The Stop Loss Revisited
by Guy R. Fleury

"If you want more, you have to do more"

This short paper deals with the impact of using stop losses in a long term stock trading strategy. It concludes with they are not that helpful in the alpha generation department since overall the system presented can't even beat the market averages.

The Stop Loss Revisited

What is it you want? The money, the entertainment, recognition, or maybe just something to talk about as if you were in the know of worldly events. Just in case it is the money, then you might appreciate what follows since it is all about your long term portfolio protection.

This is a 3-part series that elaborates on the use of stop losses in stock trading strategies. I think you will be able to benefit from my observations. To skip the text, examine the charts for what they have to say.

From the outside, the "game" is easy. You buy shares of some prospering company, wait for the price to go higher, then sell back at a profit, if so desired. Easy, and yet, from what we can see from all market participants, so difficult. Most trying to play the trading game have a hard time just beating the averages. Not surprisingly, some go as far as failing at it altogether.

The problem does not come from not understanding what to do.

You don't need to explain to anyone the mechanics of a trade for too long. It is not as if there was something esoteric or mysterious in its execution. On our computers: we screen

candidates, select a stock, an entry price, press enter, wait for some time (could be a long time) and then press enter again to exit the trade. You can even automate the process and have a machine do it all for you.

The real problem is in the ability to extract **lasting** profits, and I do put emphasis on lasting profits. It is not in one's ability to extract some profits on a trade here and there. It is over the long term, say over 20 or 30+ years that the real challenge resides. It requires knowledge, skills, and patience to extract more profits than losses from one's trading activity. Meaning the accumulated profits generated alpha over the years, thereby exceeding average market returns, hopefully by a wide margin.

A single trade is nothing, especially if it is short term. Because from there, the immediate question is: what next? What do you do for an encore? With for second question: how big was that short term profit anyway? What bet size was required to achieve it? Can it be duplicated and how often?

If you are building a retirement portfolio for yourself, or managing other people's portfolios, the longevity problem is a major concern. It will be followed by more questions: can you assure me your portfolio will be worth more in 30+ years than today? Will it outperform index averages? Will you really generate positive alpha? You should want answers to these questions now, before undertaking this long journey.

If you consider answering those questions as depending on the outcome of a series of applied random bets and say: maybe. Then, my suggestion is stop reading this, and stop playing. You are simply gambling your future away with for final probable outcome nothing substantial to show for it. Might as well quit while you are still ahead and do some good; give away what is left of your portfolio to needy people. Or, buy some low cost index funds, at least, by doing so you will end up positive, even if it is most likely just average positive which is still much better than just preserving one's capital or losing it.

When you lose at this game, you are feeding the rich and those that have learned to play the game. Somehow, the cash you lose will end up in somebody else's hands, and most probably, they are not poor hands, since poor people simply can not afford to play the game.

Take a closer look at long term winners. What do you see? Short term traders? No, all you see are long term traders/investors having mostly a Buy & Hold mentality, and can swing trade whenever they find it appropriate, meaning potentially rewarding. At the end of the day, all shares are in someone's hands.

Some don't get the math underneath it all. Like you will often hear: always use a stop loss to protect your capital. But you seldom see any kind of demonstration as to the effectiveness or validity of the saying. Answers to questions like: is it more profitable to have a systematic stop loss in place in your long term trading strategy? Can your trading strategy really last that long? How many times over a stock's price history can you execute your type of trade? Will

your trading strategy fail with time as so many do? All valid questions, but most often, not answered.

Just yesterday, I read the following conclusion to someone's article on trading, here is a direct quote:

> *No matter what your strategy or when you decide to enter, always remember to use protective stops and you'll be around for the next trade. Capital preservation is always key!*

It is said as part of what I consider trading advice folklore, is widespread, and can be seen in financial literature all the time. But, usually, nothing is provided to substantiate the claim.

Sure, on one trade it appears as common sense: preserve your capital, and it is key, otherwise, not preserving implies you are losing or going broke. But, what happens when you really apply stops to a trading strategy is not covered, only that you should execute stops. It is not enough.

You should know why you apply stops and what they will do to your long term portfolio. Otherwise, you are operating in the dark, and if you don't know why you are doing something in this game, then you should not be surprised if the market has more than a few surprises (lessons) in store for you. A lot of them, and not so pleasant since most probably they will cost you.

There are not that many ways to show if a stop loss trading strategy has value or not. It is easy to demonstrate on a single trade that a stop loss was a good idea. I could show you hundreds of example where getting out of a trade using a stop was the thing to do. But how about over a long term trading interval? How about over hundreds of trades? Will the winning trades more than compensate for all the executed stops?

One can test this on long term historical stock prices series and tabulate the results. Doing such a back test will also reveal the strengths and weaknesses of the programmed trading procedures and show their general behavior over time. But, if you do not do the testing job properly, then what would have been the purpose of having done those tests? You need to build on solid foundations.

There is also this notion that if you don't do the tests, then what could you claim? Wouldn't that advice be just other expressed opinions without corroborating statistical evidence? A backtest can certainly be revealing by showing a strategy's idiosyncrasies when put on the table for all to see.

Common sense still needs to prevail.

An Inquisitive Backtest

I opted to test the protective stop loss hypothesis starting with the notion of having a 10% trailing stop loss. The intention is to buy stocks on their way up and sell them later at a higher prices (see intro, part 1). To execute a trailing stop, you first need to buy some shares, so I also put in a 10% trailing buy order from a bottom.

The price will need to go up by 10%, after having reached some lower point. Then a purchase will be automatically initiated after that 10% rise, actually the day after. It is the same kind of operation as the trailing stop, but on the buy side.

Based on these simple conditions one should profit long term since stock prices over extended periods of time tend to go up. You wait for the stock to go up 10% and buy, then wait until a 10% drop in price from its next high mark to get out. If the stock price does not drop by 10%, it will result in you holding on to the shares for as long as it takes to get a 10% dip. The method almost guarantees you to have some winning trades. The probability of having some profitable trades is asymptotically approaching 1, if not almost surely equal to 1. Overall long term portfolio profitability is another question.

Designing such a trading script is relatively easy to code, but if you do only the 10% trailing stop case, it might not be that revealing or conclusive. So, I went for changing the stop loss setting from 1% to 40% by 1% increments and doing the test over a 20-year period, actually over 5,281 trading days (20.9 years). More than sufficient to make a point. At least long enough to silence those that would say: you selected too short a period where it work or didn't work.

The purpose of doing the test is to also answer questions like: what should be the preferred stop loss setting? How many stops will be executed over the trading interval? How much overall ending profits were generated using this supposedly "protective" stop loss technique?

Initially, trades were set at $10k each with a $100k reserves, thereby starting with a 10% portfolio bet. The outcome of the test - using the same stocks as in previous recent tests - is shown in chart #1 below.

#1 ABT - Trailing Stop (1% to 40% trailing stops)

Chart | Performance | Trades | Profit | MAE/MFE | Editor | Description | Analysis | Optimization | Results Explorer |

Result Set
- Save to File ...
- Load from File ...

Filter and Grouping
- ○ Show all Symbols   ○ Average
- ● Show only Symbol: ABT

Change #OptVar Value
- #OptVar: 1
- Value: 10

Graph Options
- Value: Profit   First: 1

S...	#OptVar1	Profit	APR	Trades	Win/Loss	Profit Fac...	Payoff Ratio	Recovery Factor	Drawdown %	Avg Profit %	WL Score	Sharpe Ratio	WL Error Term	WL Reward Ra...	Equity Drop ...	Exposure	Ulcer Index
ABT	1	20 223,35	0,88	664,00	40,36	1,29	1,90	2,59	-6,66	0,31	8,04	0,34	2,11	0,42	0,42	10,22	2,84
ABT	2	11 409,06	0,52	380,00	39,74	1,21	1,84	1,32	-7,41	0,30	5,67	0,24	1,76	0,29	2,25	8,41	4,25
ABT	3	14 202,36	0,63	234,00	40,17	1,39	2,08	2,35	-5,43	0,61	8,53	0,36	1,03	0,62	0,20	7,03	2,15
ABT	4	10 994,24	0,50	173,00	36,99	1,32	2,26	1,65	-5,96	0,65	6,39	0,28	1,24	0,40	0,21	7,32	2,79
ABT	5	16 026,04	0,71	122,00	43,44	1,60	2,08	2,74	-5,48	1,32	8,24	0,36	1,22	0,58	0,00	8,14	2,37
ABT	6	6 402,94	0,30	95,00	43,16	1,25	1,66	0,66	-8,93	0,68	3,46	0,17	1,86	0,16	0,00	7,78	5,45
ABT	7	3 441,86	0,16	77,00	45,45	1,14	1,38	0,32	-9,80	0,46	1,86	0,10	1,73	0,09	19,98	7,81	5,98
ABT	8	-1 717,40	-0,08	61,00	42,62	0,93	1,25	0,14	-11,70	-0,27	-1,19	-0,03	1,88	-0,04	-31,47	7,75	6,99
ABT	9	1 151,94	0,05	49,00	42,86	1,06	1,43	0,12	-9,34	0,28	0,64	0,04	1,74	0,03	31,52	7,76	5,25
ABT	10	2 057,04	0,10	42,00	33,33	1,13	2,26	0,28	-7,11	0,49	1,15	0,07	1,38	0,07	5,87	7,83	4,05
ABT	11	2 200,56	0,10	34,00	32,35	1,14	2,40	0,22	-9,30	0,66	1,19	0,07	1,51	0,07	24,74	7,88	5,52
ABT	12	1 222,63	0,06	30,00	36,67	1,08	1,86	0,13	-8,94	0,41	0,65	0,04	1,44	0,04	17,08	8,07	5,50
ABT	13	10 422,86	0,47	24,00	45,83	1,78	2,10	1,13	-8,09	4,33	4,96	0,24	1,69	0,28	2,10	8,76	4,12
ABT	14	9 096,59	0,42	22,00	50,00	1,72	1,72	0,94	-8,52	4,13	4,30	0,21	1,59	0,26	1,36	8,83	4,42
ABT	15	16 663,52	0,74	18,00	33,33	2,26	4,55	1,31	-10,41	9,36	6,84	0,34	2,31	0,32	0,00	9,64	5,59
ABT	16	18 022,01	0,79	16,00	31,25	2,64	5,82	1,54	-9,63	11,27	7,26	0,37	2,16	0,37	0,00	9,86	5,65
ABT	17	20 005,83	0,87	13,00	38,46	3,52	5,65	1,94	-8,52	15,44	7,87	0,40	1,85	0,47	0,00	10,13	4,74
ABT	18	27 569,99	1,17	11,00	54,55	7,32	6,11	3,21	-7,09	25,10	10,09	0,52	2,00	0,58	1,24	10,73	2,82
ABT	19	28 680,06	1,21	9,00	66,67	14,03	7,07	4,30	-5,53	32,00	10,77	0,54	1,94	0,62	0,00	10,59	2,10
ABT	20	28 341,91	1,19	9,00	66,67	12,37	6,21	4,22	-5,58	31,64	10,68	0,53	1,92	0,62	0,00	10,56	2,14
ABT	21	25 715,43	1,09	9,00	66,67	9,04	4,53	3,48	-5,91	28,67	9,66	0,48	1,97	0,56	0,30	10,67	2,48
ABT	22	24 694,42	1,06	8,00	75,00	11,44	3,84	3,44	-5,97	30,91	9,73	0,48	1,99	0,53	0,00	10,20	2,91
ABT	23	21 890,09	0,95	8,00	75,00	6,79	2,27	2,48	-7,35	27,39	8,48	0,43	2,11	0,45	0,00	10,33	3,93
ABT	24	22 629,02	0,98	7,00	71,43	6,65	2,68	2,44	-7,73	32,47	7,98	0,41	2,03	0,48	0,00	11,28	3,40
ABT	25	25 110,29	1,07	5,00	100,00	INF	INF	3,12	-6,71	50,39	8,43	0,43	1,85	0,58	0,69	11,85	3,03
ABT	26	24 534,59	1,05	5,00	100,00	INF	INF	3,08	-6,68	49,35	8,31	0,42	1,86	0,56	0,60	11,79	3,06
ABT	27	24 424,49	1,05	5,00	100,00	INF	INF	3,08	-6,64	49,09	8,28	0,42	1,84	0,57	0,59	11,79	3,03
ABT	28	23 387,02	1,00	5,00	100,00	INF	INF	2,90	-6,77	46,89	7,99	0,41	1,87	0,54	0,43	11,73	3,12
ABT	29	32 453,65	1,35	4,00	100,00	INF	INF	2,63	-8,54	80,97	8,30	0,45	2,34	0,57	0,47	14,83	3,02
ABT	30	16 763,74	0,74	4,00	100,00	INF	INF	2,05	-6,91	41,90	12,90	0,39	1,68	0,44	0,77	5,34	2,63
ABT	31	16 437,97	0,73	4,00	100,00	INF	INF	1,91	-7,26	41,22	11,09	0,37	1,58	0,46	0,93	6,08	2,94
ABT	32	15 999,89	0,71	4,00	100,00	INF	INF	1,78	-7,60	40,24	10,54	0,36	1,55	0,46	1,27	6,21	3,18
ABT	33	15 522,18	0,69	4,00	100,00	INF	INF	1,70	-7,72	38,97	10,29	0,35	1,52	0,45	1,41	6,18	3,26
ABT	34	14 103,34	0,63	4,00	75,00	54,69	18,12	1,36	-8,82	35,39	9,31	0,32	1,46	0,43	1,88	6,17	4,07
ABT	35	13 886,23	0,62	4,00	75,00	32,08	10,65	1,29	-9,12	34,66	8,93	0,31	1,45	0,43	1,81	6,31	4,20
ABT	36	13 295,85	0,60	4,00	75,00	17,14	5,77	1,24	-9,09	33,83	9,02	0,31	1,43	0,42	0,00	6,01	4,32
ABT	37	12 496,75	0,56	4,00	75,00	16,17	5,45	1,10	-9,71	31,81	8,32	0,29	1,40	0,40	0,00	6,10	4,82
ABT	38	11 921,25	0,54	4,00	75,00	10,89	3,71	1,03	-9,91	30,46	7,97	0,28	1,38	0,39	0,00	6,07	4,96
ABT	39	11 150,04	0,50	4,00	75,00	7,94	2,70	0,90	-10,57	28,53	7,38	0,26	1,38	0,37	0,00	6,11	5,47
ABT	40	11 150,04	0,50	4,00	75,00	7,94	2,70	0,90	-10,57	28,53	7,38	0,26	1,38	0,37	0,00	6,11	5,47

