

## The TUTORIAL for *The Wall Street Traffic Light*

This Tutorial explains how less experienced investors and novice investors—an important part of the book's target audience—can develop a good working knowledge of the Wall Street Traffic Light (WSTL) by “investing” 6-10 hours in reading the book.

To put this Tutorial in perspective, you need to know two critical facts about the main asset classes in an investment portfolio—stocks, bonds and cash equivalents (a money market fund, CDs or Treasury bills):

1. *After taking into account inflation and taxes, the only asset class that has a positive return over the long term is stocks.*
2. *Bonds and cash equivalents are important for purposes of managing and controlling risk, even though they each have a negative return after-inflation and after-taxes over the long term.*

In other words, don't be too cautious about including stocks in your portfolio. Being unafraid of the stock market is a life skill that many investors have never learned.

### Orientation

The WSTL is a powerful and simple investment strategy for 401(k)s and IRAs. For convenience, the phrase “401(k)s and IRAs” refers to all tax-advantaged accounts: 401(k)s, 403(b)s, 457s and IRAs of all kinds. The WSTL strategy is not recommended for taxable accounts, because of the negative impact that short-term and long-term capital gains taxes have on their performance.

You might skim through the book and say: “This material is way over my head. I don't like numbers.” Well, fear not if you are a less experienced or novice investor: This Tutorial gives only light emphasis to the numbers.

The WSTL is either **green** or **red** at any point in time. When the WSTL is **green**, WSTL investors root for the S&P 500 to rise. When it is **red**, they root for the S&P 500 to fall. The score of this “game” is measured by the movements of the S&P 500. Keep in mind that the WSTL's competitor is buying-and-holding the S&P 500 (buy-and-hold). Throughout the book, it is: WSTL vs. buy-and-hold.

The WSTL model utilizes only two data inputs: (i) the S&P 500's annual returns and (ii) its daily closing prices.

The WSTL model was developed by using 20/20 hindsight in a long-ago period, 1935-1969, the **sample period**. Then that exact same model was applied to 1970-2006, the **test period**. After the book was written, the model also has been applied to 2007-2009, a “live-test” period.

Don't be put off by many of the years in the book being a long time ago. Why? Because human nature never changes. The emotions of greed, hope, fear and regret impact the buying and selling stocks now as they did at any time in the past.

### The Performance: Return and Risk

It is essential to know that an investment's performance has two components: **return** and **risk**. These terms are in the Glossary, p. 161. Also, see the definitions of **S&P 500** and **S&P 500 return**. Note: all terms in bold type in the book and in the Tutorial are in the Glossary.

Here's a summary of the returns for 1970-2006 (37 years):

WSTL return = S&P 500 return	$24 \div 37 = 65\%$
WSTL return > S&P 500 return by avg. of 10.5%	$11 \div 37 = 30\%$
WSTL return < S&P 500 return by avg. of 11.1%	$2 \div 37 = 5\%$

To see how this track record translates into wealth accumulation, look at the last row of Exhibit 3-3 (p. 29). The initial investment of \$10,000 grew to \$1,342,527 under the WSTL vs. \$512,177 under buy-and-hold. That's a spectacular wealth-accumulation advantage for the WSTL of 162%. In regard to the table above, the advantage of 162% means that the 11 years when the WSTL return was greater than the S&P 500 return overpowered the 2 years when the WSTL return was less than the S&P 500.

For 2007-2009, the WSTL return also was higher than the S&P 500 return. That higher return caused an initial investment of \$10,000 to have a nearly 10% larger accumulation.

The best measure of an investment's risk is its downside volatility. For 1970-2006, downside volatility was nearly 30% lower for the WSTL vs. buy-and-hold. For 2007-2009, that measure was approximately 3% lower for the WSTL.

For every rolling decade during the 1935-2009 period (1935-1944, 1936-1945... 2000-2009), the WSTL strategy achieved a higher average return and took lower risk than buy-and-hold. That is “sleep well” performance indeed.

