

## **Synopsis of the book Discovering Price, by Bo Williams**

Discovering Price is the result of almost a decade of dedicated study and trading by Bo Williams, the creator of the PhiCube trading methodology. In his book, the author cites the current global financial crisis as a catalyst for a broader understanding of modern day price movement. For the general public, he suggests charting as a simple tool for keeping abreast of financial trends. However, he believes that most educational material regarding technical analysis of price is confusing and misleading. He argues that interpretation of price charts is greatly simplified and more robust when viewed through a mathematical model governed by Phi (the Golden Mean), raised to the third exponent. He calls this methodology “PhiCube”, and argues that it effectively quantifies the behavior of price in all markets and timeframes, resulting in clear and simple definitions of trends, consolidations, risk (stops), rewards (targets), position sizing, and high probability trade setups. The author believes that PhiCube will eventually be recognized by financial professionals worldwide as a new paradigm in technical analysis.

The primary audience of the book is the financial community, with a secondary emphasis on the general public. The author’s goal is to publish a book that will pass the technical and practicable scrutiny of academics, analysts, and traders, but that is also written in a style that is easily understood by all. He strives to introduce a new paradigm in technical analysis to the financial community, while simultaneously introducing simple tools that can help the general public become more responsible and better informed in their financial decisions.

The author begins by coaxing everyone to exercise greater care and responsibility in their financial decisions. He emphasizes the psychological nature of financial markets and the affect it has on price gyrations of stocks, bonds, commodities, currencies, etc. He gives a few historical examples of bubbles and crashes. He introduces technical analysis to the general public as a simple and useful tool to remain informed of financial trends.

The average citizen is not suited for trading, but can help create a healthier economic foundation by better understanding financial trends. The author stresses that actual trading success is more a function of psychology than mathematics, but argues that the mathematical side is much, much simpler than popularly documented and taught. He suggests that there is a small, finite set of mathematical relationships that govern the behavior of price. These relationships, which he calls “PhiCube”, define the mathematical rules for analysis and trading. He argues that these relationships do not change, even if everyone on Earth were to use them.

The author recognizes and briefly explains useful fundamentals of classical technical analysis (market expectations, trends, consolidations, fractals, Phi, direction, divergence, risk, return, support/resistance). He then argues against popular theories and methodologies that often confuse or mislead (random walk, Brownian motion, efficient market, buy and hold, complex chart patterns, Elliott Wave counts, Japanese candlestick patterns, incorrect understanding or interpretations of popular technical indicators, overbought/oversold etc).

The author emphasizes that the behavior of price is very simple and consistent regardless of the market or timeframe under observation. Expectations of price and time drive the financial markets. These expectations are different for every individual market participant. However, on a collective scale, similar expectations and behaviors result in trends or reversals while divergent expectations and behaviors result in consolidations. In summary, the behavior of price depends on the “relative behavior” of the market participants.

“Relative behavior” using PhiCube methodology is then defined. When the market is viewed with PhiCube methodology, market expectations are easily quantified as simple rectangular fractals of price and time. The relative direction and position of these rectangles allows the trader/analyst to understand to what degree market participants are “working together” or “working against each other”. This technique clearly shows, without ambiguity, if the market is trending or consolidating and is very accurate in defining high probability, low risk trade setups that result in positive expectancy returns in the long term.

The author argues that only a very limited set of numbers (not necessarily Fibonacci) is necessary to analyze the financial markets. He explains the theoretical derivation of these numbers and suggests that the behavior of price cannot escape them, as they efficiently define both trends and consolidations. He makes an analogy between the financial markets and light. The market, when analyzed with PhiCube methodology, reveals very specific fractals based on price and time. This is analogous to passing white light through a prism, which reveals the individual colors of the rainbow. In a sense, PhiCube fractals allow a trader/analyst to “see the market” just as a prism allows him to see the colors of the rainbow.

