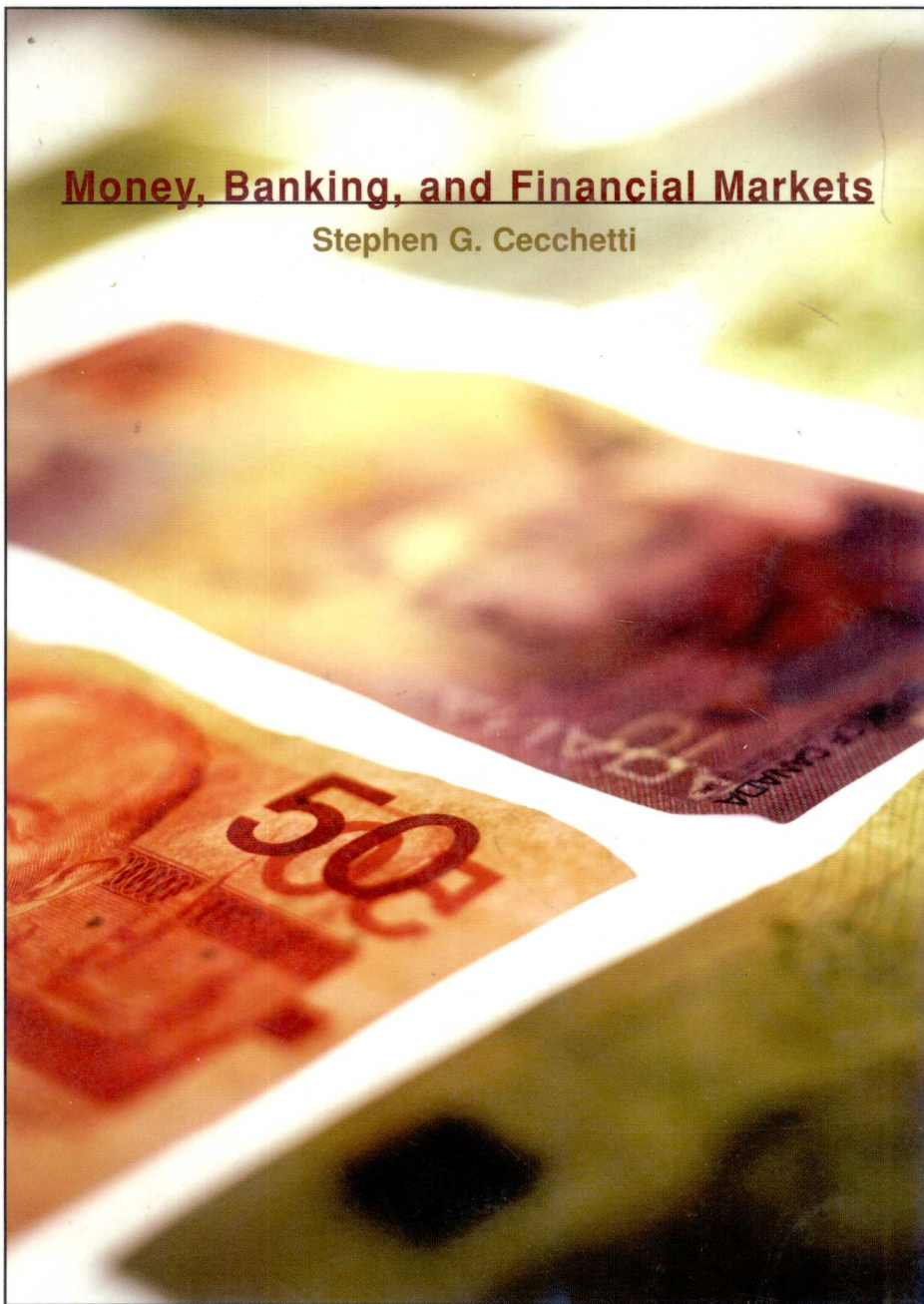


# Money, Banking, and Financial Markets

Stephen G. Cecchetti



McGRAW-HILL INTERNATIONAL EDITION



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Stephen G. Cecchetti

Brandeis University



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## MONEY, BANKING, AND FINANCIAL MARKETS

