OWN MOUNTAIN TRADING COMPANY PRESENTS

BackTesting Report #1

Baseline the Market
For US Stocks 1994 - 2008

FREE REPORT

Key lessons to learn as you study investing and trading the markets:
1. Not everything you read or hear is useful or even true
2. Even true and useful things don't work 100% of the time
3. Take risks only in proportion to how much you stand to gain

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This document is online at http://www.backtestingreport.com/BackTestingReportBaseline.pdf
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HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING. ALSO, SINCE THE TRADES HAVE NOT BEEN EXECUTED, THE RESULTS MAY HAVE UNDER-OR-OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFIT OR LOSSES SIMILAR TO THOSE SHOWN.
Dear Reader-

BackTestingReport grew out of my own efforts to back test strategies in order to become a better trader. I hope that it helps you as well. Before we dive in to this report, I want to share my story with you.

My passion for computers began in 5th grade and continues to this day. My college degree is in electrical and computer engineering. I professionally wrote software, managed development teams, and produced worldwide technical seminars. In 2005, I set out on my own to trade the US equity markets. I took various courses, read extensively, and did a rather hurried back test of a trading system. With that system, I placed second in Dr. Alexander Elder’s Spike trading competitions.

Not content with second place, I painstakingly set up the computers, tools, and processes for more rigorous and comprehensive back tests. I did a detailed exploration of the market, popular technical indicators, fundamental data, and order types. This took me many months of dedicated effort and thousands of dollars of personal expense. I learned a great many lessons which I want to impart to you in this series of reports.

Frankly, I was shocked to find that some highly-touted indicators and systems had a historical track record that was no better, and sometimes worse, than pure chance! That made identifying the potentially profitable strategies all the more valuable. In some cases, multiple strategies showed equal P&L. With the back test data I could see trade-offs between strategies and more confidently pick the choice I liked best. In short, from the back tests I gained the peace of mind that comes from making an informed decision to select a trading style for me.

As I put the finishing touches on this report, the broad markets are down significantly from last year’s highs. The days of buying and holding for a sure profit are gone. Now more than ever, investors and traders need solid, well-tested strategies to help navigate the ups and downs of the markets. That’s what it takes to protect retirement funds and grow account equity.

My goal with BackTesting Report is to give readers an outstanding value. This baseline report sets the stage. Subsequent publications test out popular trading strategies to sort the winners from the losers. BackTesting Report offers tremendous insight into market strategies for a small fraction of the actual time, effort, and cost of backtesting. It costs far less to evaluate a strategy with a back test than to pay the price in live trading!

Sincerely,
Jackie Ann Patterson
Editor, BackTesting Report
Founder, Own Mountain Trading Company
**Back Test Briefing**

*Back tests* measure the relative performance of a set of *trading strategies* on *historical price data*. They provide insight into past market behavior as well as the trading strategies. Although most traders agree that it’s useful to back test, many traders don’t do it because of the time, expense, and expertise required. This report gives you a leg up on the markets without having to go through all the work yourself.

A back test is a model of trading. Significant differences with live trading exist such as: commissions, *slippage or skid*, after hours trading, *dirty data*, software bugs, and human error. A back test doesn’t guarantee future performance but it can help you sort out whether one strategy did better than another.

Backtesting is a screening tool that is really good at eliminating under-performing trading strategies. If a trading strategy didn’t perform well in the past, it’s unlikely to make money in the future. Knowing that before risking real money trading the strategy is incredibly valuable. Backtesting helps a trader to weed out the likely losers and to understand potentially successful strategies.

One of the toughest challenges in trading is sticking to a good strategy through a *drawdown*, and back testing helps here too. Armed with BackTestingReport, informed traders can take confidence from choosing a strategy with superior relative performance.

**Back Testing Process**

In a back test, a trading strategy is written as an objective set of rules in a computer language. The back test engine applies the strategy to the historical data for each selected stock symbol. It simulates trades whenever entry and exit signals are given by the strategy. The results are recorded for each trade. Ultimately, results are compiled for all trades on all symbols.

For BackTesting Report, this means hundreds of thousands of trades with 7147 stock symbols over a 14 year time period. These results are then statistically analyzed and presented in a user-friendly form.

