Modeling Maximum Trading Profits with C++: New Trading and Money Management Concepts (Wiley Trading)

Valerii Salov
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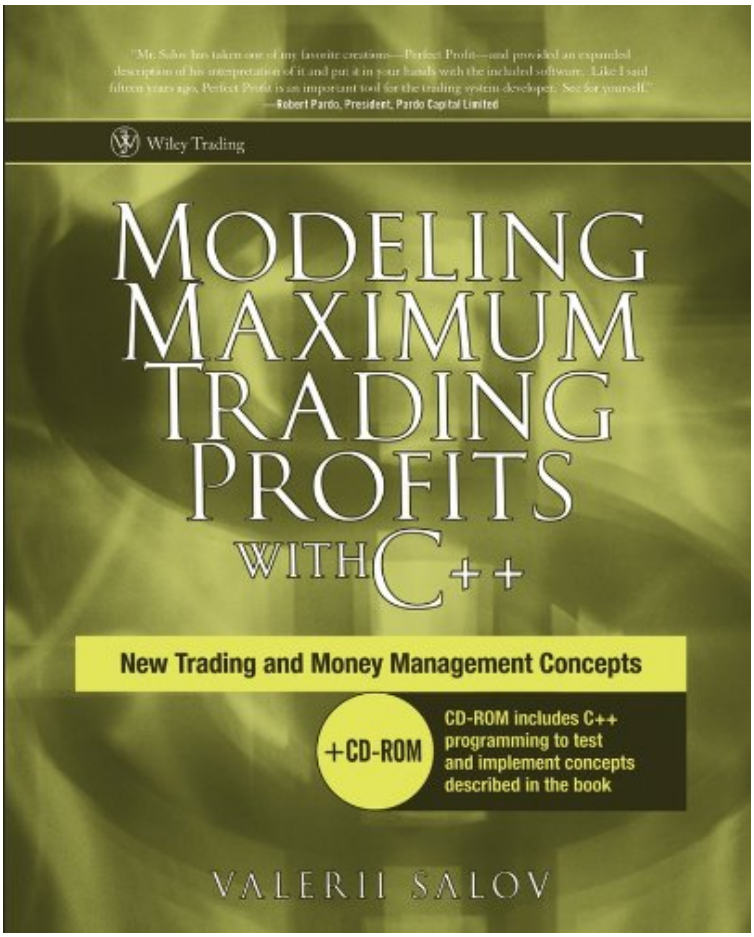

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Valerii Salov : Modeling Maximum Trading Profits with C++: New Trading and Money Management Concepts (Wiley Trading) before purchasing it in order to gage whether or not it would be worth my time, and all praised Modeling Maximum Trading Profits with C++: New Trading and Money Management Concepts (Wiley Trading):

37 of 37 people found the following review helpful. should have been a short journal articleBy Vladimir RoubtsovSUMMARY: A potentially useful concept taken to ridiculous extremes.The main theme is around the concept of *potential profit* offered by a particular market. When building automated trading strategies or evaluating human trader performance, the problem could be decomposed into a product of some intrinsic profit offered by the market and the percentage of that profit that is captured by a particular trader or strategy. This book spends most of its attention on the former factor and various derived performance metrics.*Potential profit* is defined by an idealized strategy that has *perfect foresight about all future prices over a given time interval*. In addition to the original concept apparently suggested by Robert Pardo, the book's definition is made more realistic by constraining such a

