

BACKTESTING & WHY IT ISN'T PERFECT

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THE ISSUES WITH BACKTESTING AND WHY YOU NEED TO DO IT

Backtesting is a way to determine how successful a specific trading idea was in the past. It does not guarantee future success. It can differentiate between good and poor trading ideas.

One way to backtest is to identify an idea that you think has an edge, design a code for that edge that backtesting software can interpret and run the backtest over a subset of data.

This means your first test may be done during the years 2000 to 2010. After making some adjustments to improve the performance, run the test again on data from 2011-2015. Does it still produce good results, do you still have an edge or were the results disastrous. When the results are terrible, you have identified an idea that does not work, so you start over and repeat the process.

When you have a clear edge, your theory is sound. However, just because you have an edge on paper does not mean you can trade it and make money, it just means the idea, over a large number of trades, is profitable.

By knowing that your idea is viable, you can start to trade it knowing the gap between the backtesting profits and the actual profits is likely due to your ability to trade the system.

WHAT ARE THE ISSUES

In the slides that follow, I will highlight a number of areas which I have observed that can partially bridge the gap between backtested results and reality. It is you against the computer and how the computer interprets data.

Computers will only do what they are programmed to do. Traders on the other hand will not. They may have a plan yet when it is time to act, they may not. When it comes to trading, traders can be irrational and often do the opposite of what they should be doing.

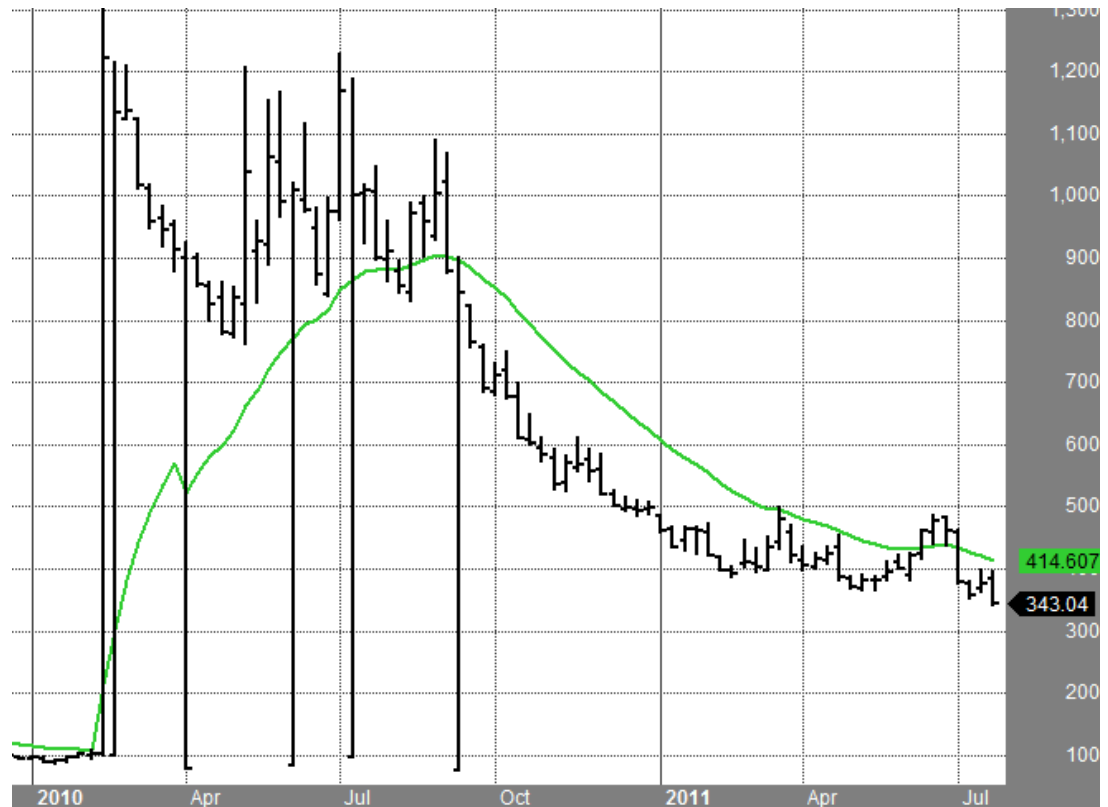
By knowing that your idea is viable, you can start to trade it knowing the gap between the backtesting profits and the actual profits is likely due to your ability to trade the system.

