Preface

The revolution that swept through the world financial markets beginning in the mid-1980s was aptly described in 1985 by the noted economist Henry Kaufman:

> If a modern-day Rip Van Winkle had fallen asleep twenty years ago, or for that matter even ten years back, on awakening today, he would be astonished as to what has happened in the financial markets. Instead of a world of isolated national capital markets and a preponderance of fixed-rate financing, he would discover a world of highly integrated capital markets, an extensive array of financing instruments, and new methods of addressing market risk.

The purpose of this book is to describe the wide range of instruments for financing, investing, and controlling risk available in today's financial markets. New financial instruments are not created simply because someone on Wall Street believes that it would be "fun" to introduce an instrument with more bells and whistles than existing instruments. The demand for new instruments is driven by the needs of borrowers and investors based on their financing and investment objectives situation, regulatory constraints (if any), financial accounting considerations, and tax considerations. For these reasons, to comprehend the financial innovations that have occurred and are expected to occur in the capital markets in the future, a general understanding of the risk management problems faced by both institutional and individual (retail) investors is required. Therefore, in addition to coverage of the markets for all financial instruments (both cash and derivative instruments), an overview of the risk management issues faced by major institutional investors and the strategies they employ is provided.

Given the rapidly changing regulatory environment facing financial market participants (both issuers and investors), I believe that the coverage is as up-to-date as possible. Although earlier editions of this book focused on new product innovation, this revision expands on that coverage with more emphasis on regulatory reform, dealing with not just the U.S. capital market but also the potential systemic risk faced by the global capital market. As Randall S. Kroszner, former member of the Board of Governors of the Federal Reserve System, stated in a speech before the Philadelphia Fed Policy Forum in November 2007 titled "Innovation, Information, and Regulation in Financial Markets," Typically, when a new product is being developed, there is an initial experimentation phase in which market participants learn a great deal about the product's performance and risk characteristics. This phase involves gathering and processing information and modeling the performance of the product in various scenarios and under different market conditions. It may then take time for market participants to understand what, exactly, they need to know to value a product. During the early phases, a fair amount of due diligence is appropriate, given the greater uncertainty associated with innovative products.

As described throughout this book, there were many painful lessons to be learned from financial innovations that resulted from ignoring the risks associated with new financial products and strategies.

Overview of the Book

The emphasis on topic coverage is best explained by providing an overview of the book and how the current edition differs from the previous edition (the fourth edition). The book is divided into eight parts. The table on page **[[X]]** shows the difference between the previous edition of this book and the current edition. In addition to the changes noted in the table and described below, every chapter concludes with key points that are in bullet format so that the student can quickly review the concepts and principles covered in the chapter.

Part I: Introduction

In this two-chapter part, chapter 1 provides an introduction to financial markets, the attributes of financial assets, and the link between financial markets and the real economy. Chapter 2, with its focus on risk, is new to the book. One of the objectives in the study of finance is to understand the trade-off between risk and return. The term "risk" carries many meanings in finance, depending on the context in which it is used. Rather than leave the concept of risk vague and describe its meaning in different contexts as they arise throughout the book, in chapter 2 we provide an overview of risk that covers the difference between risk and uncertainty, the key elements of financial risk management, the identification and quantification of financial risks, the various types of investment risk faced by investors, and the various types of funding risk faced by entities seeking to raise capital. This is a new chapter in the book.

Part II: The Players

Trying to understand the attributes of financial instruments without some knowledge of those who participate (the "players") in the financial market makes little sense. Understanding why participants are active buyers of certain types of financial instruments and avoid investing in other types of financial instruments requires becoming familiar with the investment objectives of a wide range of investor types, as well as with any regulatory constraints that might be imposed. The five chapters in part II describe the key participants in the financial market.

Chapter 3 provides an overview of market participants, as well as covering the special role of those classified as financial intermediaries. In addition, there is coverage of the roles of government in the regulation of financial markets, credit rating agencies (e.g., the three dominant ones being Moody's, Standard & Poor's, and Fitch), and international entities such as the Bank for International Settlements and the Financial Stability Board. A key player in the market is government entities. This chapter completely revises the discussion of the material that appeared in the previous edition of the book.

Chapter 4 focuses on depository institutions and chapter 5 describes insurance companies and defined benefit pension plans. Both chapters represent substantial revisions of material from the corresponding chapters in the previous edition. A new chapter in the book takes up collective investment vehicles, or investment products managed by asset management firms. These investment products, described in chapter 6, include investment company shares, exchange-traded funds, hedge funds, real estate investment trusts, and investments in venture capital funds. Chapter 7, which concludes part II, covers the wide range of activities performed by investment banking firms; this chapter is also substantially revised from the previous edition.