**How to Use Back Test Results**

To get the most out of backtesting, you need to know what to look at and when to look at it. To get a handle on the problem of designing a trading system, break the problem into pieces such as entry, stops, exits, trade size and tackle things one at a time. First pick an *entry strategy* by backtesting several different candidates, all using the same simple *exit strategy*. Decide on the entry by comparing the *win rate* and opportunity (number of trades).
Establishing a baseline of market behavior helps you tell if a strategy is doing well for good reason or if it’s just plain lucky. For example, it may initially sound great to have an entry strategy that wins 55% of the time. But if our baseline test wins 60% of the time, that entry doesn’t look so good anymore. Likewise, a win rate of 30% might not sound like much, until you learn that the baseline was 25%! The baseline sets the standard for performance. This issue is about entry baselines and it focuses on the win rate more than the other statistics.

After choosing the best entry, you need to pick the exit strategy. Compare the strategies using expectancy, standard deviation, average holding time and pick the one with the best relative performance.

Some strategies will show better than the baseline purely by luck or randomness. Advanced statistical methods which estimate the probabilities of that happening are beyond the scope of this document.

**How to Compare Strategies**

Picking entry strategies with win rates above the baseline is a good start. Also use win rate as a hint on the ease of following a system. For example, consider if you can really stick to a trading plan that only wins 10% of the time. Most importantly, remember that win rate alone doesn’t determine if a strategy is profitable – the size of the wins and losses matters, too.

One measure of excellence in a trading strategy is a large positive expectancy and small standard deviation. The standard deviation tells you how much the trade results vary. Smaller standard deviations indicate smoother equity growth whereas large deviations mean a wild ride.

Expectancy measures a trading strategy’s profit potential. It considers the win rate as well as the amount gained by each win. Expectancy can compare trading strategies that give small gains often versus strategies that rarely win but win big when they do. Over a very large number of trades, the expectancy approximates the expected gain of the trading strategy. Higher expectancy is better, and negative expectancy is the kiss of death for a strategy. Backtesting Report tells you the expectancy of all strategies tested so to help you avoid losing money on negative expectancy strategies.

Trading coach Van Tharp defines expectancy in terms of risk, as the average of the R-multiples returned by trading or backtesting the system. Very briefly, an R-Multiple of a trade is the profit/loss divided by the amount risked.

To calculate the expectancy via R-multiples, it’s necessary to estimate the risk. In this report, the total investment is assumed to be at risk because it doesn’t include a stop loss. See the [Exit Strategies series of BackTesting Report](http://www.backtestingreport.com/termsofsuse.htm) for back tests with stop losses and trailing stops.
Assessing Risk with Maximum Adverse Excursion (MAE)

Equally important to understanding the potential for gain is assessing the risk of loss. Drawdown is frequently quoted in the industry but doesn’t apply here because most of us are not managing a portfolio of the 7147 stocks back tested. Instead we can gain knowledge of the risks by tracking the Maximum Adverse Excursion (MAE). Don’t let that technical term put you off, it really just means knowing how much the position went against you. MAE is not the same as the biggest losing trade because a stock may wander down for a huge open loss and come back before the exit. (See JDSU example in Truth About MACD book).

To stay in the game, the MAE needs to stay under the size of your account. To be successful, the MAE needs to be limited to a fraction of your account.

Average Bars in Trade

Another factor in your overall profitability is how long your money is tied up in each trade. Average bars per trade can give you a hint. Keep in mind that we’re trying to find strategies that fit the maxim “let winners run and cut losses” so the winning trades may go on far longer than the average shown.

