

Equity Derivatives Explained Financial Engineering Explained

"This book, *Measuring Market Risk with Value at Risk* by Vipul Bansal and Pietro Penza, has three advantages over earlier works on the subject. First, it takes a decidedly global approach—an essential ingredient for any comprehensive work on market risk. Second, it ties the scientifically grounded, yet intuitively appealing, VaR measure to earlier, more idiosyncratic measures of market risk that are used in specific market environs (e.g., duration in fixed income). Finally, it encompasses all of the accepted approaches to calculating a VaR measure and presents them in a clearly explained fashion with supporting illustrations and completely worked-out examples." -from the Foreword by John F. Marshall, PhD, Principal, Marshall, Tucker & Associates, LLC "Measuring Market Risk with Value at Risk offers a much-needed intellectual bridge, a translation from the esoteric realm of mathematical finance to the domain of financial managers who seek guidance in applying developments from this important field of research as well as that of MBA-level graduate instruction. I believe the authors have done a commendable job of providing a carefully crafted, highly readable, and most useful work, and intend to recommend it to all those involved in business risk management applications." -Anthony F. Herbst, PhD, Professor of Finance and C.R. and D.S. Carter Chair, The University of Texas, El Paso and Founding editor of *The Journal of Financial Engineering* (1991-1998) "Finally there's a book that strikes a balance between rigor and application in the area of risk management in the banking industry. This innovative book is a MUST for both novices and professionals alike." -Robert P. Yuyuenyongwatana, PhD, Associate Professor of Finance, Cameron University "Measuring Market Risk with Value at Risk is one of the most complete discussions of this emerging topic in finance that I have seen. The authors develop a logical and rigorous framework for using VaR models, providing both historical references and analytical applications." -Kevin Wynne, PhD, Associate Professor of Finance, Lubin School of Business, Pace University

Principles of Financial Engineering, Third Edition, is a highly acclaimed text on the fast-paced and complex subject of financial engineering. This updated edition describes the "engineering" elements of financial engineering instead of the mathematics underlying it. It shows how to use financial tools to accomplish a goal rather than describing the tools themselves. It lays emphasis on the engineering aspects of derivatives (how to create them) rather than their pricing (how they act) in relation to other instruments, the financial markets, and financial market practices. This volume explains ways to create financial tools and how the tools work together to achieve specific goals. Applications are illustrated using real-world examples. It presents three new chapters on financial engineering in topics ranging from commodity markets to financial engineering applications in hedge fund strategies, correlation swaps, structural models of default, capital

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structure arbitrage, contingent convertibles, and how to incorporate counterparty risk into derivatives pricing. Poised midway between intuition, actual events, and financial mathematics, this book can be used to solve problems in risk management, taxation, regulation, and above all, pricing. A solutions manual enhances the text by presenting additional cases and solutions to exercises. This latest edition of Principles of Financial Engineering is ideal for financial engineers, quantitative analysts in banks and investment houses, and other financial industry professionals. It is also highly recommended to graduate students in financial engineering and financial mathematics programs. The Third Edition presents three new chapters on financial engineering in commodity markets, financial engineering applications in hedge fund strategies, correlation swaps, structural models of default, capital structure arbitrage, contingent convertibles and how to incorporate counterparty risk into derivatives pricing, among other topics. Additions, clarifications, and illustrations throughout the volume show these instruments at work instead of explaining how they should act The solutions manual enhances the text by presenting additional cases and solutions to exercises

"There are so many ways to use derivatives that I'm almost surprised when someone doesn't use them. Producers and consumers, investors and issuers, hedgers and speculators, governments and financial institutions: almost everyone can use them." - From the Foreword by Fischer Black, Cocreator of the Black-Scholes Model

Never before has there been so much interest in equity derivatives-or so much innovation in structuring these products. As new forms of instruments proliferate, their complexity has grown as well. Even equity derivatives professionals are unlikely to know all the details about every existing structure. With equity derivatives comprising one of the most important components of the capital markets, it's more crucial than ever for every financial professional, specialist and nonspecialist alike, to understand how derivative instruments behave, how they're structured, and how to use them profitably. Edited by leading thinkers in the field, The Handbook of Equity Derivatives, Revised Edition, assembles dozens of experts from universities and Wall Street to help the reader gain a practical grasp of the growing variety of financial instruments and how they work. Contributions from such respected authorities as Gary Gastineau, Mark Rubinstein, J. Gregg Whittaker, and Fischer Black outline the full range of the equity derivatives market, from classic warrants, options, and futures to the new and innovative PERCs, equity swaps, and equity-linked bonds. In nonmathematical language, the book provides a clear introduction to equity derivatives, including the fundamentals and history of options, basic equity structures, and pricing determinants, along with a historical perspective on their evolution. You'll find thorough surveys of:

- * The burgeoning field of synthetic structures-OTC options and exotics, equity swaps, SPINs, SIGNs, PENs, MITTs, and SuperShares
- * U.S. and foreign derivatives traded on organized exchanges
- * Issuer derivative structures, such as warrants, convertibles, PERCs, and unbundled stock units
- * The unique tax, legal, accounting, and regulatory features of derivatives
- * How to