strategy with non-zero transaction costs. Although this connection is not made by the author, the concept is related to those used in offline algorithms and competitive analysis (see, for example, Online Computation and Competitive Analysis): in essence, you want to quantify the amount of *regret* you experience comparing your performance to that of a perfect adversary or algorithm that is allowed to solve the offline version of the same problem (with all of the future data available at the outset).Three iterations of potential profit algorithms are introduced:1. "r-/l-algorithms": position size is constrained with a given maximum. The perfect strategy can be proven to be pure reversal -- except for initial and final transactions, the maximum profit is obtained by always switching positions between +max_size and -max_size at certain transaction points. Although the underlying problem could be solved using a generic optimizer, Salov introduces a concept of *s-intervals* that makes it easy to see how the global maximum can be computed with a simple linear algorithm. This algorithm offers conceptual elegance of solving its related problem exactly -- the later two are heuristic improvements for less constrained versions of the problem.2. "first PL reserve algorithm": strategy remains a pure reversal strategy but position size is allowed to vary subject only to self-financing/account margin/buying power constraints. #2 can improve on #1 due to increases in account buying power after the initial entry/exit transactions.3. "second PL reserve algorithm": same as #2 but the strategy is allowed to change existing positions in between the transaction points used by #1 and #2, i.e. the strategy is no longer pure reversal. Again, #3 can improve on #1 due to increases in account buying power during trading.Since both #2 and #3 consider how account equity grows over time subject to self-financing restrictions, connections to Kelly/Shannonmaximum growth rate formulas arise naturally. In later chapters, all algorithms are used to derive performance metrics and to compare potential profits offered by various markets using real-life price data.Unfortunately, in my view the author should have stopped at #1 and not gone on for 180 more pages. Granted, the overall approach of comparing your actual performance to that of some idealized benchmark strategy is extremely sound and useful. As a benchmark, a single simple idealized strategy is sufficient. But the author does not emphasize enough that the single biggest advantage the idealized strategy has is the perfect knowledge of future prices. Algorithm #1 already has this advantage built in and there seems to be little practical value in gleaning further incremental benefits by adding optimal account growth heuristics. (Optimizing position sizes can't be done in real-life without simultaneously controlling risk etc.) In fact, the last chapter has a cocoa contract example making 13000% returns in just 5 days! Similarly, in some examples algorithms #2 and #3 manage to grow exponentially into such large position sizes that they overflow a 32-bit integer -- it is surprising that the author does not see the ridiculousness of that and reluctantly suggests that the algorithms should be applied to "short time intervals" or "with high transaction costs".Other book shortcomings that seemed glaring to me:- only deterministic strategies are considered. Real-life strategies have to incorporate uncertainty modeling in their decisioning. Furthermore, deterministic-only strategies can't reach Nash equilibria for some problems.- only two commission cost models are considered: fixed per transaction and cost as a function of instrument price. Something like cost/share would invalidate much of the discussion.- because they have perfect price foresight all idealized algorithms unavoidably go wild on max'ing out position sizes. In real life, risk management constraints on open positions can kick in sooner than margin constraints, unless you are diversified across many positions (situation not considered in the book).- after observing how much the transaction costs can impact these idealized strategies, the author nonetheless goes on and makes very ballpark guesses about slippage etc -- it seems incongruent after all that energy spent on perfecting those strategies.2 of 3 people found the following review helpful. MPS story has continuationBy mpauthorThe topic of the Maximum Profit Strategy, MPS, has a continuation in Futures Magazine a) "Idealized models for real profits", Vol XXXVII, 5, May 2008, pp. 36-39, b) "Market Profile and distribution of price", Vol XL, 6, June 2011, pp. 34-36, c) "Trading system analysis: Learning from perfection", Vol XL, 11, 2011, pp. 38-43, d) "High-frequency trading in live cattle futures", Vol XLI, 5, May 2012, pp. 26-31 [[...] and e) "Notation for Iteration of Functions, Iteral" [[...]] describing 1) the main law of the speculative market and the MPS as its quantitative measure, 2) the a-b-c-process (do not mix it with a known a-b-c-trading pattern), and 3) the optimal trading element, OTE.14 of 20 people found the following review helpful. 15 years is not enough: a new market propertyBy Vadim ZharnitskyI am a professional mathematician with a personal interest in mathematical finance and I know the author. I did not expect Dr. Salov to be writing a book but eventually I became one of the first readers. The book focuses on modeling and calculation of the potential profit - a new and fascinating market property. It also contains a gentle introduction explaining basic trading, financial and programming terms and helping better to understand the main topic. Therefore, the book should be interesting for all market participants: trading system developer, trader, theoretician working on finance or someone who wishes to learn the field of trading systems and quantitative finance.It is interesting that the potential profit, as introduced by Robert Pardo, corresponds to a classical notion of a total variation of a function, the function being the time sequence of prices of a commodity. Computation of the potential profit in the presence of e.g. transaction costs becomes a sophisticated mathematical problem which Dr. Salov solves using the newly suggested r- and l-algorithms. In a systematic way, the author introduces s-function, s-matrix, polarity, s-intervals and proves their properties, producing an effective r- and l-algorithms.While Robert Pardo introduced potential profit as a new concept, Valerii Salov brings this concept to a substantially higher level. He considers the maximum profit as a market property, which must be combined with a sequence of trading actions -