The Facts About Trading Strategies

How to Tell Good From Bad

Good:
- High Expectancy
- Decent Win Rate
- Low Standard Deviation
- Low Max Adverse Excursion
- Reasonable # of opportunities

Bad:
- Below Baseline, especially
  - Lower Expectancy
  - Few Opportunities
- MAE larger than account size
- Win Rate too low to abide

Here’s a sample of what you’ll discover inside publications by BackTesting Report:

- A simple step that boosted the win rate of most indicators tested...
- How swing traders gained from non-standard MACD parameter settings...
- The best buy/sell signals from indicators such as MACD, RSI, Stochastics...
- How to set stops that really reduce risk...
- How to lock in profits with trailing stops...
- What happened when ATR-adjusted stops adapted to market volatility...
**Strategy Under Test**

This report establishes the baseline for comparison with all other trading strategies. This is a crucial step because you need a way to tell if a strategy did well when the market just happened to pull it along, or if the strategy really might signal timely entries and exits. A good baseline shows what happens in the absence of a strategy. Rather than exercise judgment on when to enter, the baseline strategy always enters when it doesn’t have a position and likewise, always exits after a pre-defined number of days.

**Backtesting Setup Details**

**Markets:** US Stocks and international stocks represented by ADRs on NYSE, AMEX, NASDAQ including delisted tickers. ([Click here for stock lists.](#))

**Time Periods:** May 1994 - April 2008, divided into three samples to prevent over-optimization.

- May 1994 – April 2004 denoted by darker blue
  - Ten-year period chosen to include major up, down and sideways movements.
- May 2004 – April 2007 denoted by medium blue
  - Out-of-sample data for the original period. At 3 years, it’s 1/3 as long as original.
- May 2007 – April 2008 denoted by light blue
  - Current data. It’s 1/3 of the previous sample and is more out-of-sample data.
([Click here for background on time period selection.](#))

**Direction:** Long Only and Short Only

**Entry Strategy:** Enter all stocks all the time, as long as volume criterion is met (more than 500,000 shares daily). This deliberately simple strategy sets the baseline to compare to supposedly smarter strategies tested in later BackTesting Reports. It enters via Market on Open orders.

**Exit Strategy:** Timed Exits of 2 days, 20 days, 200 days, chosen as the simplest way to make a baseline for popular Trader Types. It exits via Market on Close orders.

**Sizing:** 1000 shares for every trade.

**Backtesting Engine:** TradeStation® version 8.3, Build 1631

**Data Vendor:** CSI Data This data set was specially selected for accuracy after extensive testing. ([Click here for background on data preparation.](#))
Charts of Examples
These charts are screenshots of the TradeStation back test engine running Backtesting Report custom code for the baseline strategies tested in this report.

Figure 1: Hypothetical Example Long Trades, Created with TradeStation. © TradeStation Technologies, Inc. All rights reserved.

The solid aqua lines are profitable trades and the hot pink lines are losses. In Figure 1, if the market goes up during the trade, a profit results. Figure 2 shows the short strategy, which profits when the market goes down (in aqua), but it loses money when the market goes up.

Figure 2: Hypothetical Example Short Selling. Created with TradeStation. © TradeStation Technologies, Inc. All rights reserved.
**Back Test Results**

This report focuses on **Win Rate**, which is the metric to beat for other entry strategies in similar exit conditions. BackTesting Report research reports test popular trading strategies so you can see how they compare. Results are separated by Trader Types for readability.

**Baseline for Active Investors**

An active investor manages his/her positions and holds stocks for about a year. Typically, this investor stays on the long side of the market and puts effort into entry strategies to decide when to buy. Besides knowing the benefits of Long Term Capital Gains tax treatment, not much more effort goes into a formal exit strategy. Few active investors practice selling short. A successful active investor catches a trend, rides it even through rough patches, and exits rather than give all profits back on an opposing trend.

![Figure 3 – Hypothetical Win Rates Long Active Investor](image1)

![Figure 4 – Hypothetical Win Rates Short Active Investor](image2)
Looking at the baseline data in the figures above, the super-simple strategy of ALWAYS buying any stock with decent volume had a win rate well over 50% until 2007. We can see how the market carried the active investor on a rising tide through the first two test periods.

Things aren’t always so easy. Even though the third test period ends in May 2008 (before the intense carnage of the credit crisis), it clearly shows that the tide turned and long-term, long-only trading styles found a difficult environment. The simple baseline shows that always buying and holding only won 24% of the time in 2007-2008.

Keep in mind that there were no stops in this experiment so the price could have dropped dramatically over the longer holding period. The open loss may have exceeded a trader’s ability to stomach it, even on a trade that ultimately ended in profit.