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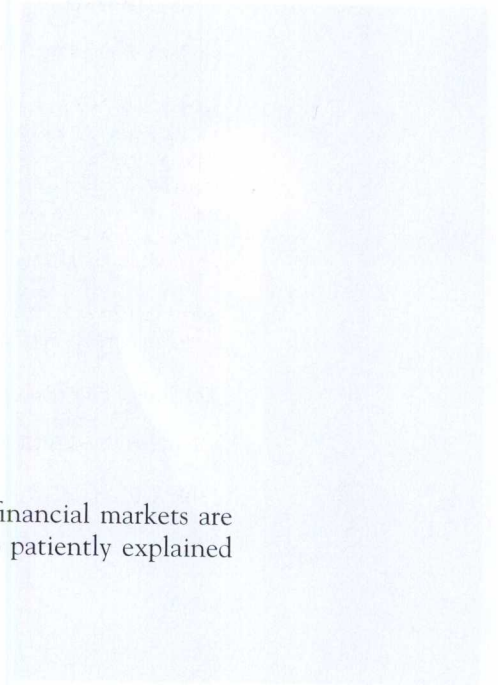
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# Dedication

To my father, Giovanni Cecchetti, who argued tirelessly that financial markets are not efficient; and to my grandfather Albert Schwabacher, who patiently explained why inflation is destructive.



## About the Author



Stephen G. Cecchetti joined the Brandeis University faculty in 2003 as a Professor of International Economics and Finance at the International Business School. He is also the Director of Research at the Rosenberg Institute for Global Finance at Brandeis. Previously, Professor Cecchetti taught at the New York University Stern School of Business and, for approximately 15 years, was a member of the Department of Economics at The Ohio State University. He has been a Visiting Professor of Economics at Princeton University, Oxford University, the University of Melbourne, and Boston College.

In addition to his academic appointments, Cecchetti's background includes serving as Executive Vice President and Director of Research, Federal Reserve Bank of New York (1997–1999); Editor, *Journal of Money, Credit, and Banking* (1992–2001); Research Associate, National Bureau of Economic Research (1989–present); Board of Editors, *American Economic Review* (1992–1998), and the *Journal of Economic Literature* (1993–present), among others.

He has consulted for various central banks around the world, including the European Central Bank, the Bank of England, the Central Bank of Bolivia, the Bank of Israel, and the Reserve Bank of Australia.

Cecchetti's research interests include inflation and price measurement, monetary policy, macroeconomic theory, economics of the Great Depression, and financial economics. His initial work concentrated on the theoretical basis and empirical plausibility of new Keynesian models of the business cycle that are based on nominal rigidities. More recently, he has developed new measures of core inflation and examined how monetary policy can be used to control aggregate price movements.

He has published over 60 articles in academic and policy journals and since 2000 has been a regular contributor to the *Financial Times*. See [www.brandeis.edu/global/news\\_cecchetti\\_articles.php](http://www.brandeis.edu/global/news_cecchetti_articles.php) for an archive of his recent newspaper columns.

Cecchetti received an SB in Economics from M.I.T. in 1977 and a PhD in Economics from the University of California at Berkeley in 1982.

# Preface

For most of the 20th century, defining money and banks was straightforward. Money was currency or a checking account balance; banks were institutions that took deposits and made loans. Then the invention of computers and the resulting revolution in information technology changed everything. Buying dinner used to require cash or checks issued by a local bank. Now diners can pick up the tab for a restaurant meal with a plastic card that debits their brokerage account at a firm whose nearest office may be thousands of miles away. The changes have been so sweeping that if a banker of the 1960s or 1970s were transported to the present day, he or she would hardly recognize our current financial system. The way we use money, financial instruments, financial markets, and financial institutions is completely different from the way our grandparents' generation used them.