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make the most profitable use of the many equity derivative products * Why some financial instruments succeed-and others fail * The future of the equity derivative market- place Whether you're a finance student becoming familiar with the field or a practicing professional seeking better ways to exploit the tremendous potential of equity derivatives for profit, The Handbook of Equity Derivatives, Revised Edition belongs on your bookshelf. "I heartily endorse The Handbook of Equity Derivatives . . . while the market is continuously inventing new instruments and discarding older ones, the clarity and straightforward nature of the handbook hints at a longevity that will make it useful for many years to come." - Stephen A. Ross Sterling Professor of Economics and Finance, MIT (on the first edition) The most relied-upon resource on equity derivative instruments, their structure, and diverse global markets- now extensively revised and updated Once, equity derivatives were exotic instruments relegated to the hands of specialists. Today, they are among the institutional investor's most popular tools for managing risk and uncovering new profit opportunities. Recognized for its authoritative contributors and its accessible, comprehensive coverage of the entire field, The Handbook of Equity Derivatives has become the standard reference on the subject for specialist and nonspecialist alike. Now, this essential resource has been carefully updated and revised to cover the most current innovations in these continually evolving investment vehicles, including:

- * Comprehensive coverage of the all-important OTC market
- * Basic equity structures and how they work
- * Pricing determinants
- * PERCs, SPIDERS, and WEBs
- * The Black-Scholes model
- * The best uses for and profit potential of new derivative products
- * Key accounting, tax, and regulatory issues

This book introduces the reader to the C++ programming language and how to use it to write applications in quantitative finance (QF) and related areas. No previous knowledge of C or C++ is required -- experience with VBA, Matlab or other programming language is sufficient. The book adopts an incremental approach; starting from basic principles then moving on to advanced complex techniques and then to real-life applications in financial engineering. There are five major parts in the book: C++ fundamentals and object-oriented thinking in QF Advanced object-oriented features such as inheritance and polymorphism Template programming and the Standard Template Library (STL) An introduction to GOF design patterns and their applications in QF Applications The kinds of applications include binomial and trinomial methods, Monte Carlo simulation, advanced trees, partial differential equations and finite difference methods. This book includes a companion website with all source code and many useful C++ classes that you can use in your own applications. Examples, test cases and applications are directly relevant to QF. This book is the perfect companion to Daniel J. Duffy's book Financial Instrument Pricing using C++ (Wiley 2004, 0470855096 / 9780470021620)

Understand today's investment challenges and the role of the Bloomberg system In recent years, changes have swept through the investment industry like wildfire. Academia has followed along and provided new lenses for viewing this

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transformation, as well as new strategies for gaining a true understanding and knowledge of investment and financial markets. Now, *Equity Markets and Portfolio Analysis* has been created to further inform investment professionals and finance students on the basic concepts and strategies of investments, and to provide more detailed discussions on advanced strategies and models. The concepts covered in this book will help readers gain a better understanding of the markets and uses for an increasing number of securities, strategies, and methodologies. *Equity Markets and Portfolio Analysis* is the only core investment book that covers the functionality of Bloomberg terminals, increasingly critical tools both in the classroom and on the trading floor. As Bloomberg terminals now play a key role in the research, teaching, and managing of student investment funds, understanding the system's information and analytical functions has become more important than ever. In-depth coverage of fundamentals through more detailed concepts for students and professionals who want to better understand the evaluation, selection, and management of securities. One-of-a-kind training and instructional course, introduction to Bloomberg investment subjects, and reference for CFA preparation. Bloomberg material provided in an appendix accompanying each chapter, a useful option for professors. Ideal for finance practitioners, investment bankers, and academics. This unique resource will give readers both the foundational knowledge and the analytical tools necessary for investment success, both in the classroom and in the real world.

Stock, bonds, cash . . . the investment mind is often programmed. The reality is that most investors think in terms of single asset classes, and allocate money to them accordingly. The unique contribution of *First Principles: An Investor's Guide to Building Bridges Across Financial Products* is that, for the first time, a single unified valuation approach is available to use for all financial products. This book shows you how to focus on the dynamics of processes and interrelationships of different investment choices, providing the reader with a financial toolbox to equip any investor with the knowledge to de-construct and value any financial product, making it a must if you're a portfolio manager or an individual investor interested in building the optimal portfolio.

Principles of Financial Engineering, Second Edition, is a highly acclaimed text on the fast-paced and complex subject of financial engineering. This updated edition describes the "engineering" elements of financial engineering instead of the mathematics underlying it. It shows you how to use financial tools to accomplish a goal rather than describing the tools themselves. It lays emphasis on the engineering aspects of derivatives (how to create them) rather than their pricing (how they act) in relation to other instruments, the financial markets, and financial market practices. This volume explains ways to create financial tools and how the tools work together to achieve specific goals. Applications are illustrated using real-world examples. It presents three new chapters on financial engineering in topics ranging from commodity markets to financial engineering applications in hedge fund strategies, correlation swaps, structural models of default, capital

