STANDARD &POOR'S

Fundamentals of CORPORATE CREDIT ANALYSIS

A practical analytical framework for credit analysis

Includes analytical tools and techniques

Focuses on business and financial analysis, cash flow modeling, and debt instruments

BLAISE GANGUIN
MANAGING DIRECTOR, STANDARD & POOR'S
AND JOHN BILARDELLO
MANAGING DIRECTOR, STANDARD & POOR'S

FUNDAMENTALS OF CORPORATE CREDIT ANALYSIS

This page intentionally left blank.

FUNDAMENTALS OF CORPORATE CREDIT ANALYSIS

BLAISE GANGUIN
JOHN BILARDELLO

McGraw-Hill

New York Chicago San Francisco Lisbon London Madrid
Mexico City Milan New Delhi San Juan Seoul
Singapore Sydney Toronto

0-07-145458-6

The material in this eBook also appears in the print version of this title: 0-07-144163-8.

DOI: 10.1036/0071454586

This book is dedicated to our loved ones:

Nita, Maya, and Leila

Mary, Crissy, and Sean

who put up with our late, late nights
and early, early mornings!

This page intentionally left blank.

CONTENTS

Foreword *Ed Emmer* ix
Preface xi
Introduction xv

PART I CORPORATE CREDIT RISK 1

Chapter 1
Sovereign and Country Risks 3

Chapter 2
Industry Risks 20

Chapter 3
Company-Specific Business Risks 47

Chapter 4
The Management Factor 64

Chapter 5
Financial Risk Analysis 80

Chapter 6
Cash Flow Forecasting and Modeling 108

PART II CREDIT RISK OF DEBT INSTRUMENTS 157

Chapter 7
Debt Instruments and Documentation 158

Chapter 8
Insolvency Regimes and Debt Structures 200

Chapter 9
Estimating Recovery Prospects 243

PART III MEASURING CREDIT RISK 271

Chapter 10
Putting It All Together: Credit Ranking 272

Chapter 11
Measuring Credit Risk: Pricing and Credit Risk Management 289

PART IV APPENDICES A TO G: CASES IN CREDIT ANALYSIS 309

Appendix A
AT&T Comcast 310

Appendix B
The MGM/Mirage Merger 322

Appendix C
Kellogg's Acquisition of Keebler 331

Appendix D
Repsol/YPF 345

Appendix E
Air New Zealand 372

Appendix F
Peer Comparison: The Three Largest U.S. Forest Products Companies 396

Appendix G
Yell Group Ltd. Leveraged Buyout (LBO) 413

Index 429

FOREWORD

Since the end of the dot.com and telecom bubbles, investors in both the equity and fixed income markets have been talking about the need to get back to the basics. The timely publishing of *Fundamentals of Corporate Credit Analysis* meets this need.

We are emerging from one of the most challenging credit cycles in recent memory. While the equity markets received most of the media attention for the "irrational exuberance" during the dot.com bubble, the debt markets had their own debacle in the high-yield market. The equity markets declined almost 40 percent from this peak in the spring of 2000. The high-yield bond market saw record defaults and dramatic declines in secondary prices. From March 2000 to October 2002, the Merrill Lynch High Yield Master Index declined 13 percent.

The financial press, regulators, and the U.S. congress focused on Enron, Worldcom, and Global Crossing. In reality the overall losses in the broader high-yield market were more widespread and severe.

In the current environment when major investors are measured on how they perform versus an index, when hedge funds thrive on volatility, and when new instruments have evolved that allow investors to hedge credit risk, it is important that we not lose sight of the fundamentals.

During the course of the past several years the bond markets have exhibited a high degree of volatility and record default levels. In order to cope with these trends and to enable portfolio managers to monitor the credit quality of their portfolios, several new techniques and instruments have proliferated. Among them are credit default swaps and the increased use of statistical models using market-based indicators. While these tools certainly have their place and role in credit analysis, they do not replace fundamental analysis—rather they supplement it. Credit risk analysis is

an art not a science. It is impossible to quantify all the elements that one must consider in credit analysis.

This comprehensive work by two senior executives in Standard & Poor's Ratings unit provides a detailed and comprehensive review of the key aspects of credit analysis.

Edward Z. Emmer
Executive Managing Director, Standard & Poor's

PREFACE

Credit analysis is not rocket science, yet it can be a mystery to many people. In many respects, we consider ourselves teachers of credit analysis because—as any credit analyst at Standard & Poor's will attest—every speech, every phone conversation, and every meeting with corporate executives, investors, and financial intermediaries are opportunities to *explain* how a specific credit rating decision was made. That always includes a discussion on how industry and economic trends and forecasts impact business and financial performance.

Yet the analytical process and decisions by credit ratings agencies are often characterized as "the black box," referring to a secretive methodology. But there are no secrets, just a comprehensive analysis that isn't easily explained with "black and white" statements. So, we thought it was about time for someone to write a book detailing this process!

As Ed Emmer stated, "Credit analysis is an art, not a science." While that means credit decisions are highly subjective in nature, it does not mean there cannot be an organized methodology to help get to a decision. That is what this book is all about. We provide the methodology and the thought process all credit analysts should go through in making a credit decision.

We were always taught that every credit decision is based on the three to five most important issues affecting the ability of a company to pay its financial obligations. The trick of course is determining what are those important issues because it is different for most companies. In fact, this is exactly what credit analysts get queried about every day. This book intends to help analysts systematically analyze a company, identify the most important factors, and make a credit decision. Importantly, to supplement the theoretical methodology, we also provide several real-life case situations that tie together the methods and the decisions.

Most books are written with the intent to answer all the questions. Instead, as authors of this book, we hope the reader can now ask even more questions. The best analysts at Standard & Poor's are the ones who ask the probing questions, who leave no stoned unturned.

The reader of this book should generally be a student of financial analysis, if not specifically credit analysis. That student could be pursuing an undergraduate business degree, a more advanced degree in finance, accounting, or economics, or even professional designations such as that of Chartered Financial Analyst (CFA). One could also be a new employee at an institutional investment organization, an investment bank, a commercial bank, and certainly at a rating agency. Anyone who analyzes a corporation would benefit from reading this book.

We cannot pretend to have seen it all, heard it all, or know it all. So a "how-to" book like this requires a lot of help and we have many people to thank. There are four people we specially want to thank because they have truly shaped corporate credit analysis and criteria for over 30 years.

First, we wish that Leo O'Neill could have seen this book. But as president of Standard & Poor's and the champion of credit ratings for 36 years, Leo would not have needed to read our book, because he lived it! Leo was a great man who built and made Standard & Poor's the great organization that it is. Thanks Leo!

Ed Emmer has been the leader of corporate ratings at Standard & Poor's since the mid-1970s. He continues to inspire and challenge all analysts at S&P to be the best. He has instinctive credit skills with a knack for identifying credits on the decline before anyone else. We are certainly proud to have Ed contribute the Foreword in this book. Thanks Ed!

Sol Samson and Scott Sprinzen have been—and continue to be—the primary architects of Standard & Poor's corporate ratings criteria since the early 1980s. They have an incredible ability to sort through the most complex issues and decipher the most appropriate analytical methods and solutions. We can honestly say that a large majority of Standard & Poor's corporate criteria book—which we refer to often—was either written by or influenced by them. Thank you Sol and Scott!

Standard & Poor's is rich in talented credit analysts. Many helped us by contributing either a "Keys to Success" analysis or a case study. While not all contributions made it into the book due to length limitations, we want to thank everyone. These contributors are:

Jeanette Ward, Emmanuel Dubois-Pélerin, Paul Watters, Cindy Werneth, Tom Watters, Kyle Loughlin, Bob Schulz, Martin King, Linli Chee, Heather Goodchild, Michael Kaplan, Jill Unferth, Nicole Delz Lynch, Rich

Siderman, Bill Wetreich, Mary Lou Burde, Bruce Hyman, Bruce Schwartz, Andrew Watt, Craig Parmalee, and Phil Baggaley.

Many people also helped us by previewing chapters or providing statistical and other information. Thanks go to:

Professor Mark Williams from Boston University, Arnaud de Servigny, Olivier Renault, David Gillmor, Jamie Richardson, Dominic Crawley, James Penrose, Barbara Ridpath, Agnès de Pétigny, Pascal Bernous, Ed Liebowitz, John Newcomb, Jack Harcourt, Bill Chew, Beth Ann Bovino, Paul Coughlin, David Wood, Takamasa Yamaoka, Patrice Cochelin, and Phil Mustacchio.

Lastly, we have so many great colleagues that we rely on in our daily work life. We just want to thank the following people for being there when we needed them. Thanks to:

Kathleen Corbet, Vickie Tillman, François Veverka, Ron Barone, Nick Riccio, Tom Kelly, Chris Legge, Evelyn Nazario, Lars Bjorklund, Mike Wilkins, Mark Mettrick, Eduardo Uribe, Laura Feinland Katz, Cliff Griep, Apea Koranteng, Anne-Charlotte Pedersen, Elena Folkerts Landau, Jerome Cretegny, Guy Deslondes, Trevor Pritchard, Christian Wenk, Alan Levin, Curt Moulton, Dorothy Hemingway, Neri Bukspan, Jane Eddy, Michael Petit, Michael Zelkind, and Ed Tyburczy.

This page intentionally left blank.

INTRODUCTION

"Would you lend your money to this?"

This is the age-old question asked by loan providers, investors, and credit analysts all over the world as a test of one's commitment. The reasoning is that if someone is willing to invest their own money, then they must have conducted a full due diligence analysis, vetting all assumptions and verifying the facts. Anyone who has the responsibility for lending an institution's money to another entity should have the same level of analytical commitment. It is best to have a regimented and systematic approach to the task, since the information is often varied and imprecise. This book is intended to help future and current loan providers, investors, and credit analysts to do their job efficiently and thoroughly.

Let's define what we mean by corporate credit analysis: It is an investigative framework that permits the systematic and comprehensive assessment of a firm's capacity and willingness to pay its financial obligations in a timely manner. More recently, the focus of corporate credit analysis has been expanded to include the assessment of recovery prospects for specific financial obligations, should the firm become insolvent.

Most lending institutions are involved in credit analysis, whether they are banks, insurance companies, pension funds, or even mutual funds (the last three are often referred to as institutional investors). These entities typically have entire departments dedicated to assessing the credit standing of the firms they are exposed to.

But credit analysis is not limited to banks and institutional investors. For example, when a firm ships equipment to or builds a plant for one of its clients, it is exposed to nonpayment risk in exactly the same way as a lending institution is. Industrial firms also track their exposure to clients through credit analysis, particularly when that exposure is material.

Credit analysis helps to distinguish good borrowers from bad ones. But if analysts are comparing two firms that are neither totally good nor

thoroughly bad, they need an analytical framework with more than just two categories. Lending institutions and credit rating agencies have created scoring systems to rank credit risk along a continuum, with grades going from nonpayment to an (almost) absence of risk. Such a system achieves several goals:

- By assigning marks, scores, or ratings on a predetermined scale, analysts can benchmark credit quality across firms from different countries and sectors.
- A particular score provides an indication of the investment premium that would be required for a particular level of risk, assuming that in efficient markets, the higher the risk is, the higher the reward will be.
- For lending institutions with large portfolios of debt instruments, a scoring system related to a robust analytical framework provides an excellent tool for monitoring the evolution of credit risk over time.
- Finally, these same institutions need to assess the recovery prospects for distressed debt, particularly during recessions, when a portion of their portfolio is impaired.

Good corporate credit analysis is a lot like building a brick house: There are many blocks and many levels, a strong foundation supports the blocks on top, and organized construction makes it easier to put it all together. That is, good corporate credit analysis encompasses many different factors in analyzing an entity, but if all the right questions are asked and all the factors are sufficiently covered, an analyst can effectively piece together the credit puzzle. The reality is that it would be pure insanity to lend any money without a thorough analysis of the borrowing entity, its surrounding environment, and its finances. The building-block thought process approach helps credit analysts to systematically organize and then analyze all the necessary and appropriate factors.

Most credit practitioners have heard about or used one of the very first such systematic approaches to credit analysis. It is called the *5 Cs of credit*, where the first C, *Character*, indicates that credit analysts must look at the leadership of the firm, its reputation, and its strategy; the second C, *Capacity*, focuses on the firm's ability to make enough money to honor its obligations; the third C, *Capital*, reviews how well capitalized the firm is or how much money the owner has invested in the venture; the fourth C, *Conditions*, discusses the competitive environment of the firm and how

well the firm fits in; and the last C, *Collateral*, analyzes other potential sources of repayment of the obligations, if these are supported by collateral security.

Over time, analytical frameworks have evolved to capture two essential types of credit risk:

- *Default*[1] *risk*, which is measured by assessing a firm's capacity and willingness to service its debt in a timely fashion
- *Recovery prospects*, which provides an assessment of how much a creditor would recoup in the event that a company defaults, and is measured by assessing the characteristics of each debt instrument and structure, and collateral valuation

When combined, default risk and recovery prospects provide a good assessment of the risk of loss, which is important information for lending institutions.

The analytical framework we propose in this book is very much like the building-block approach that we mentioned earlier, going from the more general to the more specific. In broad categories, this includes analyzing the risks related to the countries in which the operating entity does business, the sector(s) of activity in which that entity operates, the entity's competitive environment, its finances and strategy, its organizational structure, and its debt structure and actual debt instrument(s).

To assess these different risks, this book is organized in four parts: Part I, "Corporate Credit Risk," presents the building blocks that help in analyzing a firm's capacity to pay principal and interest on its debt in a timely fashion. At the end of this first part of the book, the reader should be in a position to identify all the essential risks related to a particular firm, and to measure them through benchmarking with peers and through a financial forecast.

Chapter 1, "Sovereign and Country Risks," discusses the risks related to the country or countries in which the firm operates. In particular, it shows the impact on business activity of the rules and regulations set by countries; the support (or absence thereof) from the political, legal, and financial systems; the infrastructure and natural endowments; and the countries' macroeconomic policies.