Not only do today's money and banks differ from yesterday's, but tomorrow's financial system will surely differ from the current one in ways that are difficult to predict. Thus, students who memorize the operational details of today's financial system are investing in a short-lived asset. My purpose in writing this book is to focus on the *basic functions* served by the financial system, while de-emphasizing its current structure and rules. Learning the economic rationale behind financial tools, rules, and structures is much more valuable than concentrating on the tools, rules, and structures themselves. It is an approach designed to give students the lifelong ability to understand and evaluate whatever financial innovations they may one day confront.

## The Core Principles Approach

Toward that end, the entire content of this book is based on five *core principles*. Knowledge of these principles is the basis for learning what the financial system does, how it is organized, and how it is linked to the real economy.

1. Time has value.
2. Risk requires compensation.
3. Information is the basis for decisions.
4. Markets set prices and allocate resources.
5. Stability improves welfare.

These five core principles serve as a framework through which to view the history, current status, and future development of money and banking. They are discussed in detail in Chapter 1; throughout the rest of the text, marginal icons remind students of the principles that underlie particular discussions.

Focusing on core principles has created a book that is both concise and logically organized. This approach does require some adjustments to the traditional methodology used to teach money and banking, but for the most part they are changes in emphasis only. That said, some of these changes have greatly improved both the ease of teaching and the value students draw from the course. Among them are the emphasis on risk; use

of the term *financial instrument*; parallel presentation of the Federal Reserve and the European Central Bank; a streamlined, updated section on monetary economics; and the adoption of an integrated global perspective.

## Innovations in This Text

In addition to the focus on core principles, this book introduces a series of innovations designed to foster coherence and relevance in the study of money and banking, in both today's financial world and tomorrow's.

### Early Introduction of Risk

It is impossible to appreciate how the financial system works without understanding risk. In the modern financial world, virtually all transactions transfer some degree of risk between two or more parties. These risk trades can be extremely beneficial, as they are in the case of insurance markets. But there is still potential for disaster. In 1998, risk-trading activity at Long-Term Capital Management (LTCM) threatened the stability of the international financial system.

Even though risk is absolutely central to an understanding of the financial system, most money and banking books give very little space to the topic. In contrast, this book devotes an entire chapter to defining and measuring risk. Chapter 5 introduces the concept of a risk premium as compensation for risk and shows how diversification can reduce risk. Because risk is central to explaining the valuation of financial instruments, the role of financial intermediaries, and the job of central bankers, the book returns to this concept throughout the chapters.

### Emphasis on Financial Instruments

Financial instruments are introduced early in the book, where they are defined based on their economic function. This approach leads naturally to a discussion of the uses of various instruments and the determinants of their value. Bonds, stocks, and derivatives all fit neatly into this framework, so they are all discussed together.

This approach solves one of the problems with existing texts, use of the term *financial market* to refer to bonds, interest rates, and foreign exchange. In its conventional microeconomic sense, the term *market* signifies a place where trade occurs, not the instruments that are traded. This book follows standard usage of the term *market* to mean a place for trade. It uses the term *financial instruments* to describe virtually all financial arrangements, including loans, bonds, stocks, futures, options, and insurance contracts. Doing so clears up the confusion that can arise when students arrive in a money and banking class fresh from a course in the principles of economics.

### Parallel Presentation of the Federal Reserve and the European Central Bank

To foster a deep understanding of central banking and monetary policy, the presentation of this material begins with a discussion of the central bank's role and objectives. Descriptions of the Federal Reserve and the European Central Bank follow. By starting on a theoretical plane, students gain the tools they need to understand how all central banks work. They avoid focusing on institutional details that may quickly become obsolete. Armed with a basic understanding of what central banks do and how they do

it, students will be prepared to grasp the meaning of future changes in institutional structure.