In 39 of the 40 scenarios, the simulation ended with a positive result over the 20-year trading interval. However, when one looks at the result from a profitability standpoint, it is not so hot. In fact, those are dismal performance results. The APR column show that none of the scenarios produce anything above a 1.5% CAGR (compounded annual growth rate), and that is over a 20-year investment period. Drawdowns were tolerable, as could be expected, since they were set by design at a 10% mark. After all, you were only risking $10k at a time. The exposure column can attest to that too.

What stands out is the diminishing number of trades as the percent stop loss setting is increased from 1 to 40 (see second column #OptVar1 on chart #1).

#2 ABT - Number of Positions vs APR

Number of Positions vs APR
ABT (20 years)
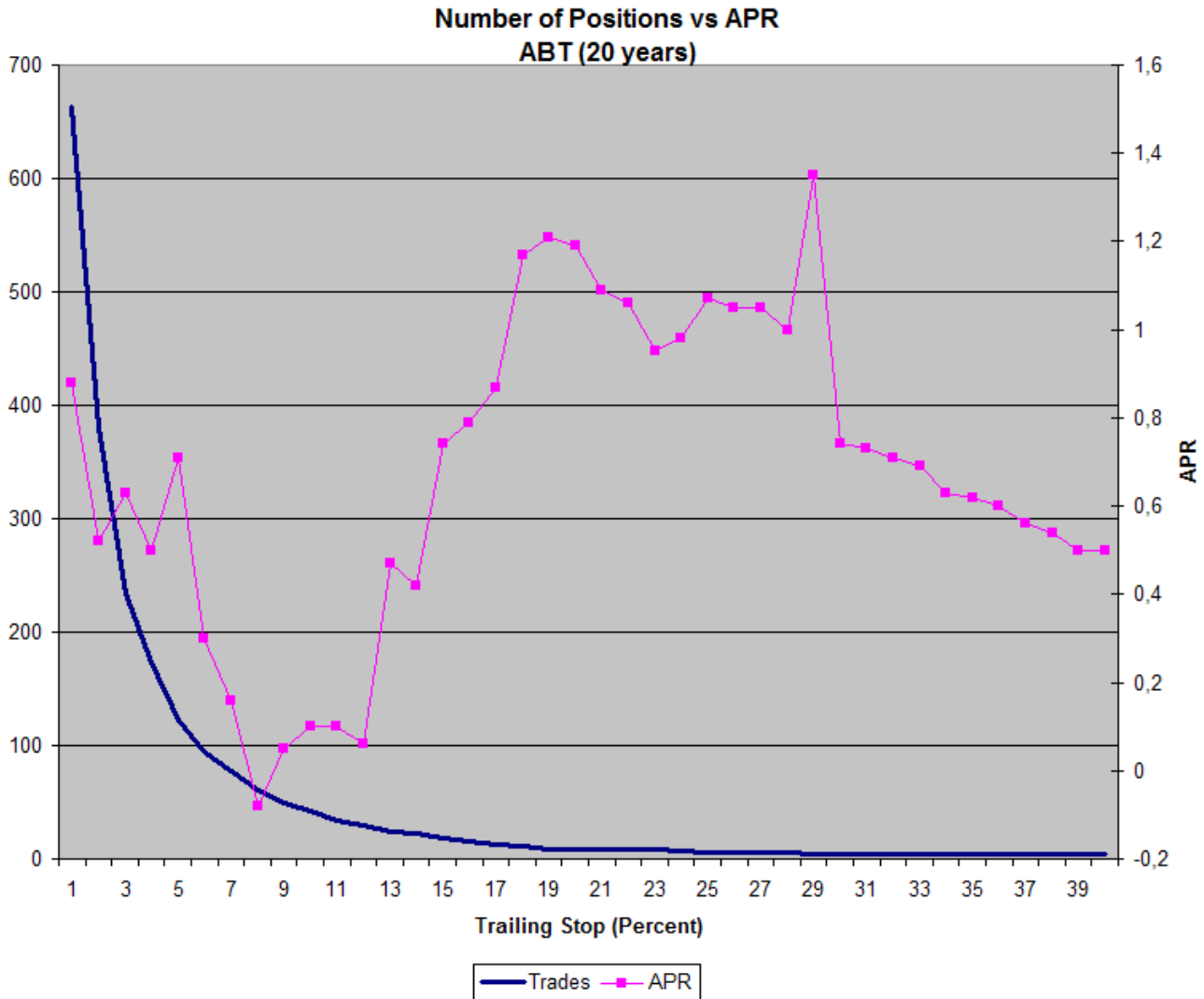
The above chart is also revealing, it shows that as the % trailing stop increased (#OptVar1 in chart #1), the number of executed trades decreased (fifth column in chart #1), and a lot faster than might be expected. This is normal since there are a lot more 1% drops than 10%, or 20% ones. As the trailing stop percent increases, we see less and less trades. This is perfectly depicted in the above chart.

So, technically, nothing of note except maybe gaining a better understanding of the stop loss scenario process. With a $10k bet out of a $100k stake, the 10% trailing stop is not that interesting after all, especially in the CAGR department. It surely suffers from low market exposure or has a real allocation problem. But in building a diversified portfolio, one might find a 10% of portfolio stake to be quite high for a single stock. Most often, that figure is much

lower, especially if you put 50 to 100 stocks in your portfolio.

#3 ABT - Number of Positions vs Profit

Number of Positions vs Profit
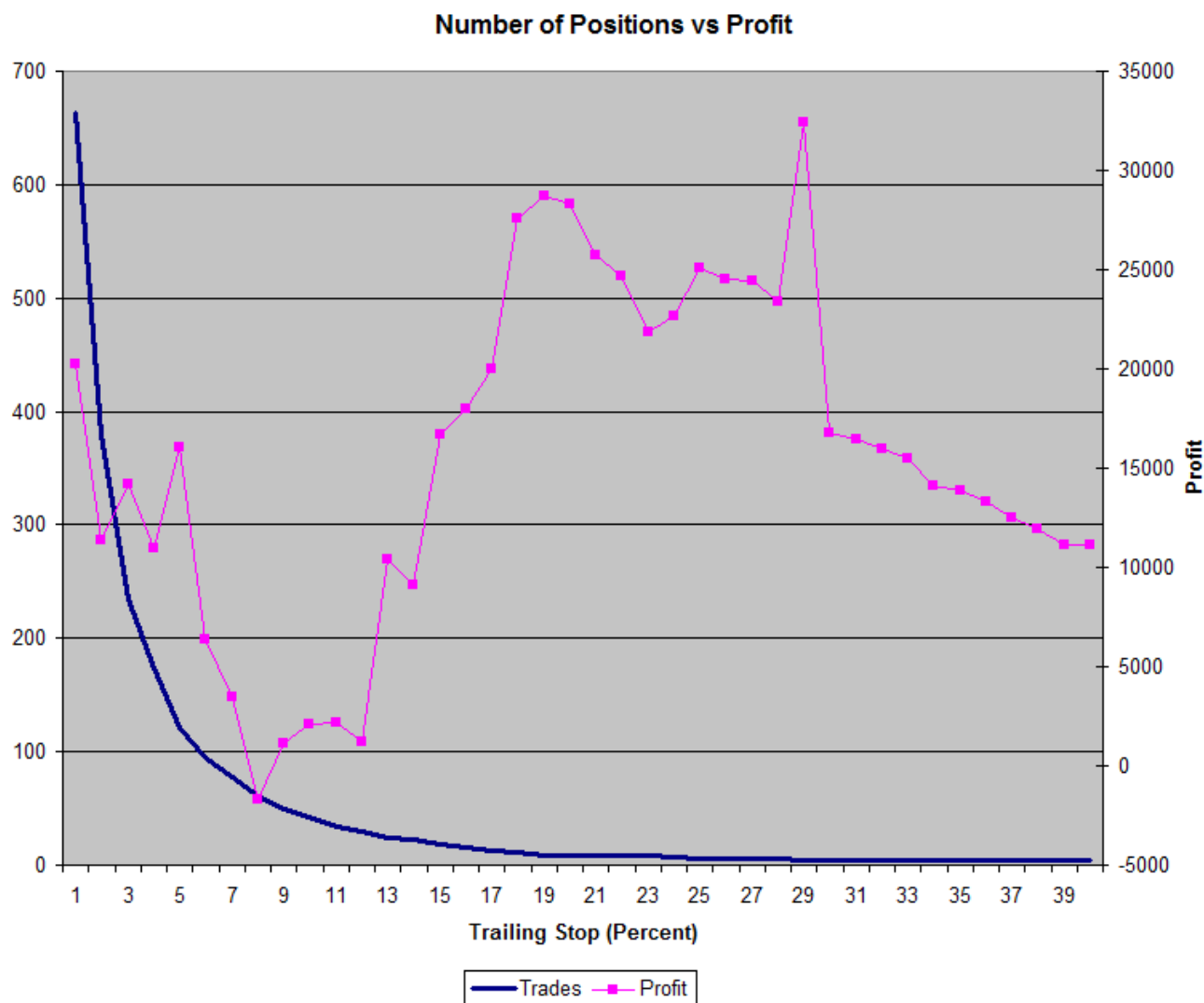
This can raise the question that the number of trades over the lifespan of a trading system will more than matter, and most probably a lot. In the above chart (#3), only the right hand scale changed compared to chart #2. Both charts are expressing the same thing, one as a percent, the other as a dollar amount.

ABT did the most trades at the 1% trailing stop level (664), but it could not even come close to achieving the performance level of a single trade as in a Buy & Hold scenario. Even the most favorable outcome came in short by a factor of 20 to 1. This saying that the Buy & Hold scenario was by far more rewarding.

There is no surprise in these results. It is what logically should have been expected.

Anyone could have reached the same conclusions without even doing this kind of test. The more you increase the stop loss level (from 1% to 40% in this study), the less the number of trades.

It is like measuring how many trading opportunities were available over the entire trading interval. The larger the trailing stop, the smaller the number of opportunities, or trades. This is not for just one stock as depicted above, but can stand on its own as a general rule.

By increasing the stop loss level, one is also increasing the average percent profit per trade as can be seen in the average profit % column of chart #1. But, this is done on a diminishing number of trades. To the point where at about the 10% stop loss level, one might consider that the trading method is losing statistical significance due to the reduced number of trades (42 trades) over the 20-year period. The best behavior appears to be between the 17% to 29% stop loss level. At those levels, it is not everyone that would trade like that knowing beforehand they will underperform even the averages of index funds. There is no alpha there.

A trading program applies a set of trading rules. In this case rather simple ones: rise by x% from a bottom, get in; drop by x% from a top, get out. And none of the trailing stop scenarios proved worthwhile even though almost all came out positive. It is just that it really was not enough for the efforts deployed, and furthermore, this was a scenario requiring constant monitoring of the situation over the years, day in and day out.

The trailing stop scenario as presented could be viewed as a variant of a simply moving average crossover system. Instead of having variable entries and exits points, these points are preset as a fix percent of price moves (from highs and lows). It becomes like changing the length of the lookback period for a moving average, and as in this test simulate for a range of lookback settings.

This view of variable entry and exit points has been covered before, for example in the **Stock Trading Strategy Experiment** or more recently in the **Value of a Stock Trading Strategy**.

