

July 12th, 2014

Nest Egg on Support

or How to Build your Retirement Fund.

Abstract:

This paper analyzes a stock trading strategy called: Support Resistance Trader (version 3). It's part of a series of trading strategies that are being analyzed and tested over the last 25 years of price data in order to find which might be my best choice going forward. The trading script SRT V3 designs support and resistance levels, will buy at support and try to sell above it. It's another trading strategy that could be expressed as: if it's your day today (within constraints): buy, otherwise abstain. So you have a trend following trading strategy relying on price randomness to be profitable. Almost a contradiction in terms, but not really.

Nest Egg on Support

I would say all people would like to build a nice retirement account if they could. However, the process has always been considered difficult and often required professional help while most of the time they could just do it all on their own. What follows is all about a long term trading strategy that could simply help anyone take the first step in that direction. And if able, do even more.

This is the 4th trading strategy to be analyzed in my back test series project and it has for backdrop: support and resistance levels. The original trading script defined a support as a navigating line near the lower range of its look back period. The same construct was used for its resistance level which would navigate near the price's top range. The output of the functions stated: price is at a resistance, support level or in between.

This is another end of day (EOD) trading strategy issuing orders for the next trading day at the open and at market. The same as the other 3 already tested strategies.

This particular trading strategy could be viewed as a variation on a theme. You define a channel and you trade within it. Kind of like the third strategy tested ([DEVX V6](#)) but not quite. Major and significant differences will be seen.

In this case, the channel used has a logical definition; by this is meant that the program only defines the state you are in: either at support, resistance or in between. One could stay at resistance levels as long as tops were being formed, just as support levels would maintain their stance as long as prices were falling. The program used these two logical barriers to dictate its trading behavior: buy at support and sell at resistance. Could it be conceptually simpler?

The original version of this program was appropriately named: Support Resistance Trader. Designed, published and generously offered by Fundtimer (his handle) to Wealth-Lab users in August 2006, almost 8 years ago. As the author said then, it was to serve as a canvas on which anyone could build and improve on the design.

As a personal note, I considered Fundtimer as a brilliant programmer, far beyond my abilities. He could program within minutes what was requested of him. He was not only providing code, he was giving away code poetry. Howard (all I know was his first name) could produce, just in a few lines of code, what you might have taken weeks to do on your own. He would produce code on demand that was not only concise, but elegant and to the point. He mastered the one liners. All I could do was admire his work. And should he ever read this, may I say thank you for your generosity; it served to motivate me to go beyond what I thought I could do.

The chart below shows the last 11 months of a 6 year testing period using the Wealth-Lab simulator and the original Fundtimer support and resistance program as is. It demonstrates its

general trading behavior:

Support Resistance Trader. Fundtimer's Original Version As Is



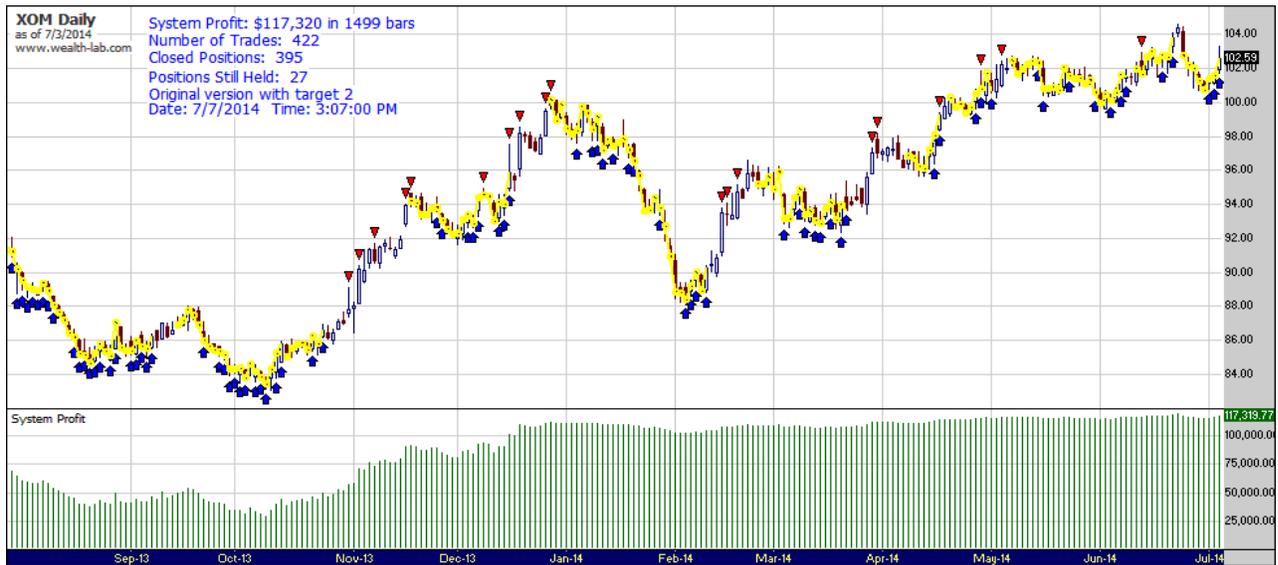
The program was initially designed to go long and short. But shorting was disabled. It was most certainly Fundtimer's intention, he knew what his program would do otherwise. Only long positions were now considered. And it's a good thing, since with shorting enabled, this trading strategy would simply and totally destroy your portfolio, what ever size it might have been, and I do mean totally.

The program after having declared a support level would scale in position, taking multiple trades if available capital allowed. It relied for its exits on its fixed profit target rather than selling at resistance. It might sound like a good idea, it was profitable, but in practice, it was also limiting.

You design a support resistance trading program, but you never sell at the resistance because some other procedure gets you out of your trades before they can even reach it. You can't reach a resistance exit because it is not programmed in either. There is no code in the program for such an exit. The program simply wants a profit for its exits, and small to boot.

Such a program structure implies that simply increasing the profit target, you would make more money. That's a test that is very easy to do: increase the profit target, and see:

Support Resistance Trader. Increasing Profits



You got the same number of trades, you just requested more money. And the program complied. But this also brings to attention that the only way out of a trade is if it reaches its profit target. Otherwise, it stays in inventory.

And for someone wishing to accumulate shares over the long term, as I do, this is not a bad idea. Requesting more profits would indirectly accumulate more shares:

Support Resistance Trader. Increasing Profits Again



From the above chart, you have the same number of trades with still more opened positions. To resume the output of those 3 charts, here are the numbers generated by the Wealth-Lab simulator:

Support Resistance Trader. Summary

	Support Resistance Trader		
Original Version	Original	Target 2	Target 3
Profit Target	5.00%	15.00%	30.00%
Generated Profits	54,698.12	117,319.80	178,585.91
Total Trades	422	422	422
Average P/(L)	129.62	278.01	423.19
Bars Held	45.45	108.85	167.73
Winners	264	188	181
Average P/(L)	218.90	648.33	1,012.66
Bars Held	26.82	129.07	262.22
Losers	158	234	241
Average P/(L)	(19.56)	(19.51)	(19.53)
Bars Held	76.58	92.60	96.77

One number, a unique number was changed in the original support resistance program to raise its profit outlook, only one character was needed.

And ...

it was sufficient to change not only its trading philosophy but its long term view of the market. You simply requested more money, and the program simply gave it to you. It did not change the number of trades; the program was still getting in trades at the very same prices as before. All you did was raise its profit outlook, requesting more profits from every trade... The program would comply or it would not. In this case, it had almost no choice, there were only two alternatives to exit a trade.

There are consequences to this course of action. One of which is to raise the average number of days shares would be held in inventory. Just as it would raise the average profit per trade and the number of shares in still opened positions. But that could be easily sustainable as long as you did not go over the edge. There are risks in any trading strategy. The Support Resistance Trader strategy has to face them as well.

The program [DEVX V6](#) also used a channel-like structure defined as a none trading zone, it would buy below it and sell above it. This one defines a support level at which it can buy shares but prematurely sells its inventory at a relatively low profit target. Still, it was profitable and this is a good point in its favor.

Then the question becomes: how far can you push this thing? How much profits can you extracts from those trading procedures. There are not that many ways to find out. You modify

the program's code to do what you think might do a better job.

If you looked for in between answers, you could increase the profit target step by step. Using XOM as poster child again, this would result in the following table:

XOM at Work

	Support Resistance Trader				
Original Version	Original	Target 15%	Target 20%	Target 25%	Target 30%
Profit Target	5.00%	15.00%	20.00%	25.00%	30.00%
Initial Account	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000
Generated Profits	\$ 54,698	\$ 117,320	\$ 150,149	\$ 166,314	\$ 178,586
Total Trades	422	422	422	422	422
Average P/(L)	130	278	356	394	423
Bars Held	45	109	138	160	168
Winners	264	188	185	182	181
Average P/(L)	219	648	837	940	1,013
Bars Held	27	129	194	243	262
Losers	158	234	237	240	241
Average P/(L)	(20)	(20)	(16)	(20)	(20)
Bars Held	77	93	95	97	97
Total Account	\$ 154,698	\$ 217,320	\$ 250,149	\$ 266,314	\$ 278,586
CAGR 6 years	7.54%	13.81%	16.51%	17.73%	18.62%
Extrapolation					
CAGR 25 years	\$ 615,915	\$ 2,538,519	\$ 4,562,052	\$ 5,922,121	\$ 7,144,905

Having more profit targets, one can follow more closely the marginal performance increments. You still had the same number of entries, and as the profit target increased, your total generated profits would also rise. That's not the only thing that would increase, from the above table, the average number of days shares would be held also increased, the same as for the losing trades but not by as much. All natural consequences of price movements; on average, it takes longer to reach higher price levels. And the longer you stayed in a stock, the more you were bound, by variance alone, to hit more stops.

The 6 year CAGR also increased, not due to market activity, but simply because you requested more profits from the taken positions. This is a nice concept: you want more, you just ask for more...

This trading procedure did not care about how prices moved. It made no price prediction. It only determined its rules of engagement: getting in at a support level to then wait to get out on its profit target or stop loss, which ever would be hit first.

Another observation: as the profit target increased, the average loss on trades stayed relatively stable. The average loss on losing trades would remain close to -\$20 per trade. This is equivalent to the round trip commissions charged. Who would accept to have 241 losers at \$20 each (\$4,820) for in return accept 181 trades generating \$1,013 each (\$183,353). And it's

not all, most of the still opened positions would also be profitable. Should you quit at the end of the run, you would be ahead in such a game.