Another important innovation is the parallel discussion of the two most important central banks in the world, the Federal Reserve and the European Central Bank (ECB). Students of the 21st century are ill-served by books that focus entirely on the U.S. financial system. They need a global perspective on central banking, the starting point for which is a detailed knowledge of the ECB.

## Modern Treatment of Monetary Economics

The discussion of central banking is followed by a simple framework for understanding the impact of monetary policy on the real economy. Modern central bankers think and talk about changing the interest rate when inflation and output deviate from their target objectives. Yet traditional treatments of monetary economics employ aggregate demand and aggregate supply diagrams, which relate output to the price level, and discuss inflation in terms of shifts in the AD and AS curves. The resulting development is lengthy and difficult. Because this book skips the ISLM framework, its presentation of monetary economics is several chapters shorter. Only those topics that are most important in a monetary economics course are covered: long-run money growth and inflation and short-run monetary policy and business cycles. This streamlined treatment of monetary theory is not only concise, but more modern and more relevant than the traditional approach. Moreover, it gives students a complete understanding of business-cycle fluctuations.

## Integrated Global Perspective

Recent technological advances have dramatically reduced the importance of a bank's physical location, producing a truly global financial system. Twenty years ago money and banking books could afford to focus primarily on the U.S. financial system, relegating international topics to a separate chapter that could be considered optional. But in today's financial world, even a huge country like the United States cannot be treated in isolation. The global financial system is truly an integrated one, rendering separate discussion of a single country's institutions, markets, or policies impossible. This book incorporates the discussion of international issues throughout the text, emphasizing when national borders are important to bankers and when they are not.

## Organization

This book is organized to help students understand both the financial system and its economic effects on their lives. That means surveying a broad series of topics, including what money is and how it is used; what a financial instrument is and how it is valued; what a financial market is and how it works; what a financial institution is and why we need it; and what a central bank is and how it operates. More important, it means showing students how to apply the five core principles of money and banking to the evolving financial and economic arrangements that they inevitably will confront during their lifetimes.

**Part I: Money and the Financial System.** Chapter 1 introduces the core principles of money and banking, which serve as touchstones throughout the book.

Chapter 2 examines money both in theory and in practice. Chapter 3 follows with a bird's-eye view of financial instruments, financial markets, and financial institutions. (Instructors who prefer to discuss the financial system first can cover Chapters 2 and 3 in reverse order.)

**Part II: Interest Rates, Financial Instruments, and Financial Markets.** Part II contains a detailed description of financial instruments and the financial theory required to understand them. It begins with an explanation of present value and risk, followed by specific discussions of bonds, stocks, derivatives, and foreign exchange. Students benefit from concrete examples of these concepts. In Chapter 7 (The Risk and Term Structure of Interest Rates), for example, students learn how the information contained in the risk and term structure of interest rates can be useful in forecasting. In Chapter 8 (Stocks, Stock Markets, and Market Efficiency), they learn about stock bubbles and how those anomalies influence the economy. And in Chapter 10 (Foreign Exchange), they study the Big Mac index to understand the concept of purchasing power parity. Throughout this section, two ideas are emphasized: that financial instruments transfer resources from savers to investors, and that in doing so, they transfer risk to those best equipped to bear it.

**Part III: Financial Institutions.** In the next section, the focus shifts to financial institutions. Chapter 11 introduces the economic theory that is the basis for our understanding of the role of financial intermediaries. Through a series of examples, students see the problems created by asymmetric information as well as how financial intermediaries can mitigate those problems. The remaining chapters in Part III put theory into practice. Chapter 12 presents a detailed discussion of banking, the bank balance sheet, and the risk that banks must manage. Chapter 13 provides a brief overview of the financial industry's structure, and Chapter 14 explains financial regulation.