Too Much Reserves

Was it a case of too much reserves? After all, bets were only $10k on a $100k stake. This can easily be answered. Simply redo the simulation with a $10k portfolio with $10k bets. Here is that test:

#4 ABT - Trailing Stop with $10k Bets & $10k Reserves

Chart | Performance | Trades | Profit | MAE/MFE | Editor | Description | Analysis | Optimization | Results Explorer

Result Set
- Save to File ...
- Load from File ...

Filter and Grouping
- ○ Show all Symbols   ○ Average
- ● Show only Symbol: ABT

Change #OptVar Value
- #OptVar: 1
- Value: 10

Graph Options
- Value: Profit   First: 1

S...	#OptVar1	Profit	APR	Trades	Win/Loss	Profit Fac...	Payoff Ratio	Recovery Factor	Drawdown %	Avg Profit %	WL Score	Sharpe Ratio	WL Error Term	WL Reward Ra...	Equity Drop ...	Exposure	Ulcer Index
ABT	1	797,62	0,37	404,00	40,35	1,02	1,57	0,17	-42,36	0,06	0,71	0,09	13,07	0,03	23,07	29,60	19,25
ABT	2	1 887,09	0,83	225,00	40,00	1,06	1,66	0,29	-43,99	0,14	1,42	0,14	8,45	0,10	6,90	32,60	23,06
ABT	3	11 017,43	3,60	137,00	43,07	1,43	1,95	2,01	-35,24	0,64	6,18	0,36	7,52	0,48	1,02	37,68	12,20
ABT	4	2 246,45	0,97	101,00	37,62	1,09	1,95	0,34	-43,26	0,37	1,41	0,14	10,51	0,09	5,86	38,93	26,18
ABT	5	-1 777,65	-0,93	79,00	39,24	0,88	1,47	0,36	-46,11	-0,11	-3,38	-0,01	12,04	-0,08	-5,23	40,01	29,20
ABT	6	-373,36	-0,18	56,00	44,64	0,97	1,35	0,06	-49,33	0,25	-0,69	0,06	17,54	-0,01	-26,81	39,20	34,04
ABT	7	-1 547,66	-0,80	45,00	46,67	0,88	1,15	0,25	-52,25	0,01	-3,38	-0,01	17,97	-0,04	-7,49	35,90	33,51
ABT	8	-1 368,27	-0,70	38,00	50,00	0,86	0,96	0,25	-46,77	-0,12	-2,52	0,01	7,34	-0,09	-7,86	40,61	29,86
ABT	9	7 038,44	2,57	28,00	57,14	1,69	1,36	1,18	-42,17	2,59	3,52	0,27	12,13	0,21	2,01	42,13	19,07
ABT	10	-904,65	-0,45	22,00	31,82	0,88	2,21	0,15	-50,32	0,13	-1,79	0,01	13,11	-0,03	-10,11	37,88	30,58
ABT	11	5 889,97	2,23	20,00	35,00	1,60	3,31	0,78	-48,86	3,26	2,28	0,24	13,66	0,16	1,88	49,85	24,94
ABT	12	-320,39	-0,15	17,00	35,29	0,96	2,04	0,05	-45,14	0,58	-0,50	0,05	12,31	-0,01	-36,28	45,37	27,35
ABT	13	4 044,95	1,63	12,00	41,67	1,45	2,69	0,34	-52,00	4,41	1,83	0,19	13,54	0,12	2,31	42,60	34,22
ABT	14	7 816,77	2,78	9,00	66,67	2,31	1,61	0,94	-37,71	8,37	4,34	0,30	11,41	0,24	1,42	39,95	25,07
ABT	15	18 622,92	5,13	9,00	33,33	2,23	9,76	1,11	-37,24	21,43	5,51	0,44	17,94	0,29	0,97	58,37	17,97
ABT	16	25 990,44	6,28	9,00	44,44	2,80	7,26	1,66	-36,12	23,91	5,59	0,48	17,22	0,36	0,62	71,69	17,21
ABT	17	10 681,21	3,52	7,00	42,86	2,31	6,01	0,85	-43,55	18,27	4,01	0,33	12,43	0,28	1,29	49,44	21,47
ABT	18	17 775,77	4,98	7,00	57,14	3,64	5,85	1,24	-39,04	22,40	5,87	0,41	16,41	0,30	0,94	51,67	18,49
ABT	19	26 895,21	6,40	4,00	100,00	INF	INF	2,49	-33,48	45,82	9,38	0,52	17,29	0,37	0,56	45,44	16,65
ABT	20	56 824,89	9,45	6,00	83,33	19,44	5,20	3,31	-36,29	45,74	7,23	0,62	13,82	0,68	0,40	83,26	14,93
ABT	21	16 092,42	4,67	6,00	66,67	3,11	3,29	1,16	-38,88	24,49	5,45	0,39	15,87	0,29	0,97	52,33	18,88
ABT	22	11 084,34	3,61	3,00	66,67	5,03	5,35	1,22	-31,79	39,84	6,78	0,36	12,10	0,30	0,90	36,31	23,63
ABT	23	7 731,29	2,76	4,00	75,00	2,27	1,60	0,54	-49,95	26,15	2,70	0,26	14,31	0,19	1,60	51,30	31,30
ABT	24	11 942,73	3,81	3,00	66,67	2,98	2,86	0,83	-50,43	43,52	3,65	0,33	14,58	0,26	1,18	51,67	24,53
ABT	25	21 368,64	5,59	3,00	100,00	INF	INF	1,66	-41,11	52,38	5,65	0,41	15,94	0,35	0,84	58,18	19,47
ABT	26	42 982,70	8,25	4,00	100,00	INF	INF	2,06	-41,11	56,71	5,26	0,52	14,68	0,56	0,55	92,38	16,33
ABT	27	43 196,61	8,27	4,00	100,00	INF	INF	2,06	-41,11	56,86	5,27	0,52	14,64	0,56	0,55	92,40	16,27
ABT	28	25 801,85	6,25	3,00	100,00	INF	INF	1,83	-40,07	59,47	5,85	0,47	18,25	0,34	0,68	64,07	23,92
ABT	29	10 723,70	3,53	2,00	100,00	INF	INF	1,06	-33,43	52,47	7,81	0,34	12,05	0,29	0,96	30,04	27,88
ABT	30	10 723,70	3,53	2,00	100,00	INF	INF	1,06	-33,43	52,47	7,81	0,34	12,05	0,29	0,96	30,04	27,88
ABT	31	52 434,59	9,10	3,00	100,00	INF	INF	2,14	-43,36	102,99	5,27	0,56	14,30	0,64	0,53	97,85	14,82
ABT	32	50 738,30	8,96	3,00	100,00	INF	INF	2,13	-43,35	101,21	5,16	0,55	14,50	0,62	0,52	98,34	15,00
ABT	33	49 894,96	8,88	3,00	100,00	INF	INF	2,13	-43,35	100,29	5,12	0,55	14,59	0,61	0,53	98,38	15,13
ABT	34	43 569,47	8,31	3,00	66,67	92,84	54,11	2,08	-48,56	94,80	4,36	0,51	15,87	0,52	0,60	98,08	17,86
ABT	35	7 252,76	2,63	2,00	50,00	9,98	18,12	0,61	-41,77	38,33	4,54	0,26	10,53	0,25	1,36	33,70	34,00
ABT	36	39 263,89	7,88	3,00	66,67	27,08	17,20	2,06	-51,21	92,39	4,00	0,50	16,87	0,47	0,62	96,08	19,33
ABT	37	36 731,37	7,61	3,00	66,67	26,72	16,63	2,03	-53,72	89,24	3,65	0,49	17,40	0,44	0,65	96,42	21,07
ABT	38	40 921,04	8,05	2,00	100,00	INF	INF	2,08	-49,56	138,01	4,50	0,55	14,66	0,55	0,55	90,30	21,26
ABT	39	39 504,16	7,90	2,00	100,00	INF	INF	2,06	-50,95	135,60	4,29	0,54	15,14	0,52	0,57	90,34	22,18
ABT	40	39 504,16	7,90	2,00	100,00	INF	INF	2,06	-50,95	135,60	4,29	0,54	15,14	0,52	0,57	90,34	22,18

Since this test is totally scalable, if you want to see bigger numbers, just add zeros to the profit figure as well as the bet size and reserves. However, it should not change the number of trades, the APR column, or the average profit % column as presented in chart #4. This to say you would get the same CAGR as can be seen in chart #4.

A more visual representation of the profit distribution in chart #4 is given below:

#5 ABT - Trailing Stop with $10k Reserves - Profit Distribution
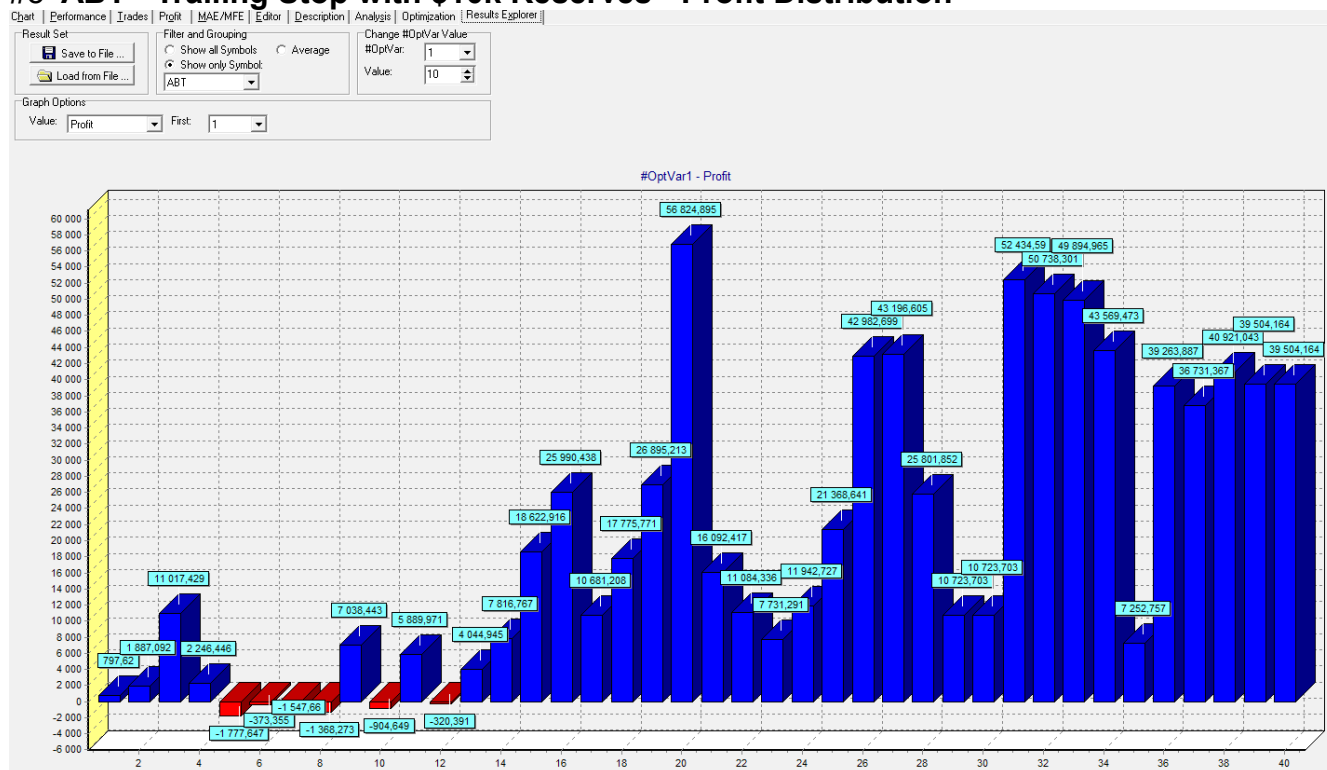
From the above chart, the profit distribution does not appear as if part of a robust system. The highest profit occurred at the 20% trailing stop setting and you could get 8 times less by setting it to 23%. Not that desirable a characteristic, too much dependence on a slight variation. In no case any of the trailing stop settings exceeded the Buy & Hold profit ($72.879) or its long term CAGR (9.9%), see chart #6.

The general drawdown level increased significantly compared to chart #1. This goes as well for the exposure ratio which is more elevated. However, the number of trades was reduced compared to chart #1. This is understandable too, the excess reserves in the first case allowed for more trading. So, limiting the reserves does have an effect on performance.