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structure arbitrage, contingent convertibles, and how to incorporate counterparty risk into derivatives pricing. Poised midway between intuition, actual events, and financial mathematics, this book can be used to solve problems in risk management, taxation, regulation, and above all, pricing. This latest edition of Principles of Financial Engineering is ideal for financial engineers, quantitative analysts in banks and investment houses, and other financial industry professionals. It is also highly recommended to graduate students in financial engineering and financial mathematics programs. * The Second Edition presents 5 new chapters on structured product engineering, credit markets and instruments, and principle protection techniques, among other topics * Additions, clarifications, and illustrations throughout the volume show these instruments at work instead of explaining how they should act * The Solutions Manual enhances the text by presenting additional cases and solutions to exercises

Analytical Finance is a comprehensive introduction to the financial engineering of equity and interest rate instruments for financial markets. Developed from notes from the author's many years in quantitative risk management and modeling roles, and then for the Financial Engineering course at Mälardalen University, it provides exhaustive coverage of vanilla and exotic mathematical finance applications for trading and risk management, combining rigorous theory with real market application. Coverage includes: • Date arithmetic's, quote types of interest rate instruments • The interbank market and reference rates, including negative rates • Valuation and modeling of IR instruments; bonds, FRN, FRA, forwards, futures, swaps, CDS, caps/floors and others • Bootstrapping and how to create interest rate curves from prices of traded instruments • Risk measures of IR instruments • Option Adjusted Spread and embedded options • The term structure equation, martingale measures and stochastic processes of interest rates; Vasicek, Ho-Lee, Hull-White, CIR • Numerical models; Black-Derman-Toy and forward induction using Arrow-Debreu prices and Newton-Raphson in 2 dimension • The Heath-Jarrow-Morton framework • Forward measures and general option pricing models • Black log-normal and, normal model for derivatives, market models and managing exotics instruments • Pricing before and after the financial crisis, collateral discounting, multiple curve framework, cheapest-to-deliver curves, CVA, DVA and FVA
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An in-depth look at the failure of Wall Street's "proven" financial models Origami is the Japanese art of folding paper into intricate and aesthetically attractive shapes. As such, it is the perfect metaphor for the Wall Street financial engineering model, which ultimately proved to be the underlying cause of the 2008 financial crisis. In Financial Origami, Brendan Moynihan describes how the Wall Street business model evolved from a method to transfer risk into a method for manufacturing risk. Along the way, this timely book skillfully dissects financial engineering and addresses how it's often a mechanism to evade regulatory constraints, provide institutional investors with customized products, and, of course, generate revenue for financial engineers. Reveals how

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Wall Street's financial engineering business model morphed into something destructive Highlights how the origami model worked well in the comparatively stable years of the early 2000s, when there was less risk to transfer Discusses how Wall Street began manufacturing risk by creating products that multiplied risk exposures and encouraged subprime lending With the collapse of Lehman Brother the Wall Street business model effectively broke. But there are many lessons to be learned from what has transpired, and Financial Origami will show you what they are.

The current crisis has exposed the shocking truth that very few practitioners actually understand the capital positions of banks and insurance companies, let alone have good, tried and tested methods of evaluating their capital position. The subject of capital management is deemed to be difficult but this is mainly because of the lack of a good and transparent overview rather than the complexity of the subject. It is vital to have a very clear understanding of the regulatory environment in order to earn an optimal return on capital. This book provides proven techniques for managing bank capital as well as explaining each component such as balance sheets and type of capital in depth. The book will show how to minimise risk whilst still maximising value and will also, crucially provide the regulatory context and all latest developments. Economic capital will also be discussed in depth, as will the practicalities of bank and insurance M&A. The book will also show how financial innovations can be used to optimise the capital position and how diversification effects are reflected in the capital position.

A practical guide to the inside language of the world of derivative instruments and risk management Financial engineering is where technology and quantitative analysis meet on Wall Street to solve risk problems and find investment opportunities. It evolved out of options pricing, and, at this time, is primarily focused on derivatives since they are the most difficult instruments to price and are also the riskiest. Not only is financial engineering a relatively new field, but by its nature, it continues to grow and develop. This unique dictionary explains and clarifies for financial professionals the important terms, concepts, and sometimes arcane language of this increasingly influential world of high finance and potentially high profits. John F. Marshall (New York, NY) is a Managing Partner of Marshall, Tucker & Associates, a New York-based financial engineering and consulting firm. Former Executive Director of then International Association of Financial Engineers, Marshall is the author of several books, including Understanding Swaps. FINANCIAL ENGINEERING The Robert W. Kolb Series in Finance is an unparalleled source of information dedicated to the most important issues in modern finance. Each book focuses on a specific topic in the field of finance and contains contributed chapters from both respected academics and experienced financial professionals. As part of the Robert W. Kolb Series in Finance, Financial Engineering aims to provide a comprehensive understanding of this important discipline by examining its fundamentals, the newest financial products, and disseminating cutting-edge research. A contributed volume of distinguished practitioners and academics, Financial Engineering details the different participants, developments, and products of various markets—from fixed income, equity, and derivatives to foreign exchange. Also included within these pages are comprehensive case studies that reveal the various issues associated with financial engineering. Through them, you'll gain instant insights from the stories of Countrywide (mortgages), Société Générale and Barings (derivatives), the Allstate Corporation (fixed income), AIG, and many others. There is

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also a companion website with details from the editors' survey of financial engineering programs around the globe, as well as a glossary of key terms from the book. Financial engineering is an evolving field in constant revision. Success, innovation, and profitability in such a dynamic area require being at the forefront of research as new products and models are introduced and implemented. If you want to enhance your understanding of this discipline, take the time to learn from the experts gathered here.