**Part IV: Central Banks, Monetary Policy, and Financial Stability.** Chapters 15 through 19 survey what central banks do and how they do it. This part of the book begins with a discussion of the role and objectives of central banks, which leads naturally to the principles that guide central bank design. Chapter 16 applies those principles to the Federal Reserve and the European Central Bank. Chapter 17 presents the central bank balance sheet, the process of multiple deposit creation, and the money supply. Chapters 18 and 19 cover operational policy, based on control of both the interest rate and the exchange rate. The goal of Part IV is to give students the knowledge they will need to cope with the inevitable changes that will occur in central bank structure.

**Part V: Modern Monetary Economics.** The last part of the book covers modern monetary economics. While most books cover this topic in six or more chapters, this one does it in four. This streamlined approach concentrates on what is important, presenting only the essential lessons that students truly need. Chapter 20 sets the stage by exploring the relationship between inflation and money growth. Starting with inflation keeps the presentation simple and powerful, and emphasizes the way monetary policymakers think about what they do. A discussion of aggregate demand, aggregate supply, and the determinants of inflation and output follows. Chapter 21 presents a dynamic aggregate demand curve that integrates monetary policy directly into the presentation. To complete the explanation of business-cycle fluctuations, Chapter 22 introduces short-run and long-run aggregate supply, wrapping up the section with a discussion of the channels of monetary policy transmission and the challenges central bankers face today.

For those instructors who have the time, we recommend closing the course with a rereading of the first chapter and a review of the core principles. What is the future likely to hold for the five parts of the financial system: money, financial instruments, financial markets, financial institutions, and central banks? How do students envision each of these parts of the system 20 or even 50 years from now?

## Learning Tools

In a sense, this book is a guide to the principles students will need to critically evaluate and use what they read in the financial press. Reading the newspaper and applying the information it contains require some basic knowledge. Supplying that knowledge is the purpose of the four types of inserts that complement the chapters, providing a break from the more technical material in the body of the text:

**Your Financial World** inserts provide students with practical information that is based on lessons covered in the chapter. Most chapters contain two of these boxes, each of which examines a personal finance problem that everyone faces. These boxes show students that the concepts taught in the money and banking course are relevant to their everyday lives. Among the topics covered are the importance of saving for retirement, the risk in taking on a variable-rate mortgage, the desirability of owning stocks, and techniques for getting the most out of the financial news.

**Applying the Concept** sections show how ideas introduced in the chapter can be applied to the world around us. Most describe historical episodes or examine issues relevant to the public policy debate. Subjects include how debt problems in emerging-market countries can create an increase in the demand for U.S. Treasury debt; why Long-Term Capital Management nearly caused a collapse of the world financial system; and what monetary policymakers learned from the Great Depression of the 1930s. Most chapters contain two of these applications.

**In the News** boxes present articles drawn from *The New York Times*, *The Wall Street Journal*, *The Financial Times*, *The Economist*, and *BusinessWeek*. These readings show how concepts introduced in the chapter are applied in the financial press. Each article is accompanied by a brief analysis that reinforces key concepts. One In the News box appears in each chapter.

**Tools of the Trade** boxes teach useful skills, including how to read bond and stock tables, how to read charts, and how to do some simple algebraic calculations. Some provide brief reviews of material from the principles of economics course, such as the relationship between the current account and the capital account in the balance of payments. Most chapters contain one of these boxes.

Finally, the end-of-chapter material is divided into three sections:

**Key Terms** A listing of all the technical terms introduced and defined in the chapter. The key terms are defined in full in the glossary at the end of the book.

**Chapter Lessons** A list of the key lessons in the chapter. Other textbooks summarize a small number of points at length. This book summarizes a larger number of

points, each of them short, clear, and couched in the form of an outline that matches the chapter headings—a format designed to aid student comprehension and retention.

**Problems** Each chapter contains 15 problems, both conceptual and computational, of varying levels of difficulty. These problems are designed to reinforce the lessons in the chapter.

## Organizational Alternatives

While this book greatly streamlines the traditional approach to money and banking, it remains flexible enough to be used in a broad variety of courses. Sixteen to 19 of the book's 23 chapters can be assigned in the following courses:

*General Money and Banking Course.* Chapters 1–8, 11, 12, 15, 16, 18, and 20–22

This course covers the primary material needed to appreciate the connections between the financial system and the economy.