#6 ABT - Trailing Stop with $10k Reserves – APR Distribution

Number of Positions vs APR (ABT)
(100% of equity, $10k bets)
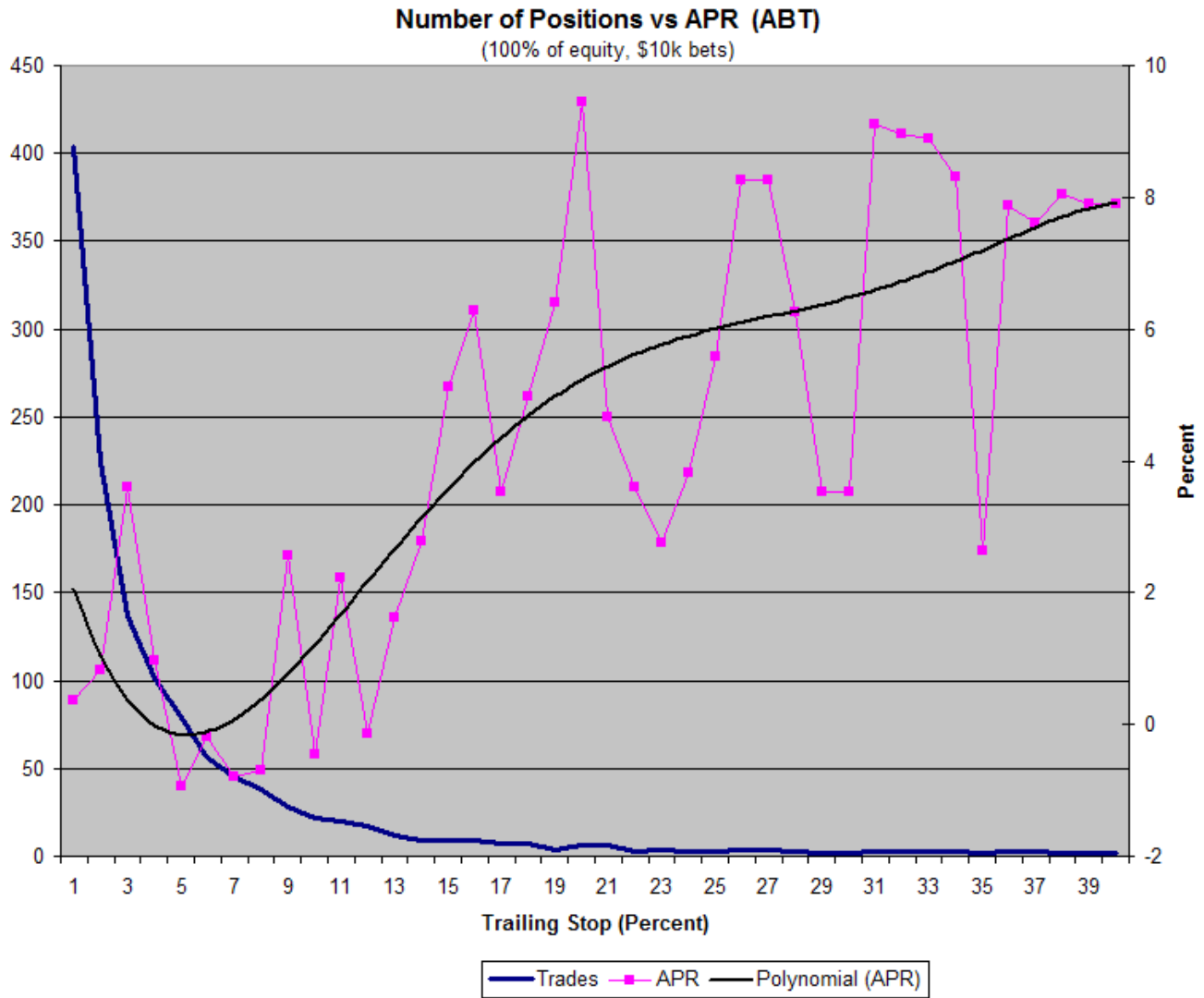
Maybe the most important point being presented is that as the trailing stop setting is increased, the number of trade opportunities decreases to a point where only one trade might remain in the portfolio and thereby asymptotically approaching the Buy & Hold scenario from under, just as the trend seems to suggest in chart #6.

At the 40% trailing stop level, there were only 2 trades executed over the 20-year period. Another way of saying not statistically significant. And a system that trade only twice in 20 years is more a variant of a Buy & Hold proposition than anything else. One could call it a system, but not that much a trading system.

It is however quite understandable that as you increase the trailing stop percentage less and

less trade opportunities exist. This is quite explicit in chart #3, the number of trades decreases significantly having a steep negative slope at the lower stop loss levels. Levels at which profitability is also decreasing, especially below the 10% trailing stop level. Above the 10% trailing stop mark, one has to consider that such a system becomes statistically not that relevant or significant even if it can show some profits.

Operating with a 30% trailing stop, which I think requires character, is shown in chart #5 as not that productive whereas the 31% level produced 5 times more. It makes it a system that is too sensitive to slight setting variations, and you don't know if another stock would respond the same. Well, in fact, you do: they won't, each stock will behave differently.

Another Stock

Should the picture change that much if I change the stock under the microscope?

I picked FDX from the same 10-stock list I often use in testing trading procedures. If a stock can pass my preliminary tests, then I can go further with the exploratory analysis.

It is when you change the stock under study that you can better view common elements. And from there maybe extract further trading rules designed to help at the portfolio level and not just apply to a single stock.

This trailing stop strategy does not care what the stock is in the sense that it is concerned only with price movements. And all stocks, whatever their respective paths, with have variable price fluctuations, each having their own signature. Still, for any stock, the number of tailing stops are numbered. They get executed or not but the stops will be the same for everyone at a particular setting. If a stock has dropped 10% from its recent high, it can be seen and acted upon by all participants.

Notwithstanding, here are the results for FDX on the $10k scenario as in chart #1:

#7 FDX - Trailing Stop (1% to 40%)

Chart | Performance | Trades | Profit | MAE/MFE | Editor | Description | Analysis | Optimization | Results Explorer

Result Set
[Save to File ...]
[Load from File ...]

Filter and Grouping
○ Show all Symbols   ○ Average
● Show only Symbol:
FDX

Change #OptVar Value
#OptVar: [1]
Value: [10]

Graph Options
Value: [Profit]   First: [1]

S... ▲	#OptVar1	Profit	APR	Trades	Win/Loss	Profit Fac...	Payoff Ratio	Recovery Factor	Drawdown %	Avg Profit %	WL Score	Sharpe Ratio	WL Error Term	WL Reward Ra...	Equity Drop ...	Exposure	Ulcer Index
FDX	1	50 781,08	1,97	766,00	38,38	1,61	2,56	4,49	-8,18	0,66	19,10	0,50	4,99	0,40	0,45	9,48	3,08
FDX	2	24 059,23	1,03	471,00	35,67	1,35	2,41	3,04	-6,97	0,51	13,25	0,36	2,56	0,40	0,80	7,24	2,24
FDX	3	20 675,34	0,90	318,00	39,94	1,36	2,06	1,91	-9,45	0,65	9,88	0,31	2,06	0,44	2,43	8,23	2,38
FDX	4	14 396,81	0,64	228,00	39,47	1,30	1,99	1,67	-7,86	0,63	8,09	0,27	1,73	0,37	0,97	7,31	2,40
FDX	5	11 127,35	0,50	172,00	44,19	1,25	1,58	1,49	-6,75	0,65	7,79	0,23	1,34	0,38	0,00	6,02	2,69
FDX	6	16 693,29	0,74	131,00	41,98	1,45	2,01	2,55	-5,74	1,28	11,25	0,34	1,17	0,63	0,12	6,17	2,25
FDX	7	10 109,53	0,46	112,00	38,39	1,25	2,01	1,03	-8,73	0,90	6,47	0,21	1,13	0,40	3,99	6,47	4,98
FDX	8	17 657,46	0,78	85,00	36,47	1,52	2,66	1,66	-9,29	2,09	11,05	0,33	1,46	0,53	1,35	6,37	4,26
FDX	9	13 808,33	0,62	76,00	40,79	1,41	2,05	1,04	-11,75	1,84	8,14	0,27	1,57	0,39	0,82	6,69	5,25
FDX	10	19 882,12	0,87	62,00	45,16	1,73	2,10	2,14	-8,20	3,22	11,13	0,37	1,35	0,64	1,83	7,15	2,88
FDX	11	20 084,29	0,87	51,00	45,10	1,83	2,24	1,75	-10,13	3,96	10,73	0,37	1,67	0,52	2,73	7,32	4,44
FDX	12	25 738,88	1,10	42,00	45,24	2,19	2,65	2,49	-8,96	6,16	13,81	0,45	1,30	0,84	1,62	7,22	3,09
FDX	13	25 282,05	1,08	37,00	45,95	2,22	2,61	2,57	-8,38	6,86	13,38	0,44	1,43	0,75	1,32	7,38	3,17
FDX	14	21 970,59	0,95	32,00	50,00	2,27	2,26	2,31	-8,23	6,84	11,38	0,38	1,27	0,75	1,46	7,66	3,01
FDX	15	18 078,64	0,79	31,00	45,16	2,03	2,46	1,60	-9,70	5,82	9,16	0,32	1,50	0,53	2,86	7,82	3,92
FDX	16	24 946,92	1,07	26,00	38,46	2,37	3,78	1,96	-10,59	9,57	10,85	0,39	2,07	0,51	2,26	8,78	4,32
FDX	17	29 163,78	1,22	22,00	45,45	3,13	3,73	2,96	-8,22	13,15	13,09	0,46	2,10	0,58	1,00	8,59	3,49
FDX	18	26 324,98	1,12	20,00	45,00	3,11	3,81	2,61	-8,50	13,18	11,41	0,42	1,85	0,60	0,97	8,96	3,39
FDX	19	30 417,92	1,27	17,00	52,94	3,87	3,44	3,55	-7,04	17,91	13,04	0,47	1,65	0,77	0,19	9,06	3,28
FDX	20	34 069,47	1,40	15,00	46,67	4,69	5,35	3,56	-8,12	22,69	13,74	0,49	1,64	0,86	0,90	9,39	3,38
FDX	21	31 963,73	1,33	15,00	46,67	4,13	4,70	3,27	-8,30	21,26	12,65	0,46	1,70	0,78	0,80	9,62	3,64
FDX	22	30 835,17	1,29	14,00	42,86	4,52	6,01	3,05	-8,59	22,09	12,44	0,44	1,73	0,74	0,97	9,45	3,62
FDX	23	26 781,22	1,14	14,00	42,86	3,44	4,59	2,57	-8,84	19,16	10,96	0,39	1,82	0,62	1,11	9,45	3,94
FDX	24	28 354,29	1,19	13,00	46,15	3,56	4,16	2,73	-8,84	21,89	10,42	0,40	1,79	0,67	1,08	10,45	4,10
FDX	25	26 154,94	1,11	13,00	46,15	3,28	3,84	2,36	-8,90	20,23	9,61	0,38	1,83	0,61	1,08	10,54	4,20
FDX	26	21 863,39	0,95	13,00	46,15	2,70	3,14	1,92	-9,30	16,78	7,96	0,32	1,87	0,51	1,06	10,76	4,70
FDX	27	23 371,47	1,00	11,00	54,55	3,83	3,20	2,10	-9,46	21,33	7,93	0,32	1,75	0,57	1,32	11,46	4,67
FDX	28	21 568,78	0,93	11,00	54,55	3,23	2,68	1,87	-9,83	19,72	7,30	0,29	1,78	0,52	1,55	11,54	4,95
FDX	29	20 299,61	0,88	11,00	54,55	3,02	2,51	1,70	-10,14	18,56	6,83	0,28	1,84	0,48	1,69	11,61	5,16
FDX	30	21 680,22	0,94	10,00	50,00	2,92	2,96	1,69	-10,87	21,93	6,75	0,28	2,07	0,45	1,88	12,38	5,40
FDX	31	24 015,00	1,03	9,00	55,56	3,47	2,78	1,79	-10,86	26,64	7,31	0,30	2,18	0,47	2,21	12,55	5,26
FDX	32	24 757,04	1,06	8,00	62,50	4,68	2,83	1,81	-10,57	31,02	7,27	0,31	2,30	0,46	2,23	13,01	4,89
FDX	33	23 973,64	1,03	8,00	62,50	4,56	2,78	1,76	-10,56	30,31	7,05	0,30	2,34	0,44	2,14	13,03	4,94
FDX	34	18 747,99	0,82	6,00	66,67	3,77	1,89	1,34	-10,94	31,16	8,27	0,26	2,40	0,34	2,53	8,84	5,85
FDX	35	21 811,86	0,94	5,00	80,00	9,74	2,19	1,72	-9,77	43,29	9,94	0,30	2,31	0,41	0,37	8,56	4,94
FDX	36	22 987,96	0,99	4,00	100,00	INF	INF	2,17	-8,99	57,82	10,50	0,32	2,18	0,45	0,68	8,57	4,50
FDX	37	21 529,98	0,93	4,00	100,00	INF	INF	1,98	-9,21	53,83	9,95	0,30	2,17	0,43	0,60	8,50	4,85
FDX	38	20 619,96	0,90	4,00	100,00	INF	INF	1,85	-9,47	51,76	9,79	0,29	2,09	0,43	0,79	8,28	4,82
FDX	39	19 442,08	0,85	4,00	100,00	INF	INF	1,63	-10,11	48,85	9,12	0,28	2,12	0,40	0,97	8,37	5,16
FDX	40	18 713,34	0,82	4,00	100,00	INF	INF	1,50	-10,63	47,03	8,50	0,26	2,11	0,39	0,87	8,62	5,37

From the above, we see about the same general behavior. As the trailing stop percent increases (#OptVar1), the number of trades declines, even if, in FDX's case, the number of trades starts with a higher number, meaning that there were more trading opportunities. And as a corollary, this implies more price volatility.