The reason the average loss per losing trade stays around -\$20 is quite simple. It equals the round trip commission costs. It's a result of the installed automatic reverse break even stop instruction in the program's code which served as protective stop. Better techniques could be used. I can see many ways to reduce the number of losers, even if they are just for \$20 each. But sometimes, you just want to know if a trading strategy is viable before adding bells and whistles. For instance, simply requesting 0.40% more in profits would pay commissions. A more efficient way would be to simply remove the automatic reverse break even stop instruction from the code. Doing so would even raise profits...

Based on the 6 years CAGR, an extrapolation was made to give a ball park figure should the CAGR be maintained over a 25 year trading interval. And this starts to show some interesting numbers.

From these observations, I had to perform 3 tests on the Fundtimer trading script: one at the 5% profit target level to show the value of the original strategy design; one at the 25% level which would stay within its trading limits; and a third with higher and still sustainable limits.

Also, the testing period would be extended to 25 years, the same as in the other tests, and use as portfolio selection the 30 DOW stocks. This way, all trading strategies will stay on comparable footings, these and the 3 already tested. I will be able to say if this relationship will hold true or not:

$$\Sigma(\mathbf{H}(\text{TS } 4) \cdot \Delta\mathbf{P}) >? \Sigma(\mathbf{H}(\text{TS } n=1,2,3) \cdot \Delta\mathbf{P}) > \Sigma(\mathbf{H}(\text{B\&H}) \cdot \Delta\mathbf{P})$$

The Support Resistance Trader Tests

Now time to backtest over a portfolio of stocks and over the last 25 years of data. It's quite a severe test to take for a bunch of stocks, and then feed them to a trading strategy that might not have been designed to support such things. And doing it over the last 25 years will surely reveal what is under the hood.

Can the trading strategy survive, can it stay positive, can it thrive? Those are legitimate questions, and the only way to find out is to perform those long term tests. They should also reveal how the trading strategy behaved over time, not as a set of rules, but as a method of play.

The original trading script as is, needed to be tested first. The following table shows 30 stocks (28 from the DOW) with the generated statistics for each.

DOW 30, SRT original version as is

Program: Support Resistance Trader (original version)					Initial Cap: \$100,000		Bet Size: \$5,000		Ending Cash On Hand
Sym	Profits	Trading Days	# Years	CAGR	# Trades	# Closed	# Won	% Won	
AXP	\$285,244	6,482	24.9	5.56%	1,332	1,328	977	73.35%	\$365,020
BA	\$219,760	6,482	24.9	4.77%	1,384	1,377	929	67.12%	\$286,068
CAT	\$217,635	6,489	25.0	4.74%	1,297	1,294	892	68.77%	\$320,323
CSCO	\$179,190	6,118	23.5	4.46%	1,089	1,073	741	68.04%	\$212,482
CVX	\$240,311	6,310	24.3	5.18%	1,449	1,448	998	68.88%	\$335,353
DD	\$137,543	3,909	15.0	5.92%	926	900	588	63.50%	\$110,923
DIS	\$244,143	6,487	25.0	5.08%	1,421	1,417	989	69.60%	\$323,448
GE	\$239,454	6,490	25.0	5.02%	1,519	1,469	1,087	71.56%	\$135,271
HD	\$204,387	6,487	25.0	4.56%	1,275	1,262	860	67.45%	\$238,030
HON	\$238,870	6,487	25.0	5.01%	1,334	1,310	986	73.91%	\$217,026
IBM	\$241,556	6,489	25.0	5.04%	1,520	1,491	1,010	66.45%	\$200,150
INTC	\$192,609	6,489	25.0	4.40%	1,226	1,219	808	65.91%	\$263,627
JNJ	\$273,975	6,489	25.0	5.43%	1,685	1,677	1,176	69.79%	\$327,767
JPM	\$210,171	6,487	25.0	4.64%	1,286	1,271	850	66.10%	\$236,274
KO	\$222,347	6,487	25.0	4.80%	1,590	1,532	1,127	70.88%	\$79,031
MCD	\$259,251	6,482	24.9	5.26%	1,538	1,519	1,073	69.77%	\$265,192
MMM	\$280,583	6,478	24.9	5.51%	1,607	1,593	1,178	73.30%	\$309,287
MO	\$235,530	6,489	25.0	4.97%	1,438	1,421	1,005	69.89%	\$262,905
MRK	\$128,352	3,902	15.0	5.66%	919	897	579	63.00%	\$128,166
MSFT	\$230,362	6,490	25.0	4.90%	1,389	1,376	939	67.60%	\$266,117
PFE	\$241,580	6,325	24.3	5.18%	1,469	1,425	969	65.96%	\$151,445
PG	\$281,106	6,487	25.0	5.51%	1,689	1,636	1,204	71.28%	\$131,154
SLB	\$195,563	6,310	24.3	4.57%	1,202	1,202	810	67.39%	\$295,563
T	\$240,216	6,310	24.3	5.17%	1,503	1,482	998	66.40%	\$232,733
TRV	\$244,761	6,310	24.3	5.23%	1,542	1,527	1,029	66.73%	\$269,405
UTX	\$252,581	6,481	24.9	5.19%	1,411	1,390	1,027	72.79%	\$248,530
VZ	\$230,457	6,325	24.3	5.04%	1,512	1,489	992	65.61%	\$216,580
WFC	\$236,753	6,310	24.3	5.13%	1,430	1,424	960	67.13%	\$306,670
WMT	\$149,963	3,909	15.0	6.28%	982	953	626	63.75%	\$106,115
XOM	\$299,540	6,489	25.0	5.71%	1,671	1,655	1,229	73.55%	\$318,651
Total	\$6,853,793				41,635	41,057	28,636		\$7,159,306
Averages	\$228,460	6,176	23.8	5.13%	1,388	1,369	955	68.52%	\$238,644

The original program version did provide some positive results. But they were not that great. An average 5.13% CAGR
It ends up mostly in cash. There are still some lessons to be learned here.

What the above table tells me is that the trading strategy could not lose if played as is.

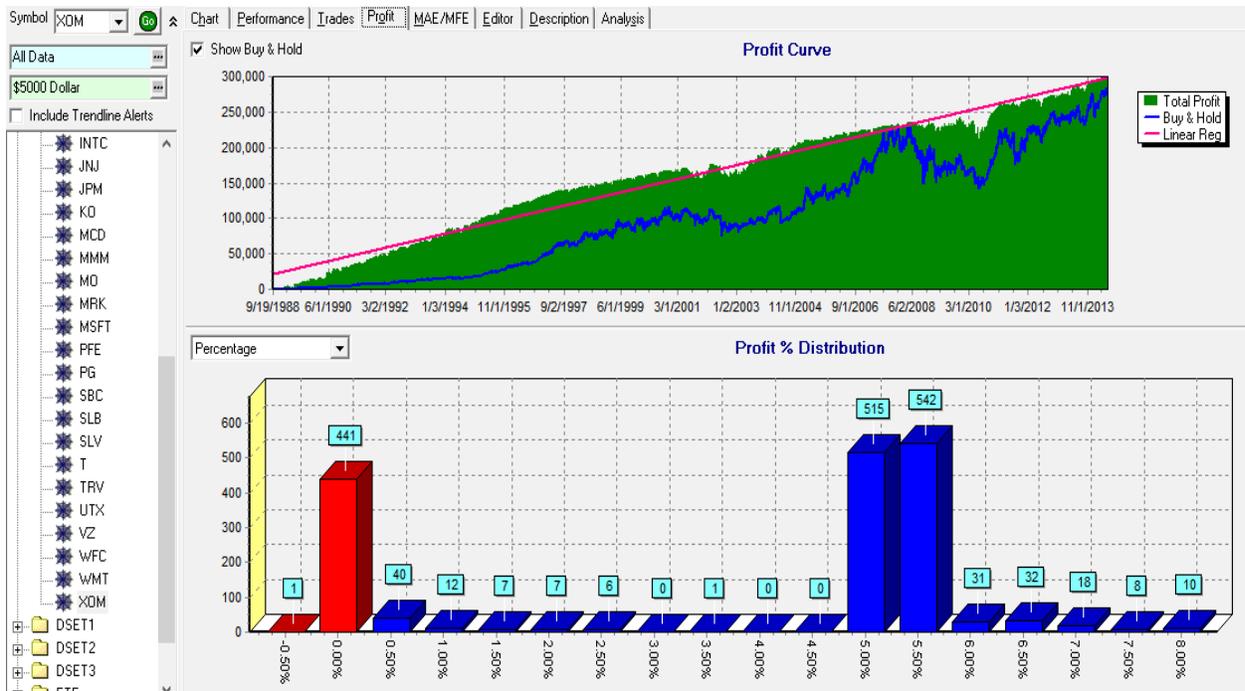
There are many reasons for this, but it is in the nature of that trading strategy to simply win the game due to three main reasons. The first one is its profit policy: give me 5% on my bet or else, I'll take the \$20 hit. And since you are playing \$5k bets it becomes a simple question of how many times will you hit one or the other.

Taking a look at the XOM numbers, there were 1,671 trades taken of which 1,655 were closed leaving for still opened positions only 6 trades. Of the closed positions (1,655), 1,229 were profitable, each generating their 5% requested profits (\$250) for a total of: \$307,250. You had 426 losers that lost on average \$20 resulting in: -\$8,520. You therefore should end with a profit around: \$298,730. The difference with the recorded profit number is due to the 6 still opened positions.

That general concept was applied to all 30 stocks in the group. And the second reason you could not lose was because of this: you were dealing with a group of stocks that were representative of the market indexes. A relatively simple trading strategy that would make you win just by playing a bunch of stocks, diversifying your play over the long haul.

If you looked at the XOM equity chart, you got something like this:

XOM Equity Curve (25 years)



It shows the equity line to be quite stable, with low volatility and low drawdowns. We can also see the two poles of attraction for the trades; you generated your \$250 (5% of \$5k) 68.78% of the time while with your stops you lost \$20 (31.22% of the time).

This is not viewing trading as it is usually done. You look back over 25 years of a trading strategy's history and you don't see what was the support or resistance line of any of the stocks in the portfolio. All you see is this 5% rule and the \$20 stop loss. Those are trading procedures that you could extract from the trading strategy, make them discretionary knowing that you are now going to win long term. The numbers won't be the same, but you don't care, you would still make your money. You could even use these "rules" to build your own retirement fund.