Chapter 2, "Industry Risks," presents the ways in which sector characteristics influence the credit profile of firms in that sector, in particular, sales prospects; whether the sector is growing, mature, niche, or global; patterns of business cycles and seasonality; and industry hurdles and bar-

riers to entry, such as capital intensity, technology, and regulations. We finish that chapter by asking whether a specific industry risk may limit a company's credit quality.

Chapter 3, "Company-Specific Business Risks," a central chapter in the book, offers an approach to assessing the degree of competitiveness of a particular firm. We discuss competitive position and competitor analysis; market position, sales growth, and pricing; and regulations. However, for the purpose of credit analysis, we also show that diversity of cash flow sources influences business consistency and stability, and how management strategy can affect the credit quality of a firm. We recommend that credit analysts look beyond general characteristics of competitiveness for each firm, and focus on sector-specific aspects (see Appendices A-G which incorporate industry sector Keys to Success in each case study).

Chapter 4, "The Management Factor," introduces the impact that management behavior and decisions may have on a firm's credit profile. In particular, it discusses corporate governance and ways to assess it. Also, it shows how a firm's financial policy should be assessed.

Chapter 5, "Financial Risk Analysis," discusses first the importance of financial policies and how they allow credit analysts to understand the risk tolerance of a firm's management. In this chapter, we present credit measures relative to the balance sheet, profitability, cash flow adequacy, and financial flexibility, and show how to interpret them.

Chapter 6, "Cash Flow Forecasting and Modeling," concludes Part I by introducing a practical approach to creating a financial model for forecasting cash flows and calculating credit ratios. We present one case on Coca-Cola and one on Honda, to show the difference between stable and cyclical sectors.

Part II, "Credit Risks of Debt Instruments," analyzes the impact of debt instruments and debt structures on recovery prospects, should a firm become insolvent. At the end of Part II, the reader should be able to identify all the essential features of debt instruments, recognize debt structures, and measure the recovery prospects of each debt instrument issued by a firm.

Chapter 7, "Debt Instruments and Documentation," gives a brief description of the major sources of funding available to a firm's treasurer and provides a step-by-step approach to analyzing a loan agreement or a bond indenture, the contracts governing the relationships between borrowers and creditors.

Chapter 8, "Insolvency Regimes and Debt Structures," analyzes the impact of a firm's financial distress on its creditors. We discuss the different treatment of creditors across various insolvency regimes and the impact of priority ranking in insolvency. In particular, we present contractual and structural subordination, and support through collateral. We conclude this chapter with an introduction to asset-based transactions, such as those used for real estate, project, or transportation equipment financing, and a rapid description of leveraged buyout (LBO) transactions.

Chapter 9, "Estimating Recovery Prospects," provides a practical approach to assessing recoveries on particular debt instruments. We discuss why businesses fail, how to assess discrete collateral, and how to value businesses by providing a case study of a fictional firm, Mousetrap Corp. Finally, we propose standard cash flow stresses to assess distress.

Part III, "Measuring Credit Risk," proposes a scoring system to assess a firm's capacity and willingness to service its debt in a timely fashion, and to evaluate recovery prospects for debt instruments in the event of a firm's financial distress.

Chapter 10, "Putting It All Together: Credit Ranking," proposes a scoring system to assess both default risk and recovery prospects, with guidance relative to the weights between the different scores. This chapter should permit students and practitioners of credit analysis to capture all the credit risks discussed in this book in an organized framework, resulting in scores reflecting a firm's default probability and the recovery expectations for a particular debt instrument.

Chapter 11, "Measuring Credit Risk: Pricing and Credit Risk Management," discusses the use of credit scoring as a benchmark for the pricing of debt instruments. Also, the use of credit scoring and ratings is presented in the context of Basel II Accords on bank capital allocation. We conclude this chapter by providing a brief description of credit rating agencies and their studies of default risk and credit migration over time. We conclude by presenting ratings and certain credit models.

Part IV, "Appendices A to G: Cases in Credit Analysis," presents seven real-life case studies prepared by senior credit analysts of Standard & Poor's. These case studies reflect credit issues such as mergers, acquisitions, governance, highly leveraged transactions, and sovereign issues.

The intellectual debate has always been which is better: the top-down approach (i.e., to start by analyzing the country risks, then analyze the industry, the company, and the specific debt instrument in that order)

or the bottom-up approach (i.e., analyze first the debt instrument, then the company, industry, and country)? We believe that the argument is irrelevant because good credit decisions are made by analyzing all factors that affect a borrower's ability to repay its financial obligations in full and on time, and the factors that will affect the recovery, should the company be insolvent. It does not really matter where credit analysts start; what matters is what was considered and analyzed to get to a decision.

Investment managers and credit analysts sometimes may not have a long time to make a credit decision, and it is impractical to expect that every last piece of information about an entity will be available before making a credit decision. So it is important for credit analysts to have the capacity to zero in on the most critical specific factors that drive a company's ability to pay its financial obligations. When time permits, however, they should complete that preliminary assessment by a full-fledged review of the borrowing entity and of the debt instruments. This book hopefully shows the way to do that.

NOTES

1. Several definitions of default exist. Some place it at the first occurrence of nonpayment (after a contractual grace period has lapsed), some see it as occurring 90 days after nonpayment (assuming that it has not been remedied during that period), and yet another group place it after bankruptcy. In this book, we use the first and most restrictive of these definitions of default.

FUNDAMENTALS OF CORPORATE CREDIT ANALYSIS

This page intentionally left blank.

PART I

Corporate Credit Risk

Part I addresses all the factors that influence and determine the operating and financial performance of a corporation, and thus ultimately its credit strength. The development of corporate credit quality begins with the macroeconomic and business environment surrounding a company. It then is fully developed by the quality of the assets and the business, by how management utilizes those assets, and eventually by the realization of the financial performance produced by those assets. The chapters in Part I identify all the major analytical areas that an analyst should cover, and the last chapter provides a step-by-step cash flow modeling exercise.

In Chapter 1, we discuss how a corporation's business can be shaped by the actions of a sovereign government. Governments have a wide-ranging impact. We address the way the business rules established, such as tariffs, and even the government's own fiscal situation affect corporate performance. In addition, the physical and human nature of a country plays a great role in determining the types of businesses that arise in that country and how successful they become.

In Chapter 2, we focus on how every industry is different and how each industry has credit risk built into it that could limit the credit quality of the companies in that industry. We discuss the different types of sales growth patterns witnessed, such as high growth, mature, or cyclical. Some industries develop barriers to entry that sort out the viable competitors from the pretenders. We identify the areas in which barriers can develop and how to analyze them.

In Chapter 3, we zero in on the risks inherent in a company's business. Competitive analysis and competitor analysis is the key first step. Competition occurs in all aspects of business, but we stress recognition of the underlying factors that drive the competition and determine which

organizations succeed and which fail. We discuss the importance and the limitations of market share analysis, and the various elements that lead to consistency or volatility of operating performance, such as diversity, flexibility, size, and regulations.

In Chapter 4, the role of management is characterized as the linchpin between business risk and financial performance. Its importance cannot be overstated. We emphasize getting to know the management team and understanding its risk tendencies, since that typically influences financial and operating decisions. Finally, we list many questions to ponder regarding corporate governance.

In Chapter 5, we address the financial measures related to the balance sheet, profitability, cash generation, and liquidity. Understanding the accounting behind the numbers is key for any analyst, and we list numerous accounting topics to study. While the trends and absolute levels are important, financial forecasting is paramount. We identify the key ratios and how to interpret them.

In Chapter 6, a financial model is created that projects cash flows and generates other credit ratios. It's a practical step-by-step methodology that credit analysts can replicate. We present two sample models, one for Coca-Cola and the other for Honda.

CHAPTER 1

Sovereign and Country Risks

"The reality is that most emerging market corporate defaults are caused by basic country risks."

—Laura Feinland-Katz,
Managing Director, Standard & Poor's

Sovereign governments can wield vast powers that shape the financial and operating environments of all corporate entities under their reign. They establish the legal rights of the people, the regulatory framework, and the fundamental rules of engagement for businesses. Of course, that means that a sovereign government can create an environment in which business truly flourishes or an environment that stifles opportunities and success. Yet while the actions and decisions of a national government certainly have a great impact on the business environment, the basic economic and business dynamics that develop within a country are influenced by more than just the government's actions.

In particular, each country has its own unique characteristics that shape the businesses and corporations in that country. This includes its infrastructure, including roads, ports, telecommunications, utilities, buildings, a labor force, an educational system, a legal system, financial markets, and natural resources, and the businesses that develop around that infrastructure.

The combination of these unique characteristics and the government's established business rules influence the country's economic performance and thus the performance of individual companies. Ultimately, the degree of corporate success or failure comes down to how well the available resources are used in conjunction with the governing business regulations. Most of the time, however, this is usually a case of the haves and the have-nots. Well-developed countries generally support business

success because they have abundant natural resources, a well-trained or well-educated workforce, strong fiscal and/or monetary policy, a stable currency, a reasonable level of taxes and tariffs, a sophisticated domestic capital market, a strong banking infrastructure, and established businesses supported by an effective infrastructure.

In contrast, "emerging" countries (or lesser-developed countries) stifle business success because neither the business community nor the sovereign government has been able to utilize the nation's assets effectively. In Africa, for instance, many countries have tremendous amounts of natural resources that are valued highly by other countries, such as oil, gold, and diamonds. One could assume that numerous successful businesses would emerge from countries with such resources. Sadly though, in some of these countries, corrupt governments and a poor educational system limit or even prevent business success. As a direct consequence, corporations based in these countries are viewed as being of high risk.

TABLE 1-1: World—Real GDP Growth
(Percent change from a year earlier)

	United States	Canada	Mexico	France	Germany	Italy	Spain
1990	1.9	0.2	5.1	2.6	5.7	1.9	3.8
1991	–0.2	–2.1	4.3	1.0	15.9	1.4	2.5
1992	3.3	0.9	3.5	1.3	1.8	0.7	0.9
1993	2.7	2.3	1.9	–1.0	–1.1	–0.9	–1.0
1994	4.0	4.8	4.5	1.9	2.4	2.3	2.4
1995	2.5	2.8	–6.2	1.8	1.8	3.0	2.8
1996	3.7	1.6	5.1	1.0	0.8	1.0	2.4
1997	4.5	4.2	6.8	1.9	1.5	2.0	4.0
1998	4.2	4.1	4.9	3.6	1.7	1.7	4.3
1999	4.5	5.5	3.7	3.2	1.9	1.7	4.2
2000	3.7	5.3	6.6	4.2	3.1	3.2	4.2
2001	0.5	1.9	–0.3	2.1	1.0	1.7	2.9
2002	2.2	3.3	0.9	1.1	0.2	0.4	2.0
2003	3.1	1.7	1.3	0.5	–0.1	0.4	2.4
2004	4.8	2.6	3.6	1.8	1.0	0.8	2.8
2005	3.5	3.7	3.6	2.2	1.9	2.0	2.8
2006	3.3	3.0	3.7	2.4	2.1	2.3	2.7
2007	3.3	3.0	3.7	2.1	1.7	2.2	2.4

This sovereign risk analysis is not just for entities in emerging countries. In 2003, the World Bank released a survey entitled "Doing Business" that found that the least amount of business regulation fosters the strongest economies. The bank, working with academics, consultants, and law firms, measured the costs of five business development functions in 130 nations. The survey identified how regulations and legal systems affected an entity's ability to register with the sovereign government, to obtain credit, to hire and terminate employees, to enforce contracts, and to utilize the bankruptcy courts. The World Bank determined that the least regulated and most efficient economies were in countries with well-established common law traditions. This includes the United States, the United Kingdom, Australia, Canada, and New Zealand. In addition, other top-performing economies were several social democracies (Denmark, Norway, and Sweden) that had recently streamlined their business regulations. See Table 1-1 for comparative growth rates of different countries.

United Kingdom	Japan	Philippines	South Korea	Saudi Arabia	Brazil	India	South Africa
0.8	5.2	3.0	9.0	10.7	–4.2	5.4	–0.3
–1.4	3.4	–0.6	9.2	8.4	1.0	0.8	–1.0
0.2	1.0	0.3	5.4	2.8	–0.5	5.3	–2.1
2.3	0.2	2.1	5.5	–0.6	4.9	6.2	1.2
4.4	1.1	4.4	8.3	0.5	5.9	7.0	3.2
2.8	1.9	4.7	8.9	0.5	4.2	7.3	3.1
2.7	3.4	5.8	7.0	1.4	2.7	7.5	4.3
3.3	1.9	5.2	4.7	2.0	3.3	5.0	2.6
3.1	–1.1	–0.6	–6.9	1.7	0.1	6.6	0.8
2.8	0.1	3.4	9.5	–0.8	0.8	6.4	2.0
3.8	2.8	4.4	8.5	4.5	4.4	4.0	3.5
2.1	0.4	4.5	3.8	1.3	1.3	5.6	2.7
1.6	–0.4	4.4	7.0	1.2	1.9	4.3	3.6
2.2	2.7	4.5	3.1	5.5	–0.2	8.3	1.9
3.3	4.1	4.3	6.9	4.0	3.6	6.4	2.4
2.9	2.5	4.5	4.9	3.8	3.5	6.2	3.4
2.6	2.0	4.9	5.5	3.7	3.6	5.5	3.5
2.6	1.9	4.9	5.5	3.6	3.8	5.7	3.2

Strong credit analysis, therefore, includes evaluating the extent to which corporations are limited or supported by the government's laws and regulations. Importantly, future business success can also be linked to the physical aspects of a country, such as the natural resources, the infrastructure, and the labor pool. This chapter breaks down the analysis into five critical drivers about the country and its sovereign government that influence the business environment. These risk drivers are the sovereign powers, the political and legal risks, the physical and human infrastructure, the financial markets, and the macroeconomic environment.

SOVEREIGN GOVERNMENT POWERS: THEY SET THE GROUND RULES

The financial condition of a sovereign government always affects the way it governs and the laws it creates. Yet not all sovereign governments are the same. There are democracies, dictatorships, and kingdoms, with different histories and with styles of governing that can be and usually are very different. As credit analysts or lenders of credit, though, we care about the main powers every government has under its control that affect the business performance of every company within that government's domain.