#8 FDX - Number of Positions vs APR (1% to 40% trailing stops)

Number of Positions vs Profit (FDX)
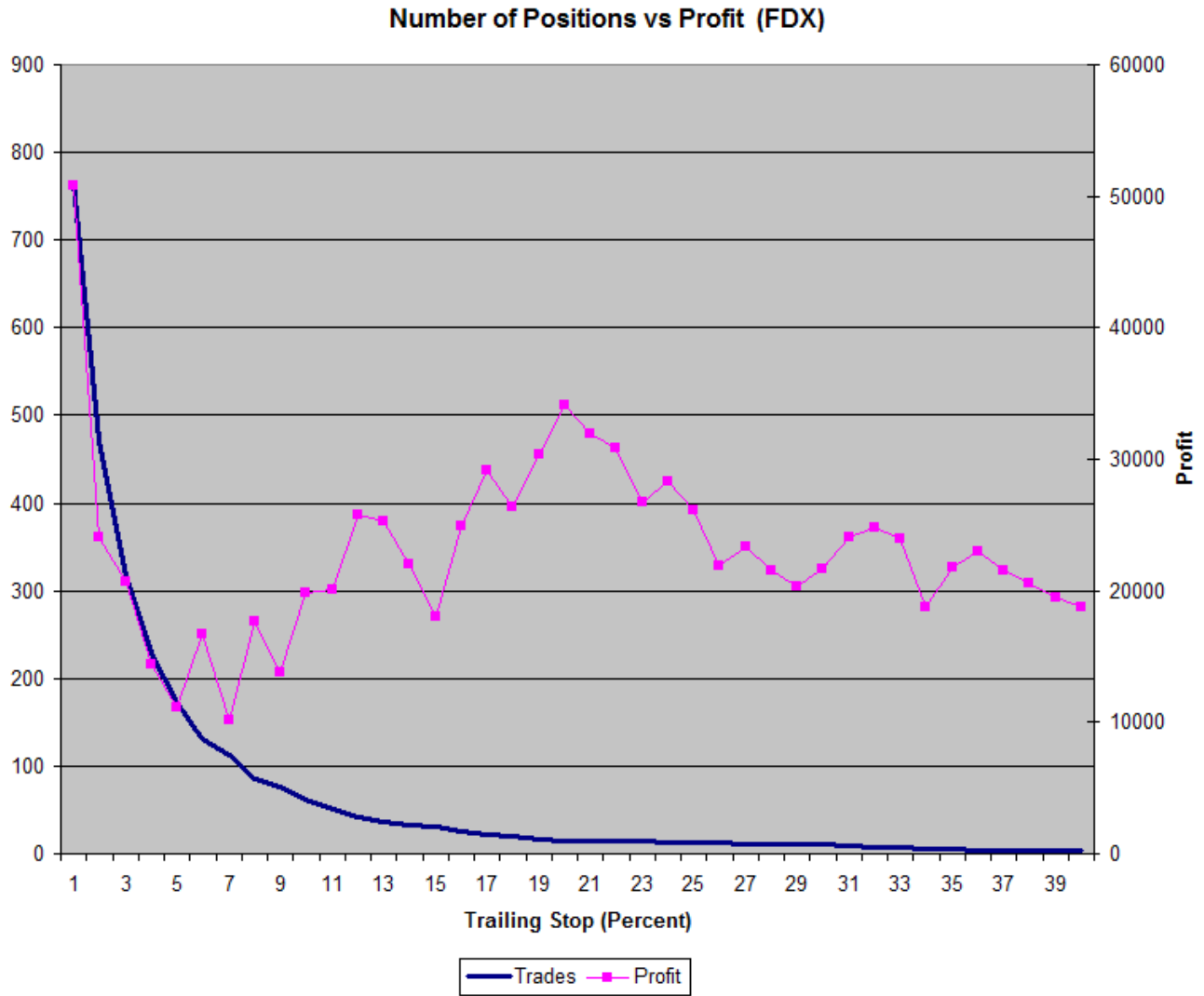
The number of trades in chart #8 maintains about the same general shape as in chart #2 which was expected as well.

As for the profit generation, FDX produced:

#9 FDX - Number of Positions vs Profit (1% to 40% trailing stops)

Number of Positions vs Profit (FDX)
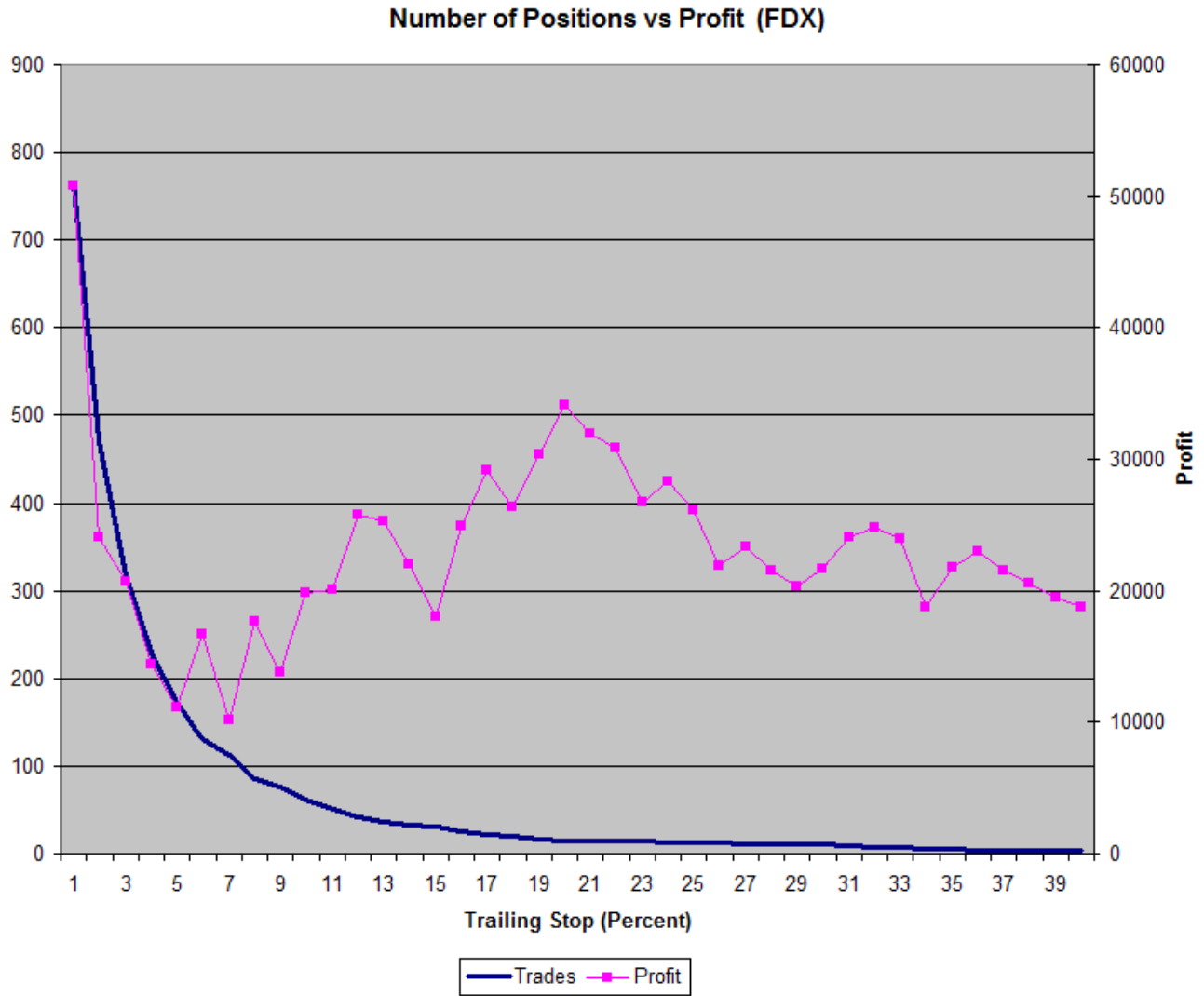
So, even though FDX was profitable for every trailing stop value, it never exceeded a 2.0% CAGR compared to a 12.31% for the Buy & Hold scenario based on the same initial capital.

#10 FDX – Summary Performance Report (10% trailing stop)

	Long + Short	Long Only	Short Only	Buy & Hold
Starting Capital	100 000,00 $	100 000,00 $	100 000,00 $	100 000,00 $
Ending Capital	119 882,12 $	119 882,12 $	100 000,00 $	1 148 733,50 $
Net Profit	19 882,12 $	19 882,12 $	0,00 $	1 048 733,50 $
Net Profit %	19,88%	19,88%	0,00%	1 048,73%
Annualized Gain %	0,87%	0,87%	0,00%	12,31%
Exposure	7,15%	7,15%	0,00%	100,00%
Number of Trades	62	62	0	1
Avg Profit/Loss	320,68 $	320,68 $	0,00 $	1 048 733,50 $
Avg Profit/Loss %	3,22%	3,22%	0,00%	1 046,64%
Avg Bars Held	57,98	57,98	0,00	5 281,00
Winning Trades	28	28	0	1
Winning %	45,16%	45,16%	N/A	100,00%
Gross Profit	47 172,00 $	47 172,00 $	0,00 $	1 048 733,50 $
Avg Profit	1 684,71 $	1 684,71 $	0,00 $	1 048 733,50 $
Avg Profit %	16,89%	16,89%	0,00%	1 046,64%
Avg Bars Held	97,39	97,39	0,00	5 281,00
Max Consecutive	6	6	0	N/A
Losing Trades	34	34	0	0
Losing %	54,84%	54,84%	N/A	0,00%
Gross Loss	-27 289,88 $	-27 289,88 $	0,00 $	0,00 $
Avg Loss	-802,64 $	-802,64 $	0,00 $	0,00 $
Avg Loss %	-8,05%	-8,05%	0,00%	0,00%
Avg Bars Held	25,53	25,53	0,00	0,00
Max Consecutive	6	6	0	N/A
Max Drawdown	-9 279,49 $	-9 279,49 $	0,00 $	-588 155,50 $
Max Drawdown %	-8,20%	-8,20%	0,00%	-71,33%
Max Drawdown Date	13/03/09	13/03/09	N/A	18/09/13
Wealth-Lab Score	11,13	11,13	0,00	3,53
Profit Factor	1,73	1,73	0,00	INF
Recovery Factor	2,14	2,14	N/A	1,78
Payoff Ratio	2,10	2,10	0,00	INF
Sharpe Ratio	0,37	0,37	0,00	0,55
Ulcer Index	2,88	2,88	0,00	22,53
Wealth-Lab Error Term	1,35	1,35	0,00	16,29
Wealth-Lab Reward Ratio	0,64	0,64	N/A	0,76
Luck Coefficient	3,66	3,66	0,00	1,00
Pessimistic Rate of Return	1,20	1,20	0,00	0,00
Equity Drop Ratio	1,83	1,83	0,00	0,43

Doing the same $10k test as with ABT with a 10% trailing stop still did not produce enough to beat the Buy & Hold as can be seen in chart #10. Simply look at the net profit in the first and last column for both scenarios. So, clearly, again, the 10% stake is not enough.

Pushing for full capital utilization as was presented in chart #4 for ABT, the following chart (#11) shows the 100% of equity bets, starting with a $10k bet:

#11 FDX - Trailing Stop with $10k Bets & $10k Reserves

Chart | Performance | Trades | Profit | MAE/MFE | Editor | Description | Analysis | Optimization | Results Explorer

Result Set
- Save to File ...
- Load from File ...