## Why Should You Read the Book?

There are strong incentives to read the book:

1. The WSTL strategy offers 401(k) and IRA investors the potential to achieve higher returns and take lower risk compared to buy-and-hold.
2. Using the strategy—with help from the free website [www.thewallstreettrafficlight.com](http://www.thewallstreettrafficlight.com)—requires less than four hours per year.
3. The total investment cost of using this strategy is a mere 0.10% per year.
4. It is easy for less experienced investors and even novice investors to understand and use this strategy.
5. The WSTL trades are infrequent.

Item 1 provides the most incentive. Item 2 is appealing to busy people. Item 3 refers to the use of a low-cost S&P 500 index fund. In contrast, many individual investors face a major problem: They incur high investment costs, which are a big drag on annual returns. Item 4 describes what this Tutorial aims to accomplish. Item 5 refers to there having been, on average, one trade out of and back into the S&P 500 every three years.

## Three Tracks

You need to put yourself on one of these tracks:

1. You limit your involvement to always knowing what color the WSTL is and acting on the sell signals (when the WSTL turns from **green** to **red**) and the buy signals (when the WSTL turns from **red** to **green**). There have been 32 pairs of sell signals and buy signals—that is, 32 years had the **green-red-green** pattern—during 1935-2009 (75 years). For the other 43 years, the WSTL was **green** throughout the year.
2. You want to develop a good working knowledge of the WSTL strategy, including an understanding of the two propositions that underlie the strategy (set forth in Chapter 1 below) as well as the rules that generate sell signals and buy signals.
3. You want to learn as much as you can about the WSTL strategy.

Investors choosing track 1 only need to monitor the “In a Nutshell” section of book’s website. If you put yourself on track 1 now, you can decide to move to track 2 later.

Track 2 is suitable for three types of individual investors—experienced, less experienced and novice—and financial journalists. This track requires that you “invest” 6-10 hours to read Chapters 1-7 and Chapter 11, a total of 66 pages. This material will liberate you from a feeling of not having enough knowledge to invest in the stock market with confidence. If you put yourself on track 2 now, you can decide to move to track 3 later.

Track 3 is for academics, market technicians, professional money managers, financial advisers and experienced individual investors who want to understand how I developed the WSTL model using the S&P 500’s annual returns and its closing prices for 1935-1969, and then applied the model to 1970-2006 and 2007-2009. Chapters 8-10 are the additional reading for this track. Some readers will want to verify (audit) the WSTL model. They will find that the model is legitimate.

Have you heard of the Beardstown Ladies? Their *Commonsense Investment Guide* (1994) claimed they had earned an average annual return of 23.4% for 1984-1993, almost 8 percentage points higher than the S&P 500’s average annual return. After selling over 500,000 copies of the book, it was discovered that the Beardstown Ladies had made a calculation error. Their average return was, in fact, 9.1% instead of 23.4%!

As you will see below, I recommend that you read some of the chapters out of order. If this book has a 2<sup>nd</sup> edition in a few years, the chapters will be arranged in that sequence.

The “heavy lifting” part of this Tutorial is what you’ve read so far, plus the material on Chapters 1-4 below. You have already finished almost half of the job!

If you are ready to read the book, then print this 11-page Tutorial (and keep it with your book), get a yellow highlighter and let’s go!

## Chapter 1

Buy-and-hold investors keep a chosen percentage of their portfolios in stocks (for our purposes, the S&P 500) 100% of the time. In contrast, the WSTL was **green** approximately 80% of the time during 1970-2009. Therefore, the 20% of the time when the WSTL was **red** accounted for the difference in the performance of the two strategies. The watchword of the WSTL model is: “Sell and buy lower.”

The WSTL model is based on two logical propositions:

1. Over a period of years, the S&P 500’s annual returns revert to their long-term mean.

2. The S&P 500's December low, which likely would be depressed to some extent by year-end tax selling, is a benchmark against which to measure investor psychology during the first part (or all) of the ensuing January-through-April period. This proposition gauges the S&P 500's momentum during those four months.

It is helpful to think of each day's S&P 500 closing price in this way: The day's news—economic, geopolitical and so on—is poured into the top of an “investor-interpretation funnel” and out the bottom comes the day's closing price. That price reflects investors' sentiment about the day's news. The S&P 500 closing price each day can be thought of as the score of the “U.S. stock-market.”