The main power is first and foremost the overarching right to create and change business regulations. Next, of course, is the taxing and tariff authority, and last is the ability to enact foreign currency exchange controls. Regardless of the type of government or whether the government is corrupt or upstanding, these are the issues a credit analyst cares about. Why? Simply because these are the key tools a government has that allow it to access money and affect the business environment. But sovereigns use these tools for different reasons and at different times.

Regulatory Framework

A national government can establish business rules that range from invasive to vague, and it's necessary to know the difference and the impact on business. Regulations can cover a very wide range of areas, including export/import restrictions, competition boundaries, service quality guidelines, antitrust legislation, subsidies, and the percentage of local or foreign ownership. Regulations can and do affect individual companies' business strategies. Politics being what it is, analysts should investigate the extent to which any company has influence over the political process,

since that could affect the form and content of regulations. Also, analysts should track a government's history of changing the rules. For example, a government could force renegotiation of tax subsidies or royalty arrangements and could change the amount of taxes on imports, exports, or foreign debt. The characteristics of a supportive government differ depending on whether one is analyzing a local or a foreign entity (i.e., the magnitude to which it supports the local entities). Still, a supportive environment would include at least consistent business regulations.

Tariffs

Tariffs, or taxes paid by foreign companies trying to sell their goods in a country, are another way in which a government can extract money from corporations. But tariffs typically have another purpose—to influence the economics of a foreign entity's goods and thereby reduce the demand for those goods, to the obvious benefit of local suppliers.

The most recent example was the tariffs the U.S. government placed on steel imports in the middle of 2002. The impact was to raise the price of foreign steel sold into the United States, allowing the struggling U.S. steelmakers to also raise prices. While this did benefit the U.S. steel companies for about one year, it ultimately did not improve their financial performance enough. In addition, foreign steelmakers effectively rallied their governments' support, and those governments then threatened tariffs on U.S. steel. This drove the U.S. government to withdraw the tariffs at the end of 2003. The obvious point to credit analysts is that tariffs can and do affect the demand for goods and are a very important factor to consider.

Fiscal Policy—Taxation

Income taxes are the primary mechanism by which a sovereign government can generate the revenue it needs to finance its activities. The income taxes a company pays are, of course, a substantial portion of its overall costs: anywhere from 25 to 50 percent of income, depending on the country. This is typically the cash outlay that corporations work the hardest to reduce. Likewise, it is an expenditure that credit analysts should try to understand and forecast very seriously.

Unfortunately, analysts sometimes ignore income taxes because they are usually characterized as a set percentage payment. That would be a

mistake, since income taxes are far more complex than that. The diligent analyst should take the time to analyze the tax regime in a country and the efforts a corporation could go to to reduce its income taxes.

Monetary Policy

In times of financial stress, governments will act to control the monetary flow in the country to its benefit. This is different from foreign currency valuation risk, i.e., the fluctuations in foreign exchange values. Instead, foreign exchange controls, otherwise known as transfer and convertibility risks, are imposed by sovereign governments that are having difficulty making payments on their own debts. A sovereign government that has not met or may not be able to meet its foreign financial obligations is likely to seek to retain its foreign currency reserves. To do this, it can impose several constraints on other government or private-sector borrowers, including:[1]

- Setting limits on the absolute availability of foreign exchange
- Maintaining dual or multiple exchange rates for different types of transactions
- Making it illegal to maintain offshore or foreign-currency bank accounts
- Requiring the repatriation of all funds held abroad, or the immediate repatriation of proceeds from exports and their conversion to local currency
- Seizing physical and financial assets if foreign exchange regulations are breached
- Requiring that exports be conducted through a centralized marketing authority, or requiring the posting of a bond prior to the export of goods to assure immediate repatriation of proceeds
- Implementing restrictions on the inflow and outflow of capital
- Refusing to clear a transfer of funds from one entity to another
- Revoking permission to repay debt obligations
- Mandating a moratorium on interest and principal payments, or required rescheduling or restructuring of debts
- Nationalizing the debt of an issuer and making it subject to the same repayment terms or debt restructuring as that of the sovereign

Foreign Currency Control

Foreign currency controls clearly are not good for any company because the company may not be able to access enough foreign currency to repay its foreign currency obligations, and it may not be able to access the cash flows of its foreign subsidiaries. But it's important to remember that these are actions taken by a government under stress. They are reactionary actions to a deteriorated economic situation. Before these events occur, credit lenders and analysts should be paying more attention to the other sovereign powers and the basic country dynamics because those characteristics generally occur before a government decides to control its currency. They help to predict negative credit trends in a deteriorating economic environment.

The Republic of Argentina in 2001 and 2002 is the most comprehensive example in which a sovereign government imposed broad foreign exchange controls. But it was the other country-specific issues (see the discussion of Repsol/YPF in Appendix D) and not the restrictions on foreign currency that caused most of the corporate defaults in Argentina at that time.

Political and Legal Risks

By their very nature, the political and legal environment in a country or in an entire region can be quite volatile and a dominating issue as far as business success goes. While a sovereign's financial condition can and will drive its decisions on money flows (taxing, currency controls, and so on), a country's financial stress (or lack thereof) can affect how the population reacts or affects the business community or certain businesses.

In this regard, credit analysts should be aware of the possibility for civil unrest that could disrupt operations. There are many countries around the world in which public uprisings have led to work stoppages, declines in revenue, and increases in costs, and even the physical destruction of business facilities. In 2002, for example, Venezuelan oil workers engaged in two prolonged work stoppages in a political insurrection against the administration of President Hugo Chavez. Venezuela's national oil company, Petroleos de Venezuela S.A., experienced a massive disruption in oil production, as there were no employees to offload crude oil, to fill storage tanks, or to operate the refineries. Oil production declined more than 70 percent, and no refined oil products were produced. Since Venezuela, a member of OPEC, is one of the top 10 oil and oil products producers in the world, this disruption caused a spike in oil prices that affected every region

of the world. (Among the OPEC producers, Venezuela is the third largest oil producer, pumping almost 3 million barrels of oil daily.)

In a less global situation, the Colombian national government for many years has been in a constant battle against the illegal drug warlords, whose tactics against the government include frequent attacks on oil pipelines and their employees. Disruptions in Colombian oil deliveries are a regular event. Obviously, in both of these circumstances, lenders of credit have to have their eyes wide open and reflect the substantial risk inherent in their investments.

One way to get comfortable with lending in a country is to evaluate its legal system. It is very important to know how dependable the rule of law actually is and whether there is an independent judicial system. The level of corruption at the government or business level is harder to determine, but it would help to know that the judicial system is fighting it. At one extreme is the United States, which has a history of business case law dating back to the late 1700s, and as a result provides a strong legal foundation for the formation of new businesses. At the opposite extreme is Iraq, which currently has no legal infrastructure to protect business and is only now (in 2004) considering what appropriate laws need to be established to support commerce.

In evaluating sovereign risks, it is important for credit analysts and lenders to understand the "legal" creditor rights. In particular, is there a bankruptcy code, and is it opaque or transparent? If there is a bankruptcy code, does it support lenders or borrowers? Is there legal case history? The supportiveness of the local bankruptcy code tends to affect a country's credit culture. That is, a creditor-friendly code could create an environment in which borrowers are not afraid to default on their debts, whereas a lender-friendly code (if strictly enforced) would prevent such an environment. (See Chapter 8 for an expanded discussion of creditor-friendly and creditor-unfriendly regimes.)

PHYSICAL AND HUMAN INFRASTRUCTURE

Natural Resources

Natural resources that both support domestic needs and may be valued by other countries for export usually determine the types of businesses that develop and succeed in a country. For example, minerals (oil, diamonds, gold, copper, iron, salt, and so on) beget the various mining and manufacturing industries, forests beget the pulp and paper industries, and farm-

land begets the agriculture industries. The quality, quantity, and economic extractability of these resources can also encourage entities from outside the country to invest in the development of those resources for the purpose of exporting them to other countries. Some countries, like the United States, are blessed with an abundance of natural resources. But the ability to use these resources for business and for profit is tied very closely to the business regulations established by the government. An overly protective government could inhibit business growth, and an aggressive, business-oriented government could strip the land of its resources too quickly. The U.S. government is always struggling with the balance between encouraging new business development and maintaining the natural beauty and health of the land. Credit analysts should understand how these rules affect a company's ability to acquire the resources, extract the resources, and use or distribute (export) the resources.

Physical Infrastructure

A physical infrastructure that supports the movement of people and goods is critical because without it, only small amounts of business can occur. Roadways, railroads, airports, and harbors with seaports all facilitate the delivery of raw materials and finished products to their appropriate destination. Infrastructure is vital to any industry involved with natural resources, since these resources are either exported or moved to a manufacturing or processing facility.

For example, the mining of any metals or precious stones would be very slow or impossible without a railroad system. When analyzing an entity that needs to move raw or finished products long distances, analysts should investigate whether there are infrastructure challenges such as potential port or highway bottlenecks, and the permission to use existing infrastructure for commercial business purposes.

Other challenges usually include the availability and sufficiency of electric power. Many times corporate entities have to either build their own electric power plants, roadways, and harbors, or significantly refurbish the existing facilities. Therefore, a key question is the cost of using existing infrastructure and the cost of constructing or maintaining infrastructure. Again, business regulations can play a large role since they can dictate the procedures for moving goods and the costs (such as through tariffs) of doing so. Typically, senior corporate executives work closely with regulators and politicians in the negotiation of business regulations and the construction of the needed infrastructure.

Human Infrastructure

Businesses cannot capitalize on natural resources and physical infrastructure without an adequate human infrastructure, i.e., a labor market and workers that use the physical infrastructure. The quality of the educational system and of the training available, the skill level of the labor force, and the sophistication of the business community are important structural features, as they will affect the complexity and acceleration of business growth. This isn't an issue in well-developed countries, such as the United States, Japan, Canada, Australia, the United Kingdom, and the rest of Western Europe. It can be a problem in the lesser-developed countries, but then again the cheaper labor costs found in Southeast Asia and Latin America are a real boon for many companies.

Analysts should be wary of the development of complex businesses in far-flung regions where the labor force and the business population may not be as well developed as in other parts of the world. This could require the importation of foreign expertise. However, sovereign governments have different views on the benefits of foreign employees. Some see the bringing in of employees as negative, as it takes jobs away from natives, while others see it as a quicker and better way to generate new businesses and therefore new tax revenues. Nevertheless, the availability, quality, and cost of the workforce are key issues for all businesses.

Labor

Labor issues are even more pronounced during stressful economic times, when many businesses are vulnerable to failure, and one of their first actions is to reduce employee rolls and benefits. Understanding the clout of labor unions and/or the bargaining power wielded by employees is key, as they can greatly influence business performance. Understanding the financial condition of the local government is important, too. If it is in financial distress, it may not pay its employees or it may just cut back on public services (utilities, trash disposal, and so on), probably resulting in labor strife or insurrections that disrupt business activities.

FINANCIAL MARKETS

A developed financial system will include a wide array of financial intermediaries that effectively connect sellers with buyers, and then efficiently price the transactions. These intermediaries include investment banks,

insurance companies, mutual funds, private equity, hedge funds, and commercial banks. However, not all countries have all the needed components of a strong capital markets system. Instead, many countries rely on the large financial institutions from the United States and Europe to play these various roles in the markets. Credit analysts need to be aware of the breadth of financial options available in a country.

Banking System

A well-established domestic banking system is important for providing needed capital to help finance the initial and ongoing development of a business or an asset. Credit analysts need to be aware of the availability of commercial lending because the accessibility of the global public and private capital markets is not always very good.

In fact, companies in emerging markets (Latin America, Southeast Asia, the greater China region, Eastern Europe, and Africa) are subject to wavering international investor confidence and do not always have the cross-border European and U.S. markets available to them. Frequently these companies only have local lending available. Credit analysts should know how well these companies fare in their domestic lending markets. Is a company a top-tier borrower that has access to capital during a sovereign financial crisis? Furthermore, does it receive better credit terms than other entities during the good economic times? Limited access to capital is typically a problem for emerging market companies. Yet even the strongest private-sector (debt) issuers can have difficulties accessing local or international capital markets during periods of (sovereign) stress.

Credit analysts should know the depth of the local domestic banking markets because in times of sovereign financial stress, the local banks will also suffer from weakened liquidity. So, to the extent that a borrowing entity has a preferred standing with creditors and, importantly, has committed credit lines, it would be better off than other companies. A heavy reliance on just capital lines poses risks, though, especially during times when the sovereign government is controlling its currency. Thus, access to other sources of capital, such as trade credit (business-to-business lending) and foreign direct investment, could boost financial liquidity.

Accounting System

The disclosure and transparency of accounting and financial reporting has grown substantially in importance following the storied indiscretions

by Enron, Arthur Andersen, WorldCom, and Parmalat. The presence of a regulatory enforcement body, such as the U.S. Securities and Exchange Commission, is critically important but, of course, does not prevent financial or accounting shenanigans. Still, analysts cannot ignore the accounting and disclosure differences among companies and regions. Conducting comparisons (i.e., apples-to-apples) of credits in a similar accounting format is necessary to make a diligent and fair analytical assessment.

Once the structural makeup of a country's physical aspects, its government and legal system, and its financial markets have been appraised, credit analysts can proceed with the evaluation of the country's volatility, trends, and overall economic performance to finalize an opinion on how well supported a company or business in that country is. This entails a review of the very many macroeconomic indicators.

MACROECONOMIC FACTORS

The stability or volatility of an economy can be tied to the many sovereign and country factors mentioned in this chapter. Analyzing that volatility or stability and what it means for corporate credits requires watching the trends in consumer spending, manufacturing and service industries' growth and productivity, inflation, interest rates, and currency valuation. While this is an art that is usually left for economists to disagree over, analyzing economic trends is a critically important aspect of credit analysis. The broad trends give a vivid "big picture" of the environment. Credit analysts, therefore, can determine how those broad trends are affecting the performances of separate industry sectors and individual companies within those sectors.