Filter and Grouping
- ○ Show all Symbols   ○ Average
- ● Show only Symbol: FDX

Change #OptVar Value
- #OptVar: 1
- Value: 10

Graph Options
- Value: Profit   First: 1

S...	#OptVar1	Profit	APR	Trades	Win/Loss	Profit Fac...	Payoff Ratio	Recovery Factor	Drawdown %	Avg Profit %	WL Score	Sharpe Ratio	WL Error Term	WL Reward Ra...	Equity Drop ...	Exposure	Ulcer Index
FDX	1	5 741,54	2,18	504,00	36,51	1,08	1,95	0,66	-46,18	0,14	3,52	0,21	16,28	0,13	2,68	33,34	22,80
FDX	2	4 376,17	1,74	320,00	34,38	1,09	2,15	0,72	-46,24	0,20	2,35	0,19	12,68	0,14	2,84	39,74	20,61
FDX	3	14 098,13	4,27	199,00	38,19	1,25	2,19	1,50	-41,81	0,58	6,34	0,34	12,39	0,34	1,31	39,23	19,48
FDX	4	1 182,87	0,53	147,00	36,73	1,03	1,90	0,12	-49,51	0,22	0,67	0,11	13,43	0,04	10,95	40,09	27,69
FDX	5	52,42	0,02	122,00	44,26	1,00	1,37	0,01	-47,53	0,22	0,03	0,09	14,18	0,00	207,59	44,52	25,00
FDX	6	3 836,55	1,56	89,00	38,20	1,13	2,04	0,55	-42,65	0,73	1,97	0,17	11,60	0,13	3,53	45,38	21,56
FDX	7	-3 691,29	-2,17	87,00	33,33	0,84	1,97	0,35	-74,20	-0,06	-7,95	0,00	17,54	-0,12	-2,74	47,50	52,86
FDX	8	10 870,73	3,56	66,00	37,88	1,46	2,49	1,52	-54,28	1,82	3,01	0,28	15,53	0,23	1,54	54,15	23,04
FDX	9	17 319,18	4,89	56,00	44,64	1,60	2,11	2,26	-45,75	2,81	5,17	0,33	15,18	0,32	1,46	51,32	21,26
FDX	10	15 140,26	4,48	43,00	46,51	1,57	2,09	1,45	-48,80	3,35	4,26	0,32	17,16	0,26	1,48	53,89	21,58
FDX	11	14 586,25	4,37	38,00	44,74	1,77	2,22	1,87	-52,19	3,78	3,52	0,31	18,79	0,23	1,45	59,36	27,02
FDX	12	19 803,78	5,33	29,00	51,72	2,49	2,00	2,46	-51,73	5,41	4,31	0,37	17,85	0,30	1,02	59,74	21,24
FDX	13	8 900,38	3,07	26,00	46,15	1,64	2,00	1,27	-55,75	4,29	2,47	0,26	19,44	0,16	1,87	54,96	26,43
FDX	14	2 174,98	0,94	22,00	45,45	1,18	1,64	0,38	-57,62	2,48	0,74	0,15	21,38	0,04	5,13	53,72	25,76
FDX	15	71,62	0,03	17,00	41,18	1,01	1,75	0,01	-57,58	1,67	0,03	0,09	20,05	0,00	196,59	43,50	33,60
FDX	16	8 697,88	3,02	14,00	42,86	1,80	2,81	0,99	-55,56	9,14	2,45	0,27	22,28	0,14	1,58	54,84	25,51
FDX	17	2 197,11	0,95	11,00	45,45	1,21	1,88	0,19	-57,39	4,41	1,07	0,15	15,99	0,06	6,17	37,89	30,53
FDX	18	10 054,41	3,36	13,00	46,15	1,73	2,68	0,69	-52,86	8,26	3,35	0,28	14,74	0,23	1,71	47,32	25,42
FDX	19	8 840,23	3,06	7,00	42,86	2,17	4,60	0,72	-39,78	12,74	5,79	0,29	17,82	0,17	1,86	31,81	27,41
FDX	20	7 448,02	2,68	9,00	44,44	2,09	3,27	1,17	-38,32	10,84	3,69	0,25	14,85	0,18	1,83	44,81	19,32
FDX	21	2 769,88	1,17	10,00	40,00	1,33	2,66	0,40	-47,47	6,51	1,32	0,16	13,91	0,08	5,00	46,57	21,37
FDX	22	15 401,68	4,53	10,00	40,00	2,85	4,91	1,85	-47,82	15,06	3,34	0,34	17,08	0,27	1,21	70,91	18,26
FDX	23	4 211,18	1,69	8,00	37,50	1,52	3,63	0,33	-62,30	9,17	1,07	0,19	22,18	0,08	3,87	59,40	29,07
FDX	24	6 263,52	2,34	7,00	42,86	1,66	3,38	0,41	-62,77	13,62	1,38	0,23	21,43	0,11	2,71	63,08	28,96
FDX	25	14 081,19	4,27	8,00	50,00	1,98	3,29	0,57	-64,53	17,95	2,22	0,32	26,03	0,16	1,35	68,33	31,58
FDX	26	7 952,84	2,82	8,00	50,00	2,05	2,43	0,82	-59,56	12,99	2,67	0,25	13,38	0,21	2,22	42,81	23,69
FDX	27	25 502,94	6,21	8,00	62,50	4,57	2,84	1,79	-47,68	22,48	4,08	0,39	13,43	0,46	0,78	79,54	18,25
FDX	28	20 697,48	5,48	8,00	62,50	3,56	2,35	1,59	-50,70	21,00	3,44	0,36	14,01	0,39	0,93	78,48	18,54
FDX	29	18 698,15	5,14	8,00	62,50	3,35	2,23	1,42	-52,06	19,79	3,15	0,34	14,30	0,36	0,98	78,23	19,07
FDX	30	20 124,00	5,38	7,00	57,14	4,02	2,86	1,41	-55,27	25,55	2,99	0,35	22,24	0,24	0,95	80,41	25,47
FDX	31	-167,63	-0,08	5,00	40,00	0,97	2,14	0,02	-56,78	5,49	-0,52	0,08	23,04	0,00	-77,55	24,08	39,73
FDX	32	9 675,92	3,27	5,00	60,00	3,03	2,61	0,83	-55,96	19,30	2,82	0,27	21,26	0,15	1,64	51,16	38,07
FDX	33	27 547,10	6,49	6,00	66,67	6,41	3,39	1,35	-61,95	31,89	2,91	0,39	16,82	0,39	0,78	85,05	25,18
FDX	34	14 332,48	4,32	2,00	50,00	5,60	8,25	1,54	-34,96	113,16	5,34	0,34	31,96	0,14	1,14	52,57	21,81
FDX	35	40 084,23	7,96	3,00	66,67	9,49	6,22	2,09	-53,68	106,51	4,29	0,46	15,69	0,51	0,60	85,99	13,96
FDX	36	55 839,36	9,38	2,00	100,00	INF	INF	2,21	-39,18	172,25	6,53	0,53	15,16	0,62	0,48	87,38	12,52
FDX	37	52 973,79	9,14	2,00	100,00	INF	INF	2,19	-41,01	167,75	6,21	0,52	15,34	0,60	0,50	86,87	12,82
FDX	38	47 410,60	8,67	2,00	100,00	INF	INF	2,15	-40,41	156,71	6,01	0,50	15,56	0,56	0,53	85,89	12,93
FDX	39	45 958,50	8,53	2,00	100,00	INF	INF	2,14	-41,92	154,55	5,78	0,50	15,62	0,55	0,54	85,76	13,17
FDX	40	45 609,99	8,50	2,00	100,00	INF	INF	2,14	-42,34	153,94	5,66	0,49	15,49	0,55	0,56	86,61	12,97

Here too, as in chart #4, we see a reduction in trading activity due to more restricted reserves, much higher drawdowns across the board accompanied with higher market exposure.

More Capital at Play

The next scenario was to put all the capital at play. Meaning putting on 100% equity bets on the original $100k reserves. If you have just $100k, this scenario would be the equivalent to an all-in play in a single stock which is not that great an idea. One building a portfolio should diversify, not just for the fun of it, but simply to spread out the risk. In whatever trading scenario there is always risk. That is why some people make money at this game, it is by taking the financial risks other people are not or no longer willing to take.

At the 10% trailing stop level using 100% equity bets, ABT and FDX produced the following charts:

#12 ABT – Summary Performance Report (10% trailing stop, 100% equity)

| Symbol | FDX | ▼ | Go | ⌃ |

| Chart | Performance | Trades | Profit | MAE/MFE | Editor | Description | Analysis | Optimization | Results Explor |

☐ Use a PerfScript: [   ] ▼ ☐ AutoRun PerfScript

All Data ···

$100K Pct of Equity 100,00% ···

☐ Include Trendline Alerts

- 📁 10NewTest20y
  - ✳ ^DJI
  - ✳ ^IXIC
  - ✳ ABT
  - ✳ ALL
  - ✳ BIIB
  - ✳ CVS
  - ✳ DIA
  - ✳ FDX
  - ✳ GD
  - ✳ GILD
  - ✳ HD
  - ✳ LMT
  - ✳ LOW
  - 📁 Dow 30
  - 📁 Port_1

	Long + Short	Long Only	Short Only	Buy & Hold
Starting Capital	100 000,00 $	100 000,00 $	100 000,00 $	100 000,00 $
Ending Capital	217 540,19 $	217 540,19 $	100 000,00 $	1 158 589,50 $
Net Profit	117 540,19 $	117 540,19 $	0,00 $	1 058 589,50 $
Net Profit %	117,54%	117,54%	0,00%	1 058,59%
Annualized Gain %	3,76%	3,76%	0,00%	12,35%
Exposure	43,47%	43,47%	0,00%	100,00%
Number of Trades	37	37	0	1
Avg Profit/Loss	3 176,76 $	3 176,76 $	0,00 $	1 058 589,50 $
Avg Profit/Loss %	3,37%	3,37%	0,00%	1 056,48%
Avg Bars Held	58,65	58,65	0,00	5 286,00
Winning Trades	17	17	0	1
Winning %	45,95%	45,95%	N/A	100,00%
Gross Profit	327 934,65 $	327 934,65 $	0,00 $	1 058 589,50 $
Avg Profit	19 290,27 $	19 290,27 $	0,00 $	1 058 589,50 $
Avg Profit %	16,39%	16,39%	0,00%	1 056,48%
Avg Bars Held	97,47	97,47	0,00	5 286,00
Max Consecutive	4	4	0	N/A
Losing Trades	20	20	0	0
Losing %	54,05%	54,05%	N/A	0,00%
Gross Loss	-210 394,46 $	-210 394,46 $	0,00 $	0,00 $
Avg Loss	-10 519,72 $	-10 519,72 $	0,00 $	0,00 $
Avg Loss %	-7,71%	-7,71%	0,00%	0,00%
Avg Bars Held	25,65	25,65	0,00	0,00
Max Consecutive	5	5	0	N/A
Max Drawdown	-92 092,70 $	-92 092,70 $	0,00 $	-588 155,50 $
Max Drawdown %	-49,45%	-49,45%	0,00%	-71,33%
Max Drawdown Date	08/07/09	08/07/09	N/A	18/09/13
Wealth-Lab Score	4,38	4,38	0,00	3,54
Profit Factor	1,56	1,56	0,00	INF
Recovery Factor	1,28	1,28	N/A	1,80
Payoff Ratio	2,13	2,13	0,00	INF
Sharpe Ratio	0,29	0,29	0,00	0,55
Ulcer Index	23,17	23,17	0,00	22,53
Wealth-Lab Error Term	13,83	13,83	0,00	16,28
Wealth-Lab Reward Ratio	0,27	0,27	N/A	0,76
Luck Coefficient	3,77	3,77	0,00	1,00
Pessimistic Rate of Return	1,12	1,12	0,00	0,00
Equity Drop Ratio	1,75	1,75	0,00	0,43

#13 **FDX – Summary Performance Report** (10% trailing stop, 100% equity)

Symbol FDX ▼ Go ⟨				
Chart	Performance	Trades	Profit	MAE/MFE	Editor	Description	Analysis	Optimization	Results Explore

□ Use a PerfScript: [_____ ▼] □ AutoRun PerfScript

	Long + Short	Long Only	Short Only	Buy & Hold
Starting Capital	100 000,00 $	100 000,00 $	100 000,00 $	100 000,00 $
Ending Capital	217 540,19 $	217 540,19 $	100 000,00 $	1 158 589,50 $
Net Profit	117 540,19 $	117 540,19 $	0,00 $	1 058 589,50 $
Net Profit %	117,54%	117,54%	0,00%	1 058,59%
Annualized Gain %	3,76%	3,76%	0,00%	12,35%
Exposure	43,47%	43,47%	0,00%	100,00%
Number of Trades	37	37	0	1
Avg Profit/Loss	3 176,76 $	3 176,76 $	0,00 $	1 058 589,50 $
Avg Profit/Loss %	3,37%	3,37%	0,00%	1 056,48%
Avg Bars Held	58,65	58,65	0,00	5 286,00
Winning Trades	17	17	0	1
Winning %	45,95%	45,95%	N/A	100,00%
Gross Profit	327 934,65 $	327 934,65 $	0,00 $	1 058 589,50 $
Avg Profit	19 290,27 $	19 290,27 $	0,00 $	1 058 589,50 $
Avg Profit %	16,39%	16,39%	0,00%	1 056,48%
Avg Bars Held	97,47	97,47	0,00	5 286,00
Max Consecutive	4	4	0	N/A
Losing Trades	20	20	0	0
Losing %	54,05%	54,05%	N/A	0,00%
Gross Loss	-210 394,46 $	-210 394,46 $	0,00 $	0,00 $
Avg Loss	-10 519,72 $	-10 519,72 $	0,00 $	0,00 $
Avg Loss %	-7,71%	-7,71%	0,00%	0,00%
Avg Bars Held	25,65	25,65	0,00	0,00
Max Consecutive	5	5	0	N/A
Max Drawdown	-92 092,70 $	-92 092,70 $	0,00 $	-588 155,50 $
Max Drawdown %	-49,45%	-49,45%	0,00%	-71,33%
Max Drawdown Date	08/07/09	08/07/09	N/A	18/09/13
Wealth-Lab Score	4,38	4,38	0,00	3,54
Profit Factor	1,56	1,56	0,00	INF
Recovery Factor	1,28	1,28	N/A	1,80
Payoff Ratio	2,13	2,13	0,00	INF
Sharpe Ratio	0,29	0,29	0,00	0,55
Ulcer Index	23,17	23,17	0,00	22,53
Wealth-Lab Error Term	13,83	13,83	0,00	16,28
Wealth-Lab Reward Ratio	0,27	0,27	N/A	0,76
Luck Coefficient	3,77	3,77	0,00	1,00
Pessimistic Rate of Return	1,12	1,12	0,00	0,00
Equity Drop Ratio	1,75	1,75	0,00	0,43

Side panel tree:
- All Data
- $100K Pct of Equity 100,00%
- □ Include Trendline Alerts
- 10NewTest20y
  - ^DJI
  - ^IXIC
  - ABT
  - ALL
  - BIIB
  - CVS
  - DIA
  - FDX
  - GD
  - GILD
  - HD
  - LMT
  - LOW
- Dow 30
- Port_1

Both stocks failing to generate impressive results showing that at the 10% trailing stop levels this trading strategy is not worth trading at all.