Pay particular attention to these sections and terms in Chapter 1: (i) “Reversion to the Mean” (proposition 1 above), (ii) “Scientific Test,” (iii) **profitable trade**, (iv) **unprofitable trade**, (v) “Expert Opinions” and (vi) “Alpha.” **Reversion to the mean** not only applies to the S&P 500's annual returns, but also to other phenomena such as annual rainfall. That is, wet years tend to be followed by dry years, and dry years tend to be followed by wet years.

The “Expert Opinions” section consists of quotes from Wall Street legends. The quotes will give you the idea that the book is a David vs. Goliath story, which is the theme of Chapter 11. “David” is the WSTL and “Goliath” is buy-and-hold.

In the context of the book, **alpha** is the difference between the performance of the WSTL and the performance of buying-and holding the S&P 500. Before adjusting for risk, alpha for the three periods is remarkable:

Percentage Points	
1935-1969 sample period	4.01
1970-2006 test period	2.84
2007-2009 live-test period	3.48

When risk is accounted for, all three of these figures would increase!

## Chapter 2

This chapter describes the next level of knowledge about the WSTL: the rules governing each year's “sell signal” or “no sell signal” decision. This decision is made between the last trading day of January and the last trading day of April. The WSTL is always **green** for all the trading days of January. When a sell signal occurs, the WSTL changes to **red**; later in the year when the buy signal occurs, the WSTL changes to **green**. If there is no sell signal, the WSTL stays **green** throughout the year. (Chapter 6 describes the rules governing the “buy signal” decision.)

The WSTL model classifies each year into one of the seven **types of years**:

Tier	Category	Type of Year
1	A	1A
1	B	1B
1	C	1C
2	Not applicable	Tier 2
3	A	3A
3	B	3B
3	C	3C

The specifications for years in Tier 1, Tier 2 and Tier 3 are:

Tier	S&P 500's Two-Year Mean Annual Return Immediately Preceding the Year Being Classified	That Two-Year Mean Annual Return in Relation to the S&P 500's Long-Term Mean of 13.0%
1	Above 13.6%	Above
2	6.2% to 13.6%	Below to slightly above
3	Below 6.2%	Farther below

Carefully read “Specifications for Years in the A, B and C Categories” (pp. 16-19). Study the flowchart.

Here’s a road map for the seven types of years:

Type of Year	Year's Color Pattern
1A, 3A or Tier 2	<b>Green</b> throughout
1B or 3B	<b>Green-Red-Green</b>
1C or 3C	<b>Green-Red-Green</b>

Note: Regardless the type of year, the WSTL is always **green** for January and December.

Exhibit 2-4 presents the 13 trades for 1970-2006. The average profit per trade was 7.1%. As of 03/19/10, the only completed trade since 2006 was in 2009. As a result, the following row can be added to the exhibit:

Year	Type of Year	WSTL Return	S&P 500 Return	Outcome of Trade
2009	3C	41.4%	26.5%	14.9%

Recall that the WSTL was **red** approximately 20% of the time during 1970-2006. To see the exact weeks that account for the 20%, look at p. 23.

### Chapter 3

There are four main points to understand in this chapter. First, 26 of the 40 years during 1970-2009 were 1A, 3A or Tier 2 years. Despite the 37.0% negative return for 2008 (a Tier 2 year), the mean return for these years compares favorably with the S&P 500's mean return of 12.5% for that period.

Type of Year	Number of Years	Mean Return	Three Worst-Return Years
1A and 3A	16	22.0%	1987 5.2%; 1992 7.7%; 1993 10.0%
Tier 2	10	11.4%	2008 -37.0%; 1994 1.3%; 2007 5.5%

Second, for 1970-2006, there were 13 trades and 11 of them were profitable. For 2007-2009, there was one trade, in 2009, and it was profitable. On average, the 12 profitable trades increased those years' returns by 10.5%, and the 2 unprofitable trades decreased those years' returns by 11.1%.

