1 Introduction to the "TG2… Read Me First" book

The primary goal is the management of profit and risk in the real world where forecasting and position keeping are the key ingredients of the trading/investment operation. This book is the "base" Volume in the "Trader's Guide to ... Series" of books. It is intended to provide the foundation and introduction of concepts, definition, and "reality impact" for market professionals/newcomers to trading, for all of the books in the Series.

Think of this book as being "two books": **PART I** and **PART II**.

PART I: this is the Market Basics components of this book (Chapters 2 through 5) reviewing the business, strategies, culture, and other big picture aspects of trading and management of trading. **PART II**: this consists of Chapters 6 through 12 highlighting key components of valuations, risk measurement, and position keeping/risk management and providing the first level of quantitative tools and machinery.

Much of the professional trader's function these days involves dynamic position keeping (especially for portfolios and products with non-linear position values and business involving complex products or modern arbitrage). For this reason, there is, in addition to broad coverage of all methods, special emphasis on trading with dynamic strategies and synthetic replication.

Practical solution of problems requires matching the right tools with your "needs"[4]. For the present, "needs" is the quantification of derivatives/securities valuation and risk assessment, with the primary goal of maximising risk-adjusted returns. The tools are mathematics, finance, and economics, with the single biggest issue being that of tools to assess "humans[5]". This means some reliance on psychology, but much more reliance on experience with the idiosyncrasies of each specific market.

To provide such tools, the technical Sections of this book are only a cursory introduction to important methods. However, the Chapters in this book lead to the later books in this Series, each of which provides much greater detail.

The tools for dealing with "human nature" are bit trickier. There is a strong effort through this book, and the Series, to include details of these idiosyncrasies. Often, the expressions "real world" or "reality impact" are used to refer to such idiosyncrasies.

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[4] This seems obvious and perhaps even pedantic at this stage, but it is a near certainty that you will find yourself attempting to solve trading/risk problems with the wrong tools at some point.

[5] The quantification of human behaviour is often intractable, and so such tools are heuristic at best.

1.1 Feeds, Screens, and Calculators

Throughout this Series the discussions, examples, and calculations aim to present matters as they are "seen" on a trading floor. This includes a large number of instances where data feeds, dealing screens, and "calculators" are required. There are a very large number of feeds, dealing systems, and calculators "out there". As such, this Series presents these items with a balance of three "levels": the simplest/cheapest, intermediate, and full-blow/expensive. In all cases, this may include "tools" that you may build yourself, though generally those tools are spreadsheets that fall into the "simples/cheapest" category.

In terms of data and feeds, the Series uses public domain data via charting packages for simplest category, FutureSource for the intermediate category, and Bloomberg for the full-blown category. We gratefully appreciate the kind contributions from Bloomberg L. P., FutureSource.Com, and we do not own any shares in any of these providers, or benefit materially by making use of their contributions.

Similarly, there are calculators for pricing, risk, position keeping, and the like that fall into these three categories. The simplest is usually some form of a spreadsheet implementation that you can build yourself (or is provided in the accompanying software). The intermediate calculators may also take the form of spreadsheets, but perhaps use sophisticated add-ins for the specialised calculations, or database technology for portfolio management. We are grateful to Palisade Corporation for providing their @Risk ® spreadsheet add-in. Some of the calculations and results rely on "full-blown" calculators, and those are detailed as appropriate.

We have tried to provide sufficient information in most cases so that the "keen reader" may create their own calculator. We have also tried to provide sources of calculators and data for those who do not wish to build their own (or for whom buying is a more sensible business decision than building). Please feel free to write to TG2Books@Arbitrage-Trading.com if you have any comments or suggestions in this regard.

Registered owners of certain TG2 books may also download software that accompanies the books (see 0.2.4). The software is provided for EDUCATIONAL PURPOSES ONLY. It is unsupported, but we welcome your comments. You must agree not to use it in a commercial setting, nor alter or use it in any manner that is harmful.

1.2 What we do for a living

Trading primarily involves transacting (possibly complex) financial product, and the risk management/position keeping of the resulting portfolios of trades for the purpose of profit on a risk or riskless basis. The key issues are the preservation of capital, and generation of income (whether its bid-offer spread revenue from market making or capital gains from directional or arbitrage "prop" trading[6]). These activities must be performed in a manner that satisfies the regulators, as well as management/shareholders.

The key functional components in the business of trading are:

- Pricing Securities and Derivatives
- Hedging and Position keeping
- Position keeping vs. Risk management
- Managing the business of trading

However, before those components can be "dealt with" in any meaningful manner, certain fundamental concepts/principals must be firmly established, including:

- Business mandate
- Risk/return considerations
- Forecasting vs. risk management
- What the maths do NOT mean
- Arbitrage as the basis of valuation
- Valuation and uncertainty

This "Read Me First" Book is devoted to the introduction/description of these components/objectives, couched in the setting of running a business under pains and pleasures of the real world.

[6] "Prop trading" is short for "proprietary liability trading" and is generally associated with any trading activity that generates profits from directional or arbitrage position taking (rather than the so-called relatively low risk market making approach).