These are not very complicated rules, you most certainly could improve on them, continue to make them automated or chose to operate them on a manual basis. Either way, you would be assured to win. By how much, I don't know. I'm not a fortune teller. All I can say is that you

won't need luck on your side to succeed. You'll be winning by default. Simply because you adopt a method of play. And to show its validity, you performed a 25 years test on 30 stocks representative of the market as a whole.

What are the drawbacks of this marvelous trading strategy? The first one is that it is lousy at using its cash reserves. You end up mostly in cash. And the second, it's only generating 5.13% CAGR. That's not much, it does not even beat the Buy & Hold.

Some would say: great idea, but I'll pass. Wait, not so fast there. It's a program, one can modify it to do better! And to boot, I'll do it using a single character.

Here is what I must consider the smallest modification to a trading program I've done in years. A single character to modify a trading philosophy. So how much is this character really worth?

XOM A Single Character's Worth

Program: Support Resistance Trader (orig. PT25)					Initial Cap: \$100,000		Bet Size: \$5,000		Ending Cash On Hand
Sym	Profits	Trading Days	# Years	CAGR	# Trades	# Closed	# Won	% Won	
AXP	\$784,550	6,483	24.9	9.14%	1,332	1,304	693	52.03%	\$732,576
BA	\$668,850	6,483	24.9	8.52%	1,385	1,356	653	47.14%	\$623,675
CAT	\$564,604	6,490	25.0	7.88%	1,297	1,265	550	42.41%	\$487,498
CSCO	\$408,784	6,119	23.5	7.16%	1,089	1,025	472	43.34%	\$196,512
CVX	\$706,617	6,311	24.3	8.98%	1,449	1,400	677	46.72%	\$533,307
DD	\$249,842	3,910	15.0	8.68%	926	866	284	30.67%	\$38,218
DIS	\$651,108	6,488	25.0	8.42%	1,421	1,397	659	46.38%	\$618,110
GE	\$827,315	6,491	25.0	9.33%	1,519	1,413	849	55.89%	\$446,458
HD	\$472,167	6,488	25.0	7.24%	1,275	1,221	547	42.90%	\$284,651
HON	\$642,567	6,488	25.0	8.37%	1,334	1,267	661	49.55%	\$382,119
IBM	\$583,055	6,490	25.0	8.00%	1,520	1,444	657	43.22%	\$297,007
INTC	\$467,121	6,490	25.0	7.20%	1,226	1,203	502	40.95%	\$460,064
JNJ	\$884,711	6,490	25.0	9.60%	1,685	1,626	927	55.01%	\$652,116
JPM	\$470,599	6,488	25.0	7.23%	1,286	1,245	514	39.97%	\$361,778
KO	\$809,722	6,488	25.0	9.25%	1,591	1,402	852	53.55%	\$19,042
MCD	\$820,036	6,483	24.9	9.31%	1,538	1,423	813	52.86%	\$305,583
MMM	\$921,423	6,479	24.9	9.77%	1,607	1,558	881	54.82%	\$750,573
MO	\$832,854	6,490	25.0	9.36%	1,438	1,379	773	53.76%	\$648,662
MRK	\$298,249	3,903	15.0	9.64%	919	868	358	38.96%	\$156,727
MSFT	\$562,134	6,491	25.0	7.87%	1,390	1,346	607	43.67%	\$425,826
PFE	\$626,745	6,326	24.3	8.49%	1,469	1,350	711	48.40%	\$162,850
PG	\$805,152	6,488	25.0	9.23%	1,689	1,499	825	48.85%	\$17,783
SLB	\$506,587	6,311	24.3	7.71%	1,202	1,188	498	41.43%	\$524,862
T	\$732,444	6,311	24.3	9.12%	1,503	1,425	731	48.64%	\$407,502
TRV	\$658,052	6,311	24.3	8.70%	1,542	1,482	668	43.32%	\$424,138
UTX	\$821,431	6,482	24.9	9.32%	1,411	1,362	765	54.22%	\$669,907
VZ	\$566,907	6,326	24.3	8.11%	1,512	1,447	647	42.79%	\$334,705
WFC	\$753,394	6,311	24.3	9.23%	1,430	1,388	700	48.95%	\$620,464
WMT	\$269,156	3,910	15.0	9.07%	982	895	350	35.64%	(\$85,148)
XOM	\$1,062,808	6,490	25.0	10.33%	1,671	1,554	978	58.53%	\$495,955
Total	\$19,428,984				41,638	39,598	19,802		\$11,993,520
Averages	\$647,633	6,177	23.8	8.68%	1,388	1,320	660	46.82%	\$399,784

One character was added to the Support Resistance Trader program. It have extra cash hanging around, then request to use some of it. Ask for higher profits, and take the added losses in stride.

The program responded with ease. Hardly stressed, it simply complied. A single character

added some \$12.5Mil to your trading account. You still did the same number of trades, used the same capital. This added character did not change your entries, it only altered your automatic exits, and in a good way. What were the consequences to being so greedy (if that word is still acceptable)? Surprisingly, nothing bad. It even generated more cash. You're trying to use more of the available cash reserves and the program responds by producing even more cash. Now, that's an acceptable quandary.

What can be learned from this little slight of hand?

Let's see what the numbers say. First, CAGR was raised 69.09% to 8.68%. You've increased profits by \$12.5M. You decreased the number of won trades from 69.75% to 46.82% however. On the other hand, you've increased your stock inventory by some 387%. For someone wishing to accumulate shares over the long term, this most certainly is in the right direction.

So the general numbers are: there are still 2,048 positions still opened, they are valued at about \$10.4M should they be instantly liquidated. You have 19,802 trades that were closed with a profit of \$1,250 each for a total of: \$24,753,500; but your losing trades have been dragging down on your profits. Nonetheless, should you liquidate everything you still would be ahead by: \$19,428,984. You added more cash to your reverses. And this was the reason you became more greedy in the first place. Well, let's not say greedy, but more efficient in the use of your capital.

What's wrong with this one character change. Nothing. You got more money, it might not have been the most efficient of methods, but you still won. And here too, you could extract the trading rules, make them discretionary with only a slight change: just requesting on average more profits on your positions and slowly build your retirement account.

Could I do better? Sure. I could do it with 2 more characters.

Retirement Fund Basis

The Support Resistance Trader (SRT) strategy has been modified by a single character and it was sufficient to change its long term investment philosophy. It stopped caring about making a single trade and started looking at the big picture, thousands of trades at a time distributed over 25 years. From making bets on support levels, the strategy was being transformed into a long term method of play instead of a program following short term unproven, unreliable and unpredictable indicator outputs.

What was observed in the preceding table was that as you increased the profit targets, you increased the number of stop losses. They were not that expensive considering the added generated profits. But, if you wanted to accumulate shares for the long term, using an automatic reverse break even stop was counter productive.

You suffered a drawdown and got out of your trade at break even, just when your stock was rising again! How many price series would stop at their break even point and turn down

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again? Also, note that the drawdowns on each of those trades was limitless, it was only on the reverse break even stop that you accepted the losses. After having suffered all those drawdowns, you were simply quitting at break even. And that is the third reason why this trading strategy is winning.

In my scenario, the question is: why get rid of a position if all you wanted was to accumulate shares for the long term in the first place? Why not wait for your profit target all the way? How bad could it be? You have time on your side, and 25 years is a long time. And in the above scenarios, you've already agreed to support those drawdowns, so that won't change. Only your attitude towards profits and losses will.

The modifications brought to the SRT strategy were made using 3 characters. Enough to change the very nature of the trading strategy and its long term outlook. By making these changes, you are dealing with all price variations over the 30 stocks in the portfolio over the last 25 years. And the only way to see the impact of those 3 characters is to do the test again with the modifications.