Trade your new system as if you were testing it. Start out small and take the next 20 to 30 trades. See what happens. What did you learn? Can you keep applying this strategy or does it need a few tweaks?

The following slides will highlight some of the issues.

BAD DATA

PBR.A 2/7/07 Split 2:1 (left)
SQQQ Holiday Data (right)



Stock charts and backtesting from Amibroker
Data comes from an external data provider

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SORTING THE ENTRY

How will you determine which stock to buy?

1. Alphabetically
2. Highest close
3. Lowest close
4. Largest volume
5. Support and resistance
6. Risk
7. Favorite indicator

TAKEOVERS AND BANKRUPTCY

Do you remember

Lac Minerals

Placer Dome

Dome Canada

Dome Petroleum

Northern Telecom

Enron

Lehman Brothers

JAWS

Newkid

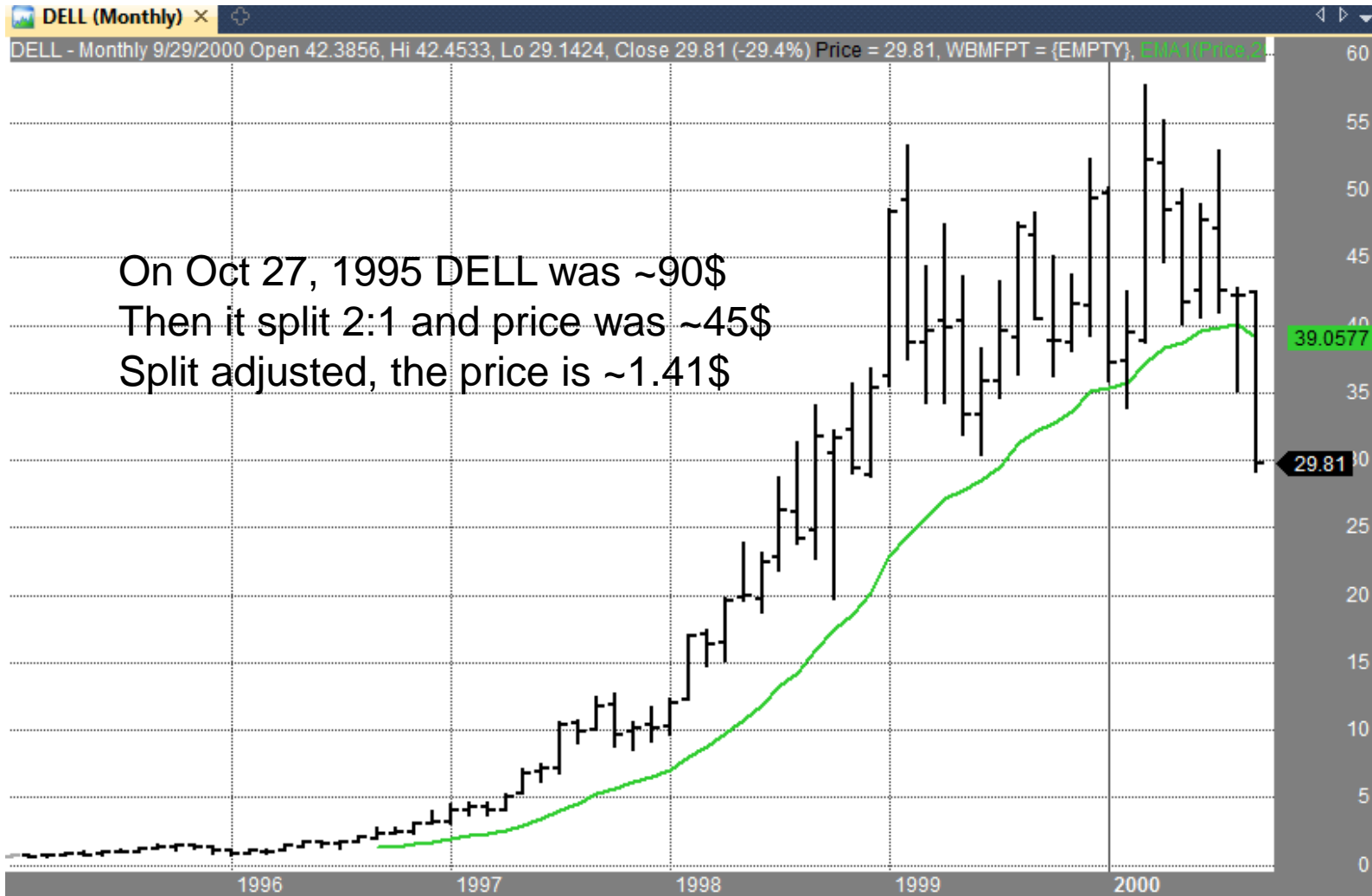
1000's of other stocks which are no longer with us