"The principal objective of this intermediate book on Islamic finance is to address selected issues in the theory and practice of Islamic finance that typically fall beyond the contents of classic introductory text books on the subject matter. These topics are often discussed at very basic level. The list of special topics includes the stability of Islamic finance, the role of ethics, the scope of financial engineering and derivatives, the function of Islamic capital markets, as well as perspectives on Islamic structured finance, corporate finance, and financial inclusion. The book can serve as a guide to hitherto unexplored avenues of research in Islamic finance for graduate and post-graduate students. This book includes: - some reference to case studies and specific problems in the practice of Islamic finance as well as conventional finance - a list of suggested further readings per chapter - appendices that include details of advanced analysis for the purpose of simplifying the level of discussion for advanced undergraduate students - graphs, figures, tables on financial and economic data"--

Bestselling author Salih Neftci presents a fresh, original, informative, and up-to-date introduction to financial engineering. The book offers clear links between intuition and underlying mathematics and an outstanding mixture of market insights and mathematical materials. Also included are end-of-chapter exercises and case studies. In a market characterized by the existence of large pools of liquid funds willing to go anywhere, anytime in search of a few points of advantage, there are new risks. Lacking experience with these new risks, firms, governmental entities, and other investors have been surprised by unexpected and often disastrous financial losses. Managers and analysts seeking to employ these new instruments and strategies to make pricing, hedging, trading, and portfolio management decisions require a mature understanding of theoretical finance and sophisticated mathematical and computer modeling skills. Important and useful because it analyzes financial assets and derivatives from the financial engineering perspective, this book offers a different approach than the existing finance literature in financial asset and derivative analysis. Seeking not to introduce financial instruments but instead to describe the methods of synthetically creating assets in static and in dynamic environments and to show how to use them, his book complements all currently available textbooks. It emphasizes developing methods that can be used in order to solve risk management, taxation, regulation, and above all, pricing problems. This perspective forms the basis of practical risk management. It will be useful for anyone learning about practical elements of financial engineering. * Exercises and case studies at end of each chapter and on-line Solutions Manual provided * Explains issues involved in day-to-day life of traders, using language other than mathematics * Careful and concise analysis of the LIBOR market model and of volatility engineering problems

The remarkable growth of financial markets over the past decades has been accompanied by an equally remarkable explosion in financial engineering, the interdisciplinary field focusing on applications of mathematical and statistical modeling and

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computational technology to problems in the financial services industry. The goals of financial engineering research are to develop empirically realistic stochastic models describing dynamics of financial risk variables, such as asset prices, foreign exchange rates, and interest rates, and to develop analytical, computational and statistical methods and tools to implement the models and employ them to design and evaluate financial products and processes to manage risk and to meet financial goals. This handbook describes the latest developments in this rapidly evolving field in the areas of modeling and pricing financial derivatives, building models of interest rates and credit risk, pricing and hedging in incomplete markets, risk management, and portfolio optimization. Leading researchers in each of these areas provide their perspective on the state of the art in terms of analysis, computation, and practical relevance. The authors describe essential results to date, fundamental methods and tools, as well as new views of the existing literature, opportunities, and challenges for future research.

The recent financial crisis brought to light many of the misunderstandings and misuses of exotic derivatives. With market participants on both the buy and sell-side having been found guilty of not understanding the products they were dealing with, never before has there been a greater need for clarification and explanation. *Exotic Options and Hybrids* is a practical guide to structuring, pricing and hedging complex exotic options and hybrid derivatives that will serve readers through the recent crisis, the road to recovery, the next bull market and beyond. Written by experienced practitioners, it focuses on the three main parts of a derivative's life: the structuring of a product, its pricing and its hedging. Divided into four parts, the book covers a multitude of structures, encompassing many of the most up-to-date and promising products from exotic equity derivatives and structured notes to hybrid derivatives and dynamic strategies. Based on a realistic setting from the heart of the business, inside a derivatives operation, the practical and intuitive discussions of these aspects make these exotic concepts truly accessible. Adoptions of real trades are examined in detail, and all of the numerous examples are carefully selected so as to highlight interesting and significant aspects of the business. The introduction of payoff structures is accompanied by scenario analysis, diagrams and lifelike sample term sheets. Readers learn how to spot where the risks lie to pave the way for sound valuation and hedging of such products. There are also questions and accompanying discussions dispersed in the text, each exploited to illustrate one or more concepts from the context in which they are set. The applications, the strengths and the limitations of various models are highlighted, in relevance to the products and their risks, rather than the model implementations. Models are de-mystified in separately dedicated sections, but their implications are alluded to throughout the book in an intuitive and non-mathematical manner. By discussing exotic options and hybrids in a practical, non-mathematical and highly intuitive setting, this book will blast through the misunderstanding of exotic derivatives, enabling practitioners to fully understand and correctly structure, price and hedge these products effectively, and stand strong as the only book in its class to make these "exotic" concepts truly accessible.