*General Money and Banking Course with International Emphasis.* Chapters 1–8, 10, 11, 12, 15–19, and 20

This alternative to the general money and banking course substitutes chapters on foreign exchange and exchange-rate policy for the macroeconomic model included in courses with less international emphasis.

*Financial Markets and Institutions.* Chapters 1–9, 11–18

The traditional financial markets and institutions course covers money, financial instruments and markets, financial institutions, and central banking. The focus is on Parts II and III of the book.

*Monetary Economics and Monetary Policy.* Chapters 1–7, 10, 11, 12, 15–23

A course called monetary economics and monetary policy uses the material in Parts II and III as a foundation for understanding the material in Parts IV and V. A half-semester course for students with a background in financial instruments and institutions might cover only Chapters 1–3 and 15–23.

## Supplements for Students

### Student Study Guide and Workbook

James S. Fackler (University of Kentucky) has written an excellent study guide and workbook for students. It includes descriptions of the major lessons in each chapter, definitions, and practice multiple-choice and essay questions. Detailed answers to the practice test questions are also provided.

### Web Site

The book's Web site, [www.mhhe.com/economics/cecchetti1e](http://www.mhhe.com/economics/cecchetti1e), includes a variety of free content for students, including chapter quizzes, PowerPoint slides, and interactive graphs with related exercises. Instructors may access all the book's major supplements using a special password.

## Supplements for Instructors

### Instructor's Resources and Solutions Manual

Mary Lesser (Iona College) has collected a broad array of materials for instructors. This manual includes chapter overviews, outlines, and a discussion of how the core principles apply to each chapter. It also addresses concepts students often find difficult, including suggestions for alleviating confusion. Solutions to the problems at the end of each chapter are given. Included as well is helpful advice provided by Stephen Miller (University of Nevada at Las Vegas) on how instructors can easily modify their existing course to take advantage of the approach in this book.

### Test Bank

John Nader (Grand Valley State University) has constructed a test bank of 2,300 multiple-choice and 600 short-answer and essay questions. The test bank can be used both as a study guide and as a source for exam questions. It has been computerized to allow for both selective and random generation of test questions.

### PowerPoint Slides

Nick Noble (Miami University) has developed a set of PowerPoint slides intended for classroom use. The slides outline the main points in each chapter and reproduce major graphs and charts. This handy, colorful supplement will help to maintain students' interest during lectures.

## Acknowledgments

I owe thanks to many more people that I can possibly list, including a large number of academics, central bankers, and financial market participants around the world. A few of these deserve special mention. I would like to thank Robert M. Solow, who set me on the path doing economics as a 20-year-old undergraduate; George A. Akerlof, whose inspiration still guides me, even more than 20 years after he signed my dissertation; William J. McDonough, who gave me the opportunity to watch and ask questions from inside the Federal Reserve; and to Peter R. Fisher, who was my day-to-day guide to what I was seeing at the Fed.

Of my numerous collaborators and colleagues over the years, Nelson Mark (now at the University of Notre Dame) deserves special mention. His encouragement, counsel, and friendship have guided me for more than 15 years. In addition, Mike Bryan of the Federal Reserve Bank of Cleveland has been a constant source of help and encouragement, as have numerous friends throughout the central banking world.

Among all of the professional colleagues who took the time to read early versions of the manuscript, I would like to single out Jim Fackler for his insight and patience. This book is much better for the time he generously devoted to correcting my logical mistakes.

Without all the people at McGraw-Hill/Irwin this book would never have been written. Gary Burke and Paul Shensa first convinced me that I could write this book, and then taught me how. Erin Strathmann worked tirelessly (and daily) to improve the book. Betty Morgan made my sentences and paragraphs readable. And all of the people in production and design turned the words and charts into a beautiful, readable book.