Consumer Spending

While it is difficult to pinpoint the most important economic indicator, some economists would argue that the ability of the consumer to spend money drives all other indicators. While the authors of this book tend to agree with this premise, we will not and cannot defend the point, since we are credit analysts (i.e., novice economists) and not trained economists. Nevertheless, consumer-spending patterns are important to follow, as they ultimately influence the demand for products to be manufactured and sold.

The supplies of products to be manufactured and sold are driven by other different factors, including the availability of raw materials, labor,

and manufacturing capacity. There is substantial circularity when analyzing economic figures. For instance, the level of employment and wages clearly affects the ability of the general consumer to spend. The rise and fall in consumer spending determines the need for manufacturing plants and retail outlets, which in turn creates the need for more or less labor. The point is that whether an analyst is evaluating a manufacturing or a retail entity, a comprehensive review of all economic indicators is needed, since these indicators are interrelated (see Table 1-2). Economists know whether

TABLE 1-2: Economic Indicators

Leading Indicators
Building permits, new private housing units
Manufacturers' new orders, consumer goods and materials
Manufacturers' new orders, non-defense capital goods
Vendor performance, slower deliveries diffusion index (ISM)
Average weekly manufacturing hours
Average weekly initial claims for unemployment insurance (inverted)
Consumer expectations index
Stock prices, S&P 500 Composite
Interest-rate spread, 10 year Treasury bonds less Federal Funds
Real money supply, M2
Coincident Indicators
Industrial production
Employees on nonagricultural payrolls
Personal income less transfer payments
Manufacturing and trade sales
Lagging Indicators
Average duration of unemployment (inverted)
CPI for services, rate of change
Commercial and industrial loans outstanding
Labor cost per unit of output, manufacturing
Ratio of consumer installment credit to personal income
Inventories to sales ratio, manufacturing and trade
Average prime rate charged by banks

the indicators are leading, lagging, or coincident with the changes in gross domestic product. Analysts, of course, must be aware of this.

Inflation and Interest Rates

In countries with high inflation rates (see World Inflation Rates in Table 1-3), business regulations with pricing flexibility that permits the pass-through of rising expenses becomes a critical factor to stability for many companies. Many times, though, pricing flexibility can occur only in reasonably healthy economic times. In periods of stress, consumers will buy what they need and spend what they can afford. Also, sovereign governments sometimes impose price controls, to the benefit of consumers but probably at the expense of overall economic growth. So, the elasticity of prices can vary for different products and services.

TABLE 1-3: World—CPI Inflation
(Percent change from a year earlier)

	United States	Canada	Mexico	France	Germany	Italy	Spain	United Kingdom
1990	5.4	4.8	26.7	3.2	2.7	6.5	6.7	8.1
1991	4.2	5.6	22.7	3.2	2.0	6.3	5.9	6.8
1992	3.0	1.5	15.5	2.4	5.1	5.3	5.9	4.7
1993	3.0	1.9	9.8	2.1	4.5	4.6	4.6	3.0
1994	2.6	0.2	7.0	1.7	2.7	4.1	4.7	2.4
1995	2.8	2.2	35.0	1.8	1.7	5.2	4.7	2.8
1996	2.9	1.6	34.4	2.0	1.5	4.0	3.5	2.9
1997	2.3	1.6	20.6	1.2	1.8	2.0	2.0	2.8
1998	1.6	1.0	15.9	0.6	1.0	2.0	1.8	2.7
1999	2.2	1.7	16.6	0.5	0.4	1.7	2.3	2.3
2000	3.4	2.7	9.5	1.7	1.4	2.5	3.4	2.1
2001	2.8	2.5	6.4	1.6	2.0	2.8	3.6	2.1
2002	1.6	2.2	5.0	1.9	1.3	2.5	3.1	2.2
2003	2.3	2.8	4.5	2.1	1.1	2.7	3.0	2.8
2004	2.2	1.4	4.7	1.8	1.4	2.3	2.3	2.5
2005	1.5	1.3	4.6	1.7	1.4	2.3	2.4	2.6
2006	1.4	1.7	3.9	1.7	1.6	2.3	2.3	2.5
2007	1.9	1.9	4.1	1.7	1.5	2.1	2.0	2.3

When interest rates are high, local borrowing costs can be expensive. The counterpoint, though, is that in countries with high and maybe even consistently high interest rates, access to the international capital markets may be inconsistent or totally unavailable; leaving the high-cost local lenders as the primary borrowing option. Analysts should review local lending documents to check for possible indexing of rates to a local reference such as inflation, bank deposit rates, or foreign exchange rates. Borrowing costs may be not only expensive but also volatile.

FOREIGN EXCHANGE RISK

While inflation and interest-rate risks tend to be greater in the lesser-developed or emerging countries, foreign exchange rate risk is something that has to be considered in every country. The biggest risk occurs when

Japan	Philippines	South Korea	Saudi Arabia	Brazil	India	South Africa	China
3.1	14.2	8.6	2.1		9.0	14.3	3.1
3.2	18.7	9.2	4.9		13.9	15.3	3.4
1.7	8.9	6.3	–0.1	952.0	11.8	13.9	6.4
1.3	7.6	4.8	1.1	1,927.4	6.4	9.7	14.7
0.7	9.1	6.3	0.6	2,080.0	10.2	8.9	24.1
–0.1	8.0	4.5	4.9	65.7	10.2	8.7	17.1
0.1	9.0	4.9	1.2	15.8	9.0	7.4	8.3
1.7	5.9	4.4	0.0	6.9	7.2	8.6	2.8
0.7	9.8	7.5	–0.6	3.2	13.2	6.9	–0.8
–0.3	6.7	0.8	–1.4	4.9	4.7	5.2	–1.3
–0.7	4.2	2.3	–0.8	7.0	4.0	5.3	0.4
–0.7	6.3	4.1	–0.4	6.8	3.8	5.7	0.7
–0.9	3.0	2.8	–0.3	8.5	4.3	9.2	–0.8
–0.2	2.9	3.5	0.3	14.7	3.8	5.9	1.2
0.0	4.2	3.7	0.6	6.1	5.1	2.9	3.2
0.0	5.5	4.0	1.6	6.2	5.5	3.8	3.3
0.8	5.4	3.6	1.6	6.4	5.3	3.9	3.2
1.5	5.1	3.3	1.7	6.4	5.2	5.1	3.1

revenues and costs are denominated in different currencies. Even small swings in one currency's value versus another's will compress or widen operating margins, making a consistent credit evaluation difficult, or at least making frequent financial analysis an even more necessary part of the analytical process. An example would be a global manufacturer of any product who imports raw materials from one country, builds the product in a plant in a second country, and sells the product in a third country. In this case, raw material and labor costs are in different currencies from revenues. To complicate the scenario further, a company can borrow in many different currencies as well. When currency values swing, disconnects between the value of the cash flows available and the values of the required debt payments can create a severe payment vulnerability.

Fluctuations in currencies can also affect the prices of goods in different countries and, therefore, the demand for products. For example, in 2003 the U.S. dollar weakened in value versus the Eurodollar by about 25 percent. The consequence was that U.S. exports to Europe became cheaper in comparison to European goods. U.S. exports rose by 8 percent as a result. In other words, the demand for U.S. goods rose in Europe because of the change in price value.

In conclusion, there are macroeconomic indicators that help keep analysts informed about the broad trends in an economy and in specific industry sectors. Some macroeconomic factors have very real impacts on the performance of individual entities. Inflation, interest rates, and foreign currency values not only affect the nominal value of revenues and expenses, but also can affect pricing and the demand for goods. Since these economic figures are typically made public very frequently, analysts should follow the announcements and track the trends religiously.

CHAPTER SUMMARY

Sovereign and Country Risks: Establishing the Business Environment

Several basic government and country dynamics shape the business environment. The sovereign government has special rights and powers to establish laws, infrastructure, and business rules, to set and change taxes and tariffs, and to control the monetary flow in the country via foreign currency controls. Knowing these business laws and rules is an important first step in analyzing these businesses and assessing overall credit risk. The stability of those rules, and of the business environment in general,

has much to do with the political and legal volatility in a country. If the political environment is volatile and the rule of law is not strong, the business environment will be unstable; however, a stable environment with strong laws does not guarantee business success.

The physical and human infrastructure in a country affects the types of businesses that develop in that country. Without this infrastructure, new business and businesses will not be created, and it certainly is hard to succeed without it. Analysts should pursue the presence and the costs of the infrastructure, since it can be critical to the success of a business. Nevertheless, having this infrastructure does not guarantee business success.

Although collecting macroeconomic data and analyzing macroeconomic indicators is the job of trained economists, it is important that credit analysts follow these trends closely, too. In addition, the level and changes in inflation, interest rates, and currency values directly affect the value of revenues and expenses, as well as the price and demand for goods, and therefore ultimately financial performance. If read correctly, these indicators can portend rising or falling economic activity or financial performance, and can lead analysts, lenders, and investors to revise their credit decisions (presuming the other analytical aspects of the building block methodology are considered).

After this stage of the building-block methodology, credit analysts should have enough information to form an opinion on the business environment related to sovereign risk, the supportiveness of the sovereign government, the stability of the political and legal environment, the quality and abundance of the infrastructure, and the condition and trends of the financial and business markets. This frame of reference about the business environment that an entity operates in is not sufficient to make a credit or lending decision, but credit scores can be limited on companies in higher-risk countries. Once the foundation for understanding sovereign risk has been established, the analyst can proceed to the next stage: analyzing the specific industry or industries that the entity is involved in.

NOTES

1. *Standard & Poor's Corporate Ratings Criteria* 2002, "Sovereign Risk," p. 38.

CHAPTER 2

Industry Risks

"Industry risk assessment sets the stage for analyzing specific company risk factors and establishes the priority of these factors in the overall evaluation."

—Sol Samson, Managing Director, Standard & Poor's

This quotation highlights the interrelated nature of proper credit analysis (i.e., the building-block methodology). The previous chapter discussed how the makeup of a sovereign government and a country lead to the development of specific industries and business in general. This chapter will discuss how industry specifics lead to questions about individual companies, and how events at an individual company can affect that company's competitors and the industry as a whole.

Industry risk is defined as the risk of losing revenue or market share or incurring an overall financial decline as a result of industry changes, business cycles, product obsolescence, changes in consumer preferences, changes in technology, reduction in barriers to entry, or an increase in competition. The occurrence of industry risk is not just a recent phenomenon. One example dates back over 100 years, to the time of the horse and buggy.

The horse carriage–making industry was a thriving, successful business in the 1800s and early 1900s. Buggy-whip manufacturers were equally successful during this time. The leading manufacturers in both industries were creative and delivered well-constructed lines of products that pleased and satisfied most customers. Credit analysts (if they existed) at that time might have had a favorable view of these companies. Yet analyzing individual carriage and whip companies without analyzing the dynamics of the entire industry, satellite industries, and competing industries would have led to a major financial mistake back then, since the development of the automobile eventually made the horse-drawn carriage obsolete as a primary transportation vehicle. Lending institutions that did not see the connection and thus did not consider the industry's real risks

made poor credit decisions as a result. Those analysts and lenders who were on top of the situation probably knew that government intervention—that is, protection of the horse-carriage and buggy-whip industries—was not likely to occur. While this may be an antiquated and exaggerated example, it provides a lesson that credit analysts and especially lenders and investors frequently forget—that broad industry trends, new products, and competition can rapidly undermine industry relevance.

A more recent example of industry risk involves the link between the Internet and telecommunications firms during the 1990s. Both sectors had seemingly limitless upside potential. Venture capitalists and common stock investors fell over each other to invest insane amounts of money in numerous firms, even if they were only remotely involved with the Internet. Although the success of Internet enterprises was based on a fundamental assumption that high growth rates and demand would continue, many lenders, bond investors, and credit rating agencies accurately recognized that the purely Internet-related firms were very high risk because of pervasive competition encouraged by low barriers to entry, and flawed business models in which their ability to make money was questionable. While stock prices soared, the interest charged on loans to these entities was relatively high, reflecting the risk inherent in these companies and their individual Internet businesses. When a majority of those companies failed to make profits or generate free cash, the number of shuttered Web sites and defaulted companies skyrocketed. So, even though analysts correctly identified the industry risk associated with Internet companies (implied by the sector's high cost of capital), investors still lost money. Furthermore, investors compounded their losses by investing in fledgling telecommunications companies.

Telecommunications companies are the backbone of the Internet—i.e., the entities with the physical cable and fiber optics that deliver the Internet content to subscribers. The primary participants are the massive well-established and well-financed "regional Bell operating companies" (RBOCs). Revenue prospects for data delivery (as opposed to voice delivery) are tied to the demand for the content delivered. (A similar analogy is retail stores, whose performance depends on the demand for the products made by others but sold within the store.)

One would think that the barriers to entry in this business would be high, since it took billions of dollars to build these networks and that the RBOCs had significant advantages because of their size, financial wherewithal, and incumbency. But the barriers came down, as investors—armed with their assumptions that Internet demand would spur demand

for telecommunication services—were abundantly liberal with their money. In fact, brand new companies emerged with fresh capital destined to build out regional and national fiber-optic networks. However, the national U.S. telecommunications network became massively overbuilt once many Internet content firms went bust due to lack of demand. While the RBOCs were able to withstand the quick downturn of this business, most of their new competitors could not. Investors and lenders to the new entrants in the sector lost a lot of money. See "U.S. Telecoms' Credit Quality: A Migration Story" at the end of this chapter. The two foremost reasons, therefore, to thoroughly evaluate an industry and not just an individual company within that industry are to:

1. Assess the industry's short- and long-term sales growth trends and potential, and the events and competitors that challenge those prospects.
2. Assess how strong or weak the targeted company is within that industry, especially in comparison to competitors

Different industries pose different risks and opportunities for the companies that operate in them. There are many aspects and attributes of an industry that should be examined to get the proper perspective on how much risk is inherent in that industry.

In this book, we will focus on the variability of business activity, what it takes to be in a certain industry sector, and how the risks inherent in an industry affect the level of credit risk. We will examine the following:

- Sales and revenue prospects
- Patterns of business cycles and seasonality
- Industry hurdles and barriers to entry
- Can industry risk limit a company's credit quality?