Three Character's Worth

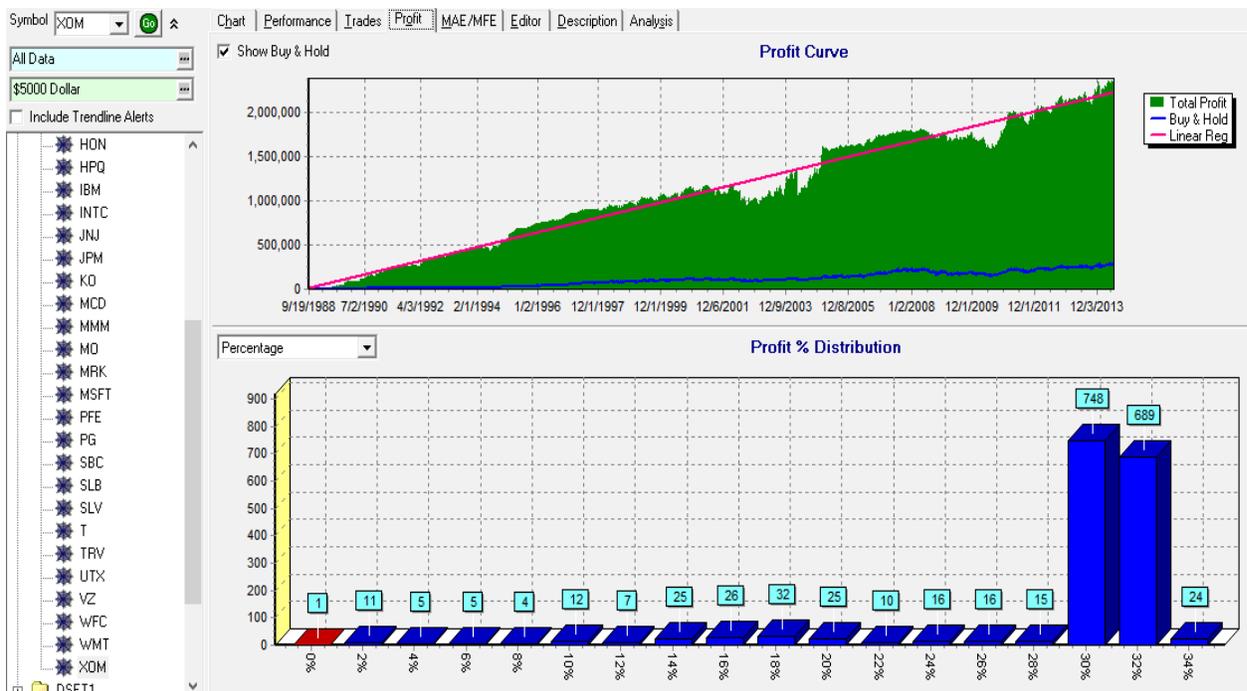
Program: Support Resistance Trader (orig. PT30 NS)					Initial Cap: \$100,000		Bet Size: \$5,000		Ending Cash On Hand
Sym	Profits	Trading Days	# Years	CAGR	# Trades	# Closed	# Won	% Won	
AXP	\$2,131,760	6,483	24.9	13.26%	1,332	1,279	1,329	99.77%	\$1,934,243
BA	\$2,021,957	6,843	24.9	13.03%	1,385	1,341	1,357	97.98%	\$1,904,386
CAT	\$1,865,152	6,490	25.0	12.67%	1,297	1,176	1,296	99.92%	\$1,263,296
CSCO	\$1,237,466	6,119	23.5	11.65%	1,089	806	1,000	91.83%	(\$86,937)
CVX	\$2,060,332	6,311	24.3	13.50%	1,449	1,314	1,448	99.93%	\$1,398,989
DD	\$1,272,692	3,910	15.0	19.03%	926	817	898	96.98%	\$784,526
DIS	\$2,125,771	6,488	25.0	13.24%	1,421	1,389	1,421	100.00%	\$2,045,207
GE	\$1,234,487	6,491	25.0	10.94%	1,519	969	1,079	71.03%	(\$1,167,816)
HD	\$1,817,498	6,488	25.0	12.57%	1,275	1,185	1,270	99.61%	\$1,438,997
HON	\$1,949,135	6,488	25.0	12.87%	1,334	1,257	1,329	99.63%	\$1,628,675
IBM	\$1,969,419	6,490	25.0	12.91%	1,520	1,315	1,398	91.97%	\$1,054,684
INTC	\$1,595,026	6,490	25.0	12.01%	1,226	1,031	1,159	94.54%	\$686,099
JNJ	\$2,458,065	6,490	25.0	13.87%	1,685	1,593	1,685	100.00%	\$2,032,635
JPM	\$1,764,183	6,488	25.0	12.44%	1,286	1,152	1,247	96.97%	\$1,161,551
KO	\$1,460,523	6,488	25.0	11.64%	1,591	1,117	1,276	80.20%	(\$590,999)
MCD	\$2,056,962	6,483	24.9	13.11%	1,538	1,314	1,509	98.11%	\$954,082
MMM	\$2,360,282	6,479	24.9	13.72%	1,607	1,546	1,606	99.94%	\$2,111,108
MO	\$1,980,265	6,490	25.0	12.93%	1,438	1,288	1,384	96.24%	\$1,287,994
MRK	\$1,095,315	3,903	15.0	17.97%	919	658	860	93.58%	(\$215,715)
MSFT	\$2,028,258	6,491	25.0	13.03%	1,390	1,276	1,369	98.49%	\$1,498,508
PFE	\$1,517,136	6,326	24.3	12.12%	1,469	1,129	1,207	82.16%	\$118,440
PG	\$1,958,837	6,488	25.0	12.89%	1,689	1,364	1,462	86.56%	\$523,284
SLB	\$1,793,162	6,311	24.3	12.88%	1,202	1,163	1,202	100.00%	\$1,654,642
T	\$2,058,362	6,311	24.3	13.49%	1,503	1,316	1,501	99.87%	\$1,141,629
TRV	\$2,235,165	6,311	24.3	13.86%	1,542	1,439	1,531	99.29%	\$1,759,782
UTX	\$2,038,177	6,482	24.9	13.07%	1,411	1,328	1,387	98.30%	\$1,685,546
VZ	\$1,865,286	6,326	24.3	13.02%	1,512	1,216	1,411	93.32%	\$446,559
WFC	\$2,134,600	6,311	24.3	13.65%	1,430	1,369	1,427	99.79%	\$1,883,166
WMT	\$1,286,164	3,910	15.0	19.10%	982	840	937	95.42%	\$651,242
XOM	\$2,367,671	6,490	25.0	13.70%	1,671	1,461	1,670	99.94%	\$1,248,724
Total	\$55,739,108				41,638	36,448	39,655		\$32,236,527
Averages	\$1,857,970	6,189	23.8	13.47%	1,388	1,215	1,322	95.38%	\$1,074,551
The original Support Resistance Trader with 3 added characters. There are some lessons to be learned here. You're building a retirement fund the easy way and you still don't seem to be able to use all that cash.									

The above table speaks for itself. You modified an old trading strategy (published in 2006), given away because it was only doing so and so. And you add 3 characters to it. Thereby transforming its trading strategy to adhere to an investment philosophy (for lack of a better word) and increase its portfolio output over 8-fold.

You still have the same number of positions, all your entries are at the same prices as before. But you changed how you would look at things. You stopped being worried about drawdowns, you had them before too, it's just that now you are looking at the long term picture.

If you examined the XOM equity curve, it now looks like this:

XOM Equity Curve (25 years)



It does show that you were getting out of those positions at the 30% level, and showed the distribution of the still opened positions. There is only one trade out of the 210 still opened positions that shows a small loss, the other 209 show a profit.

On the 41,638 trades taken over the past 25 years, 39,655 showed a profit. This says that 95% of your trades are or were profitable. You did not even had to try to reach these numbers, they were simply provided as a side effect or consequence of the trading methodology used.

Building Your Retirement Fund

Those 3 characters surely had value. But what you want are rules you can stand by, procedures to help you better invest and protect your capital. And I hope the above can show how a change in trading philosophy can help you change your profit outlook and from “stuff” you might not have thought was there.

Extracting from that program the rules of engagement in order to use “discretionary” methods should be easy. You could just print the program and would have all the rules laid out for you. There are not that many, it's a relatively short program. But, nonetheless, what would be those rules?

You would start by making the best stock selection you can. It does not even need to be great, you are only looking for stocks that could survive over the years. I do think that common sense applies here as well.

Your primary question becomes: which kind of stocks might survive over the long term? You stopped being in the speculation business, you now jumped with both feet in the investment business. And should carry out accordingly. I can easily see companies like IBM, MA, V, GS, CVX, BA, DIS, HD, HON, INTC, JNJ, KO, MCD, MO, MSFT, SLB, TRV, WFC, XOM, and many many more continue to thrive over the next decades. It is not a lack of choices that will hinder you. It's what you will do with these choices that will make all the difference.

After making your stock selection, you can start executing your rules of engagements. You like stocks that go up. I think I need to repeat this: you like stocks that go up. The implication is simple, the more they want to go up, the more you want to participate. This does not mean that you simply want to hold on, no, that's not the point. Your strategy only goes long! It should be evident what you want going forward.

You just want those stocks to prove to you that they merit your support for some undetermined time period. And they can get it only if they have long term prospects to rise in price. Your confidence in them is measured in profits, not theirs, but yours. You are looking for future $\Delta P > 0$, more precisely, for $n(\Delta P > 0)$. And if the above table is any indication, you want n , the number of profitable trades, to run in the thousands.

What the modifications to the SRT strategy show is that long term it generated a rolling windows of profitable trades ($\Delta P > 0$). Positions reaching their profit targets would return their sale proceeds to the account ready to be used again to acquire more shares. How far can you push this thing? I don't know. But you have built a snowball effect, a feedback loop. You have a trading strategy that tries to feed itself...

The main rule of engagement is: you buy, wait for your profit, take it, and repeat. Can this be scaled? Sure, no problem at all, up or down. You divide your initial capital among the stocks you wish to accumulate, and subdivide again to determine your bet size. And that becomes your trade unit. In these tests, trade units of \$5k, \$1k and \$100 have been explored.

You already fixed your exits independent of market activity, you're only left with your entries. And now here is the biggy. The support level as defined in the original SRT program did not matter at all. It was used just as an excuse to take a trade. And if you looked closely at its definition, you could replace it with just a look at a chart or by programming other functions to say about the same thing: the current price is lower than it was recently. I would translate this to: oh, I'm offered a price rebate, thanks.

Using the above scenario, you are building a long term portfolio. You will be slowly accumulating shares, slowly accumulating cash and beat the Buy & Hold trading strategy without even trying. You will be winning simply by default, by your method of play, by your trading strategy.

A true long term trading strategy built to give you what you want: a workable plan, peace of mind and long term profits. Not as a speculative scenario but as the default scenario.

Can this be improved? Sure. But I'll have to up the ante. It will take a whole line of code this time.

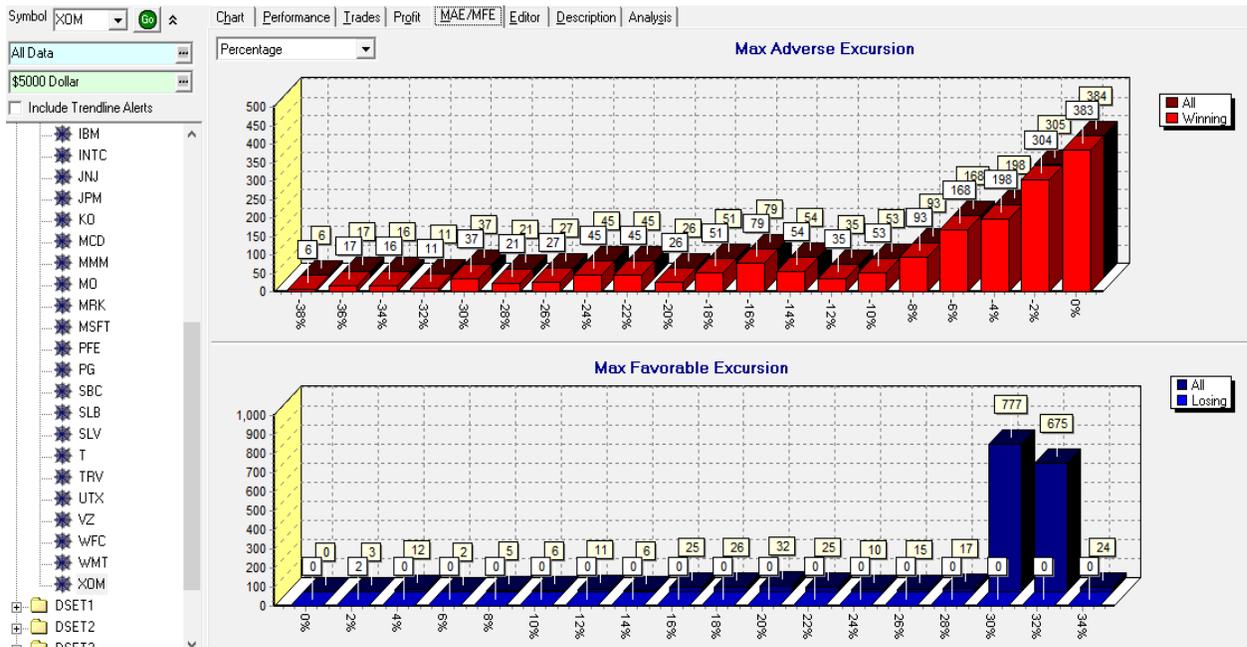
What would be the objectives? Raising profits? Yes. Raising long term inventory? Yes. Raising cash reserves? Yes. All at the same time? Yes. Will this be complicated? No. One line of code.