Part III: Basics of Cash and Derivatives Markets

The four chapters in part III begin by covering the fundamentals of primary and secondary markets in chapter 8. The placement of the next three chapters, all new, early in the book may seem odd to some. These chapters discuss products known as financial derivatives (chapters 9 and 10) and the process of securitization (chapter 11), which are often viewed as more advanced topics. Their placement early in the book reflects my bias as to the importance of these topics to appreciating modern financial markets and risk management strategies. Their coverage in the popular press typically offers a one-sided view, the side that makes for interesting press, typically pointing out the financial fiascos resulting from the use of financial derivatives and the products created from the securitization process.

Most courses covering financial derivatives focus on how these instruments are priced. In chapters 9 and 10, as well as in part VIII of the book, which provides more detail on the different types of financial derivatives, the elements of pricing are presented. However, the chief focus is on how they are used to control the various types of financial risks described in chapter 2. The use of financial derivatives for this purpose does not make its way into the popular press because, quite simply, it does not sell papers (it does not make for interesting press). So, when an institutional investor successfully utilizes a financial derivative to protect certain risks associated with, say, a $1 billion financial position, that does not appear in the press. It is only when financial derivatives are used for speculative purposes and such use results in a major financial loss that we see the failed strategy documented in the press.

It is also possible to appreciate the use of derivatives in risk management without knowing the intricacies of how they are priced. Although the fundamental principles of pricing financial derivatives are important, the overweighting of this topic in a course for which this book was designed would be a poor allocation of class time. The pricing of financial derivatives should be reserved for those who are well trained in mathematics and statistics. Asset management firms and the trading desks of banks have a designated group of well-trained "quants" to carry out this function, with most of those in the group having doctorates in finance or some quantitative field such as mathematics or physics.

The placement of the coverage on the securitization process (chapter 11) early in the book might be even more puzzling to some. Because of the problems that occurred in the market for one type of securitization product (securities backed by a pool of subprime residential mortgages) in the summer of 2007 and its connection to the severe recession that followed in 2008 and 2009, it may seem that there is little to justify this financial innovation. Yet the role of securitization in financial markets is critical for reasons set forth in chapter 11, as well as its use by corporations and governments as a risk management tool. The problems in implementing the securitization process that led to what is now popularly referred to as the "subprime mortgage crisis" are explained in chapter 11, as well as the government's regulation of securitization to reduce the likelihood of the recurrence of such a crisis.

Part IV: Risk and Return Theories

In this three-chapter part, titled "Risk and Return Theories," the major topics covered are the principles of portfolio theory (chapter 13) and how assets are priced (chapter 14). These are the major theories in finance, and there is considerable theoretical debate as to whether these theories are in fact correct in reflecting the way investors should construct an investment portfolio (i.e., portfolio theory) and how assets are priced (i.e., asset pricing theory). Both chapters are similar to what appeared in the previous edition.

Chapter 12, which describes return distributions and risk measures, is new to this edition. The four principal topics covered in the chapter are the different types of distributions that financial asset returns can be assumed to follow, different measures of dependence between asset returns, attributes of portfolio risk measures, and alternative ratios of reward to risk. This chapter precedes the chapters on portfolio theory and asset pricing because the material presented is necessary to understand those theories and, just as important, the limitations of those theories. Although the topics draw on basic concepts in statistics, the coverage is at an elementary level.

There are three important takeaways from chapter 12. The first is that there is substantial empirical evidence from real-world markets that return distributions for financial assets do not follow the normal distribution as assumed in much of finance theory. In fact, some market commentators believe that the failure of many finance models is the result of relying on the assumption that returns follow a normal distribution, the principal distribution covered in introductory statistics courses. The second is that a measure of dependence between financial asset returns as assumed in traditional portfolio theory, the covariance or correlation, is just one measure of dependence. For the purpose of both portfolio management and risk management, there are better measures that can be employed. Finally, the measure of portfolio risk used in traditional finance theory is the variance or standard deviation. Other measures that offer a better means for capturing risk are available, and these measures affect the reward/risk ratios that should be used by investors in constructing portfolios.

Part V: Interest Rate Determination and Debt Pricing

The structure of interest rates and the pricing of debt obligations are the subjects of part V. Chapter 15, the first of three chapters in this section, focuses on the classical theory of interest rates, which, it is assumed, provides the anchor for all interest rates in an economy. We then look at how all other interest rates differ from it by looking at the myriad of factors that have an impact on the interest rate investors seek on alternative investment products, such as the type of issuer, the characteristics of the bond issue, and the state of the economy. In chapter 16, the principles in chapter 15 are used to demonstrate how debt obligations should be priced in the market, as well as how to determine the calculation of a bond's yield. In the last of the three chapters in this part of the book, chapter 17, we extend the theories and principles in chapter 16 to the relationship between the yield on a bond and its maturity, which is referred to as the term structure of interest rates. The different economic theories that have been offered to explain the term structure of interest rates are described.

The three chapters in this part of the book differ little from the corresponding chapters in the previous edition.