Would you have traded them?

Would they change your results?

SPLITS AND CONSOLIDATIONS

You may only want to trade stocks > \$20?



YOUR AVAILABILITY

Going away on vacation

Kids sick

Have an early morning meeting

Not feeling well

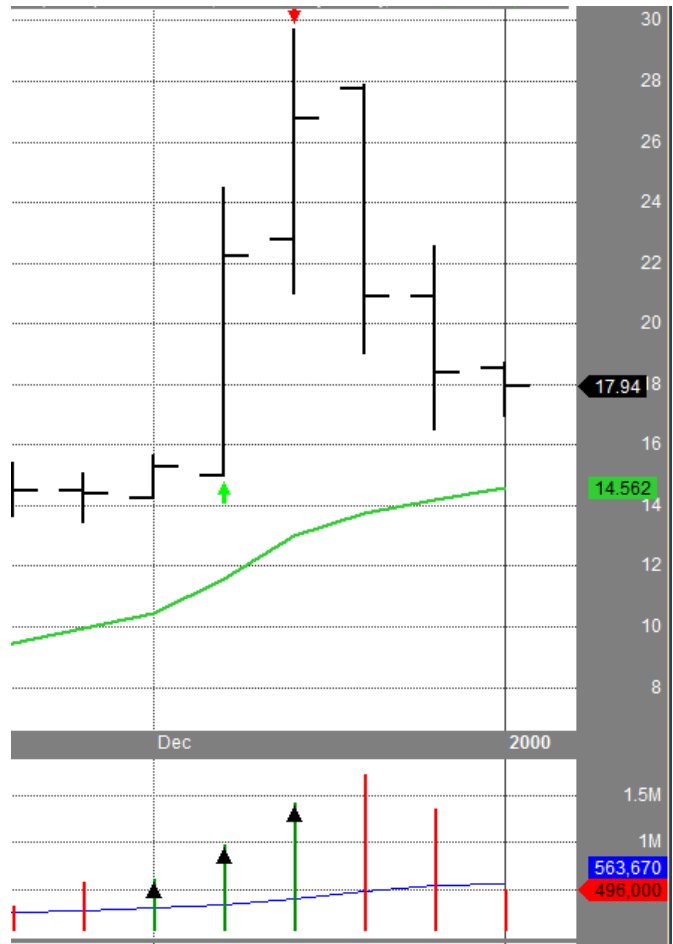
Power outage

Your mother calls you

Late night at the office

Decided to watch the late movie

CODING ERRORS



All trades	
Initial capital	10000.00
Ending capital	702878096.91
Net Profit	702868096.91
Net Profit %	7028680.97 %
Exposure %	52.03 %
Net Risk Adjusted Return %	13508908.62 %
Annual Return %	77.69 %
Risk Adjusted Return %	149.32 %
Total transaction costs	17402230.61