Managing Financial Risk is the most authoritative and comprehensive primer ever published for financial professionals who must understand and successfully use derivatives. The previous edition of this professional financial classic sold over 18,000 copies and emerged as a leading training tool in the derivatives industry. The book covers derivative products from the most basic to the most complex and explains how derivatives are used by each major player in the market: dealers, financial firms, and corporations. In addition, the book includes short contributions from a variety of experts from leading companies such as Citibank, J.P. Morgan, British Petroleum, and Ciba-Geigy. Completely updated to include new material on new products such as commodity swaps and credit swaps, this edition will cover every aspect of the

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derivatives marketplace with insight and authority.

Do you know these words: alphabet stock, barstrier, bookbuld, cartwheel, G-hedge, haircut, spider, swaption, vanna, wrangle.....? Each term has its unique meaning you may not be able to find its definition in an ordinary dictionary. Derivatives market is a dynamic area with a vocabulary that is constantly changing. It is this dictionary's purpose to present an up-to-date vocabulary. About 10,000 entries have been drawn from futures, options, securities and financial engineering. Definitions are precise and right to the point. Whether you are an investor, a professional trader or an amateur, you will find this dictionary of immeasurable help.

This second edition, now featuring new material, focuses on the valuation principles that are common to most derivative securities. A wide range of financial derivatives commonly traded in the equity and fixed income markets are analysed, emphasising aspects of pricing, hedging and practical usage. This second edition features additional emphasis on the discussion of Ito calculus and Girsanovs Theorem, and the risk-neutral measure and equivalent martingale pricing approach. A new chapter on credit risk models and pricing of credit derivatives has been added. Up-to-date research results are provided by many useful exercises.

This text provides a thorough treatment of futures, 'plain vanilla' options and swaps as well as the use of exotic derivatives and interest rate options for speculation and hedging. Pricing of options using numerical methods such as lattices (BOPM), Monte Carlo simulation and finite difference methods, in addition to solutions using continuous time mathematics, are also covered. Real options theory and its use in investment appraisal and in valuing internet and biotechnology companies provide cutting edge practical applications. Practical risk management issues are examined in depth. Alternative models for calculating Value at Risk (market risk) and credit risk provide the theoretical basis for a practical and timely overview of these areas of regulatory policy. This book is designed for courses in derivatives and risk management taken by specialist MBA, MSc Finance students or final year undergraduates, either as a stand-alone text or as a follow-on to Investments: Spot and Derivatives Markets by the same authors. The authors adopt a real-world emphasis throughout, and include features such as: * topic boxes, worked examples and learning objectives * Financial Times and Wall Street Journal newspaper extracts and analysis of real world cases * supporting web site including Lecturer's Resource Pack and Student Centre with interactive Excel and GAUSS software

A practical, informative guide to derivatives in the realworld Derivatives is an exposition on investments, guiding you from the basic concepts, strategies, and fundamentals to a more detailed understanding of the advanced strategies and models. As part of Bloomberg Financial's three part series on securities, Derivatives focuses on derivative securities and the functionality of the Bloomberg system with regards to derivatives. You'll develop a tighter grasp of the more subtle complexities involved in the evaluation, selection, and management of derivatives, and gain the practical skillset necessary to apply your knowledge to real-world investment situations using the tools and techniques that dominate the industry. Instructions for using the widespread Bloomberg system are interwoven throughout, allowing you to directly apply the techniques and processes discussed using your own data. You'll learn the many analytical functions used to evaluate derivatives, and how these functions are applied within the context of each investment topic covered. All Bloomberg information appears in specified boxes embedded throughout the text, making it easy for you to find it quickly when you need it or, or easily skip it in favor of the theory-based text. Managing securities in today's dynamic and innovative investment environment requires a strong understanding of how the increasing variety of securities, markets, strategies, and methodologies are used. This book gives you a more thorough understanding, and a practical skillset that investment managers need. Understand derivatives strategies and models from basic to advanced Apply Bloomberg information and

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analytical functions Learn how investment decisions are made in the real world Grasp the complexities of securities evaluation, selection, and management The financial and academic developments of the past twenty years have highlighted the challenge in acquiring a comprehensive understanding of investments and financial markets. Derivatives provides the detailed explanations you've been seeking, and the hands-on training the real world demands.

In his new book, Riccardo Rebonato introduces financial professionals to the practical and subtle use of the concepts of volatility (the degree of randomness in a price movement) and correlation (the relationship between the changes in value of two financial assets) in the pricing of complex options. By explaining this approach in clear and accessible terms, the author provides traders, risk managers, financial professionals and students with the tools to undertake an effective investigation of option pricing models both at the qualitative and quantitative level. Dr Riccardo Rebonato is Head of Group Market Risk for the NatWest Group, London, UK. He holds Doctorates in Nuclear Engineering and Science of Materials/Solid State Physics. He has recently been appointed Lecturer in Mathematical Finance at Oxford University. Prior to joining NatWest, he was, at the same time, Head of the Complex Derivatives Trading desk and of the Complex Derivatives Research Group at Barclays Capital, where he worked for nine years. Before that he was a Research Fellow in Physics at Corpus Christi College, Oxford He is the author of the highly successful book Interest-Rate Option Models (Wiley, second edition 1998) and has published several papers on finance in academic journals. He is a regular speaker at conferences world-wide.