Bo’s extensive trading experience and study of technical analysis has resulted in a new set of technical indicators designed to quantify the market’s behavior in a simpler, better way. The most powerful PhiCube indicator is the Mirror Image Moving Average (MIMA). MIMA is capable of showing both direction and divergence in a single line, using the same scale as price. It is smoother and faster than conventional indicators, reducing false trade signals and noise. The author combines MIMA lines in a very specific way to anticipate when tests of important price highs or lows will fail. These failures result in double tops or Wave3 reversal setups, whose risks are very limited relative to their suggested targets.

Another indicator, the PhiCube Santo, is also introduced and explained. It is used in conjunction with the MIMA and is a very effective indicator in suggesting important tops and bottoms as they actually form.

In addition to proprietary PhiCube indicators Santo and MIMA, the author explains how to apply PhiCube methodology using conventional indicators like moving averages, stochastics, RSI, MACD, etc. With this illustration, he shows that the final trading results with these indicators are basically the same independent of which indicator is

applied. He then re-emphasizes that the “relative behavior” of PhiCube fractals is what matters, not the indicator used.

The concept of Wave3 is consequently introduced. This is completely natural technical phenomenon where the market itself reveals that is it attempting to reverse direction. Essentially, when the market fails to make a new top, it begins a potential Wave3 down. When it fails to form a new bottom, it forms a potential Wave3 up. This is the author’s favorite technical setup, as it often provides the best return for the smallest risk.

The author argues that the market is composed of a combination of Waves3, both up and down, on several different timeframes. He shows how to identify the relative direction and force of each Wave3 using PhiCube fractal analysis. When several Waves3 are “working together”, the market is trending or reversing. When several Waves3 are “working against each other”, the market is consolidating. Finally, the author illustrates the process of Waves3 “bleeding” from shorter timeframes to longer ones, explaining quantitatively the processes of bottom and top “basing”.

The advantage of PhiCube methodology is that it can target the Wave3 earlier than conventional indicators. This is a unique characteristic of the MIMA and Santo. Potential Waves3 are identified very early in their development, when stop loss points are very close. This always results in a very low risk relative to the suggested target. In the long run, this provides better trading results.

The author then introduces another completely new concept in technical analysis, called PhiCube “fractal packing”. Essentially, in nature, the Golden Mean has two functions: additive growth and fractal packing. Additive growth has been the focus of conventional technical analysis for decades, but fractal packing has been neglected by chartists. With PhiCube fractal packing, it is possible to define highly probable price targets and reversal times well in advance. Once formed, PhiCube fractal packing shows whether tops and bottoms are “completely packed” or “incompletely packed”, which suggests if trends or consolidations will reverse or continue. Fractal packing is an advanced analytical technique, but it also lends to ambiguous interpretations. For this reason, the author de-emphasizes its practicable use in trading, focusing instead on the simplicity of the Santo and MIMA.

As a trader, Bo attributes 60% of success to psychology and only 40% to mathematics and technical analysis. For this reason, he takes great care to explain how PhiCube concepts are derived and why they work. The emphasis on “why” lends strong credibility to his arguments, fostering a sense of trust and belief in the PhiCube methodology, thus facilitating its actual application in trading. The author warns of the common practicable pitfalls of trading for those who are not prepared mentally. He emphasizes the possibility of PhiCube tools to cause harm to those who are not willing to train and practice extensively. He briefly describes the characteristics and attributes of a healthy trading psychology, but intends to write a more detailed book on trading psychology in the future.

About the author:

James L. (Bo) Williams is a professional trader, financial educator, and author. He is the creator of the financial trading methodology PhiCube and is a co-founder of PhiCube, Inc. Bo has a BS in Mechanical Engineering from the University of Tennessee and an equivalent MS in Nuclear Propulsion through the US Navy/DOE. Bo is a former nuclear submarine officer and executive in the industrial automation industry. He currently resides in São Paulo, Brazil, where he demonstrates his trades live everyday via internet.

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