Third, the best measure of an investment strategy's return is the **compound annual growth rate (CAGR)**; see pp. 29-30. Unfortunately, many investors don't know the meaning of this important term.

Fourth, here is an update of Exhibit 3-3, which includes 2007, 2008 and 2009:

	Type of Year	WSTL Return	End-of-Year Accumulation From One-Time Investment of \$10,000 Using the WSTL	S&P 500 Return	End-of-Year Accumulation from One-Time Investment of \$10,000 in the S&P 500
From Exhibit 3-3			\$1,342,527		\$512,177
2007	Tier 2	5.5%	\$1,416,366	5.5%	\$540,347
2008	Tier 2	-37.0%	\$892,311	-37.0%	\$340,418
2009	3C	41.4%	\$1,261,727	26.5%	\$430,629
CAGR		12.86%		9.86%	

Compared to buy-and-hold for 1970-2009, the WSTL's accumulation was greater by 193% and the WSTL's CAGR was greater by 3.00%. Both statistics are improvements over the performance for 1970-2006 in Exhibit 3-3.

## Chapter 4

This chapter discusses eight measures of risk. All of them favor the WSTL over buy-and-hold. Since the WSTL was **red** for only one month during 2007-2009, there is little need to update the eight measures of risk for 1970-2006.

Pay particular attention to the depth and duration of downside volatility (p. 32). This measure of risk—the so-called **ulcer index**—is not widely used, probably because calculating it is very time consuming. However, when the ulcer index is calculated on a daily basis (as is done in “The Research” section of the book’s website), it is a far better way to measure an investment strategy’s risk than the standard deviation.

The ulcer index for the WSTL strategy was 11.6% vs. 16.5% for buy-and-hold. Since the WSTL’s ulcer index was 4.9 percentage points less, that represents 29.7% lower risk:  $-4.9 \div 16.5 = -29.7\%$ .

## Chapter 11

You have done some “heavy lifting” by reading and studying Chapters 1-4. Your reward is to kick back and read the David-and-Goliath story in this chapter. “David” is the WSTL strategy, and “Goliath” is the strategy of buying-and-holding the S&P 500 for the long term. In the confrontation with Goliath, David’s two weapons of choice are the two logical propositions in Chapter 1 above:

1. Over a period of time, the S&P 500 annual returns revert to their long-term mean.
2. The S&P 500 December low is a benchmark against which to measure investor psychology during the first part (or all) of the ensuing January-through-April period.

With your understanding of the WSTL model, you will enjoy reading about the **efficient market theory** and the fact that scholars—including four Nobel Prize-winning economists—have found virtually no evidence that disputes the theory. Glancing at Exhibit 11-1 will help you appreciate the great work performed by the WSTL model.

Enjoy the quotes in “Other Trappings of Goliath’s Apparent Invincibility.” (pp. 95-96). The joke at the bottom of p. 96 puts the book in perspective. Finally, savor the “Significance of David’s Victory” section (pp. 97-98).

## Chapter 6

If you’ve decided to use the WSTL strategy for some (or all) of the stock portion of your 401(k) and IRA portfolio, this chapter guides you through the process.

The first paragraph of the chapter sets the tone. It identifies knowledge, time and inclination as the three factors that determine whether investors do most of the work of investing themselves or whether they hire financial advisers do it for them. You now have sufficient knowledge to do-it-yourself, if you choose to do so. Moreover, you know that—with the help of the book’s website—using the WSTL strategy requires less than four hours per year. So that leaves inclination. The best reason to have the inclination to choose the stock portion of your 401(k) and IRA portfolio yourself is to save the sizable fees that a financial adviser would charge for that service—often 1% of your portfolio’s value each year.

Pages 46-47 are a review of Chapter 2. For the first time in the book, Exhibit 6-2 presents the three limits for buy signals. Remember that in any year a sell signal occurs, a buy signal will occur later in the year.

The book’s website has evolved since its inception in January 2008. At a minimum, keep abreast of the “In a Nutshell” section on the homepage and the “Market Commentaries” section.