Obviously, you need more robust strategies than just buying and holding on. Ideally, you want entry strategies that start off in the right direction and exit strategies that get out with a profit. Truth About MACD and the Exit Strategies BackTesting Reports build on this document to help you screen candidate strategies looking for the ones with the best relative performance.

To be a real winner, a strategy for active investors will need to beat the baseline in Table 1-Table 2. Potentially profitable strategies have a positive expectancy, shown in green. Losing strategies have their negative expectancies colored red. Smaller standard deviations are better.

### Table 1 – Hypothetical Backtesting Results

<table>
<thead>
<tr>
<th>Trader Type</th>
<th>Name of Strategy Under Test</th>
<th># Trades</th>
<th>Avg Hold</th>
<th>%Wins</th>
<th>Expect</th>
<th>StdDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Investor</td>
<td>Long Baseline 1994-2004 200 day</td>
<td>26049</td>
<td>192</td>
<td>57%</td>
<td>0.15</td>
<td>1.11</td>
</tr>
<tr>
<td>Active Investor</td>
<td>Long Baseline 2004-2007 200 day</td>
<td>5497</td>
<td>196</td>
<td>62%</td>
<td>0.11</td>
<td>1.16</td>
</tr>
<tr>
<td>Active Investor</td>
<td>Long Baseline 2007-2008 200 day</td>
<td>1378</td>
<td>199</td>
<td>24%</td>
<td>-0.16</td>
<td>0.32</td>
</tr>
</tbody>
</table>

### Table 2 – Hypothetical Backtesting Results

<table>
<thead>
<tr>
<th>Trader Type</th>
<th>Name of Strategy Under Test</th>
<th># Trades</th>
<th>Avg Hold</th>
<th>%Wins</th>
<th>Expect</th>
<th>StdDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Investor</td>
<td>Short Baseline 1994-2004 200 day</td>
<td>26049</td>
<td>192</td>
<td>42%</td>
<td>-0.16</td>
<td>1.11</td>
</tr>
<tr>
<td>Active Investor</td>
<td>Short Baseline 2004-2007 200 day</td>
<td>5497</td>
<td>196</td>
<td>38%</td>
<td>-0.12</td>
<td>1.16</td>
</tr>
<tr>
<td>Active Investor</td>
<td>Short Baseline 2007-2008 200 day</td>
<td>1378</td>
<td>199</td>
<td>76%</td>
<td>0.15</td>
<td>0.32</td>
</tr>
</tbody>
</table>

As we can see from Figure 4 and Table 2, short selling had a much higher win rate in the last period. The key is to know when to apply that style of trading because shorting was not generally rewarded in the earlier periods.
Baseline for Position Traders
A position trader seeks intermediate-term opportunities. To be successful, a position trader gets in on a burst of action -- perhaps one leg of a longer-running trend -- and gets out before the action fades.

The results in this report set the baseline: to be considered useful, an entry strategy needs to show fewer trades and higher win rate with a comparable average holding time. Potentially profitable strategies have a positive expectancy, shown in green. Losing strategies have their negative expectancies colored red. Smaller standard deviations are generally better.

The results to beat for position traders are shown below in Table 3 - Table 4.

Table 3 – Hypothetical Backtesting Results

<table>
<thead>
<tr>
<th>Table of Results: Long</th>
<th>Productivity</th>
<th>Reliability</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trader Type</strong></td>
<td><strong>Name of Strategy Under Test</strong></td>
<td># Trades</td>
<td>Avg Hold</td>
</tr>
<tr>
<td>Position Trader</td>
<td>Long Baseline 1994-2004 20 day</td>
<td>140473</td>
<td>20</td>
</tr>
<tr>
<td>Position Trader</td>
<td>Long Baseline 2004-2007 20 day</td>
<td>41980</td>
<td>20</td>
</tr>
<tr>
<td>Position Trader</td>
<td>Long Baseline 2007-2008 20 day</td>
<td>12597</td>
<td>20</td>
</tr>
</tbody>
</table>

Not surprisingly, the standard deviation increases with the holding time. The longer you own a stock the more the price can move around. The other sections show that prices didn’t change much in 2 days but spread out quite a bit over 200 days. Here at 20 days, the variance was moderate for the position trader.