Without students, universities would not exist. And without a class in money and banking to teach, I would not have written this book. I owe a debt to every student who has sat in a classroom with me. Not surprisingly, some students helped more than others. The ones that deserve special mention for the time and effort they put in to helping with the manuscript are: Margaret Mary McConnell of the Federal Reserve Bank of New York, Roisin O'Sullivan of Smith College, Stefan Krause of Emory University, Lianfa Li of China International Capital Corporation, Craig Evers of the Federal Reserve Board, Anne LePard of Brandeis University, and Georgios Karras of University of Illinois, Chicago.

And finally, there is my family; my wife Ruth and our sons Daniel and Ethan. For three years they have put up with my daily routine of writing, rewriting, and rewriting again and again. To them I owe the biggest thanks, and I promise I won't do this again, at least not right away.

**Stephen G. Cecchetti**  
Brandeis University

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# Feature Walkthrough



## YOUR FINANCIAL WORLD

Pay Off Your Credit Card Debt as Fast as You Can

Credit cards are extremely useful. They make buying things easy—sometimes too easy. While we all plan to pay off our credit card balances every month, sometimes we just don't have the resources. So we take advantage of the loans the card issuers offer and pay off only part of what we owe. Suddenly we find ourselves deeply in debt.

How fast should you pay off your credit card balance? All the bank or finance company that issued the card will tell you is the minimum you have to pay. You get to decide whether to pay more, and your decision makes a big difference. We can use the present-value concept to figure out your alternatives.

Let's take a typical example. You have a balance of \$2,000 and can afford to pay at least \$50 per month. How many monthly payments will you need to make to pay off the full debt? What if you paid \$60 or \$75 per month? To find the answer, use equation (12) for the present value of a fixed series of payments. In this case, the present value is the loan amount, \$2,000; the fixed monthly payment is \$50, \$60, or \$75; and the interest rate is whatever your credit card company charges per month. Most credit card companies charge between 10 and 20 percent a year. (The average rate is around 13 percent.) We need to figure out the number of payments, or  $n$  in equation (12).

Table 4.4 shows the number of months needed to pay off your \$2,000 balance at various interest rates and payment amounts. The first entry tells you that if your credit card company is charging a 10 percent annual interest rate (which is comparatively low), and you pay \$50 per month, then you will need to make payments for 48.4 months—just over four years.

Looking at the entire table, you can see the advantage of making big payments. Assume you're paying 15 percent, which is realistic. The table shows that increasing your payment from \$50 to \$60 will allow you to finish paying off your debt in 42.5 months rather than 54.3 months. In other words, paying \$10 more a month will allow you to

Table 4.4 Number of Months to Pay Off a \$2,000 Credit Card Debt

Annual Interest Rate	Monthly Payment		
	\$50	\$60	\$75
10%	48.4	38.9	30.1
12%	50.5	40.3	30.9
15%	54.3	42.5	32.2
20%	62.4	47.0	34.5

finish paying off the loan one full year sooner. And if you can manage to pay \$75 a month, you'll be finished 10 months before that.

Looking more closely, you can see that making large payments is much more important than getting a low interest rate. The lesson is: Pay off your debts as fast as you possibly can. Procrastination is expensive.



How fast should you pay off your credit card balance?

SOURCE: © MacKenzie

\*The most straightforward way to do this is to use a spreadsheet to add up the payments until their present value equals the credit card balance. You can also use equation (A-4) in the appendix of this chapter, which can be solved using logarithms.

For a complete listing of titles of chapter features and their page references, refer to the information found on the inside front cover of this text.