Their respective simulation reports (ABT and FDX) came out with the following numbers:

#14 ABT – Trailing Stop (1% to 40%, 100% equity)

S...	#OptVar1	Profit	APR	Trades	Win/Loss	Profit Fac...	Payoff Ratio	Recovery Factor	Drawdown %	Avg Profit %	WL Score	Sharpe Ratio	WL Error Term	WL Reward Ra...	Equity Drop ...	Exposure
ABT	1	-9 062,69	-0,45	359,00	39,28	0,97	1,56	0,21	-41,69	0,02	-2,62	0,02	10,26	-0,04	-19,70	24,34
ABT	2	17 739,86	0,78	208,00	39,90	1,06	1,67	0,33	-41,57	0,14	1,52	0,14	6,89	0,11	7,35	29,87
ABT	3	54 899,40	2,10	121,00	41,32	1,26	1,88	0,87	-40,41	0,45	3,98	0,25	5,42	0,39	1,73	31,46
ABT	4	19 051,88	0,83	93,00	36,56	1,09	2,03	0,32	-41,04	0,36	1,40	0,13	7,99	0,10	6,84	35,06
ABT	5	-3 483,63	-0,47	68,00	42,65	0,93	1,34	0,18	-45,38	-0,01	-2,00	0,01	8,68	-0,05	-10,00	34,35
ABT	6	-12 439,10	-0,63	51,00	43,14	0,91	1,35	0,19	-49,23	0,08	-2,66	0,02	12,43	-0,05	-7,44	35,35
ABT	7	-18 524,80	-0,97	38,00	47,37	0,83	1,07	0,31	-50,96	-0,13	-5,16	-0,03	12,82	-0,08	-5,98	28,34
ABT	8	-14 158,89	-0,72	31,00	51,61	0,85	0,88	0,29	-41,47	-0,19	-3,06	0,00	6,41	-0,11	-8,13	33,44
ABT	9	91 370,53	3,13	26,00	61,54	1,93	1,29	1,69	-36,92	3,22	4,78	0,32	8,64	0,36	1,68	41,31
ABT	10	-8 776,81	-0,44	19,00	31,58	0,88	2,24	0,15	-48,41	0,15	-1,98	0,01	10,20	-0,04	-10,76	32,60
ABT	11	54 272,33	2,08	17,00	35,29	1,65	3,41	0,66	-48,87	3,55	2,54	0,24	11,88	0,18	2,11	41,95
ABT	12	-9 858,89	-0,49	14,00	35,71	0,88	1,83	0,15	-47,03	0,08	-1,97	0,02	9,64	-0,05	-12,85	36,68
ABT	13	-1 951,78	-0,09	10,00	40,00	0,96	1,66	0,03	-48,36	0,55	-0,45	0,05	7,46	-0,01	-44,80	30,57
ABT	14	-682,74	-0,03	6,00	66,67	0,98	0,55	0,02	-30,81	0,49	-0,22	0,04	5,46	-0,01	-118,83	19,04
ABT	15	17 759,46	0,78	8,00	25,00	1,28	5,95	0,26	-37,25	6,11	1,15	0,13	10,75	0,07	8,65	42,51
ABT	16	50 623,86	1,97	8,00	37,50	1,84	4,47	0,77	-36,12	9,42	2,24	0,22	12,26	0,16	2,38	56,01
ABT	17	-13 664,21	-0,70	6,00	33,33	0,62	1,43	0,36	-32,08	-1,78	-2,82	0,02	6,04	-0,12	-7,56	32,59
ABT	18	16 802,52	0,74	6,00	50,00	1,56	1,82	0,27	-39,05	3,32	1,18	0,14	6,19	0,12	7,10	38,42
ABT	19	59 142,38	2,23	3,00	100,00	INF	INF	1,27	-28,44	16,85	4,76	0,25	7,15	0,31	1,83	33,59
ABT	20	189 097,70	5,17	5,00	80,00	15,18	3,50	2,55	-36,29	28,49	4,63	0,41	9,84	0,53	0,81	71,26
ABT	21	878,30	0,04	4,00	50,00	1,03	1,21	0,01	-37,53	1,41	0,10	0,08	5,32	0,01	139,52	26,48
ABT	22	84 406,88	2,95	3,00	66,67	4,51	4,18	1,06	-31,84	30,24	5,99	0,32	9,35	0,32	1,16	33,59
ABT	23	43 473,98	1,73	3,00	66,67	1,82	1,73	0,39	-44,43	22,69	2,62	0,21	10,87	0,16	2,63	36,71
ABT	24	89 008,91	3,07	3,00	66,67	2,71	2,31	0,71	-50,42	33,39	3,12	0,29	11,32	0,27	1,54	48,79
ABT	25	170 238,56	4,84	3,00	100,00	INF	INF	1,53	-41,12	42,93	5,09	0,38	12,53	0,39	1,00	55,96
ABT	26	352 041,59	7,43	4,00	100,00	INF	INF	1,98	-41,12	49,14	4,85	0,48	11,57	0,64	0,63	90,28
ABT	27	349 413,63	7,40	4,00	100,00	INF	INF	1,97	-41,12	48,81	4,83	0,48	11,50	0,64	0,64	90,29
ABT	28	198 359,69	5,33	3,00	100,00	INF	INF	1,68	-40,07	47,96	5,21	0,42	14,44	0,37	0,84	61,36
ABT	29	72 698,59	2,63	2,00	100,00	INF	INF	0,86	-33,46	35,46	6,47	0,28	8,84	0,30	1,36	27,07
ABT	30	2 988,04	0,14	1,00	100,00	INF	INF	0,06	-32,89	3,05	0,75	0,06	3,55	0,04	23,71	12,46
ABT	31	212 203,23	5,56	2,00	100,00	INF	INF	1,71	-43,36	103,50	3,67	0,42	10,97	0,51	0,94	85,88
ABT	32	390 291,38	7,85	3,00	100,00	INF	INF	2,01	-43,36	88,12	4,62	0,51	11,30	0,69	0,61	96,23
ABT	33	375 431,44	7,69	3,00	100,00	INF	INF	1,99	-43,36	86,43	4,53	0,50	11,32	0,68	0,63	96,08
ABT	34	193 033,61	5,24	2,00	50,00	74,47	76,20	1,66	-45,84	99,73	3,34	0,40	11,77	0,45	1,05	84,93
ABT	35	-4 470,51	-0,22	1,00	0,00	0,00	0,00	0,08	-35,65	-4,48	-2,33	0,02	3,85	-0,06	-16,06	12,65
ABT	36	282 120,47	6,58	3,00	66,67	24,86	14,58	1,88	-51,28	77,89	3,44	0,45	13,12	0,50	0,77	93,28
ABT	37	166 407,41	4,77	2,00	50,00	21,18	23,93	1,59	-47,89	95,11	3,03	0,38	12,61	0,38	1,17	81,96
ABT	38	287 618,56	6,65	2,00	100,00	INF	INF	1,89	-49,56	116,10	3,84	0,48	11,56	0,58	0,68	87,43
ABT	39	276 887,25	6,51	2,00	100,00	INF	INF	1,88	-50,96	114,24	3,65	0,47	12,01	0,54	0,71	87,41
ABT	40	276 887,25	6,51	2,00	100,00	INF	INF	1,88	-50,96	114,24	3,65	0,47	12,01	0,54	0,71	87,41

#15 FDX – Trailing Stop (1% to 40%, 100% equity)

S...	#OptVar1	Profit	APR	Trades	Win/Loss	Profit Fac...	Payoff Ratio	Recovery Factor	Drawdown %	Avg Profit %	WL Score	Sharpe Ratio	WL Error Term	WL Reward Ra...	Equity Drop ...	Exposure
FDX	1	6 120,92	0,28	422,00	35,55	1,01	1,91	0,10	-42,84	0,07	0,61	0,09	11,38	0,02	21,13	26,57
FDX	2	40 248,27	1,62	269,00	34,20	1,10	2,18	0,78	-37,23	0,22	2,99	0,19	10,78	0,15	3,17	33,98
FDX	3	126 835,37	3,97	175,00	37,71	1,26	2,26	1,58	-36,50	0,61	7,64	0,33	9,09	0,44	1,39	33,00
FDX	4	-21 717,61	-1,16	128,00	32,81	0,92	2,00	0,31	-47,76	-0,05	-5,36	-0,01	10,76	-0,11	-5,36	31,91
FDX	5	9 919,57	0,45	100,00	43,00	1,04	1,50	0,18	-38,84	0,32	0,82	0,11	10,45	0,04	12,21	33,59
FDX	6	35 040,45	1,44	79,00	39,24	1,14	1,97	0,64	-41,96	0,76	2,36	0,17	8,71	0,17	3,78	35,31
FDX	7	-10 856,69	-0,54	74,00	35,14	0,95	2,03	0,12	-65,69	0,38	-2,13	0,07	13,09	-0,04	-11,21	42,43
FDX	8	23 422,30	1,01	56,00	37,50	1,12	2,11	0,33	-53,47	0,96	1,25	0,15	10,87	0,09	5,33	37,36
FDX	9	155 955,31	4,57	45,00	44,44	1,74	2,27	1,74	-52,77	3,16	5,38	0,32	15,38	0,30	1,46	40,07
FDX	10	117 540,19	3,76	37,00	45,95	1,56	2,13	1,28	-49,45	3,37	4,38	0,29	13,83	0,27	1,75	43,47
FDX	11	203 706,89	5,42	33,00	48,48	2,28	2,21	2,61	-52,24	4,93	4,75	0,37	15,74	0,34	1,15	54,55
FDX	12	255 062,38	6,21	27,00	55,56	3,15	1,94	3,84	-51,81	6,42	5,01	0,42	14,85	0,42	0,83	59,67
FDX	13	70 270,28	2,56	22,00	45,45	1,57	2,05	1,04	-53,43	4,43	2,61	0,23	13,43	0,19	2,20	45,80
FDX	14	-13 362,92	-0,68	18,00	38,89	0,86	1,76	0,21	-63,29	0,93	-2,91	0,05	19,20	-0,04	-7,43	38,17
FDX	15	1 985,60	0,09	17,00	41,18	1,02	1,77	0,03	-57,71	1,74	0,09	0,09	16,04	0,01	71,53	43,82
FDX	16	125 453,91	3,94	13,00	46,15	2,13	2,87	1,20	-55,68	11,17	3,05	0,32	17,40	0,23	1,10	57,22
FDX	17	23 364,09	1,00	11,00	45,45	1,22	1,89	0,20	-57,54	4,52	1,12	0,15	12,86	0,08	5,85	38,09
FDX	18	65 743,22	2,43	12,00	41,67	1,48	2,88	0,45	-52,88	7,17	2,36	0,23	14,19	0,17	2,45	48,54
FDX	19	90 618,75	3,11	7,00	42,86	2,24	4,74	0,74	-39,81	12,90	5,88	0,29	14,44	0,22	1,83	31,89
FDX	20	22 355,34	0,96	7,00	42,86	1,45	2,61	0,26	-41,72	5,22	1,37	0,14	13,49	0,07	5,78	41,04
FDX	21	-3 769,12	-0,18	8,00	37,50	0,95	2,05	0,04	-52,03	1,65	-0,63	0,06	16,37	-0,01	-36,75	43,76
FDX	22	50 100,30	1,95	9,00	33,33	1,69	4,46	0,52	-54,90	8,92	1,42	0,21	16,76	0,12	2,99	61,70
FDX	23	43 617,34	1,74	8,00	37,50	1,55	3,70	0,34	-62,40	9,31	1,10	0,19	17,85	0,10	3,76	59,51
FDX	24	64 029,10	2,38	7,00	42,86	1,68	3,44	0,41	-62,90	13,78	1,40	0,23	17,30	0,14	2,67	63,16
FDX	25	143 529,95	4,32	8,00	50,00	2,02	3,35	0,58	-64,61	18,09	2,23	0,32	21,12	0,20	1,34	68,46
FDX	26	80 985,34	2,86	8,00	50,00	2,09	2,47	0,83	-59,69	13,13	2,69	0,25	10,78	0,27	2,20	42,90
FDX	27	259 444,45	6,27	8,00	62,50	4,85	2,91	1,81	-47,71	22,62	4,11	0,39	10,91	0,57	0,78	79,69
FDX	28	210 332,52	5,53	8,00	62,50	3,72	2,39	1,62	-50,70	21,13	3,47	0,36	11,34	0,49	0,92	78,53
FDX	29	190 510,42	5,20	8,00	62,50	3,49	2,27	1,45	-52,12	19,93	3,18	0,34	11,58	0,45	0,96	78,36
FDX	30	204 756,58	5,44	7,00	57,14	4,23	2,92	1,43	-55,34	25,71	3,02	0,35	17,88	0,30	0,94	80,48
FDX	31	-415,30	-0,02	5,00	40,00	0,99	2,18	0,01	-56,84	5,71	-0,13	0,08	18,40	0,00	-313,66	24,23
FDX	32	99 159,09	3,33	5,00	60,00	3,17	2,70	0,85	-56,01	19,52	2,85	0,27	17,11	0,19	1,61	51,30
FDX	33	280 305,09	6,55	6,00	66,67	7,00	3,51	1,37	-61,97	32,07	2,93	0,39	13,65	0,48	0,77	85,15
FDX	34	146 618,34	4,38	2,00	50,00	5,70	8,38	1,57	-35,01	115,19	5,40	0,34	25,62	0,17	1,12	52,79
FDX	35	407 545,75	8,03	3,00	66,67	9,60	6,29	2,12	-53,75	107,87	4,31	0,46	12,73	0,63	0,59	86,12
FDX	36	567 050,88	9,44	2,00	100,00	INF	INF	2,24	-39,22	174,28	6,56	0,53	12,29	0,77	0,48	87,48
FDX	37	258 587,77	6,26	1,00	100,00	INF	INF	1,90	-33,56	261,60	7,46	0,46	17,50	0,36	0,69	55,74
FDX	38	481 916,75	8,73	2,00	100,00	INF	INF	2,18	-40,44	158,66	6,04	0,50	12,61	0,69	0,53	86,02
FDX	39	467 221,06	8,60	2,00	100,00	INF	INF	2,17	-41,95	156,50	5,81	0,50	12,66	0,68	0,54	85,89
FDX	40	463 003,06	8,56	2,00	100,00	INF	INF	2,17	-42,38	155,89	5,69	0,49	12,55	0,68	0,55	86,69