All trades	
Avg. Profit/Loss	226293.66
Avg. Profit/Loss %	3.92 %
Avg. Bars Held	3.88

Winners 2009 (64.68 %)

All trades	
Initial capital	10000.00
Ending capital	380135.14
Net Profit	370135.14
Net Profit %	3701.35 %
Exposure %	79.69 %
Net Risk Adjusted Return %	4644.61 %
Annual Return %	20.61 %
Risk Adjusted Return %	25.86 %
Total transaction costs	99115.80

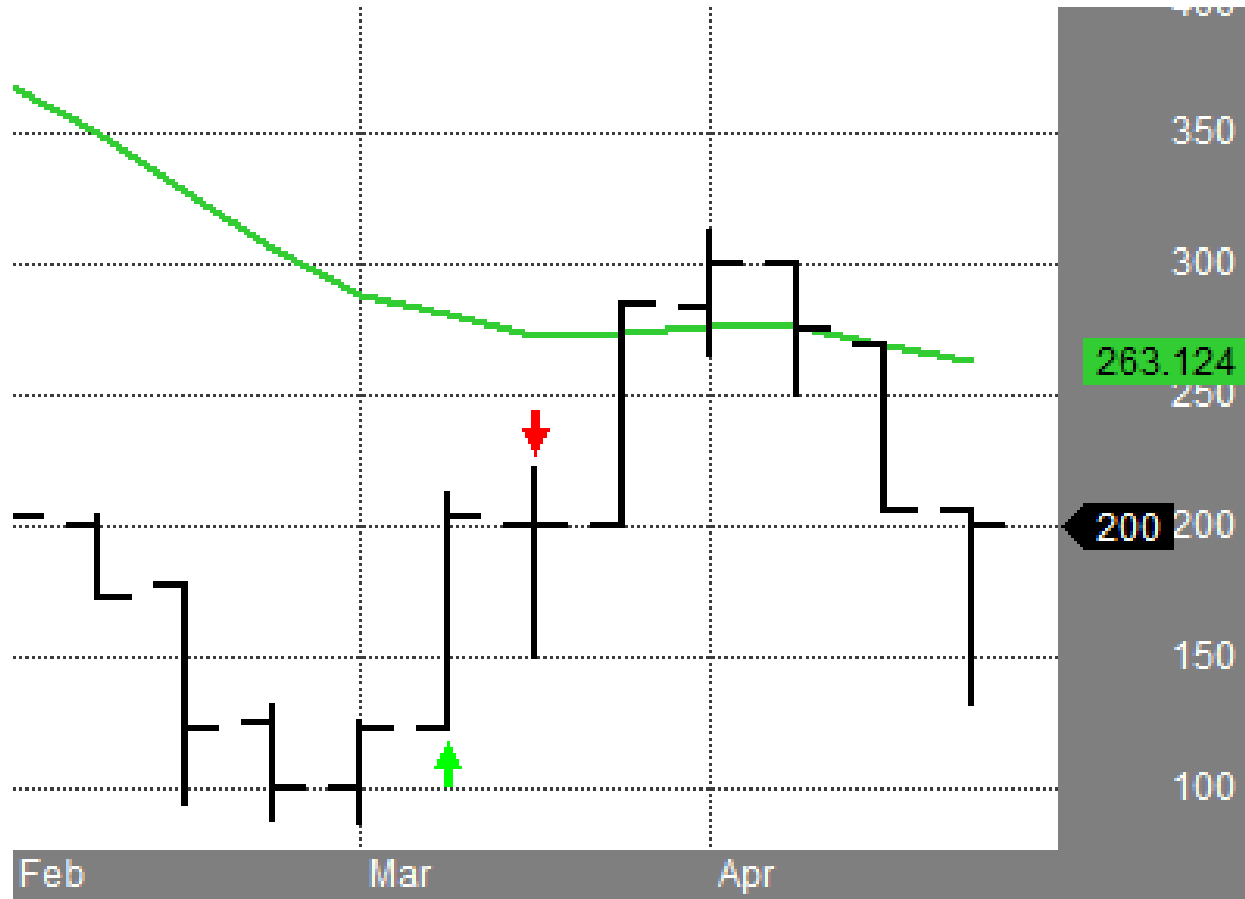
All trades	
Avg. Profit/Loss	142.09
Avg. Profit/Loss %	1.04 %
Avg. Bars Held	4.46