This book provides the first practical guide to the function and implementation of algorithmic differentiation in finance. Written in a highly accessible way, Algorithmic Differentiation Explained will take readers through all the major applications of AD in the derivatives setting with a focus on implementation. Algorithmic Differentiation (AD) has been popular in engineering and computer science, in areas such as fluid dynamics and data assimilation for many years. Over the last decade, it has been increasingly (and successfully) applied to financial risk management, where it provides an efficient way to obtain financial instrument price derivatives with respect to the data inputs. Calculating derivatives exposure across a portfolio is no simple task. It requires many complex calculations and a large amount of computer power, which is prohibitively expensive and can be time consuming. Algorithmic differentiation techniques can be very successful in computing Greeks and sensitivities of a portfolio with machine precision. Written by a leading practitioner who works and programmes AD, it offers a practical analysis of all the major applications of AD in the derivatives setting and guides the reader towards implementation. Open source code of the examples is provided with the book, with which readers can experiment and perform their own test scenarios without writing the related code themselves.

Accompanying computer optical disc contains 'demos of commercial software, spreadsheets and code illustrating models and methods from the book, cutting-edge research articles..., data document and demo from CrashMetrics, the Value at Risk methodology'. (book)

Equity strategies are closely guarded secrets and as such, there is very little written about how investors and corporate can utilise equity vehicles as part of their growth strategies. In this much-needed book, industry expert Juan Ramiraz guides readers through the whole range of equity derivative instruments, showing how they can be applied to a range of equity capital market situations, including hedging, yield enhancement and disposal of strategic stakes, mergers and acquisitions, stock options plan hedging, equity financings, share buybacks and other transactions on treasury shares, bank regulatory capital arbitrage and tax driven situations. The book includes case studies to highlight how equity derivative strategies have been used in real-life situations.

This book provides an introduction to the valuation of financial instruments on equity markets. Written from the perspective of trading, risk

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management and quantitative research functions and written by a practitioner with many years' experience in markets and in academia, it provides a valuable learning tool for students and new entrants to these markets. Coverage includes: ·Trading and sources of risk, including credit and counterparty risk, market and model risks, settlement and Herstatt risks. ·Numerical methods including discrete-time methods, finite different methods, binomial models and Monte Carlo simulations. ·Probability theory and stochastic processes from the financial modeling perspective, including probability spaces, sigma algebras, measures and filtrations. ·Continuous time models such as Black-Scholes-Merton; Delta-hedging and Delta-Gamma-hedging; general diffusion models and how to solve Partial Differential Equation using the Feynmann-Kac representation. ·The trading, structuring and hedging several kinds of exotic options, including: Binary/Digital options; Barrier options; Lookbacks; Asian options; Chooses; Forward options; Ratchets; Compounded options; Basket options; Exchange and Currency-linked options; Pay later options and Quantos. ·A detailed explanation of how to construct synthetic instruments and strategies for different market conditions, discussing more than 30 different option strategies. With source code for many of the models featured in the book provided and extensive examples and illustrations throughout, this book provides a comprehensive introduction to this topic and will prove an invaluable learning tool and reference for anyone studying or working in this field.

Risk control, capital allocation, and realistic derivative pricing and hedging are critical concerns for major financial institutions and individual traders alike. Events from the collapse of Lehman Brothers to the Greek sovereign debt crisis demonstrate the urgent and abiding need for statistical tools adequate to measure and anticipate the amplitude of potential swings in the financial markets—from ordinary stock price and interest rate moves, to defaults, to those increasingly frequent "rare events" fashionably called black swan events. Yet many on Wall Street continue to rely on standard models based on artificially simplified assumptions that can lead to systematic (and sometimes catastrophic) underestimation of real risks. In *Practical Methods of Financial Engineering and Risk Management*, Dr. Rupak Chatterjee—former director of the multi-asset quantitative research group at Citi—introduces finance professionals and advanced students to the latest concepts, tools, valuation techniques, and analytic measures being deployed by the more discerning and responsive Wall Street practitioners, on all operational scales from day trading to institutional strategy, to model and analyze more faithfully the real behavior and risk exposure of financial markets in the cold light of the post-2008 realities. Until one masters this modern skill set, one cannot allocate risk capital properly, price and hedge derivative securities realistically, or risk-manage positions from the multiple perspectives of market risk, credit risk, counterparty risk, and systemic risk. The book assumes a working knowledge of calculus, statistics, and Excel, but it teaches techniques from statistical analysis, probability, and stochastic processes sufficient to enable the reader to calibrate probability distributions and create the simulations that are used on Wall Street to value various financial instruments correctly, model the risk dimensions of trading strategies, and perform the numerically intensive analysis of risk measures required by various regulatory agencies.

