” trades – Stop Cash Sale, Stop Margin Sale and Stop Short Cover. If you want to you can enter all these at the same time.
  - Note: For part 4 you should track recent price changes for the three stocks so that your limit orders are placed at prices that have a reasonable chance of being executed. Your goal for a limit order is to purchase or sell at a better price than is currently available. Your goal for a stop (loss) order is to sell or cover a previous sale at a price that is worse than the current price – hence the term “stop loss.” Of course the “stop loss” may imply stopping the loss of a profit if prices have moved in your favor!
5. After you have successfully completed step 4 you have again cashed out of the three trades. Again your cash has either increased or decreased relative to what it was at the beginning of step 4. In this step you are required to reconcile how your transactions in step 4 changed your total cash.

After completing the above 5 steps, you will have gained important experience and understanding of order types and how they are implemented and executed.