Table 4 – Hypothetical Backtesting Results

<table>
<thead>
<tr>
<th>Table of Results: Short</th>
<th>Productivity</th>
<th>Reliability</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trader Type</strong></td>
<td><strong>Name of Strategy Under Test</strong></td>
<td># Trades</td>
<td>Avg Hold</td>
</tr>
<tr>
<td>Position Trader</td>
<td>Short Baseline 1994-2004 20 day</td>
<td>140473</td>
<td>20</td>
</tr>
<tr>
<td>Position Trader</td>
<td>Short Baseline 2004-2007 20 day</td>
<td>41980</td>
<td>20</td>
</tr>
<tr>
<td>Position Trader</td>
<td>Short Baseline 2007-2008 20 day</td>
<td>12597</td>
<td>20</td>
</tr>
</tbody>
</table>

The effects of the market trend on the position trader are muted compared to the active investor: neither the gains nor losses were as great. However, a directional bias is still clear from the back test data. The simple baseline strategy for position traders still won more often when it went with the major trend of the markets.

Ultimately, you need a strategy that performs well across changing market conditions, not just during a bull or bear market. Note that this may mean that a strategy has rules to avoid trading under certain conditions. That’s okay as long as it works at the right edge of the chart, not just in hindsight. For example, a rule that says stand aside while the price is below the 200 day moving average can be useful. A rule that says “don’t trade long if the year is going to be bearish like 2008” is not useful because we don’t know how the year ahead will look.
Close inspection of the two graphs in Figure 5 and Figure 6 shows that a slight gap opened between the win rates for the long and short trades. Because they share the same entry points and are the same trades in opposite directions one might expect their win rates to add up to 100%. Since they don’t, it means some trades must lose in both directions. How? Commissions are the culprit. A stock must gain enough to cover the cost of commissions or be counted as a loss. In the first period, the long win rate was 54% and the short win rate was 44%, implying that roughly 2% of the trades couldn’t make up for the commission after 20 days. This effect gets worse as the average hold time decreases.
SneakPeek 1 - Example Expectancy Graph. Each vertical gridline denotes one strategy. The strategy is backtested in the three timeframes and resulting expectancy denoted by the triangle, diamond, and square markers. Color-coded zones represent profitable strategies (green), strategies with a very thin edge (yellow), and unprofitable strategies (red). This example is typical of many strategies that produce profits in favorable conditions but lose even more in unfavorable market conditions.

Quiz:
1. Which MACD Histogram gives the earliest buy signal?
2. Which gave the most profitable sell signal?

Psst...If you didn't know of more than one MACD Histogram check out **Truth About MACD**, now available on amazon.com
Baseline for Swing Traders

A Swing Trader capitalizes on short-term price movements. A swing trader will hold overnight, possibly for several days, which distinguishes swing trading from day-trading. However, a swing trader rarely rides the full long-term trend. Instead a swing trader is ready with a quick exit the moment the trade goes the other way. Given the shorter time span, swing traders need entry and exit strategies that pounce on the opportunities to get in, capture profits, and get out all the while minimizing the inevitable losses.

Figure 7– Hypothetical Backtesting Results Long Swing Trader

![Long Baseline for Swing Trader]

Figure 8– Hypothetical Backtesting Results Short Swing Trader

![Short Baseline for Swing Trader]

Swing trades lasting two days were not much affected by the market trend. All the win rates clustered close to 50% for both long and short trades.
Looking closely at the two graphs in Figure 7-Figure 8, the gap widens between the win rates for the long and short trades. Again, because they share the same entry points and are the same trades in opposite directions one might expect their win rates to add up to 100%. Since they don’t, it means some trades must lose in both directions due to commissions. A stock must gain enough to cover the cost of commissions or be counted as a loss. In the first period, the long win rate was 49% and the short win rate was 47%, implying that roughly 4% of the trades couldn’t make up for the commission after 2 days. This is double the rate of the longer position trades, which shows how transaction costs such as commissions take their toll on a short term strategy.

Neither long trades nor short trades had greater than 50% win rate in the first period. This illustrates the need for swing trading strategies to signal when a stock is moving with surgical precision.