SALES AND REVENUE PROSPECTS

Industries can be characterized in five ways with regard to their sales and revenue prospects. That is, an industry can be considered a growth industry, a mature industry, a niche sector, a global business, or highly cyclical. Each characterization can affect the way an analyst interprets the credit quality of the industry and its participants.

A growth industry is one that has not yet achieved sales in all possible markets but has great potential for sales growth in new markets, to

How the Economy Affects Different Industries

Industries Highly Affected by Economic Changes	Industries Moderately Affected by Economic Changes	Industries Slightly Affected by Economic Changes
Paper and forestry, metals and mining	Telecommunications	Environmental services, including waste disposal
Large-scale manufacturing of capital goods and automotive products	Technology	Health care and pharmaceuticals
Airlines, shipping, trucking, and rail	Large-scale broadcasting and publishing	Regulated utilities
Homebuilding and building materials	Engineering and construction companies	Cable television
Oil and natural gas	Gaming	Military defense
Chemicals		Branded consumer products
Retail, lodging, and restaurants		

new customers, for new products, and at a faster pace in general (greater than 5 percent) than other industries. Conversely, a mature industry is already selling to most possible customers and markets, and has growth potential that is roughly average compared to that of other industries (usually in the –5 to 5 percent range).

Niche sectors are small, narrow businesses or products within larger industries where the growth potential is meaningful and opportunistic for smaller participants and usually insignificant or marginally incremental for larger entities. A global business is typically a mature business whose sales are made across country boundaries. Therefore, the sales growth opportunities for competitors in a global industry can be substantial, but the logistical and political challenges can be daunting. Highly cyclical industries experience wide swings in demand (and supply), with peaks and troughs that are perfectly seen in hindsight but hard to pinpoint as they are occurring.

Sales Growth and Pricing Power

A good metric for measuring an industry's growth, size, and general health is revenue generated by the entire industry. Later in this chapter, we will discuss the costs of business and thus an industry's profitability. All industries are quite diverse. How revenue is totaled can influence opinions of the industry's health. Credit analysts should carefully segment the different sectors within an industry to best compare them and other industries on an apples-to-apples basis. Furthermore, revenue is made up of two components, unit sales and price per unit, and analyzing the trends in both is important.

An industry that has good credit quality would obviously be one that is not just growing in size, but also growing at a consistent pace. Healthy industries are capable of consistently creating new products and services that will be and are demanded by a market. In addition, prospects for increasing product demand are the hallmark of a healthy industry. But the strongest industries sustain an environment of growing demand with stable to rising prices.

The concept of pricing power—the ability of the seller (not the market) to dictate price—occurs when demand exceeds supply and is important because it confirms the value of the industry's (or the company's) products and services. The perfect example is the broad health-care industry, where the need and demand for pharmaceutical drugs, medical equipment and devices, and health-care facilities will grow in perpetuity, without doubt! The success, growth, importance, and effectiveness of each sector within the health-care industry is greatly supported by the worldwide education system and funded by government, insurance, and private enterprises. Arguably, the health-care industry has the best long-term sales growth prospects of any industry, especially given global population growth, the rising average age of humans, and the apparently never-ending creation of new diseases and maladies.

In addition, the health-care industry possesses pricing power in first-world countries. Drugs and medical devices benefit from free-market pricing, while health-care facilities (hospitals and nursing homes) enjoy some price retention supported by the presence of insurance and government payment provisions. While the industry's ability to endlessly increase the cost of health care will ultimately be challenged in the future, the demand for health-care solutions is so great that pharmaceutical firms and medical device makers spend billions on research and development to create new products. Health-care facilities will continue to purchase and provide the most sophisticated medical solutions to their patients.

Rising prices will continue until these entities are prohibited from passing these costs and their associated profits on to the consumer through product and service prices.

Mature Industries

Not all industries benefit from the same strong business fundamentals that the health-care sector enjoys. Many industries are considered mature. Credit analysts cannot be complacent and assume that a mature industry translates to one that has a stable growth pattern. It all depends on the supply and demand fundamentals. Mature industries constantly face shifting supply and demand balances that directly affect sales growth and pricing power. Large-scale manufacturers (makers of paper, chemicals, capital goods, automobiles, and so on) change their industry's supply balances with the opening and closing of manufacturing plants and the rise and fall of workers' hours. Plant capacity utilization is a good indicator of a manufacturing industry's health and especially of the industry's pricing power. Industries with low capacity utilization (below 80 percent, according to most economists' guidelines) typically experience flat to declining prices until demand picks up (usually as a result of seasonal or economic shifts; see later in this chapter) or until more plant capacity is taken out of service. High capacity utilization drives higher prices and encourages manufacturers to build more plants or increase workers' hours (double shifts and so on).

The entrance of new products shapes sales demand in mature industries. It's difficult to determine the ultimate impact of new products on existing products, but it is a critical piece of analysis that will shape the view of industry risks and drive many specific credit decisions. Credit analysts must always stay up-to-date with the latest product trends and new product innovations, and analyze their impact on other products. While the reality is that new products don't always succeed, the entrance of new products or improved existing products can influence the supply–demand dynamics.

First, a new product can make an existing product obsolete for a multitude of reasons, but most commonly because it is a superior product at a similar price. Second, a new product can become an alternative or substitute to an existing product, usually because it is a similar (not superior) product, but at a lower price. Third, new products can change the entire landscape entirely by generating new demand for all related products, much the way faster and faster semiconductors maintain the sales

demand for new computers and have spawned demand for better modems, monitors, and software products.

The best examples (but not the only examples) of all three of these scenarios can be found in the technology sector, where product innovation happens so quickly that today's top products become obsolete in a short period of time and the desire for futuristic products is insatiable.

Niche Sectors

One of the key factors in understanding the sales growth and pricing power in mature industries is to follow the supply and demand patterns. Of course that's true for all types of industries, but the ramifications for niche sectors can be much more volatile. Companies operating in niches are attempting to take advantage of the inefficiencies of larger companies by focusing on a narrow line of products, thereby theoretically delivering a better product at a better price. Most industries have many thousands of small suppliers supporting the products constructed by larger companies. These niche companies are reliant on the success of the larger companies and face enormous competition. This is why niche companies are high-risk credits.

A great example is in the automotive industry, where the Big Three automakers (General Motors, Ford Motors, and Daimler Chrysler) are supplied by about 40 large suppliers, who in turn are supported by roughly 100,000 small niche auto parts manufacturing companies. These small entities are subject not only to the dynamics of the entire auto industry, but to the circumstances surrounding the individual suppliers and automakers they support. This is the typical life in a niche industry.

Therefore, niche companies' sales growth prospects and pricing power are typically considered to be at high risk. Credit analysts should be diligent in investigating alternative products and contractual arrangements with the larger entities, as well as the larger entities' sales prospects. Credit providers clearly should not overweight their loans to any one-niche entity.

Global Firms

Global businesses encompass all of the risks and opportunities of a mature industry, but they are multiplied and complicated by scale. By definition, a global business is one in which competitors, suppliers, man-

ufacturers, distributors, and natural resources can and do produce and deliver from anywhere in the world. In reality, only large companies can effectively work and succeed on a global scale. The complication, however, is that competition for new business in any region of the world can be won by either local players or global companies, and the supply/demand dynamics—and therefore pricing power—are driven by both global and local circumstances.

It is with these industries that the building-block process of credit analysis is most valuable. Credit analysts must pay their best diligent attention to the relevant sovereign and country risks in these cases. For instance:

- Global supplies dictate global prices, but the availability of local supplies (and probably cheaper transportation costs) will affect local prices.
- Local tariffs on foreign products affect the prices of those products (and thus the companies' pricing power) and the overall desirability for foreign companies to be present in those countries.
- Local business regulations could favor local companies, affecting the winners and losers of new business.

Despite these apparent advantages to the local competitors, global companies can benefit from their size via lower costs, a broader array of international products, and more wherewithal to deliver a larger supply of products. Furthermore, global companies do try to act local where they can. Global companies gain local status, and possibly influence more favorable regulation, if they hire a significant number of locals as employees and if they generate a significant amount of tax revenues for the local government.

Cyclical Sectors

Highly cyclical industries not only are greatly affected by swings in the general economy, but are also susceptible to wide variations in supply and demand dynamics that cause financial stress. Therefore, a major challenge for corporations in these industries is to achieve consistent sales performance. To moderate cyclical risks, many companies seek business diversity to soften the swings in performance. To complicate matters further, competition in these sectors is fairly intense, since the product tends

to be either a commodity (e.g., paper, metals, chemicals) or subject to retail consumer sentiment (e.g., autos, retail outlets, leisure).

Predictability of sales trends requires a keen understanding of the sector and all its threads, but even then recognizing the peaks and troughs of the industry's cycle is highly suspect. Nevertheless, credit analysts are best off charting industry sales on a regular basis and watching for shifts by the industry as a whole, by competitors, and by the company itself. The next section goes into greater detail on industry cyclicality.

PATTERNS OF BUSINESS CYCLES AND SEASONALITY

> "The reality is that weak companies usually don't have the benefit of waiting for a cyclical upturn!"
>
> —Tom Kelly, Managing Director, Standard & Poor's

Every industry has a business cycle and is affected by the economic cycle in some way. However, industries are not all affected in the same manner by the swings in their businesses or the economy (see Table 2-1). Credit analysts have to be acutely aware of how industries and their individual participants react to these swings. Furthermore, credit analysts must be looking to the future by anticipating cycles, the possible impacts on sector supply and demand fundamentals, and the potential reaction by individual companies. Rating agencies believe that the value of their credit ratings is that they are based on a long-term view of the credit that does not fluctuate widely along with the economy or business cycles. This is true. However, swings in business performance, no matter what causes them, should certainly affect the lenders' decisions with regard to the size and tenor of loans.

Cyclicality

Cyclicality is a negative that should be built into the business risk assessment.[1] Industries with frequent and wide swings in supply and demand during their cycles are inherently riskier than the more stable industries. Therefore, in anticipating these swings, credit analysts should evaluate the magnitude and timing of the peaks and the troughs of the cycles of

TABLE 2-1: When Does the Economy Affect Certain Industry Sectors?

Early in economic cycle	Automotive and auto suppliers; leisure, gaming, and lodging; building materials, homebuilders, and real estate; retailers and restaurants; textiles and apparel
Stable throughout cycle	Health care; food, beverage, and tobacco; food and drug retail; consumer products; utilities
Late in economic cycle	Metals and mining; chemicals; oil and natural gas; telecommunications; cable television; capital goods; airlines and aerospace; paper; containers; technology; broadcasting and media; publishing and printing

different industry sectors. Of course, given the impossibility of predicting the top and bottom of cycles, this is a task that will be inaccurate, but it is important nonetheless, since it helps frame the future performance of individual companies. The stronger companies will be able to withstand the troughs of any cycle. That does not mean that their financial and operating performance will not decline. It probably will decline. But it does mean these companies typically build up financial resources, such as cash reserves, equity cushions, and available debt capacity, during the peaks of the cycles for use during the troughs of the cycles. Credit analysts should be recognizing the buildup of these resources in the up cycles and be skeptical of the future of companies that spend their wealth.

For example, technology companies (and automakers, too) usually carry a large amount of cash on hand because of the potentially wide and unpredictable swings in the demand for technology products. This cash is used to maintain product development and innovation (i.e., research and development). Nevertheless, technology firms often fail even though they may have promising products because they lack the resources to develop, market, and distribute these products when the tech business cycle is at a low.

The technology sector is not the only example. The chemical industry has one of the most complex business-cycle dynamics. Credit analysts who cover this industry know that demand for chemical products varies on the basis of both retail and industrial needs, whereas supplies vary on the basis of plant capacity (which is very expensive) and the availability of feedstocks (typically oil or natural gas). Since the availability of chemical feedstocks is affected by many factors other than demand for chemicals (for example, the demand for gasoline, jet fuel, and home heating fuel), this disconnect creates a complexity in forecasting the chemical cycles.

Business Cycles

Don't be lulled into thinking that all business cycles are the same. There is no one typical cycle for any industry. In fact, with the development of computing technology and the reality of real-time deliveries, business cycles in the twenty-first century have been faster than those of the 1990s and earlier. It is dangerous to blindly assume that future cycles will behave like previous cycles. Credit analysts should just assume that the phases of the next cycle will be different in some way—longer or shorter, steeper or less severe—and not just a repeat of the last or any other cycle.

In addition, one could expect that corporate management learns from previous cycles and does not repeat past bad decisions. However, our experience is that poor managers continue to make bad decisions, and are not employed for long. Furthermore, global industries have to deal with multiple local and global cycles. So, it would not be wise to assume that history will exactly repeat itself in global businesses.

What has been consistent and should be expected is that weak companies become even weaker and more negatively volatile during troughs in cycles. Most defaults occur during troughs. This, of course, is why analyzing industry cycles is so important. The speed and magnitude of changes in market conditions can mean the difference between survival and failure for some companies.[2] A cyclical downturn could shove a company into the grave, while a cyclical upturn could give the company a needed lift to build resources, to develop new products, and possibly to survive through the cycle to the next trough.

There are different types of cycles. The general business cycle incorporates the overall economic activity and business demand in either a national or a global sense. Demand-driven cycles are typically within individual sectors, such as the product-replacement cycles in the personal computer industry and its satellite industries (semiconductors, moni-

tors, modems, and so on). Supply-driven cycles are reflected in the capacity expansions and plant closings usually seen in the manufacturing sectors, such as in the paper, metals, and chemicals industries. The coincidence of these cycles occurring at the same time is not unusual. This does not necessarily complicate the analysis any further but it does magnify the cycle for the weaker industry participants.

Seasonality

Seasonality is another type of cycle that affects only some industries (retailing, toys, agriculture, utilities, and energy, to name a few). Entities whose businesses are inherently seasonal will exhibit natural swings in their financial and operating performances that must be accepted and taken into consideration. Credit analysts should evaluate and forecast these companies' results on an annual and seasonal basis. In other words, it is important to analyze the annual performance of these types of companies, but at the same time it is important to fundamentally analyze their individual seasons.