This section is being written before I do the test to up the ante.

And why would this work in the first place? The reason this will work is quite simple. It's due to the mathematical expression of what I'll be doing: $A(t) = A(0) + \sum(H(1 + r + g + T)^t \cdot \Delta P)$. With the modifications, I'll be improving on the combined contributions of g (the reinvestment policy) and T (the contribution from the trading activity). Having both numbers positive: $g > 0$ and $T > 0$, they will improve overall performance. That's on the mathematical side. On the practical side, the improvements will go in the direction of general market conditions. Technically, the trading strategy will play on the long term secular upward market drift.

In the XOM trading story, of all the trades taken over the past 25 years (1,671 of them), all of them saw some red. The dark red bars on the chart below shows the maximum % drawdown each of the trades taken suffered. It was not a question of having a 50/50 chance of seeing some red; it was almost a guarantee that you would see some.

XOM Trading Story (25 years)



From the above chart, the bright red bars in the foreground give the number of trades that finished positive for each negative % bin. The interpretation is simple. For example of the 53 trades that went down by no more than 10%, all 53 of them were sold with a profit. Of the 2 positions still opened, one went down 1% and the other 2%. That's it. All the other trades that went negative, even the 6 down by 38% finished in positive territory. And all the trades still opened (210), all of them are in positive territory, with paper profits. These are amazing statistics.

By modifying this trading script one more time, your objective is to shift the blue bars at the bottom of the above chart to the right. There will be a price to pay for this, but I expect it to be minimal.

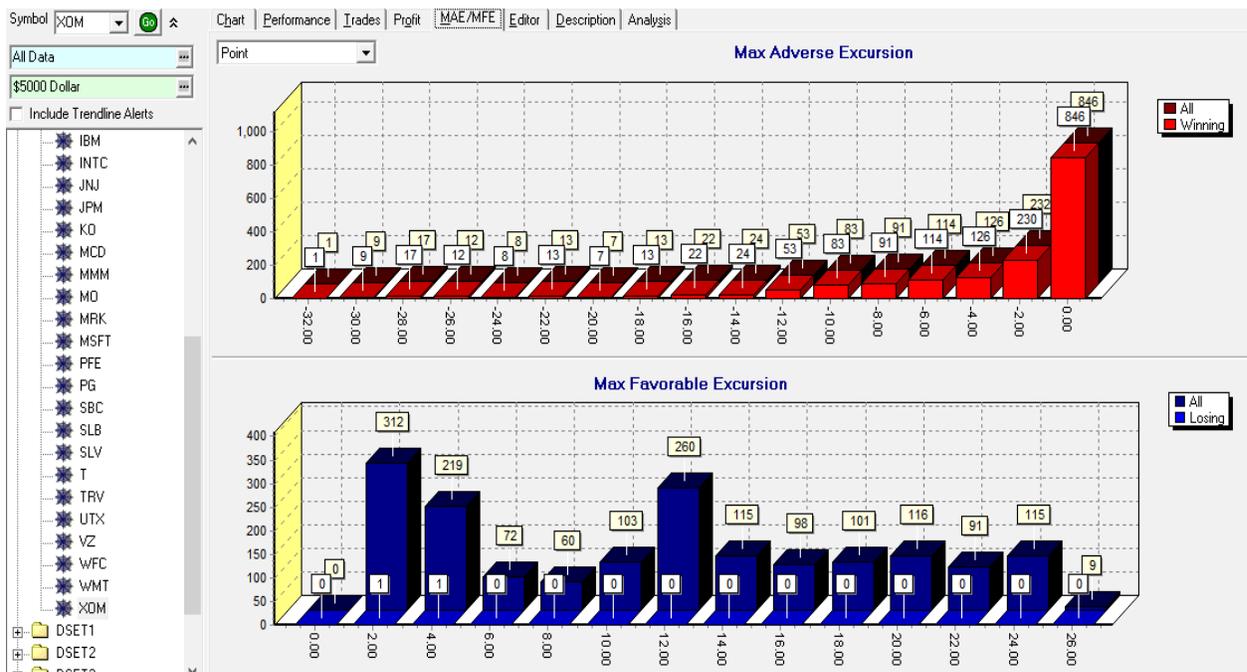
On the fundamental basis, the reasons why you will win in the future are the same as those why you would have won in the past. You are playing on the what you want to extract from the market, not following it, not outguessing it, but following your own trading script, your own rules to the game. You back tested your trading strategy over the 30 DOW stocks over the last 25 years for proof of concept. Now that you have it, you are ready to go. You know the future will be different, but you most certainly can fix now your trading rules and determine your own rules of engagement.

You already know that all your trades will go negative and that you could have accepted a loss at any time and at any of the negative % bins. The original SRT version lacked in this regard. By using the automatic reverse break even stop instruction in its code; it assured that

you would see and live through all the dark red bars in the chart above. Meaning that you suffer all the drawdowns. You had to wait for break even to exit. And that is not a very good strategy, in fact, in my view of things, it is rather awful. That's why, just by removing it, it improved performance considerably.

From the above chart, you still had all the drawdowns, but the majority of them were concentrated in the 0 to -10% bins. In points: 1,490 of the 1,671 were in the less than -\$10 moves as illustrated in the following chart:

XOM Trading Story - Points



Why all this explanation before doing the rise the ante test?

To help view the problem of building your retirement fund, or any kind of long term fund, from a slightly different perspective. Maybe view this as a practical guide to building your investment and trading account. My methods are totally scalable and are designed for those that have to start small and slowly grow. Not by taking risks, but by following a long term trading plan design to better control your participation in the stock market and really build a long term portfolio.

My trading methodology is to accumulate shares over the long term and trade over the process. And this is what is being demonstrated here.

You want to accumulate shares for the long term. Technically, you want to buy & hold, but only

to a certain limit. You want to be more productive than just buying and holding. That's why you accept to trade over the process, to create a feedback loop. You can return the profits to your account and continue to accumulate shares for the long term.

If 3 characters were sufficient to transform the trading philosophy of the original SRT script; adding one line of code will be required to shift its performance higher. On my side, all I have to do is follow the governing equation.

So, it's now time to do the “raise the ante” test.

The Raise the Ante Test

This was a daring display of confidence. Predicting before even doing a portfolio simulation on 30 stocks over 25 years that you would be making more money, well not really, just following the equation. Notice that there was not even a mention of indicator improvements, or detecting better entry prices. All that was said is that it would take one more line of code! The outcome of the test was predicted in this fashion:

What would be the objectives? Raising profits? Yes. Raising long term inventory? Yes. Raising cash reserves? Yes. All at the same time? Yes. Will this be complicated? No.

I even had a side bet with a friend as to the profit level that would be reached. I won.

One More Line

Program: Support Resistance Trader (Raising Ante)					Initial Cap: \$100,000		Bet Size: \$5,000			Ending Cash On Hand	Ending Stock Inventory	Ending Stock Value
Sym	Profits	Trading Days	# Years	CAGR	# Trades	# Closed	# Won	% Won				
AXP	\$3,188,678	6,486	24.9	15.03%	1,332	1,270	1,329	99.77%	\$2,931,204	3,784	357,474	
BA	\$3,104,774	6,486	24.9	14.91%	1,387	1,324	1,360	98.05%	\$2,870,558	2,609	334,216	
CAT	\$2,783,684	6,493	25.0	14.41%	1,298	1,085	1,297	99.92%	\$1,569,114	11,955	1,314,570	
CSCO	\$1,870,108	6,122	23.5	13.49%	1,089	719	1,017	93.39%	(\$37,857)	78,682	2,007,965	
CVX	\$3,050,031	6,314	24.3	15.27%	1,452	1,246	1,448	99.72%	\$1,931,232	9,487	1,218,799	
DD	\$1,830,826	3,913	15.1	21.74%	929	720	899	96.77%	\$705,897	18,877	1,224,929	
DIS	\$3,228,164	6,491	25.0	15.07%	1,423	1,355	1,422	99.93%	\$2,904,922	4,871	423,242	
GE	\$1,716,815	6,494	25.0	12.31%	1,521	810	1,082	71.14%	(\$1,558,222)	127,120	3,375,037	
HD	\$2,758,070	6,491	25.0	14.37%	1,276	1,160	1,254	98.28%	\$2,218,562	8,033	639,508	
HON	\$2,972,158	6,491	25.0	14.70%	1,334	1,245	1,334	100.00%	\$2,567,671	5,316	504,487	
IBM	\$2,982,214	6,493	25.0	14.71%	1,521	1,274	1,407	92.50%	\$1,815,094	6,740	1,267,120	
INTC	\$2,389,875	6,493	25.0	13.74%	1,227	928	1,163	94.78%	\$789,187	54,422	1,700,688	
JNJ	\$3,814,336	6,493	25.0	15.82%	1,685	1,586	1,681	99.76%	\$3,343,958	5,427	570,378	
JPM	\$2,580,654	6,491	25.0	14.08%	1,286	1,034	1,247	96.97%	\$1,242,242	25,778	1,438,412	
KO	\$2,108,142	6,491	25.0	13.20%	1,593	973	1,234	77.46%	(\$772,861)	71,027	2,981,003	
MCD	\$3,085,445	6,486	24.9	14.88%	1,540	1,280	1,515	98.38%	\$1,739,016	14,411	1,446,429	
MMM	\$3,588,732	6,482	24.9	15.57%	1,609	1,515	1,608	99.84%	\$3,127,656	3,888	561,076	
MO	\$2,857,349	6,493	25.0	14.52%	1,438	1,162	1,365	94.92%	\$1,422,183	35,348	1,535,166	
MRK	\$1,426,151	3,906	15.0	19.89%	919	514	816	88.79%	(\$748,275)	38,919	2,274,426	
MSFT	\$2,942,075	6,494	25.0	14.65%	1,392	1,163	1,356	97.41%	\$1,658,956	32,861	1,383,119	
PFE	\$2,191,302	6,329	24.3	13.73%	1,469	1,012	1,161	79.03%	\$169,713	70,555	2,121,589	
PG	\$2,739,437	6,491	25.0	14.34%	1,689	1,212	1,446	85.61%	(\$188,075)	37,303	3,027,512	
SLB	\$2,720,992	6,314	24.3	14.74%	1,203	1,098	1,202	99.92%	\$2,149,996	5,850	670,996	
T	\$3,003,920	6,314	24.3	15.20%	1,505	1,158	1,503	99.87%	\$1,014,214	58,437	2,089,706	
TRV	\$3,433,969	6,314	24.3	15.81%	1,543	1,420	1,536	99.55%	\$2,818,662	7,555	715,307	
UTX	\$3,075,842	6,485	24.9	14.87%	1,411	1,288	1,387	98.30%	\$2,460,704	6,266	715,138	
VZ	\$2,836,709	6,329	24.3	14.89%	1,515	1,139	1,456	96.11%	\$865,035	41,170	2,071,674	
WFC	\$3,294,660	6,314	24.3	15.62%	1,430	1,352	1,424	99.58%	\$2,937,996	8,869	456,664	
WMT	\$1,876,720	3,913	15.1	21.93%	982	748	940	95.72%	\$631,985	17,505	1,344,735	
XOM	\$3,440,255	6,493	25.0	15.35%	1,671	1,357	1,663	99.52%	\$1,647,379	18,603	1,892,876	
Total	\$82,892,087				41,669	34,147	39,552		\$44,227,846	831,668	41,664,241	
Averages	\$2,763,070	6,180	23.8	15.29%	1,389	1,138	1,318	95.03%	\$1,474,262	27,722	1,388,808	
The original Support Resistance Trader with raised ante. In all 3 areas expected to rise, all did. You have raised profits, raised CAGR, raised cash reserves over the long haul (25 years).												