The short-term trading styles get far more trade opportunities than the intermediate or longer-term styles, according to the “# Trades” column in Table 5 - Table 6.

In general, potentially profitable strategies have a positive expectancy, shown in green. Losing strategies have their negative expectancies colored red. In this case, all the expectancies for the swing trades were roughly zero (break-even). The values in Table 5 - Table 6 are colored differently because they are not exactly zero. Yellow indicates that the expectancy was slightly positive, but rounded down to zero – indicating caution. Conversely, red indicates rounding up to zero – warning against a slightly unprofitable strategy.

### Table 5 – Hypothetical Backtesting Results

#### Table of Results: Long Trades

<table>
<thead>
<tr>
<th>Trader Type</th>
<th>Name of Strategy Under Test</th>
<th>Productivity</th>
<th>Reliability</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swing Trader</td>
<td>Long Baseline 1994-2004 2 day</td>
<td>514487</td>
<td>2</td>
<td>49%</td>
</tr>
<tr>
<td>Swing Trader</td>
<td>Long Baseline 2004-2007 2 day</td>
<td>177925</td>
<td>2</td>
<td>51%</td>
</tr>
<tr>
<td>Swing Trader</td>
<td>Long Baseline 2007-2008 2 day</td>
<td>58654</td>
<td>2</td>
<td>48%</td>
</tr>
</tbody>
</table>

### Table 6 – Hypothetical Backtesting Results

#### Table of Results: Short Trades

<table>
<thead>
<tr>
<th>Trader Type</th>
<th>Name of Strategy Under Test</th>
<th>Productivity</th>
<th>Reliability</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swing Trader</td>
<td>Short Baseline 1994-2004 2 day</td>
<td>514487</td>
<td>2</td>
<td>47%</td>
</tr>
<tr>
<td>Swing Trader</td>
<td>Short Baseline 2004-2007 2 day</td>
<td>177925</td>
<td>2</td>
<td>47%</td>
</tr>
<tr>
<td>Swing Trader</td>
<td>Short Baseline 2007-2008 2 day</td>
<td>58654</td>
<td>2</td>
<td>52%</td>
</tr>
</tbody>
</table>

This issue of BackTesting Report provides the baseline using a stunningly simple strategy. This is the baseline for comparison for in-depth research which back tests technical entry and exit signals, looking to uncover the means to finesse a swing trade.
Highlights of Results Distributions

(Click here for instructions on how to read a results distribution.)

All the long results distribution graphs in this issue show the effects of not using a stop loss. By setting the risk as the total amount of the investment, it is not possible to lose more than 1R in a trade. Hence all the losing long R-multiples are in the -0.5R bin as shown in Figure 9 below.

Assuming the total cost is risked makes it impossible to lose more than 1R-multiple for long trades in this report. Losing 1R means the stock dropped to zero and the whole investment is lost. The stock price can’t go lower than zero, so 1R is the maximum loss from buying without stops. Of course, a trader may limit risk to less than the total cost, for example by setting stops. In trading strategies that use stop losses, the risk is the difference between entry price and stop price multiplied by the number of shares. In other words, the risk is the amount lost if the stop is hit. With stops, a trade may lose more than 1R if the market gaps past the stop, but their R is smaller due to the stop.

Figure 9– Hypothetical Backtesting Results

Figure 10– Hypothetical Backtesting Results
Zooming in with Figure 10 shows that 41% of the losses were over 15% of the total equity and 7% lost more than half their value. And the period 2004 – 2007 was a strong market for buying stocks! This shows the importance of having a selective entry strategy and a robust exit strategy to limit losses and grow profits.

Another interesting aspect of the long results distribution is the “fat tail” to the right. Notice the few outliers in the range of six to eight R-Multiples (bins marked 6.5 and 7.5). The distribution is lopsided with some trades gaining more than 1R. We could design a trading strategy to go after just those trades, but it would be unlikely that those specific parameters would continue to work since the market is constantly changing. A better approach is to come up with a broad strategy that tends to capture more winners and fewer losses.