For example, in the northern parts of the United States and Canada, natural gas utilities sell the very large majority of natural gas during the winter home heating months of November through February. As a result, these gas utilities make the large majority of their profits during the first and fourth quarters. The second and third quarters of any year are usually less profitable because this is when the utilities are expending capital to purchase gas supplies and fill up storage.

If an analyst were to evaluate credit risk based solely on one of these seasons, the result would be either an extreme positive or extreme negative view of the utility. Instead, analysts should take a longer-term perspective, incorporating this inherent industry seasonality.

For example, what happens during the summer gas supply season (e.g., the amount and cost of supplies purchased and stored) will affect a company's performance during the winter selling season. Conversely, the performance in the winter affects the activities in the summer. That is, if it is very cold and natural gas sales are high, financial performance will be good, but gas inventories will dwindle. A well-managed gas utility will build its financial resources during these good months so as to build supplies again during the summer without impairing its overall financial profile.[3]

The somewhat more critical analysis of gas utilities is what happens during and after warm winter months, since financial performance will

be weaker, and the company will not be able to make up the difference during the subsequent months. This is when management's strategies and actions play an important role in the analysis.

Frankly, the changes in or the consistency of business strategies and financial policies in the different phases of cycles or seasons is critical to the performance of every company. It should not be surprising to witness shifts in management's style or aggressiveness as cycles change. For example, during a cyclical downturn, many entities would slow or eliminate growth efforts, whereas during cyclical rebounds, whole industries could experience widespread acquisition and expansion activities. Once again, credit analysts using the building-block methods would be aware (should be aware) of all the environmental factors affecting an industry or an individual company. During the various phases of a cycle, this awareness helps the analyst probe corporate executives on their business strategies and forecast future industry and company performances.

Business cycles by definition reflect the rise and fall of economic and business activity in an industry sector that result in the varying financial and operating performances of individual companies. Credit analysts should evaluate the impact of these cycles on individual industries and then evaluate individual managements' spending and borrowing decisions in order to effectively evaluate the financial performance of targeted credits.

BARRIERS TO ENTRY

Barriers to entry, or hurdles, can come in many forms and can be either financial or nonfinancial in nature. Every industry has certain requirements—the proverbial entry ticket to the ball game—that it is absolutely essential that a company meet if it is to be able to conduct business in that industry. For some industries, these requirements are achievable, but still necessitate an investment in skills, resources, or hard assets, or need the benefit of time to develop business relationships, a reputation, and experience in general. Conversely, some hurdles are true barriers because the requirements are so expensive (in terms of time and money) or expansive (e.g., geographically or in terms of needed capabilities) that they are realistically very difficult to achieve.

An example of a high hurdle that has been leaped over and over again is in the electric power generation industry. To be able to sell electric power in just about any country, all any company needs to do is build an electric power plant and connect it to the local or regional power network. Electric power technology is 100 years old, and it is easily replicable.

The hurdles are twofold. First, suitable sites for the plant itself, the substations, and the above- or below-ground electric power lines must be located. It is usually difficult to find acceptable real estate within major cities. But this is not a particularly high hurdle, since power plants can be built away from cities in Greenfield locations[4] that are also reasonably close to the power grid (i.e., the network that sends the power throughout the region). Environmental issues, however, could make site location a major hurdle. Therefore, power generators have to expend a lot of effort to respond to the concerns of environmentalists and, of course, residents living near the site.

The second hurdle is the cost to build a power plant, which varies with the size and type of plant. Suffice it to say that the cost is not a small amount. Midsize power plants in the United States cost up to $500 million to construct, and large power plants cost billions of dollars. Given this substantial expense, an analyst could come to the conclusion that cost was a true barrier to building a power plant. The reality, though, is that many large and midsize power plants were built between 1993 and 2003. The demand for electricity during this period was so great that power companies, including many new entrants, were able to find investors and lenders who were willing to provide substantial amounts of capital to build these facilities. The lesson is not that hurdles are achievable, but that there is a cost to achieving hurdles. Analysts need to be aware of the hurdles and what it takes to resolve them because the cost of resolution can affect the economics of the business, and thus the credit quality.

Hurdle Cost

There are several items to evaluate in a business to determine if there are hurdles. As we just noted, the *cost* to construct facilities or the capital intensity of an industry can be a major hurdle. Any industry requiring large-scale assets, such as manufacturing plants, or requiring funds to extract natural resources, such as oil or metals, is going to be capital intensive. The need to access other people's money at times is a strong deterrent to new entrants. However, the marketplace's demand for an industry's products will determine how worthwhile it is for existing participants to build new facilities or for new entrants to come into the sector. If profit margins are wide enough, a corporation will seek to build new facilities. If the returns are healthy enough, investors and lenders will lend money for the construction. The role of the credit analyst is to evaluate the profit margins for the corporation and the availability (and cost) of capital to determine if

cost barriers are low or high. In the electric power industry, the nominal capital costs to build power plants are high, but when the demand for more power is high, the barriers to capital come down.

Technology

The *technology* inherent in an industry, including the industry's rate of innovation or the rate of a product's obsolescence, creates an expectation from customers concerning the development of new products. This requires skilled employees and an effective innovation process that in fact leads to new products or product enhancements that meet customer needs. This is a significant hurdle for many companies.

A good example is in the semiconductor business. Andy Grove, former chief executive officer at Intel, was often quoted as saying "chip processing size and speed will double every 18 months." This was a challenge to the industry's technologists that was largely met throughout the 1980s and 1990s. Intel set the pace of innovation, and its competitors had to keep up or else go out of business (which happened to many). So, while employing skilled technicians is probably not a major hurdle for most semiconductor chip manufacturers, getting those technicians to develop faster and better products at the market's pace was significant. Regarding industry technology, credit analysts should investigate the sophistication required and what it takes to get it.

Access to Customers

Access to customers can be a hurdle in many industries. The location and effectiveness of the distribution channels established by firms in the industry is critical to their success. In some cases, it could take a small industry participant many years to develop a level of customer access that is competitive with that of the major players. Take the retailing industry as an example. Major retailers (food distributors, clothing stores, appliance stores, home improvement centers, gasoline stations, and so on) have thousands of stores situated where those companies believe they are best located for easy access by their targeted customers. It is not especially difficult for new or existing industry players to find and construct such stores, but the cost and the time element are hurdles to evaluate.

Reputation is also a factor. Just having a product (or a store) does not mean that customers want it, will use it, or even know that it exists. The

barrier then involves marketing and creating a known brand. This is a critical component in highly competitive industries, such as consumer products, that rely heavily on customers recognizing and remembering their products. Credit analysts have to recognize that consumers are fickle and that maintaining access to a customer is an essential job for a company, especially those with intense competition.

Suppliers

Access to suppliers and raw materials can be a hurdle, too. While some companies may be fully integrated and gather all the necessary supplies to create their specific product, most, if not all, firms rely heavily on other industries' products or services for supplies. Access to raw materials or to another company's products can be either easy or extraordinary, depending on the location of these materials or products and how they need to be delivered.

This is where a country's infrastructure plays a significant role. Access to harbors, airports, highways, and electric power is critical to the ability to deliver supplies. This isn't much of an issue in a well-developed country like the United States, but it is a substantial issue and expense in many other countries. Global industries, especially those involved with natural resources, have to deal with these issues. These include, but are not limited to, the oil, metals, and paper industries. While this may be a given in certain industries and certain countries, it is not a given everywhere or all the time. Credit analysts must be aware of the supply side of a business because shortages are a success killer.

The automotive industry is the best example of an industry with hurdles so high that they regularly affect existing manufacturers and are probably true barriers for new entrants. In the early 1900s, the auto industry was integrated, with the automakers actually constructing every part of the car. Today, automakers are large assemblers with dozens of facilities and many thousands of employees, and they essentially acquire every piece of their cars from thousands of suppliers. Given the magnitude of these operations, existing manufacturers are challenged to efficiently coordinate their efforts, and new entrants would be hard-pressed to replicate the asset base and the business relationships. Technology issues such as fuel efficiency, safety features, engine power, product design, and other esthetic features can be enormous, and slim profit margins do not permit much leeway in performance. Lastly, access to customers is a daunting task, especially considering the intense competition inherent in the auto

sector. While it might be possible for a new entrant to build a network of showrooms to sell its vehicles, getting the vehicle well enough known to encourage potential customers to come into the showrooms could be difficult and costly. Existing automakers spend a substantial sum every year on their national marketing campaigns to promote their vehicles. This is just one of many expenses that make the cost of being an automaker a likely barrier for a new entrant. Combining all these hurdles creates an industry that isn't likely to face any new entrants. However, because these hurdles are such a significant component of success, existing participants need to continuously try to improve their position; if they do not, they increase the probability of failure.

DOES INDUSTRY RISK PUT A CEILING ON CREDIT QUALITY?

> "The risks of doing business in some industries can be so great that it can put a limit on the credit quality of some and possibly all of the competitors in that industry."
>
> —Edward Tyburczy, Managing Director, Standard & Poor's

In the next chapters, we will discuss the key components that are included in a comprehensive credit review of the business and financial profiles of a company. While any one of those particular analytical categories can be an overriding determinant of credit quality, "the industry risk assessment goes a long way toward setting the upper limit on the (credit) rating to which any participant in the industry can aspire."[5]

This is an extremely important point to understand. If the risks inherent in an industry (see Table 2-2) establish a certain amount of volatility or create a particular performance barrier that cannot be overcome, then that is a limit on the credit quality of the individual participants.

Limits on Profits

One of the prime examples of an industry risk that could limit credit quality is the basic profitability of the sector. Profitability is the difference between revenues and expenses. To the extent that there is inflexibility in either revenue or expenses, there could be a limit to credit quality.

TABLE 2-2: Industries Ranked by Level of Inherent Risk

Highest-Risk Industries	Medium-Risk Industries	Lowest-Risk Industries
Metals and mining firms, especially integrated steelmakers	Oiland natural gas producers	Branded consumer products firms
Large-scale manufacturers, particularly automakers and suppliers	Technology firms, including telecommunications equipment makers	Pharmaceutical and medical device companies
Airlines and aerospace	Restaurants and retail stores	Regulated utilities
Homebuilders and building materials suppliers	Health-care facilities such as hospitals and nursing homes	Publishing and broadcasting
Merchant electricity generators and marketers	Hotels and gaming companies	Military defense manufacturers
Paper and wood products manufacturers	Basic transportation, including trucking and railroads	Agriculture, meat and poultry companies

Executive management's job is to execute the strategy that maximizes its growth opportunities while optimally utilizing its capital. However, factors such as the level of competition, revenue growth, and capital intensity (which play a significant role in the profit margins and cash generation of a company and an industry) can be inflexible at times and restrict even the best management's strategies.

For example, there may be fierce competitors in some industries, so that the fight for customers and market share can occasionally prevent each competitor from growing revenue significantly. Of course, there are also industries with limited competition (monopolies and oligopolies). Analysts therefore must evaluate not only an industry's growth prospects in terms of revenue and net income (as covered in this chapter), but also the degree to which competition (or other factors such as regulation, discussed later in the chapter) affects the growth potential of the industry participants.

As discussed, industries with limited growth potential can have limits to credit quality. Conversely, there are many sectors with steady revenue growth that favorably affects credit quality. With regard to both competition and industry growth, a careful examination of an individual company's market position is warranted.

Capital Intensity

The entry capital requirements of a sector—and the continual investment needs—can directly affect the participants' ability to improve their profit margins or even to be profitable. While investing in the business (capital spending) is usually the fuel for new business growth, some sectors face a level of necessary spending that eats into either profitability or cash flow. Capital-intensive industries that also face intense competition and modest growth prospects typically are saddled with low profit margins. Examples of that type of industry sector are integrated steelmakers, tire and rubber companies, homebuilders, and the mining sector. There are also many positively structured industries that generate comparatively more revenue with each dollar of capital and may also be able to vary spending with cycles. Branded consumer products, pharmaceutical manufacturers, publishing, and broadcasting have some of the more favorable revenue and expense attributes.

Industries that have to spend their free cash to maintain or grow their business also face a limit to their credit quality. The oil and gas production business is an example. In this industry, the producers have to continually spend their cash to explore for, develop, and produce more oil and natural gas. Since their oil and gas reserves are continuously being depleted, if they do not keep up this spending, their financial performance will rapidly decline.

Industries that are susceptible to volatile commodity prices, such as oil and gas (and petrochemicals), are deeply affected by this uncertainty. The top-performing companies in these sectors balance their spending with the level of prices so as to moderate the need for more debt. That is, during periods when prices are high, these companies have the flexibility to invest more into the business, pay down debt, or build a cash horde. Each decision has a credit implication. During periods of low prices, these companies may be prepared for their lower revenues if they invested their money well. If they did not invest well, their credit quality will deteriorate. The point here is that there can be a limit to credit quality in indus-

tries with inherent commodity and spending risks, but it is how companies deal with those risks that sets the limit.

One last point on the oil and gas industry is to note that some of the strongest companies in the world are in this sector (e.g., Exxon Mobil, Chevron Texaco). While some of these firms were dealt a great hand as spin-offs from the John D. Rockefeller organization way back when, they have not permitted the industry's risk dynamics to lead to significant deterioration in their financial profiles.

Industry Regulations

Specific industry regulations (and legal issues, e.g., those concerning asbestos and tobacco) can also put limits on credit quality, since they will affect business strategies and potential performance. For example, the regulated return on equity prescribed for utilities places a significant restriction on earnings growth. However, the certainty of that return, combined with the regulated right to recover prudent expenses, establishes a safety net for monopoly utilities. This typically results in good credit quality. Efforts by many regulators around the world to loosen up regulations, to establish some competition, and to permit more market pricing have hurt that sector's credit quality, and in many cases its financial performance. It's situations like this that require analysts to pay close attention to sector trends.