The remainder of Chapter 6 is the section, “Basics of Implementing the WSTL Strategy.” Each of its five parts is self explanatory. Additional information on the “Fundamentals of Asset Allocation” is available as a supplementary item in the “About the Book” section of the website. The material in the box at the beginning of this Tutorial was drawn from this item.

Two of the Frequently Asked Questions (FAQs) at the website are relevant to Chapter 6:

**Q5:** Okay, I’ve read *The Wall Street Traffic Light* and have decided to use the WSTL strategy for a portion of my stock portfolio. Should I start now or wait until the next signal occurs?

**A5:** Start now. Just abide by the signal currently in force. For example, if the WSTL is **green**, go ahead and buy a Fidelity or Vanguard S&P 500 index fund (see p. 51). If the WSTL is **red**, put the money you have earmarked for the WSTL strategy into a Fidelity or Vanguard money market fund.

**Q6:** About 40% of my 401(k)/IRA portfolio is invested in U.S. large-cap stocks. I've decided to use the WSTL. What portion of the 40% would you recommend I use the WSTL for?

**A6:** That's strictly a personal decision that each WSTL investor must make. For example, you could earmark half of the 40% for the WSTL. Then, 3-5 years after you begin using the WSTL, calculate which half of the 40% performed better. The result can guide what you decide to do for the next 3-5 years.

Now is a good time to read the other 13 FAQs.

## Chapter 7

Since the WSTL strategy is mechanical in nature, this chapter emphasizes that discipline and patience are needed to use the strategy in a manner such that you don't become a victim of your emotions. In particular, two sections of the chapter are critical: "Taking the Heat" and "Selling the S&P 500 at a Loss." The "Stock Market Entertainment" section at the end of the chapter provides a valuable compass for managing your day-to-day emotions about the stock market.

## Chapter 5

A **market anomaly** is any investment strategy that, over a long period, generated abnormal returns—returns which, after being adjusted for risk, exceeded the market's mean return for that long period. Many leading scholars believe that the abnormal returns of any market anomaly discovered and divulged to the public—for example, by publishing a book or an article describing it—will likely be eliminated as a result of the competition among investors trying to capitalize on the anomaly.

The WSTL model was a market anomaly for 1935-2006 before the book was published. And the anomaly has continued after the book was published. Another long-time market anomaly, the U.S. Presidential Cycle, is described on p. 40.

Some experienced investors will think this chapter is incomplete because the "unfavorable season" (May through October) is not included. It is excluded because my analysis of the unfavorable season, which took into account earning interest on 3-month T-bills, indicated that this season is not a market anomaly after all.

The remainder of the chapter discusses several aspects of the WSTL anomaly. You will enjoy the "An astute observation" section, p. 44.

## Chapters 8 through 10

These chapters are important for those who want to know exactly how the WSTL model was developed for 1935-1969, and then applied to 1970-2006 and to 2007-2009. Chapter 8 demonstrates that the simple line chart is a useful tool in classifying years into the A, B and C categories. To see evidence of an efficient-market-theory advocate's arrogance about the use of charts, see the "Chart Reading" section (p. 98). A line chart for each year during 1935-2010 is in "The Research" section of the website.

Chapter 9 applies steps 2-4 of the four-step process set forth in Chapter 8 to develop the WSTL model for 1935-1969. Appendix C, "Setting the Limits for Buy Signals," is critical in applying step 2. It is highly desirable for you to go through the calculations for the return of a year in which there is a trade (see pp. 115-119).

Chapter 10 uses a three-step process to apply the WSTL model to 1970-2006. Of course, that same process will be used for each year after 2006.

Appendix G is a handy reference. It classifies the annual returns for the WSTL and S&P 500 by tier for 1935-2006 (72 years). There were 38 years in Tier 1, 14 years in Tier 2 and 20 years in Tier 3. For 2007-2010, the first two years were in Tier 2 and the last two were in Tier 3.

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I congratulate you on finishing this Tutorial.

I welcome your feedback via the "Contact Us" section of the website.

May the Wall Street Traffic Light help illuminate your financial path.

John K. Harris  
March 21, 2010