It is possible for short trades to lose more than the total investment if the price runs up more than 100%. However, a short trade can never earn more than that total amount invested, and then only if the price falls all the way to zero. The results distributions from the short backtesting runs confirms it. Figure 11 illustrates this fact.
Conclusion
This report establishes a baseline for comparison with real trading strategies. To get insight into the market, hundreds of thousands of trades by a very simple strategy were simulated over 14 years of data for 7147 stocks.

To validate the usefulness of indicators and strategies you need research that tests them over the same time period and stock list. A long strategy that performs worse than this baseline gets a no-confidence vote that says don’t trade it – or if it’s bad enough consider testing it for short selling. A strategy that tests out better than the baseline might help live trading and is worthy of further investigation.

Imagine having the confidence that comes from data on
What worked...and what didn’t work
Here are a few examples:

**WORKED:** Setting stops to reduce risk

**DIDN’T WORK:** Buying when price crosses the 200 day MA (although we find many other good uses for this popular moving average)

Watch the free video at [http://www.truthaboutmacd.com](http://www.truthaboutmacd.com) for more examples.

Next Steps
The next step is to back test strategies over the same time periods with the same stock tickers to compare to the baseline. In this way, we can weed out the weak trading strategies, identify better trading strategies, and help you build confidence in the trading strategies you ultimately choose to use.

Taking positive action is a necessary part of getting better results. While the market may go up or down regardless of what any one of us does, we can each prepare ourselves to make the most of any given situation by honing our tools and skills.

Take the next step by accessing the resources below.
Resources

Publications that Use this Baseline

Truth About MACD: What Worked, What Didn’t Work, and How to Avoid Mistakes Even Experts Make now available on amazon.com  This book gives the low-down on the Moving Average Convergence Divergence (MACD) technical indicator. It covers how to interpret the MACD as well as its hypothetical backtested performance compared to this baseline. In addition, it includes out-of-sample back-tests on MACD up through June 2014.

Exit Strategy BackTesting Reports at http://backtestingblog.com/order/exit-strategies/ is a series of four reports that backtest common strategies for profit-taking and risk management. Covered techniques include Moving Average Crossovers, Average True Range (ATR) stop losses, and Bollinger bands.

Web Sites
BackTestingBlog.com – background information on backtesting, including glossary

Divergence-Alerts.com – daily alerts on MACD Divergences in stocks, ETFs and futures. Also tracks an ETF rotation investment strategy.

Related Reading
The author’s current reading list is posted at http://backtestingblog.com/order/books/

Bibliography


Understanding Technical Indicators Made Easy with BackTesting Report

BTR1: Baseline (Free Bonus Report)

BTR2: Trading Above the Moving Averages: Shows you when it made sense to wait for a market ripe for buying by highlighting which MAs worked and which didn’t.

BTR3: Price Crossing the MA: Learn simple ways to trigger an objective buy signal on a rising trend

BTR4: Moving Average Crossovers
Tests out the buy signals from this classic strategy. Plus a free bonus! Best of Moving Average Buy Signals, comparing the best signals from previous reports plus introducing a new strategy with promising results, especially for swing traders. This bonus is exclusively for BackTesting Report package customers. All four moving average issues are zipped into one download.

Buying New Trends Series

Custom Strategies and Scans

EasyLanguage® for TradeStation enables you to scan the markets for opportunities to use the strategies tested by BackTesting Report. Mark charts with the buy and sell signals taken by the most promising strategies. TradeStation strategies also support RadarScreen to scan a symbol list in real time. For example, you can save hours each day in identifying the elusive and powerful MACD divergences on US stocks.
Automated Scans for MACD Divergences

To save yourself hundreds of hours searching for MACD Divergences, check out the BackTesting Report custom scans for MACD Divergences. Check out BackTesting Report’s package of TradeStation (TS) strategies and functions which highlight MACD Divergences on a chart. The TS strategies generate MACD Divergence buy and sell signals that can be used (at your own risk), with either the TS automated trade execution, the backtesting engine, the scanner, the RadarScreen®, or simply to see the strategy trades highlighted on the chart.

For more information visit: http://backtestingblog.com/code/macd-divergences/

![Figure 12 - The MACD Divergence strategy and RadarScreen. Screenshot Created with TradeStation. © TradeStation Technologies, Inc. All rights reserved.](image-url)
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