The challenge has been met, in all areas of concern. You got raised profits, raised inventory levels, and yes, raised cash reserves. It might seem hard to see from just looking at the above table, so I've done a difference table to show where the improvements have been.

One More Line Differences

Program: SRT Differences (Raising Ante - Previous Version)					Initial Cap: \$100,000		Bet Size: \$5,000		Ending Cash On Hand	Ending Stock Inventory	Ending Stock Value
Sym	Profits	Trading Days	Over Years	CAGR	# Trades	# Closed	# Won	% Won			
AXP	\$1,056,918	3	24.9	1.77%	0	(9)	0	0.00%	\$996,961	638	59,957
BA	\$1,082,817	3	24.9	1.88%	2	(17)	3	0.07%	\$966,172	893	116,645
CAT	\$918,532	3	25.0	1.74%	1	(91)	1	0.00%	\$305,818	5,543	612,714
CSCO	\$632,642	3	23.5	1.84%	0	(87)	17	1.56%	\$49,080	21,865	583,562
CVX	\$989,699	3	24.3	1.77%	3	(68)	0	-0.21%	\$532,243	3,626	457,456
DD	\$558,134	3	15.1	2.71%	3	(97)	1	-0.21%	(\$78,629)	9,874	636,763
DIS	\$1,102,393	3	25.0	1.83%	2	(34)	1	-0.07%	\$859,715	2,768	242,678
GE	\$482,328	3	25.0	1.37%	2	(159)	3	0.11%	(\$390,406)	32,192	872,734
HD	\$940,572	3	25.0	1.80%	1	(25)	(16)	-1.33%	\$779,565	2,108	161,007
HON	\$1,023,023	3	25.0	1.83%	0	(12)	5	0.37%	\$938,996	853	84,027
IBM	\$1,012,795	3	25.0	1.80%	1	(41)	9	0.53%	\$760,410	1,320	252,385
INTC	\$794,849	3	25.0	1.73%	1	(103)	4	0.24%	\$103,088	21,654	691,761
JNJ	\$1,356,271	3	25.0	1.95%	0	(7)	(4)	-0.24%	\$1,311,323	457	44,948
JPM	\$816,471	3	25.0	1.64%	0	(118)	0	0.00%	\$80,691	13,177	735,780
KO	\$647,619	3	25.0	1.56%	2	(144)	(42)	-2.74%	(\$181,862)	19,727	829,481
MCD	\$1,028,483	3	24.9	1.77%	2	(34)	6	0.27%	\$784,934	2,393	243,549
MMM	\$1,228,450	3	24.9	1.85%	2	(31)	2	-0.10%	\$1,016,548	1,473	211,902
MO	\$877,084	3	25.0	1.59%	0	(126)	(19)	-1.32%	\$134,189	16,798	742,895
MRK	\$330,836	3	15.0	1.92%	0	(144)	(44)	-4.79%	(\$532,560)	14,662	863,396
MSFT	\$913,817	3	25.0	1.62%	2	(113)	(13)	-1.08%	\$160,448	17,788	753,369
PFE	\$674,166	3	24.3	1.61%	0	(117)	(46)	-3.13%	\$51,273	20,847	622,893
PG	\$780,600	3	25.0	1.45%	0	(152)	(16)	-0.95%	(\$711,359)	18,242	1,491,959
SLB	\$927,830	3	24.3	1.86%	1	(65)	0	-0.08%	\$495,354	3,807	432,476
T	\$945,558	3	24.3	1.71%	2	(158)	2	0.00%	(\$127,415)	29,845	1,072,973
TRV	\$1,198,804	3	24.3	1.95%	1	(19)	5	0.26%	\$1,058,880	1,443	139,924
UTX	\$1,037,665	3	24.9	1.80%	0	(40)	0	0.00%	\$775,158	2,298	262,507
VZ	\$971,423	3	24.3	1.87%	3	(77)	45	2.79%	\$418,476	10,023	552,947
WFC	\$1,160,060	3	24.3	1.97%	0	(17)	(3)	-0.21%	\$1,054,830	2,143	105,230
WMT	\$590,556	3	15.1	2.83%	0	(92)	3	0.30%	(\$19,257)	7,917	609,813
XOM	\$1,072,584	3	25.0	1.65%	0	(104)	(7)	-0.42%	\$398,655	6,749	673,929
Total	\$27,152,979				31	(2,301)	(103)		\$11,991,319	293,123	15,161,660
Averages	\$905,099	3	23.8	1.82%	1	(77)	(3)	-0.35%	\$399,711	9,771	505,389
The previous version of Support Resistance Trader with raised ante. In all 3 areas expected to rise, all did. You have raised profits, raised CAGR, raised cash reserves, raised inventory and inventory value over the long haul (25 years).											

What the above table shows are the differences in each of the columns of the Up Ante scenario and the previous version of the trading strategy (PT30NS). There were 3 added days, simple to explain, it's the time difference between the two tests. It has an impact, but only minor, it's only 3 more days over a 25 years time interval...

In the profits column: all 30 stocks saw their profits rise, not one here and there, but all of them. Together, they contributed an added \$27M to the bottom line. This raised the CAGR, on average, by 1.82%. The power of compounding at work!

Only 31 trades were added over the last 3 days. Not what could be called a major impact on an \$82.892M portfolio, at most a minor incremental change.

The number of closed trades declined. Some might view this as a negative, but that was the primary objective. If you want to accumulate shares over time, one of the first thing to do

would be to not close as many of your trades. By closing less trades, you increased your holding inventory which is what you wanted in the first place. The number of won trades decreased a little, by 103 out of 39,655 trades taken over the 25 years of trading in the previous scenario. A decrease of 0.26%. It should be put in context.

The percentage of shares ending in a profit declined by -0.35%. That is the cost to anted up your trading scenario. The percentage of won trades passed from 95.38% to 95.03%! But one should also notice that the DOW declined over the added 3 days, and that too would have a negative impact on still opened positions. I would have liked a higher number of closed trades, since closing more trades puts more money back into the account that can be reused to accumulate more shares.

The ante up program modifications increased profits by \$27M, \$11.991M of it was cash returned to the account. The entries in red in the ante up table show stocks that could be considered using some margin. But this needs to be viewed in context also. One has to look at the value of the current stock inventory and the profits column. The program allows use of margin.

The goal of the ante up program was to increase inventory over the long term, and in that department, it did admirably. It increased the inventory by 283,123 shares valued at \$15.1M. It took 25 years to accumulate these shares. Progressively and over time the ante up program requested more for its inventory.

For any one wishing to build a long term portfolio of stocks, standing ready to change only slightly how he/she looks at the long term output of a trading strategy, the above scenario is not that bad...

Can this be improved again? Sure. But this time it will take a few hundred lines of code. Even more code could be used to smooth out not only the equity curve (reducing volatility further), but also better optimize the use of available cash reserves (thereby raising CAGR). But we are still at the proof of concept level. Those things will have to wait.

Adding Other Improvements

I had to push further. It's kind of a second nature to try to fix things. Always looking for an answer to: what if I did this or that, what would happen? It's an easy question, but when applied to money, you really want to know, even before you put a penny on the table, what could be a possible outcome. These added code modifications will be debugged using XOM and once ready will be applied only once to the 30 DOW stocks. The same as for the other tests.

My search is to improve performance levels without adding too much risk and also not adding too much capital. Something like having your available capital do the best it can. I know I can't take a \$5B IBM bet as Mr. Buffett did since I don't have the money. But, I can start small, or at

any level for that matter, and grow from there.

At all times, the prime directive is to survive within portfolio constraints and be consistent within those limitations. Have a global picture of what you want to do, and take needed actions to reach your long term objectives.

Since you don't know for sure which investment can be a sure thing, nor know how much it could rise over time, you opt from the start to distribute your bets over a group of stocks. This way a simple diversification will have for specific purpose to protect your trading account. It's even in your best interest. If a stock goes down in flames, it is only 1 out of 30. The impact might be considered minimal. But note that your first real job was to select the stocks in which you had confidence in their future prospects. Should you find that confidence misplaced, sell the stock in question and make a new selection. In the stock market, there should be no going down with the ship.