The authors concentrate on the practicalities of each class of derivative, so that readers can apply the techniques in practice. Product descriptions are supported by detailed spreadsheet models, illustrating the techniques employed. This book is ideal reading for derivatives traders, salespersons, financial engineers, risk managers, and other professionals involved to any extent in the application and analysis of OTC derivatives. Combines theory with valuation to provide overall coverage of the topic area Covers all the latest developments in derivatives

A whole is worth the sum of its parts. Even the most complex structured bond, credit arbitrage strategy or hedge trade can be broken down into its component parts, and if we understand the elemental components, we can then value the whole as the sum of its parts. We can

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quantify the risk that is hedged and the risk that is left as the residual exposure. If we learn to view all financial trades and securities as engineered packages of building blocks, then we can analyze in which structures some parts may be cheap and some may be rich. It is this relative value arbitrage principle that drives all modern trading and investment. This book is an easy-to-understand guide to the complex world of today's financial markets teaching you what money and capital markets are about through a sequence of arbitrage-based numerical illustrations and exercises enriched with institutional detail. Filled with insights and real life examples from the trading floor, it is essential reading for anyone starting out in trading. Using a unique structural approach to teaching the mechanics of financial markets, the book dissects markets into their common building blocks: spot (cash), forward/futures, and contingent (options) transactions. After explaining how each of these is valued and settled, it exploits the structural uniformity across all markets to introduce the difficult subjects of financially engineered products and complex derivatives. The book avoids stochastic calculus in favour of numeric cash flow calculations, present value tables, and diagrams, explaining options, swaps and credit derivatives without any use of differential equations.

Equity Derivatives Explained Palgrave Macmillan

Since the development of the Black-Scholes model, research on equity derivatives has evolved rapidly to the point where it is now difficult to cut through the myriad of literature to find relevant material. Written by a quant with many years of experience in the field this book provides an up-to-date account of equity and equity-hybrid (equity-rates, equity-credit, equity-foreign exchange) derivatives modeling from a practitioner's perspective. The content reflects the requirements of practitioners in financial institutions: Quants will find a survey of state-of-the-art models and guidance on how to efficiently implement them with regards to market data representation, calibration, and sensitivity computation. Traders and structurers will learn about structured products, selection of the most appropriate models, as well as efficient hedging methods while risk managers will better understand market, credit, and model risk and find valuable information on advanced correlation concepts. Equity Derivatives and Hybrids provides exhaustive coverage of both market standard and new approaches, including: -Empirical properties of stock returns including autocorrelation and jumps -Dividend discount models -Non-Markovian and discrete-time volatility processes -Correlation skew modeling via copula as well as local and stochastic correlation factors -Hybrid modeling covering local and stochastic processes for interest rate, hazard rate, and volatility as well as closed form solutions -Credit, debt, and funding valuation adjustment (CVA, DVA, FVA) -Monte Carlo techniques for sensitivities including algorithmic differentiation, path recycling, as well as multilevel. Written in a highly accessible manner with examples, applications, research, and ideas throughout, this book provides a valuable resource for quantitative-minded practitioners and researchers.

This book is the definitive and most comprehensive guide to modeling derivatives in C++ today. Providing readers with not only the theory and math behind the models, as well as the fundamental concepts of financial engineering, but also actual robust object-oriented C++ code, this is a practical introduction to the most important derivative models used in practice today, including equity (standard and exotics including barrier, lookback, and Asian) and fixed income (bonds, caps, swaptions, swaps, credit) derivatives. The book provides complete C++ implementations for many of the most important derivatives and interest rate pricing models used on Wall Street including Hull-White, BDT, CIR, HJM, and LIBOR Market Model. London illustrates the practical and efficient implementations of these models in real-world situations and discusses the mathematical underpinnings and derivation of the models in a detailed yet accessible manner illustrated by many examples with numerical data as well as real market data. A companion CD contains quantitative libraries, tools, applications, and resources that will be of value to those doing quantitative programming and analysis in C++. Filled with practical advice and helpful tools, Modeling

Read Book Equity Derivatives Explained Financial Engineering Explained

Derivatives in C++ will help readers succeed in understanding and implementing C++ when modeling all types of derivatives. The author/editor has produced two stand-alone or companion volumes. Only one third of the original material remains. New Markets and Products begins with two chapters on emerging markets. The book then goes on to cover markets and products of increasing complexity: standard equity and interest rate derivatives, exotic options, swap (and swaptions), volatility trading and finally credit derivatives. The contributors are all acknowledged experts in their fields: Michael Howell, Mark Fox, Ian King, Chris Rogers, Andrew Street, Riccardo Rebonato, Edmond Levy, Bryan Thomas, Vincent Lacoste, Desmond Fitzgerald and Blythe Masters. New Markets and Products will be an essential reference tool for risk managers, institutional investors, fund managers, bankers, corporate treasurers and financial consultants. "In this volume Carol Alexander has gathered together ten articles that are concerned with important recent developments in financial markets. Two of the articles are concerned with emerging markets. They explore the reasons for their growth and the nature of the investment opportunities available. The remaining eight articles are concerned with derivatives. There are chapters on equity derivatives, interest rate derivatives, exotic options, volatility trading, and credit derivatives. The final chapter on credit derivatives is particularly timely. This market is in the process of transforming the way banks manage credit risk. I have seen no other discussion of the market as comprehensive and useful as that provided by Blythe Masters. Market participants and students alike will find much useful and thought-provoking information in this volume." - John Hull, August 1998