## YOUR FINANCIAL WORLD

A Guide to Evaluating Risk

Table 5.5 Evaluating the Risk of a \$1,000 Investment

A. The Gain	
Payoff	Probability
+\$400	$\frac{1}{2}$
\$0	$\frac{1}{2}$
B. The Loss	
Payoff	Probability
\$0	$\frac{1}{2}$
-\$300	$\frac{1}{2}$

Deciding whether a risk is worth taking is extremely difficult, but some simple rules can help. Let's start with the investment described in Table 5.2, where \$1,000 yields either \$1,400 or \$700 with equal probability. If we think about it in terms of gains and losses, this investment offers an equal chance of gaining \$400 or losing \$300. Should you take the risk? The answer depends on how risk averse you are, but most of us would say no. To see why, let's break the investment down into two parts, the gain and the loss (see Table 5.5).

Taking the gain first, how much would you pay for a 50 percent chance of making \$400? Again, the answer depends on your risk aversion, but you surely would pay less than \$200, the expected value of such an investment. Let's assume that your answer is \$150.

Next, let's turn to the loss. How much would you be willing to pay to avoid a \$300 loss altogether? To put it another way, assume that you risk losing \$300 and are considering buying insurance against the loss. The insurance company will take the bet for you, losing the \$300 in your place if that is the outcome. How much would you be willing to pay an insurance company to avoid taking a 50 percent chance of losing \$300? Again, the answer depends on how risk averse you are, but we know that you will pay more than the expected value of the loss, which is \$150. (The insurance company would insist on receiving more.) Let's assume you will pay \$200 to avoid the loss.

Now we are ready to answer our original question: Is the value of the potential gain sufficient to compensate you for the cost of the potential loss? Subtracting the \$200 that you are willing to pay to avoid the \$300 loss from the \$150 you will pay for the opportunity to gain \$400, we get  $\$150 - \$200 = -\$50$ , a result less than zero. In short, the potential gain is not big enough to compensate you for the potential loss, so you should not take the risk. In fact, our computation suggests you

would be willing to pay \$50 not to make this investment!

### Deciding if a Risk Is Worth Taking

1. List all the possible outcomes, or payoffs.
2. Assign a probability to each possible payoff.
3. Divide the payoffs into gains and losses.
4. Ask how much you would be willing to pay to receive the gain.
5. Ask how much you would be willing to pay to avoid the loss.
6. If you are willing to pay more to receive the gain than to avoid the loss, you should take the risk.

## Your Financial World

These boxes show students that the concepts taught in the text are relevant to their everyday lives. Among the topics covered are the importance of saving for retirement, the risk in taking on a variable rate mortgage, the desirability of owning stocks, and techniques for getting the most out of the financial news.



### APPLYING THE CONCEPT ENDING DISCRIMINATION IN LENDING

For many years, banks routinely accepted deposits from households in low-income neighborhoods but refused to lend funds to people in those areas. In this practice, known as *redlining*, loan officers would literally draw a line on a map and lend only to those people who lived on one side of the line. The problem was particularly acute in inner cities, where neither businesses nor individuals could obtain financing for normal activities like building and renovation. Redlining contributed to the decline of inner cities, which became increasingly unpleasant and dangerous places.

To understand the reasons for redlining, imagine that a bank's loan officers are considering loan applications from two neighborhoods, each of which offers a wide variety of loan opportunities. These lenders will make loans in both neighborhoods until, holding the interest rate and other relevant factors fixed, the riskiness of the loans in the two neighborhoods is equal. In this way the bank controls its credit risk. But if one of the neighborhoods offers only high-risk opportunities, all the bank's lending will be funneled into the low-risk neighborhood. That is essentially what happened to the inner cities. From the banker's perspective, redlining was just a way to control credit risk. Default rates were so high in some areas, managers said, that responsible lenders simply did not risk lending there.\* Unfortunately, given the racial composition of many high-risk neighborhoods, the policy looked discriminatory even though it may have been color-blind.

## Applying the Concept

These sections showcase history and examine issues relevant to the public policy debate. Subjects include how debt problems in emerging market countries can create an increase in the demand for U.S. Treasury debt; why Long-Term Capital Management caused a near collapse of the world financial system; and what monetary policy makers learned from the Great Depression of the 1930s.