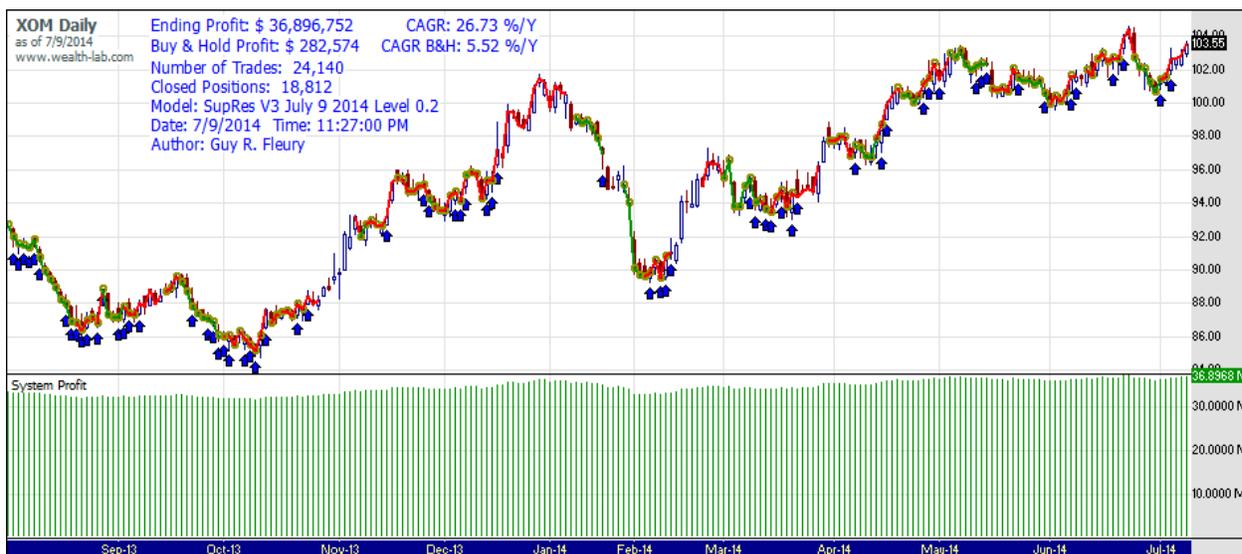
There is no need to keep protective stops at your broker either. They are not part of your trading strategy. A Flash Crash would have little impact on your long term view of the market, just as the 1987 crash now appears like a blip on a long term chart. A triple inverse ETF is not part of your menu either. You have to be, at a bare minimum, consistent with what you intend to do...

How would you improve on the SRT strategy?

There are many ways. What I might use to improve results might not be somebody else's cup of tea. For instance, I liked the fact that, right or wrong, the SRT strategy would often declare a support level, even if it could be wrong most of the time (not verified, and not interested in knowing at this time, even if it is). My interest is not there. What I really wanted was an excuse to get in a position! I already had agreed that the future was uncertain.

I've used [unorthodox](#) or [bizarre trading](#) techniques before, so to better present my case, I'll put my XOM chart on the table and try to explain what is going on behind the scene:

XOM on the Table



On the above chart, the green (support) and red (resistance) lines kind of follow the logical definitions as presented by Howard in his original trading strategy. But I modified them to better suit my own needs. Most often, the V3 strategy will take a position when a support region is defined. However, some of my trading procedures are quirky. Looking at the green dots, only some are being taken as viewed by the blue arrows underneath them. It's like saying: thanks for the offer, but not now, maybe later. How about if maybe I'll take one of your future offers should I find it appropriate?

Offered support level trades could be taken, as if on an impulse. Random functions determine if a trade should be taken while it is in a defined support area. This would mean that the blue arrows under the green dots represent acceptance of an offered bet. It's like I'm not sure, but I'll take this one anyway. Having a random surrogate as decision maker using a fuzzing support resistance definition might or might not be a good idea. The upcoming test should determine if the concept has any merit.

No test has been conducted to determine if Howard's program definition of support and resistance was any good. All you had were functions trying to classify price movements. That the support or resistance definitions be right or wrong was not the question. Maybe the first question from this should have been: should it have an impact on performance? Not an easy answer.

Wait, there are blue arrows under the red lines too. Yes. Should one understand that while facing resistance, your program is not selling but entering in new positions? Yes. But on what basis would one buy resistance? On the little faith that the code used to define support or resistance is right. All I see is some code saying: hey, I'm less or more expensive than I was recently. The support resistance lines are not used as the author originally intended. Just as

the new added code to transform the original Fundtimer trading strategy is making, for all intent and purposes, an almost totally new trading strategy. If you wanted to do more than a 3 character deal and a one liner, you had to also push further.

At the portfolio level, the SRT V3 gave the following results:

DOW on SRT V3

Program: SRT Differences (Raising Ante - Previous Version)					Initial Cap: \$100,000		Bet Size: \$5,000			Ending Cash On Hand	Ending Stock Inventory	Ending Stock Value
Sym	Profits	Trading Days	Over Years	CAGR	# Trades	# Closed	# Won	% Won				
AXP	\$1,056,918	3	24.9	1.77%	0	(9)	0	0.00%	\$996,961	638	59,957	
BA	\$1,082,817	3	24.9	1.88%	2	(17)	3	0.07%	\$966,172	893	116,645	
CAT	\$918,532	3	25.0	1.74%	1	(91)	1	0.00%	\$305,818	5,543	612,714	
CSCO	\$632,642	3	23.5	1.84%	0	(87)	17	1.56%	\$49,080	21,865	583,562	
CVX	\$989,699	3	24.3	1.77%	3	(68)	0	-0.21%	\$532,243	3,626	457,456	
DD	\$558,134	3	15.1	2.71%	3	(97)	1	-0.21%	(\$78,629)	9,874	636,763	
DIS	\$1,102,393	3	25.0	1.83%	2	(34)	1	-0.07%	\$859,715	2,768	242,678	
GE	\$482,328	3	25.0	1.37%	2	(159)	3	0.11%	(\$390,406)	32,192	872,734	
HD	\$940,572	3	25.0	1.80%	1	(25)	(16)	-1.33%	\$779,565	2,108	161,007	
HON	\$1,023,023	3	25.0	1.83%	0	(12)	5	0.37%	\$938,996	853	84,027	
IBM	\$1,012,795	3	25.0	1.80%	1	(41)	9	0.53%	\$760,410	1,320	252,385	
INTC	\$794,849	3	25.0	1.73%	1	(103)	4	0.24%	\$103,088	21,654	691,761	
JNJ	\$1,356,271	3	25.0	1.95%	0	(7)	(4)	-0.24%	\$1,311,323	457	44,948	
JPM	\$816,471	3	25.0	1.64%	0	(118)	0	0.00%	\$80,691	13,177	735,780	
KO	\$647,619	3	25.0	1.56%	2	(144)	(42)	-2.74%	(\$181,862)	19,727	829,481	
MCD	\$1,028,483	3	24.9	1.77%	2	(34)	6	0.27%	\$784,934	2,393	243,549	
MMM	\$1,228,450	3	24.9	1.85%	2	(31)	2	-0.10%	\$1,016,548	1,473	211,902	
MO	\$877,084	3	25.0	1.59%	0	(126)	(19)	-1.32%	\$134,189	16,798	742,895	
MRK	\$330,836	3	15.0	1.92%	0	(144)	(44)	-4.79%	(\$532,560)	14,662	863,396	
MSFT	\$913,817	3	25.0	1.62%	2	(113)	(13)	-1.08%	\$160,448	17,788	753,369	
PFE	\$674,166	3	24.3	1.61%	0	(117)	(46)	-3.13%	\$51,273	20,847	622,893	
PG	\$780,600	3	25.0	1.45%	0	(152)	(16)	-0.95%	(\$711,359)	18,242	1,491,959	
SLB	\$927,830	3	24.3	1.86%	1	(65)	0	-0.08%	\$495,354	3,807	432,476	
T	\$945,558	3	24.3	1.71%	2	(158)	2	0.00%	(\$127,415)	29,845	1,072,973	
TRV	\$1,198,804	3	24.3	1.95%	1	(19)	5	0.26%	\$1,058,880	1,443	139,924	
UTX	\$1,037,665	3	24.9	1.80%	0	(40)	0	0.00%	\$775,158	2,298	262,507	
VZ	\$971,423	3	24.3	1.87%	3	(77)	45	2.79%	\$418,476	10,023	552,947	
WFC	\$1,160,060	3	24.3	1.97%	0	(17)	(3)	-0.21%	\$1,054,830	2,143	105,230	
WMT	\$590,556	3	15.1	2.83%	0	(92)	3	0.30%	(\$19,257)	7,917	609,813	
XOM	\$1,072,584	3	25.0	1.65%	0	(104)	(7)	-0.42%	\$398,655	6,749	673,929	
Total	\$27,152,979				31	(2,301)	(103)		\$11,991,319	293,123	15,161,660	
Averages	\$905,099	3	23.8	1.82%	1	(77)	(3)	-0.35%	\$399,711	9,771	505,389	
The previous version of Support Resistance Trader with raised ante. In all 3 areas expected to rise, all did. You have raised profits, raised CAGR, raised cash reserves, raised inventory and inventory value over the long haul (25 years).												

Outstanding and impressive numbers. Nonetheless, just looking at the numbers, I was somewhat disappointed by SupRes V3. It came in at number 4 out of the 4 tested trading strategies. Even DEVX V3 performed better, and overall had better numbers. This could be represented as:

$$\begin{aligned}\Sigma(\mathbf{H}(\text{BBB Mod01}).*\Delta\mathbf{P}) &> \Sigma(\mathbf{H}(\text{DEVX V6}).*\Delta\mathbf{P}) \\ \Sigma(\mathbf{H}(\text{DEVX V6}).*\Delta\mathbf{P}) &> \Sigma(\mathbf{H}(\text{DEVX V3}).*\Delta\mathbf{P}) \\ \Sigma(\mathbf{H}(\text{DEVX V3}).*\Delta\mathbf{P}) &> \Sigma(\mathbf{H}(\text{LMK0.06}).*\Delta\mathbf{P}) \\ \Sigma(\mathbf{H}(\text{LMK0.06}).*\Delta\mathbf{P}) &> \Sigma(\mathbf{H}(\text{SupResV3}).*\Delta\mathbf{P}) \\ \Sigma(\mathbf{H}(\text{SupResV3}).*\Delta\mathbf{P}) &> \Sigma(\mathbf{H}(\text{B\&H}).*\Delta\mathbf{P})\end{aligned}$$

Some of trading procedures of SRT V3 might be interesting to keep and analyzed further. But for the moment, it did come in a disappointing 4th.