Part VI: Equity Markets

This part and the next both describe the cash market for the two major asset classes: equity and fixed income (debt). The two chapters in part VI cover the equity market and are substantially revised chapters in the new edition. The major changes that have occurred in this market since the previous edition required a total rewriting of the chapters on the equity markets.

The first chapter, chapter 18, covers the structure of the common stock market starting with the regulators of the equity markets, the venues available to investors for executing trades (exchange markets and alternative trading systems), and how orders are executed. Chapter 19 then takes up two major topics and represents a substantial revision of the material presented in the corresponding chapters in the previous edition. The first topic concerns the strategies employed by investors in the common stock market; the discussion includes the notion of pricing efficiency and its impact on the type of strategy that should be selected. The second topic is the various types of trading strategies, and here the issues associated with a practice known as high-frequency trading are discussed.

Part VII: Debt Markets

There is a wide range of debt products (or, equivalently, a large number of sectors of the debt market). For this reason there are eight chapters in part VII. They include money market instruments (chapter 20), Treasury and agency securities (chapter 21), municipal securities (chapter 22), corporate senior obligations (chapter 23), international bonds (chapter 24), residential mortgage loans (chapter 25), agency residential mortgage–backed securities (chapter 26), and credit-sensitive securitized products (chapter 27).

Although all the chapters in this part have been updated from the previous edition, one major change is the consolidation of two chapters in the previous edition ("Market for Asset-Backed Securities" and "Commercial Mortgage Loans and Commercial Mortgage–Backed Securities") into one chapter, chapter 27 ("The Market for Credit-Sensitive Securitized Products").

Part VIII: Derivative Markets

Part VIII reflects a restructuring of the book based on feedback from users. In the previous edition, equity derivatives were covered in two chapters and were included in the part on equity markets; similarly, the chapters on derivatives dealing with interest rate and credit risk were included in the part on debt markets in the previous edition. In this edition I have placed all the chapters on derivatives into this last part of the book.

The five chapters in this part build on the basics of financial derivatives described in chapters 9 and 10. In addition to describing each derivative contract, each chapter describes how the basic pricing models described in chapters 9 and 10 have to be modified because of the nuances of the contract features, and then presents illustrations as to how the derivative instrument can be used to control risk.

Other than the updating of contract provisions, the chapters are basically the same as in the prior edition.

	Chapter in Current Edition	Chapter in Previous Edition
1	Financial Assets and Financial Markets	Chapter 1
2	Overview of Risks and Risk Management	New chapter
3	Overview of Market Participants	Substantially revised chapter 2
4	Depository Institutions	Significantly revised chapter 3
5	Insurance Companies and Defined Benefit Pension Plans	Chapter 4
6	Managers of Collective Investment Vehicles	New chapter
7	Investment Banking Firms	Chapter 6

	Chapter in Current Edition	Chapter in Previous Edition
8	Primary and Secondary Markets	Chapter 7
9	Introduction to Linear Payoff Derivatives: Futures, Forwards, and Swaps	Combination of chapters 10 and 12, with substantial revisions
10	Introduction to Nonlinear Payoff Derivatives: Options, Credit Default Swaps, Caps, and Floors	Combination of chapters 11 and 12, with substantial revisions
11	Securitization and Its Role in Financial Markets	New chapter
12	Return Distributions and Risk Measures	New chapter
13	Portfolio Selection Theory	Revised chapter 8
14	Asset Pricing Theories	Revised chapter 9
15	The Theory and Structure of Interest Rates	Chapter 17
16	Valuation of Debt Contracts and Their Price Volatility Characteristics	Chapter 18
17	The Term Structure of Interest Rates	Chapter 19
18	The Structure of the Common Stock Market	Substantially revised chapter 13
19	Common Stock Strategies and Trading Arrangements	Substantially revised chapter 14
20	The Money Market for Private Debt Instrument	Chapter 20
21	Treasury and Agency Securities Markets	Chapter 21
22	Municipal Securities Markets	Chapter 24
23	Corporate Senior Instruments Markets	Combination of chapters 22 and 23
24	International Bond Markets	Chapter 29
25	The Residential Mortgage Market	Chapter 25
26	The Market for U.S. Agency Residential Mortgage–Backed Securities	Chapter 26, with the discussion of nonagency mortgage-backed securities removed

	Chapter in Current Edition	Chapter in Previous Edition
27	The Market for Credit-Sensitive Securitized Products	Combination of chapters 27 and 28
28	The Market for Equity Derivatives	Combination of chapters 15 and 16
29	The Market for Interest Rate Risk Transfer Vehicles: Exchange Traded Products	Chapter 30
30	The Market for Interest Rate Risk Transfer Vehicles: OTC Instruments	Chapter 31
31	The Market for Credit Risk Transfer Vehicles: Credit Derivatives and Collateralized Debt Obligations	Chapter 32
32	The Market for Foreign Exchange and Risk Control Instruments	Chapter 33