

Idea Behind the Model

Based on research below, when stock opens at an extreme open price with respect to previous close evaluated by z , it tends to close the gap very soon, either in the same session or the next few sessions.

Case Study for Filling Open Price Gap in DJIA Stocks on Intraday Timeframe

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Abstract: Stock open price in a trading session is usually located within the trading range of previous day unless there is a good or a bad news about the stock. If it is good news, open price could be higher than the High price of previous day which causing "Up Open Gap". If there is bad news, then open price could lower than the Low price of previous day which causing "Down Open Gap". During the trading session which lasts for 390 minutes in US, stock trading will result in either closing the open gap or leave it opened.

This research aims to quantify expected behavior and to find the time of filling the open gap, if it will be closed on the intraday timeframe.

Keywords: Algorithmic Trading, High Frequency Trading, Market Timing, Stock Market, Stock Open Gap.

<https://www.iosrjournals.org/iosr-jef/papers/Vol10-Issue5/Series-2/C1005021418.pdf>

Model

Inputs: Stock daily prices, Intraday prices, Fair Value, Options Trading History

Output: Predict reversion level.



Live Results Sample

TRADES	QUANTITY	STATUS	PRICE	AMOUNT	
PUBM JAN 21 '22 25 Put Sold 2 @ 0.80 on CBOE	2	Filled 11/10/2021, 11:22 PM	0.80	160 Commission: 1.35	Exit Proceeds $335 - 1.57$ $= \$333.43$
PUBM JAN 21 '22 30 Put Sold 1 @ 1.75 on NASDAQOM	1	Filled 11/10/2021, 11:09 PM	1.75	175 Commission: 0.22	
PUBM JAN 21 '22 30 Put Bot 1 @ 1.20 on CBOE	1	Filled 11/10/2021, 7:37 PM	1.20	120 Commission: 1.02	Entry Cost $220 - 2.36$ $= \$217.64$
PUBM JAN 21 '22 25 Put Bot 2 @ 0.50 on CBOE	2	Filled 11/10/2021, 7:35 PM	0.50	100 Commission: 1.34	

PnL: 53.2%

Challenges & Difficulties

- Given that Model was built during October 2021, most of required data were not available through API so data was collected from different sources using Excel and then uploaded to the model.
- Model needs high computational power which was very expensive to afford.
- Trading was not available to retail traders through API on IBKR side, so orders were placed manually.
- All of those challenges are relaxed now, in all aspects, like getting data through APIs and trading options through APIs.