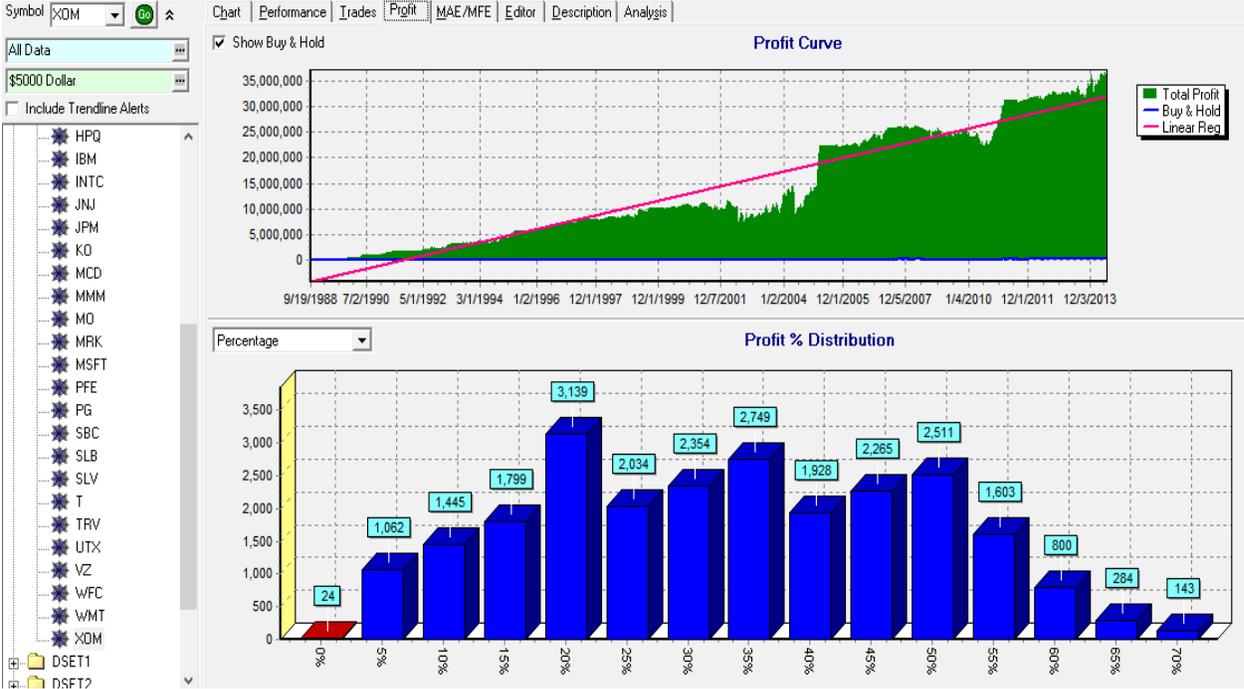
Notwithstanding, it has succeeded where it counts. It did build a portfolio of shares over time. It accumulated over 5 millions shares distributed in the 30 stocks which had a liquidation value of \$327 millions. Therefore it did achieve its purpose. The goal was to accumulate shares and trade over the process to acquire even more shares. On that count, objectives met.

There is still excessive cash reserves. You end with the stock inventory representing 63.21% of total equity, the rest being in cash. Unused cash available to continue to feed the system going forward. SRT V3 still managed a more than respectable 23.97% CAGR over its 25 years scenario.

Of the 631,030 trades taken, 80.21% were profitable (this includes still opened positions). On the 2 stocks where you have a lost, the reason is simple. The average of all the positions held is still underwater. But to their credit, they have high inventory levels, and just giving them time might be the best thing to do, just as you have provided time to all your positions over the past 25 years.

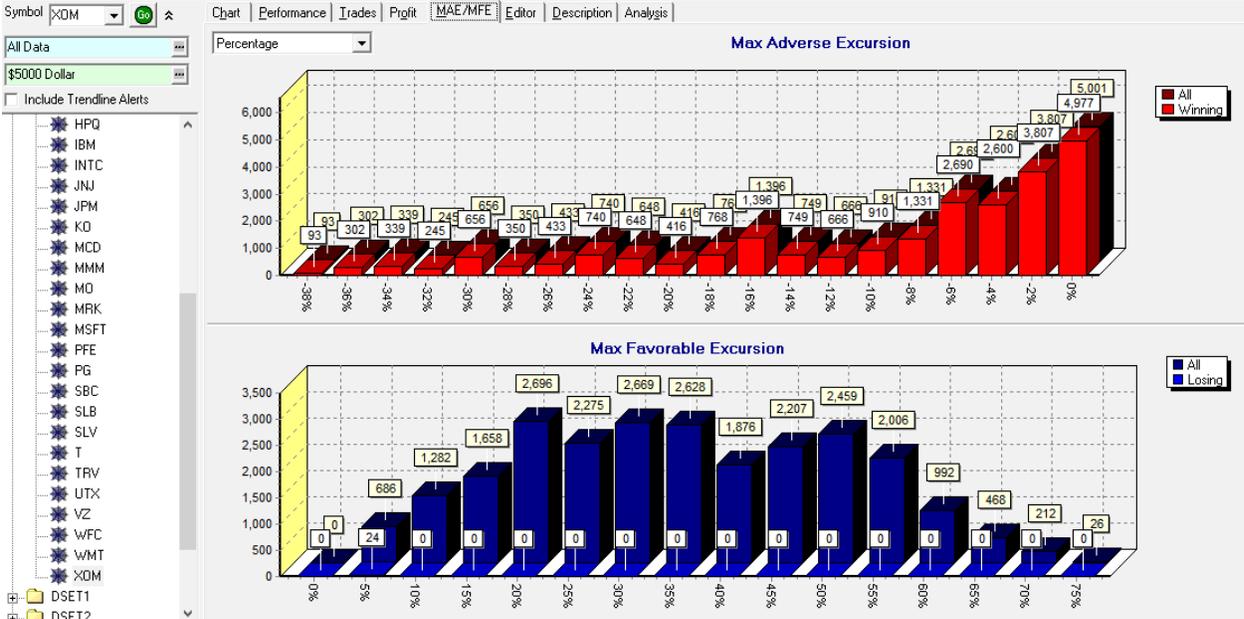
Having used XOM as example in all strategies reviewed, here is its equity chart over the last 25 years under V3:

XOM V3 Equity Chart (25 years)



XOM's maximum adverse excursion and maximum favorable excursion chart gave:

XOM V3: MAE - MFE



What those two charts show is that most of the positions taken over the 25 years of trading have resulted in a profit, in fact, 99.9% did. You have 5,304 positions still opened which result in an inventory of 312,042 shares valued at \$32.3M. To top it off, out of those 5,304 still opened positions, only 24 currently show a small loss (less than 2% each). Still opened positions costed \$26.5M and are currently valued at \$32.3M. XOM's total liquidating value is: \$36.8M. Not bad for a trading strategy that makes no predictions, and just wants to accumulate shares over the long haul.

But still... it only made number 4 in the ranking. Here are the current strategy rankings:

Rank	Trading Strategy	Order Tested
1	BBB Mod 01	2
2	DEVX V6 & V3	3
3	LMK 0.06	1
4	SupRes V3	4

My Concluding Remarks

I took an old and “ordinary” trading strategy that was designed to go nowhere in the sense that it could not even beat the Buy & Hold trading strategy. And then transformed it.

For me, if your trading strategy can not beat the Buy & Hold over the long term (20+ years); you have nothing, absolutely nothing, since the Buy & Hold would have been a better alternative.

The SRT strategy was transformed, in objectives, and in methods of play, to give it a long term perspective. My interest was in its unbalanced trading procedures which could be coerced on the long side to accumulate inventory over time and in its easy declaration of a support level that it be there or not.

Just changing 3 characters in the original trading script was sufficient, not only to change its trading philosophy, but make it a money maker that could be suitable for anyone wishing to build a retirement fund even if traded on a discretionary basis. It was like beating the Buy & Hold by default, without really trying. Gaining alpha points as a result of the method of play.

To show that one could do more, I even upped the ante. Declaring that an added one liner could increase long term performance levels. The test was conducted, and it demonstrated that raising the ante was not only possible, but easy to achieve. A trader might not have looked at these program modifications as having value, but for someone looking to build an inventory of stocks over time, these modifications were more than valuable.

It's up to you to look at your trading strategies with a long term perspective. I see no need to crash and burn. You can design from the start that your trading strategy will not only survive over the long term, but also thrive beyond the majority of players out there.

My own added modifications, to push performance even higher, were impressive but not enough. Under test, all they could do was to come in at # 4 in the current list of 4 (at #5 if you count DEVX V3). But still, a performance level that could bring envy to Buy & Holders.

What ever you do, common sense still needs to prevail. It needs to be put on the table. If you can't test your trading ideas and concepts over the long term (20+ years), how could you know, even have a hint, as to what your trading strategies might do. You are the one pressing enter, be it discretionarily, or in an automated manner. But if you haven't tested your "stuff", I will want a pretty good description of your "discretionary" trading methods. Don't count on me to accept your word without verification. Because in my world, even discretionary trading method can be programmed and tested.

For those thinking that the data is being manipulated in some fashion, coerced to do what I want it to do. Forget it. It's plain old historical stock data spanning the last 25 years and on stocks part of the DJIA.

The real difference is in the trading strategy. It's in the way I look at things. I can accept the compromise of exchanging the need to know right now what's coming for the obligation to wait for what will come. I'm not manipulating the data, I don't need to. I'm not manipulating indicators. I don't need to. I don't even need the support resistance indicators provided in the original program, their use were just an excuse to get into a trade.

My hope is that this paper helps you better understand my trading methodology. It's not that complicated, but I do admit that it is sophisticated. It is also made to help you make more.

Thank you for reading this far, I'm obligated and grateful.

Email: guyrfleury@gmail.com

Yes you can.