Lastly, strong (or weak) industry hurdles or barriers to entry can and will affect an industry's credit quality. Clearly, industries that require large amounts of capital, sophisticated technology, or extraordinary efforts to access customers or suppliers, or face that onerous regulatory requirement will have limits to the strengths of their participants' credit quality. The perverse situation, though, is that if a company can actually meet those requirements and its competitors cannot, it very possibly will have much higher credit quality. Conversely, sectors with low barriers will face heavy competition and possibly weak credit quality (e.g., Internet companies).

In any of these circumstances, industries with restrictive traits do not prevent all participants from having good credit quality, and sectors with supportive traits do not guarantee strong credit. But the degree of risk or volatility inherent in an industry's ability to grow its revenues, manage its costs, and be profitable will establish a range of possibilities for the industry players. Some will be limitless, and some limited. It's then

up to those companies to manage within or around the industry dynamics. These are the circumstances that drive corporations to acquire or merge with other companies.

Credit analysts should develop opinions on how inflexible an industry can be, determine what companies can and cannot achieve, and determine what it takes to succeed or fail. Identifying the industry leaders is a good start, since those companies by definition set the trends. Focusing on the best-performing companies in a given industry or sector is also very useful for comparison purposes and to understand the range of business strategies and performance possibilities in the sector.

CHAPTER SUMMARY

Industry Risks: The Critical Risk Factors for Company Analysis

Country and governmental risks establish a framework for the business environment—the rules of engagement. Industry risks are the dynamics built into an industry; they are special to each individual industry because of the type of product or service the industry is providing. All industry participants face the same inherent industry risks, but these risks may affect each company differently, especially since each company's management may react to the risks differently. Therefore, determining the potential impact of each risk on a credit is important.

In fact, identifying the inherent industry risks gives the credit analyst a starting point for the interrogation of a specific company and its particular credit risks. The factors of industry risk to focus on are the factors that can magnify or diminish the volatility of an individual company's performance. This chapter centers on sales growth prospects, patterns of cyclicality, and barriers to entry, and then asks whether the cumulative industry risks limit the credit quality of the sector's participants (see Table 2-3).

Industries can be segmented into five categories: growth, mature, niche, global, and highly cyclical. Each type of industry has different sales growth opportunities. A good metric for measuring industry growth and size is revenue generated by the entire industry. But it's the pace of that growth that triggers different management activities and thus has an influence on credit quality. An industry that typically is supportive of good credit quality would be one that is growing in size at a consistent pace because theoretically that could result in consistent individual manage-

TABLE 2-3: Analytical Factors for Electric Utilities

TRANSMISSION AND DISTRIBUTION COMPANIES (ONLY)

Regulation

- The nature of the rate-making structure, e.g., performance-based vs. cost of service
- Authorized return on equity
- Timely and consistent rate treatment
- Status of restructuring, e.g., residual obligation to provide power, which entails the purchase of electricity for resale
- FERC's evolving rules for regional transmission for organizations, independent system operators, and for-profit transcos
- Incentives to maintain existing delivery assets and invest in new assets
- Nature of distributor support if the company retains the status of provider of last resort

Markets

- Economic and demographic characteristics, including size and growth rates, customer mix, industrial concentrations, and cyclical volatility
- Location

Operations

- Cost, reliability, and quality of service (usually measured against various benchmarks)
- Capacity utilization
- Projected capital improvements
- Nature of diversified business operations, if any

Competitiveness

- Alternative fuel sources, such as gas and self-generation
- Location of new generation
- Potential for bypass
- Rate structure

ment strategies. Nevertheless, supportive industry growth or not, it's how a company pursues that growth that ultimately affects its credit quality.

The whole effort of evaluating sales growth patterns is complicated further by the cyclicality or seasonality inherent in an industry. Again,

managements react differently during these cycles. Credit analysts should monitor how each company spends its cash during the different cycles, since that will ultimately affect the need for further leveraging, and thus will affect the financial profile over the longer term.

Every industry has certain requirements that any company must meet if it is to participate and engage in business. Those barriers to entry can be either high or low, but they are nonetheless a mandatory entry ticket. These financial and nonfinancial hurdles can truly affect the level of success for individual companies and certainly influence the level of competition. For the credit analyst, the barriers are yet another factor to focus on. For example, a thorough assessment of a company's market position is necessary if an industry is determined to be highly competitive.

Now, through the second stage of the building-block methodology, credit analysts should be able to identify the most important industry risk factors. Combined with an understanding of the supportiveness of a country's laws, regulations, and infrastructure, industry risks further mold the possible credit quality of the industry's participants. Separately, each factor does not result in a credit or lending decision, but it is another important piece of information that leads to the decision. The question, though, remains whether industry risks can limit the credit quality of the industry's participants. The general answer is yes, if the risks restrict a company's ability to grow revenues, manage costs, be profitable, or just generate cash. The specific answer for any one credit can be different, though. It all depends on how its management responds to the dynamics of its industry and the business environment. So now, the analyst can focus on the risks inherent in an individual company.

CASE STUDY: U.S. TELECOMS' CREDIT QUALITY—A MIGRATION STORY

Since the early 1990s, the U.S. telecommunications industry has undergone dramatic changes that have literally transformed the basics of the industry. This case examines the genesis of these changes and their impact on credit quality.

From the inception of telephone service through the 1980s, U.S. telephone companies were regulated under a traditional rate-base rate-of-return methodology. In other words, phone companies were guaranteed a specified return on their invested capital. State and federal regulators would apportion the telephone company's plant and associated expenses among their respective regulatory jurisdictions and allow the company to

charge the rates needed to assure the proper return. This led to rational behavior on the part of regulated entities, which included constructing and maintaining telephone networks with extremely high levels of network performance so that the appropriate constituencies (i.e., customers, regulators, and politicians) would be kept happy.

While this regulatory construct was viable for a century, as new technologies drove down the cost of service, it became recognized that the traditional rate-based rate-of-return model might not be ideal and was arguably contradictory to efficient behavior. For example, a company that undertook what would be considered rational steps in a competitive environment, such as streamlining costs or rationally minimizing capital expenditures, might find itself "punished" in essence for its efficiency by being forced to reduce its rates so as not to be over-earning. Eventually, of course, an inefficient company, while entitled to its legal rate of return, might find that its rates were so high that residential customers would complain to regulators and politicians. But regulators, keenly aware of political realities, found a solution: shift a disproportionate share of the cost recovery burden to business users and long-distance callers. Given today's low long-distance rates as a result of the highly competitive long-distance marketplace, it may be difficult to remember that as late as the 1980s, long-distance calls were somewhat of an extravagance for many people—the result of this deliberate social policy to ensure low-priced, universal basic telephone service.

So the regional Bell operating companies (RBOCs) were historically given a virtual *de jure* monopoly on local residential service, with subscriber rates kept at a politically acceptable level and returns for the companies guaranteed. As a result of protected markets, guaranteed returns, and regulators' interest in encouraging strong balance sheets, credit quality in 1990 was very high. Eighty percent of rated U.S. telecoms and an even larger percentage of rated debt carried investment-grade ratings, and 60 percent of ratings were at the A level or better.

Deregulation Begins

The breakup of AT&T also resulted in specified roles for telecom companies. The seven RBOCs were effectively limited to providing telephone service within specified boundaries called local access and transport areas (LATAs). These LATAs were usually coincident with state boundaries for the lower-population states or with area codes for larger-population states. Any calls that crossed a LATA boundary had to be handed off to a

long-distance carrier, such as AT&T or Sprint, which would then deliver the call to the local telephone company for delivery to the terminating or called party. The long-distance carrier paid an access fee to the originating and terminating local phone companies for the use of their local network. These access fees were the single largest expense category for the long-distance providers. This setup led to ways of bypassing these expensive access fees, fueling the growth of alternative access providers such as Teleport Communications Group Inc. and Metropolitan Fiber Systems. Later, in a somewhat changed regulatory format, it led to the proliferation of competitive local exchange carriers (CLECs).

The 1990s also saw the advent of "flexible regulation." While the traditional regulated monopoly model met the goals of establishing high-quality, universal telephone service, regulators were questioning whether this traditional model was the most efficacious. Given technological developments that drove down the cost of telecommunications, the notion that the then-current regulatory model was optimal was beginning to be challenged during the late 1980s.

Noting the declining telecom cost curve and the need to stimulate more advanced forms of data and voice telecommunications, regulators began to experiment with alternative forms of regulation (AFORs). These were generally hybrids, somewhere between strict regulation and free markets. As a rule, these AFORs allowed more reward with more risk for regulated telecoms. A common AFOR was one that regulated prices instead of returns. For example, in exchange for capping or lowering its prices, a telephone company could potentially earn a higher (although usually not unlimited) return. The logic was that customers benefited from falling prices and companies were encouraged to be more efficient. Companies were also increasingly being forced to allow competitors into their markets. On the federal regulatory front, the RBOCs were given the opportunity to get into the previously proscribed interLATA business by demonstrating that their own networks were open to competition, and, indeed, the RBOCs now have long-distance approval.

Conversely, the long-distance companies are aggressively offering local service. This local provisioning is generally done by the long-distance companies leasing the RBOCs' own network on a wholesale basis, via unbundled network elements, and marketing their own package of local and long-distance services.

As a result of these developments, overall credit rating quality has dropped, specifically because of the confluence of two major trends. First, there was a rapid influx of new issuers, with virtually all of these compa-

nies rated in the speculative-grade category. In fact, most had ratings no higher than B, and many of the issues were rated in the CCC category, significantly weakening the overall telecom credit profile. Issuance of speculative-grade debt by telecom companies totaled more than $75 billion between 1997 and 2001. In addition to the huge issuance of speculative-grade debt, telecom credit quality was weakened further through a general weakening of many established investment-grade incumbents. Downgrades by Standard & Poor's dominated rating actions beginning in 2000, with a ratio of 27 downgrades for each upgrade action in 2002. As a result, the average rating fell from BBB+ in 1990 to BB in 1995, and declined further to BB– in 2003.

Credit Lessons Learned

The migration the credit quality of U.S. telecoms has reflected the sea changes that this industry has undergone beginning in the 1990s. But while the regulatory and technical developments in telecommunications are specific to the industry, the core drivers of the telecom experience and the impact on credit quality can provide analytical insight beyond just telecommunications. Some of the credit lessons learned from the telecom experience that are applicable to other industrial sectors follow.

Do not underestimate the competition or the power of incumbency.

The new telecom entrants (the CLECs in particular) often underestimated the difficulty of competing with incumbents (in this case, the RBOCs). A mindset that the RBOCs were bureaucracies that would willingly cede at least some of their market share may have lulled some CLECs into underestimating the ability of the RBOCs to at least temporarily stifle competition.

Overreliance on regulatory support may not be viable long term.

The Telecom Act created a regulatory environment that was supportive of new telecom upstarts. It provided competitors access to the RBOCs' networks at favorable prices, and these upstarts benefited from certain access fees and reciprocal compensation. But the passage of the act after years of political battles between large industry segments should not have been viewed as the final chapter. Indeed, court challenges and FCC decisions diluted some of the act's provisions, and new entrants that based their business plans

on support from the act faced trouble if they did not have an effective fallback position.

Irrational exuberance does not last forever.

While in retrospect this seems clear, just a few years ago it was almost sacrosanct to ignore the vicissitudes of the market. Investors' appetite for high-yield telecom debt was insatiable, with little regard being paid to the potential for a shift in market reception for telecom securities.

Prefunding is good.

Many telecom start-ups had business plans that contained funding gaps two to three years out. The companies expected the capital markets to gladly provide additional financing when it was needed. Of course, the virtual closure of the market to high-yield issuance in general (and to CLECs in particular) is well known. Prefunding is a virtual necessity for start-ups. The additional interest expense is a reasonable price to pay for the surety of needed liquidity.

Source: Excerpted from "US Telecoms Ratings: A Migration Story," May 2004, written by Richard Siderman, Managing Director, Standard & Poor's.

NOTES

1. *Standard & Poor's Corporate Ratings Criteria* 2002, p. 41.

2. *Standard & Poor's Corporate Ratings Criteria* 2002, p. 41.

3. Natural gas prices typically rise during and after cold winter seasons, making the summer gas purchases more expensive.

4. A Greenfield location is a previously unused site, such as an open grass field. A Brownfield location is a site with an existing manufacturing plant or some other type of business activity.

5. *Standard & Poor's Corporate Ratings Criteria* 2002, p. 18.

CHAPTER 3

Company-Specific Business Risks

> "Competition can be based on price, quality of product, distribution capabilities, image, product differentiation, service, or some other factor."
>
> —Scott Sprinzen, Managing Director, Standard & Poor's

At this point of the analytical process, the critical role a sovereign government and country dynamics play relative to business and how much volatility is inherent in the relevant industry sector should already be understood. Based on this fundamental knowledge, the credit analyst's next step is to drill into a corporation's business to understand how it generates funds and how it spends those funds. A credit analyst also needs to know how stable or unstable that revenue stream and cash generation will be, and therefore how reliable the company is likely to be at repaying its financial obligations.

In that regard, then, the end result of business risk analysis should be a determination of a business's volatility. As we will suggest in Chapter 5, "Financial Risk Analysis," this is useful in establishing the appropriate financial performance for specific levels of credit quality. To effectively characterize business risk, we suggest in Chapter 10 the following five-point scale:

- Very high risk
- High risk
- Moderate risk
- Low risk
- Very low risk

As you go through each section of this chapter, keep the level of risk in mind. Business risk analysis starts with evaluating the products or services the company provides. As in the analysis of industry risks and opportunities, there are many factors to assess. For example, in Michael

Porter's book *Competitive Strategy*, he notes that a company's competitive position is influenced by "the five forces," namely, buyers, suppliers, industry competitors, potential new entrants, and substitute products and services. (See Figure 3-1.) In this book, we too stress competitor analysis and an entity's competitive position, and this chapter also has a focus on market position, business stability, regulations, and management.

The type and magnitude of competition, and the most important competitive factors, can and do differ industry by industry. (See Appendices A-G in which each case study refers to the industry's Keys to Success.) In corporate credit analysis, the basis for the evaluation of a company's competitive position should be the important factors that drive the company's success. Identifying these keys to success also allows analysts to compare that company to its industry peers. All of these factors can be characterized as a corporation's overall business profile.

