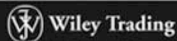

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TRADING PAIRS

MARK WHISTLER

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Trading Pairs

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Trading Pairs

Capturing Profits and Hedging Risk with Statistical Arbitrage Strategies

MARK WHISTLER

John Wiley & Sons, Inc.

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Introduction

This book is intended for the average investor who would like to gain a new perspective on the market. Traditionally, when we invest, we either buy or sell a stock, and then hope that it moves in our chosen direction. However, at times this strategy leaves us with a “naked” position that is simply at the mercy of the market. Thus, pairs trading offers a unique alternative, and allows the individual investor a way to “hedge” positions. Think about it for a moment. If you have a long and a short position, then you are technically market neutral. And if the broader indices fall 200 points—in theory—your position should still be “flat.” The goal is to protect our portfolios from dramatic market swings up or down, while finding stock relationship inequalities, in an effort to make money.

As a result, this book attempts to present the information of pairs in an easy-to-read format that allows the reader a new way of approaching investing. In addition, the book is geared for “at home” investors who do not have expensive trading software. In fact, if you have access to the Internet and Microsoft Excel, you can do everything in this book. A little patience and drive will help you to reshape your current paradigm of the market.

Trading Pairs

CHAPTER 1

The Nuts and Bolts

What Are Pairs?
How Do Pairs Work?
Who Uses Pairs?
Mindset of Reading This Book

WHAT ARE PAIRS?

Where there is a relationship, there is opportunity, and where there is opportunity, there is money. In the ever-elusive world of the stock market, investors often think that the only way to make money is to do it the "old-fashioned" way. By this I mean either investing fundamentally in buy-and-hold companies or seeking more conservative and diversified financial vehicles. However, the computer age has opened a Pandora's Box of trading styles, where many individual investors are now finding new ways to make money previously available only to industry insiders and professionals.

If our cycles of light were tradable, what would you do if you could buy darkness at noon and short the remainder of daylight? In essence, what if you could trade the rotation of daylight, while hedging risk in case of the random eclipse? Amazingly, if we look closely enough, we begin to observe that the stock market is illuminated with the same principles of cyclical relationships. In our markets, there is a rotary motion of money continually occurring in stocks, sectors, indices, options, currencies, and even emotions.

Our job as a pairs trader is to try and understand the fundamental, technical, and emotional cycles of these rotational relationships, while attempting to capitalize on discrepancies when disharmony appears. You may better know this process as *arbitrage*. "Rrrrrrrrr . . . arbitrage." It sounds sexy, doesn't it? Be careful not to fall in love with this savvy beast, for it can cause you to lose your hair with the stress it presents! The actual definition of arbitrage is: "The simultaneous purchase and selling of a security in order to profit from a differential in the price. This usually takes place on different

exchanges or marketplaces." (EN 1.1) For the pairs trader, though, we will utilize another form of arbitrage called "statistical arbitrage," which means: "A profit situation arising from pricing inefficiencies between securities. Investors identify the arbitrage situation through mathematical modeling techniques." (EN 1.2) For the purposes of this book, we will focus mainly on using statistics to (1) identify relationships, (2) assist in determining the direction of the relationship, and (3) ascertain how to execute our trades based on the data presented.

Also, in this text, we will use the term *pairs trading* interchangeably with statistical arbitrage, thus eliminating any possible conflict of semantics. So what exactly is pairs trading and/or statistical arbitrage? Pairs trading is a style of investing/trading that attempts to institute *at least* one long and one short position for every trade, while statistically analyzing the relationship presented. (EN 1.1) What's more, the pairs trader attempts to capitalize on market imbalances between two or more stocks (or other financial instruments) in anticipation of making money when the inequality is corrected. In short, the pairs trader believes two or more stocks have enough of a correlated relationship that statistical analysis will unveil tradable opportunities when the stocks move away from one another. When the two begin to secede from one another, the pairs trader will try to figure out "why" they are separating and then institute a trade in an attempt to capitalize on either additional divergence or possible reconvergence.

To measure these relationships, the pairs trader uses statistics, fundamentals, technical analysis, and even probabilities. One of the main keys to pairs trading is finding strong correlations between financial instruments, thus building a foundation for further analysis. We then hope to dissect the empirical data in an effort to unearth information that allows us an efficient and methodical way of attempting to make money in the stock market. The key word here is *methodical*. I would like to distinguish this word from *system*, as it is important to recognize that we are trying to approach the market with an orderly (backed by statistics in the case of pairs) but not automated trading strategy. What's more, in the first few chapters of this book I hope to relay a few commonsense nuggets of fundamental and technical information that will help assist in making accurate decisions when our math fails. The overall goal of this book is to empower the individual investor with an entirely distinctive paradigm of trading than the typical buy-and-hold strategy. Pairs trading is by no means the "holy grail" of trading and *will* have its ups and downs, like any other trading style. However, with the proper base of applicable knowledge and impeccable money management skills, we may find ourselves with an effective trading strategy with which to work from.

HOW DO PAIRS WORK?

Take a moment and imagine a highway and the service road that parallels it. Generally, the service road will follow the highway very closely, except where terrain or development prevents such. The resulting situation is a divergence of the service road from the highway, while the obstacle is overcome. In the end, the service road will almost always come back together with the highway, as the two have a very highly correlated relationship. Now, imagine the area in between the service road and highway. This area is known as the *spread*. The spread is the measured distance between the two objects traveling together. The pairs trader attempts to measure the spread with statistics in an effort to find a tradable relationship of inequality opportunities, otherwise known as the previously mentioned arbitrage.

The key is the correlation between two (or more) stocks, sectors, indices, or other financial instruments to be studied. Because a highway and service road parallel one another more closely than a highway and Town Boulevard, the highway and service road will likely have a higher correlation than the latter two. I don't want to leave you with the impression that there isn't opportunity to make money between the highway/boulevard relationship. However, one must simply understand the risks presented when using a lower correlation or, in this case, a lesser correlated group of roads.

In fact, think of all the wonderful opportunities with a lower-correlated group of roads. If the highway is the benchmark road that passes a town, it is likely that several roads within the town parallel the interstate. As a trading analogy, this simple observation may allow the trader to buy and sell many smaller streets, avenues, or boulevards using the interstate as a larger guide of general direction. This would be the same as using an index like the Dow Jones Industrial Average as a benchmark for trend, while buying and selling (shorting) many components within that particular index.

Thus, in a nutshell, pairs trading works by betting that two or more securities will diverge or converge in price. You are betting that a $50 stock and a $55 stock will either have a larger or smaller spread ($5 in this case) when the trade is closed. Divergence traders would like to see the spread increase, while convergence traders would prefer to see the spread decrease.

WHO USES PAIRS?

Anyone and everyone! Historically, pairs trading has been more of an "institutional" trading style (coveted by hedge funds) for wealthy investors or those with trading savvy who invest for a living. (As a brief side note, while