Winners 1331 (51.09 %)

Correct PositionScore = 100 + Ref(((C-L)/(H-L),-1);

Incorrect PositionScore = 100 + (C-L)/(H-L);

MISSED ENTRIES WHICH THE COMPUTER FOUND AND YOU MAY HAVE MISSED



YOU WERE NOT PART OF THE DATA SET

Generally, for the historical trades which are found in a backtest, you were not in the market.

This likely does not matter for stocks which trade a lot of volume however for small volume stocks you can influence the market, if only for a second.

NOT FOLLOWING YOUR SYSTEM

Computers just follow the code

Humans generally tend to follow their plan and occasionally deviate from the plan.

Example: Code is written to take the lowest priced stock. Backtesting shows overall stocks less than \$5 do better than stocks less than \$10.

Five stocks come up priced at \$1, 1.10, 1.15, 1.25, 1.30 & 1.35

You can only buy two stocks with the remaining cash

The computer will buy \$1 & \$1.10, you may not

DIVIDENDS

As it looks now



<http://stockcharts.com>

As it happened

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THE DATABASE

Do you have all current stocks in your data base?

Does your vendor have all current stocks in their data base?

Indicators which are missed as there is not enough historical data.
i.e. Have a 200-day Moving Average in your backtest and a good signal comes after 180 days.

THE NEWS AND OTHER INPUT

May effect you, will not effect the computer.

WHEN WAS THE BACKTEST RUN

Depending on how many open positions you allow in your backtest, will determine which stocks get selected.

For instance, let us say you only want 20 stocks in your portfolio. When you start a backtest at the start of July and it has selected 20 stocks by the end of July, no stocks will be selected in August until at least one stock in the portfolio is sold. This could result in a missed trade that you might take and the computer would not.

HOW MANY SHARES ARE AVAILABLE

In real life, only a defined number of shares are available at a specific price. Unless your backtesting database has every trade that was recorded in all stocks over the years in which you are backtesting the computer will likely make errors.

For instance, assume you get a buy signal and the computer puts a limit price into the market. The buy is for 1,000 shares and the price hits your bid. The computer buys 1,000 shares even though there are only 100 available.

POSITIONS TAKE AND MAXIMUM NUMBER OF POSITIONS TO HOLD

Your backtesting results will vary depending on how many positions you instruct the computer to take per time period. For instance instructing the computer to take 2 trades a week will give you different results than taking 5 trades a week.

Your backtesting results will vary depending on the maximum number of positions you instruct the computer to hold at any one time. For instance instructing the computer to only hold 10 positions in your account will give you different results than taking holding 20 positions.

By combining these two, you can see in one case it will take 10 periods ($20/2$) just to reach your maximum positions while in the other case it will take 2 periods ($10/5$).

FURTHER INFORMATION

Thanks for reading. To learn more about stock trading please visit my website at the link below.

<http://www.knispo-guide-to-stock-trading.com>

When you have read my book *Dating the Stock Market, 10 Key Mindsets You Need to Excel as a Trader* thanks for your support. When you have not and are interested you can pick it up on Amazon or visit my book website at www.DatingTheMarket.com