The profit distribution charts for ABT and FDX produced the following:

#16 ABT – Trailing Stop - 100% Equity Bets - Profit Distribution
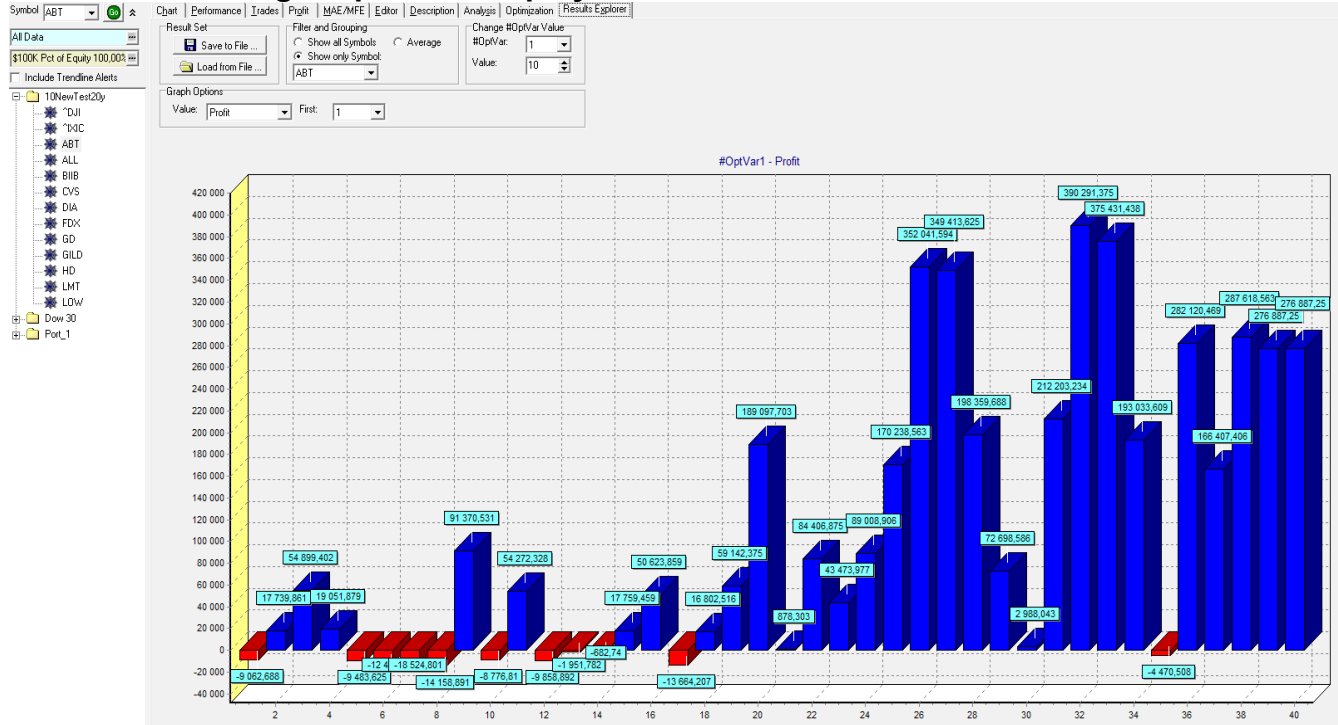
#17 FDX – Trailing Stop - 100% Equity Bets - Profit Distribution
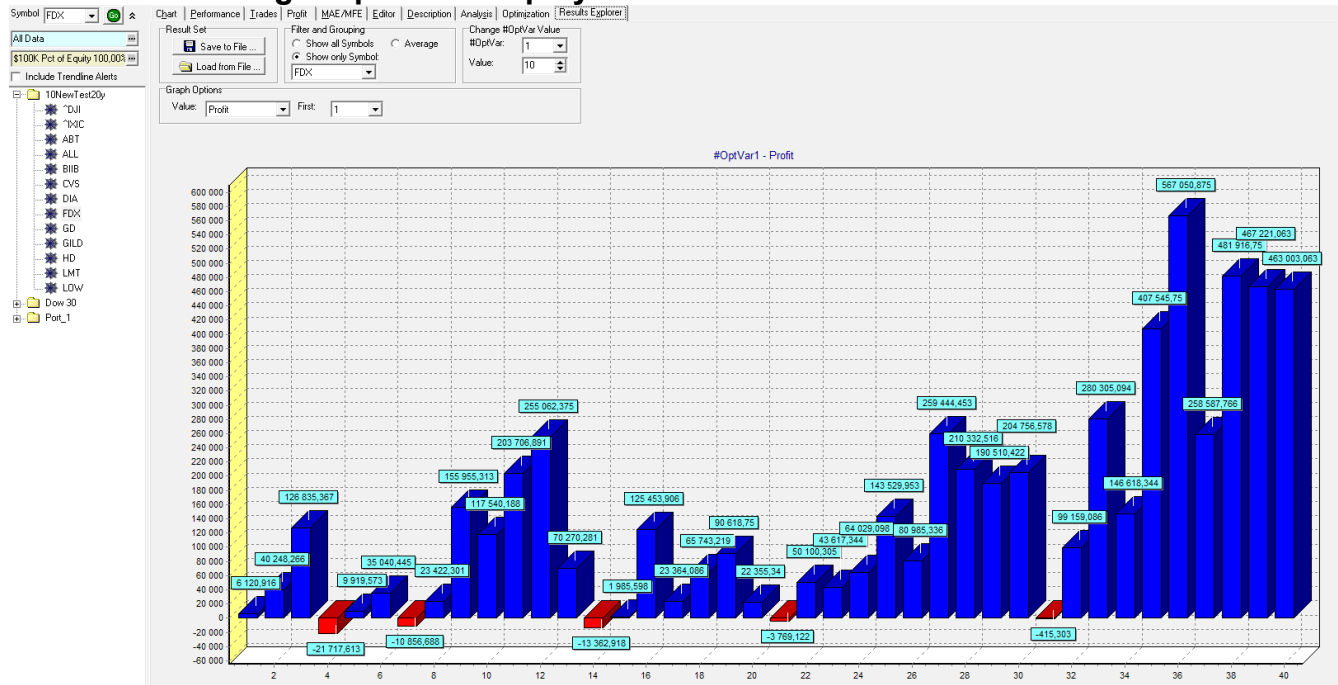
The 100% equity bets with $100k initial capital still underperformed the old standby: the Buy & Hold which required a lot less work than the investigated stop loss trading strategy.

I ran all 10 stocks in the list, the same list as used in **The Stock Trading Strategy Experiment**. They all performed similarly to ABT and FDX. None outperformed the Buy & Hold, even at the 100% of equity bet level. So, adding more charts would be like saying the same thing over and over again.

Conclusion

You often see mentioned in financial literature that one must use stop losses, whereas here it is stated that they might not be worth much. I could run this test on more stocks, but it would not provide more insight, only confirmations of what has already been shown: increasing the stop loss value is certainly no guarantee to outperform the averages. You can win at the game, meaning ending with a profit, but, in all the scenarios presented, the Buy & Hold would have been preferable, and a lot less work.

Naturally, one should still use some forms of stop loss once in a while, but maybe only the kind that gets you out of troubled companies. You are in the business of buying stocks that can prosper over time. Your job is not to hold no matter what, it is however to invest wisely by also putting some common sense on the table.

Why play when you know you will underperform over the long run? Is it for the entertainment or some kind of destructive death wish? A quick look at charts #12 and #13 (the 100% invested with a 10% trailing stop scenario) tends to show how much that kind of entertainment might cost. Take the difference between the net profit Buy & Hold column and the first column.

This type of entertainment can be quite expensive, but if it is what you want to do, all I can say is: it is your ball game, you play it as you wish.

Applying a stop loss scenario as depicted in this article can serve as portfolio protection, but one should also accept that it might be a sure way to underperform market averages. And as such, should be frowned upon.

In the end, you are the one pressing enter, that it be manually or automatically using a trading program.

There are better ways to trade with better trading techniques.

Some worthwhile trading techniques are covered in my ebook where a more elaborate structure is provided. In case you might be interested, here is the Amazon link.

The best thing I think anyone should do is: do your own tests. Prove to yourself that what you want to do can stand the test of time, and at the portfolio level.

If you don't do this kind of test, then on what basis could you ever make any claim, really meaning any claim at all. You want to start with an idea you have which has not been tested but that you think should work, well, no kidding, but an idea is not enough. I need more than ideas or opinions when it is related to short term trading. Show me numbers, and overall, they better show some alpha, otherwise I will lose interest very quickly, if not on your very first unsubstantiated "claim".

Best of luck.

Second Conclusion

This is more an unsolicited piece of advice than anything else. So, here it goes. Whenever you see someone promoting a trading strategy where they say they use protective stops, may I suggest you run away. Based on all that has been presented in this paper, they are assuring you, declaring in your face, that you will underperform the averages over the long term. They will have a trade here and there that did protect some of the capital, but it won't compensate for the damage done over the long term since you will still generate less overall profits than even the index averages.

You would be better off instead buying index funds where you could do it all yourself at your own pace. At least, you would get about the same as the index average, not below it by design. As always, it is all up to you.

The best way to go might be for you to do your homework, and if you do, you might find that a Buffett style portfolio mimicking his methodology might be the way to go. You will find many examples of trading strategies based on such a Buffett methodology on my site, and it is all free. You might even find some of that stuff interesting.

My preferred stock trading strategy in my collection is currently DEVX8 in its latest iteration. It is designed to accumulate shares over the long term and trade over the process. The generated trading profits are reinvested into accumulating more shares producing a positive feedback loop. It is also an automated long term trading strategy designed to be controllable from the outside if so desired. I think anyone could design such a trading strategy based on their own long term views of the market.

All my best.

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