Equity Derivatives Explained is written in a clear, concise and down-to-earth manner by a long time practitioner and published author, this book delivers the necessary knowledge about equity derivatives for students, traders and finance professionals. Designed to bridge the gap between theory and practice by taking a risk centric approach, focusing on the fundamentals of why equity derivatives exist, the various strategies deployed and the aspects are most important to the relevant participants. Avoiding the typical long and complex theoretical and mathematical approaches, in favor of a direct, simple and intuitive approach, this introductory text offers an applied, practical and realistic approach to understanding equity derivatives. This book provides succinct but thorough coverage of the essentials of equity derivatives. It starts with an introduction on stock markets' fundamentals before opening the gate on the world of structured products. Delta-one products and options are covered in detail, providing readers with deep understanding of the use of equity derivatives strategies. Equity Derivatives Explained contains most of the traded payoffs and structures and covers all practical aspects of pricing and hedging. For each product, payoffs are accompanied by graphs, scenario analysis and real-life examples. The treatment of risks is performed in a very intuitive fashion and provides the reader with a great overview of how dealers approach such derivatives. The author also delivers various common sensical reasons on which models to use and when. By discussing equity derivatives in a practical, non-mathematical and highly intuitive setting, this book enables practitioners to fully understand and correctly structure, price and hedge these products effectively, and stand strong as the only book in its class to make these equity-related concepts truly accessible.

This latest addition to the Financial Engineering Explained series focuses on the new standards for derivatives valuation, namely, pricing and risk management taking into account counterparty risk, and the XVA's Credit, Funding and Debt value adjustments.

Book and CDROM include the important topics and cutting-edge research in financial derivatives and risk management.

Most books on financial derivatives focus on either the investment side of the business or on the mathematical models to price them.

However, there is a gap between how quantitative researchers, analysts, structurers, risk managers and traders look and communicate on derivatives problems. In particular there often is a strong emphasis on pricing rather than hedging or risk management. This book fills a gap

Read Book Equity Derivatives Explained Financial Engineering Explained

for a technical but not impenetrable guide to hedging options, and the 'Greek' (Theta, Vega, Rho, and Lambda) parameters that represent the sensitivity of derivatives prices. Taking the viewpoint of the front office practitioner, the book introduces the various option hedging strategies and the mathematics behind them in a concise but thorough manner. The book begins at an elementary level, with an introduction to the Black–Scholes formula (upon which most quantitative finance is built) from a practitioner perspective. The Greeks and Hedging Explained then develops the many themes that are omitted from many textbooks but which actually make up most of what happens in practice – including the effect of day conventions, interest rates and sticky deltas. The book features numerous illustrations, worked examples and, where appropriate, highlights market conventions over academic assumption. The Greeks and Hedging Explained is a welcome addition to the Financial Engineering Explained series and will serve as a foundation text for some of the more complex titles in the series.

A timely update to one of the most well-received books on project financing As an effective alternative to conventional direct financing, project financing has become one of the hottest topics in corporate finance. It's being used more and more frequently—and more successfully—on a wide variety of high-profile corporate projects, and has long been used to fund large-scale natural resource projects. But the challenges of successful project financing are immense, and the requirements of the process can easily be misunderstood. That's why John Finnerty has returned with the Third Edition of Project Financing. Drawing on his vast experience in the field, Finnerty takes you through the process step by step. Using updated examples and case studies that illustrate how to apply the analytical techniques described in the book, he covers the rationale for project financing, how to prepare the financial plan, assess the risks, design the financing mix, raise the funds, and much more. Includes completely new chapters that cover the financing of sustainable projects as well as Sharia-compliant (Islamic) project financing New material has been added to the discussion of financial modeling and international debt financing Explores today's most innovative financing techniques and analyzes the shortcomings of unsuccessful project financing attempts Whether you're a corporate finance professional, project planner, or private investor, Project Financing, Third Edition demystifies the complexities of project financing and provides an invaluable guide for anyone who wants to master innovation in corporate finance today.

Essential insights on the various aspects of financial derivatives If you want to understand derivatives without getting bogged down by the mathematics surrounding their pricing and valuation, Financial Derivatives is the book for you. Through in-depth insights gleaned from years of financial experience, Robert Kolb and James Overdahl clearly explain what derivatives are and how you can prudently use them within the context of your underlying business activities. Financial Derivatives introduces you to the wide range of markets for financial derivatives. This invaluable guide offers an overview of the different types of derivatives—futures, options, swaps, and structured products—while focusing on the principles that determine market prices. This comprehensive resource also provides a thorough introduction to financial derivatives and their importance to risk management in a corporate setting. Filled with helpful tables and charts, Financial Derivatives offers a wealth of knowledge on futures, options, swaps, financial engineering, and structured products. Discusses what derivatives are and how you can prudently implement them within the context of your underlying business activities Provides thorough coverage of financial derivatives and their role in risk management Explores financial derivatives without getting bogged down by the mathematics surrounding their pricing and valuation This informative guide will help you unlock the incredible potential of financial derivatives.

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