trading strategy. He systematically comes the way from simple market and trading systems performance measures to a powerful and automatic tool filtering the most critical price events. This becomes possible because he takes into account transaction costs such as commissions, slippage, and others. A motivation for each decision leading to the complete software, new algorithms, or money management is carefully explained.I highly recommend reading this book for anyone interested in development of trading systems and who wants to understand better the work of markets.

"Mr. Salov has taken one of my favorite creations ndash; Perfect Profit ndash; and provided an expanded description of his interpretation of it and put it in your hands with the included software. Like I said fifteen years ago, Perfect Profit is an important tool for the trading system developer. See for yourself."mdash;Robert Pardo, President, Pardo Capital Limited"A very in-depth reference for programmers that should serve well into the future. The code herein lends itself well to other syntactically similar programming languages such as Java, PHP, and C#."mdash;Ralph VinceThe goal of trading is to make money, and for many, profits are the best way to measure that success. Author Valerii Salov knows how to calculate potential profit, and in Modeling Maximum Trading Profits with C , he outlines an original and thought-provoking approach to trading that will help you do the same.This detailed guide will show you how to effectively calculate the potential profit in a market under conditions of variable transaction costs, and provide you with the tools needed to compute those values from real prices. You'll be introduced to new notions of s-function, s-matrix, s-interval, and polarities of s-intervals, and discover how they can be used to build the r- and l-algorithms as well as the first and second profit and loss reserve algorithms. Optimal money management techniques are also illustrated throughout the book, so you can make the most informed trading decisions possible.Filled with in-depth insight and expert advice, Modeling Maximum Trading Profits with C contains a comprehensive overview of trading, money management, and C .

From the Back Cover"A very in-depth reference for programmers that should serve well into the future. The code herein lends itself well to other syntactically similar programming languages such as Java, PHP, and C#."mdash;Ralph Vince The goal of trading is to make money, and for many, profits are the best way to measure that success. Author Valerii Salov knows how to calculate potential profit, and in Modeling Maximum Trading Profits with C++, he outlines an original and thought-provoking approach to trading that will help you do the same. This detailed guide will show you how to effectively calculate the potential profit in a market under conditions of variable transaction costs, and provide you with the tools needed to compute those values from real prices. You'll be introduced to new notions of s-function, s-matrix, s-interval, and polarities of s-intervals, and discover how they can be used to build the r- and l-algorithms as well as the first and second profit and loss reserve algorithms. Optimal money management techniques are also illustrated throughout the book, so you can make the most informed trading decisions possible. Filled with in-depth insight and expert advice, Modeling Maximum Trading Profits with C++ contains a comprehensive overview of trading, money management, and C++. Anbsp;companion website is also included to help you test the concepts described throughout the book before you attempt to use them in real-world situations.About the AuthorVALERII SALOV, PHD, is Vice President and Director of Financial Product Development for Toolkit at NumeriX LLC, a firm that provides software solutions for the pricing and management of derivatives. Previously, Salov worked at Merrill Lynch, where he helped develop automated systems for trading futures, equities, and foreign exchange. He received a PhD in analytical chemistry from the Russian Academy of Sciences.