COMPETITIVE POSITION AND COMPETITOR ANALYSIS

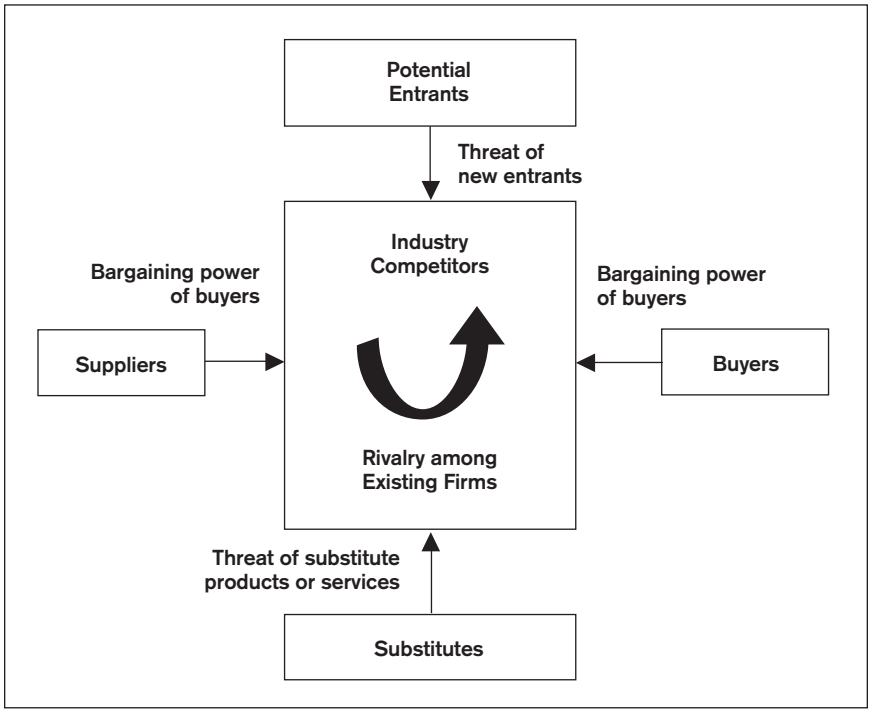
The crux of good corporate credit analysis is accurately comparing one credit with another. Lenders of money and investors in securities essentially rank companies by their degree of quality (i.e., the strength of their ability to pay financial obligations) when determining what interest rate to charge or how much to pay for an investment. Comparing the strengths and weaknesses of different credits is a core activity of a credit analyst. (See Chapter 11, "Measuring Credit Risk.")

Competitive Strategy

Related to this, analyzing a company's strengths and weaknesses relative to those of its business competitors is key to determining how successful the company will be in its business activities. Therefore, this is a critical component when analyzing a credit. In *Competitive Strategy*,[1] Michael Porter is talking directly to practitioners (i.e., corporate executives) on how best to win business competition. He writes:

> The goal of competitive strategy for a business unit in an industry is to find a position in the industry where the company can best defend itself against these competitive forces or can influence them in its favor.

FIGURE 3-1: The Five Forces Model



Source: Michael E. Porter, *Competitve Strategy*, The Free Press, 1980.

Since the collective strength of the forces may well be painfully apparent to all competitors, the key for developing strategy is to delve below the surface and analyze the sources of each. Knowledge of these underlying sources of competitive pressure highlights the critical strengths and weaknesses of the company, animates its positioning in its industry, clarifies the areas where strategic change may yield the greatest payoff, and highlights the areas where industry trends promise to hold the greatest significance as either opportunities or threats.

The Competitive Factors

All industries have multiple keys to success and critical competitive factors. Price, quality, customer service, and the ability to deliver on time and

in quantity are fairly typical competitive factors, especially in business-to-business situations. Price, quality, image, shelf space, repeat business, and product familiarity are also reasons why consumers buy products. The type of industry may matter; that is, it may matter whether the industry is a global, mature, growth, or niche industry because the nature of competition in a particular type of industry could differ from that in other types.

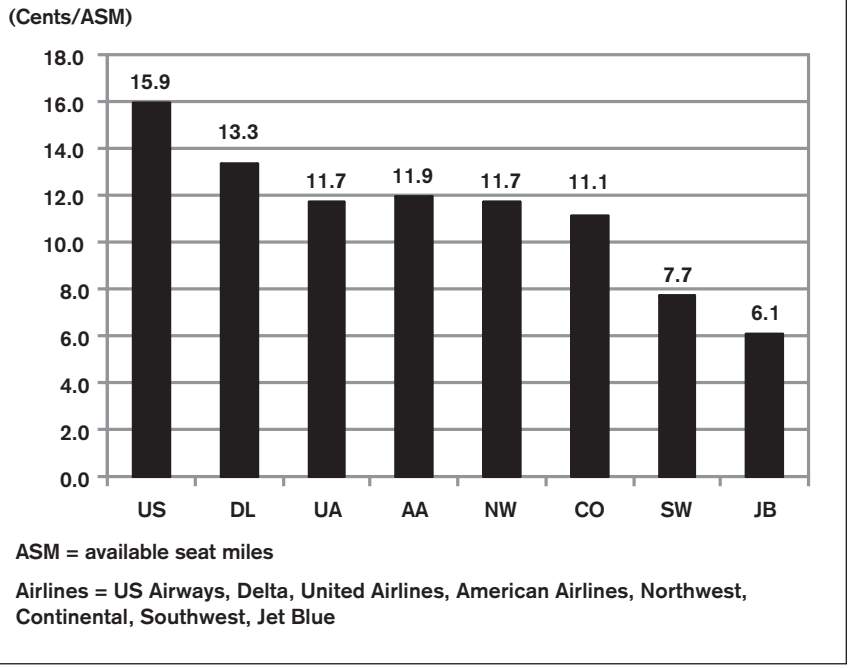
Analysts utilizing the building-block methodology will conduct an industry risk assessment and will therefore identify the critical factors for analyzing specific company risks. Many of those risks will be key competitive factors, too.

To determine the critical keys to winning the competition, credit analysts should focus not only on the primary competitive factors but, most importantly, on the underlying factors that influence and ultimately determine the winners and losers. For example, if an industry were determined to be highly competitive, a careful assessment of the firm's market position would be one of the focuses. More specifically, if a company competes on price, the underlying factor will be its costs. The lowest-cost supplier is best able to reduce its prices and maintain profitable margins (and thus win the price competition).

An excellent example is Southwest Airlines and Jet Blue, whose operating costs (i.e., costs per available seat mile) are at least 30 percent lower than those that of the larger major airline competitors (see Figure 3-2). If competition is on quality, the underlying factor is the skills of the company's people or the abilities of the manufacturing facilities. If competition is on the ability to deliver, then the breadth of distribution outlets or the speed of manufacturing is key. Technology and health-care companies compete on innovation. The key to their success is innovation and the ability to create the next valued product that consumers want, need, and are willing to purchase.

There are many ways to compare competitors. The key is to be comprehensive. In doing a cost comparison, think about the entire operation. For example, most companies have energy costs, manufacturing costs, distribution costs, construction costs, labor costs, financing costs, and taxes (to name just a few). Managers are always looking for ways to be operationally efficient or to get economies of scale because it helps their competitive position. Efficiencies and economies can be in manufacturing, distribution, marketing, purchasing, administration, or finance. In other words, efficiencies are sought in every operation within the company and in every location. Analysts should be comparing competitors along these same lines.

FIGURE 3-2: 4Q 2003 U.S. Costs



Source: Standard & Poor's

MARKET POSITION, SALES GROWTH, AND PRICING ARE INTERRELATED

"The Corporation is one of the world's largest and most diversified manufacturers of softgoods for apparel and interior furnishings. It is a leading developer, marketer, and manufacturer of fabrics and other textile products used in a wide variety of . . ."

—Burlington Industries Inc., September 30, 2000, SEC Form 10-K

"As a leading supplier across all distribution channels, Pillowtex sells its products to most major mass merchants, department stores, and specialty retailers. . . . Pillowtex is one of the largest firms in the home textile industry and has significant competitive strengths."

—Pillowtex Corporation, January 1, 2000, SEC Form 10-K

Big deal! Do not be fooled by a corporation's marketing spin. Nearly every company says it is one of the leaders in its business. The word *leading* is possibly the most used and abused word in financial statement reporting history. In most cases, a company's representation of its market position is deceptive and can mislead analysts into believing that the company's products and services are stronger, better positioned, and more profitable than they really are. For two real-life examples of misleading market positions, look no further than Burlington Industries Inc. (filed for Chapter 11 bankruptcy in 2001) and Pillowtex Corp. (filed for Chapter 11 bankruptcy in 2000)! Clearly, their products' market positions were not strong enough to keep these companies successful.

The strength of a product's market position is an extremely important element of credit analysis. Understanding product strength (i.e., market position) helps credit analysts determine a company's ability to generate consistent sales demands, to achieve the product's potential sales growth, and to maintain pricing power.

The reality is that not every company can be the sales leader of its industry, and that even being tops in sales does not guarantee profitability. Even more confusing is that many times the number two or number three company in sales is more successful than the industry leader. General Motors sells more cars than any other automaker in the United States, but by many other measures Toyota can be considered the most successful company in the industry.[2] Furthermore, unfortunately, in some industries, being number two can significantly diminish success and therefore credit quality. This sometimes is because the market is not big enough for multiple products, but most of the time it is because a company's products are not meeting customers' needs.

Market Share

Still, market share analysis can unlock some mysteries. To start with, analysts must make sure to conduct the analysis on a company's main markets or products and not dilute the analysis by combining too many products or attempting to analyze the company's share of small markets. For example, in analyzing a surgical supplies distributor, it is better to focus on its market share in the surgical supplies industry, rather than its share of just one product, because of the relatively small revenue base for each product. However, in analyzing pharmaceutical manufacturers, the market share of individual drug products is important because the

revenues generated by some drugs are in the billions of dollars.

Translating market share is a bit tricky. Having the highest market share is a goal for most firms, but having it does not necessarily translate into a competitive advantage or dominance. Highly fragmented industries may have multiple "leading providers," depending on how they calculate their shares. Determining whether a certain level of market share is positive or negative has a great deal to do with the level of competition. Having 40 percent of a two-product market could be poor performance, while having 20 percent of a fragmented market could be highly successful. Either way, market share analysis is not a static one-time effort. It should be done over a continuum. The trends that develop are the telltale signs of growth or deterioration. Furthermore, entities or products that are increasing their market share may also be achieving a degree of price leadership. The reverse is true, too. This phenomenon does not happen overnight, which is why share analysis is a long-term process.

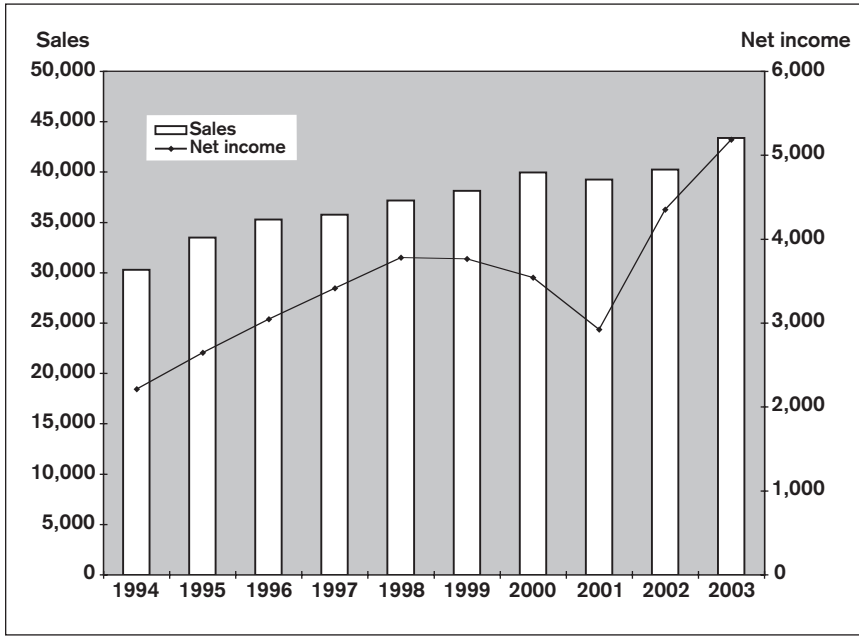
Product and Sales Diversity

Most industries have a broad range of different buyers of their products and services. The stronger credits have products or services that are differentiated from competing products and are desired by customers. For these entities, this creates a bargaining power that then translates into consistent sales demand and, importantly, a measure of pricing power as well. For some companies, this power can be sustained, but for many others, it is fleeting and subject to the swings in the economy or customer whims. The successful companies understand the strengths of their products and know the demands of their customers, and therefore they become consistently better at delivering what the market wants or needs. Many times that means retrofitting the quality or other attributes of the product to meet customer requirements. Most of the time it reflects a deep understanding of a market and its trends, resulting in shifting marketing, packaging, distribution, and pricing strategies in response to those trends. In essence, the stronger companies can target customers at the right time with the right product and deliver it at a profitable price. Companies that do this well achieve a greater percentage of the growth in sales in their products. The weaker companies unfortunately do not find a strength in their products, don't know their customers well enough, don't attract enough sales demand, and ultimately end up just cutting price (and thus profitability) so as to clear inventory.

Since most companies have many products, it is very difficult—if not impossible—for credit analysts to understand a management's strategies for each and every product. But it isn't necessary, either. Instead, analysts should evaluate the industry trends, competitor trends, consumer trends, and the individual management's broad and specific strategies, and then the consistency of the company's sales performance.

Take Procter & Gamble, for example. For 20 years it has been one of the most successful consumer products companies, and it continues to be so, as evidenced by its consistent revenue and income growth (shown in Figure 3-3). While all consumer products are fraught with risk based on consumer whims, Procter & Gamble has consistently sold its many and varied products. Analysts would find it impossible to evaluate management's strategies for each and every one of Procter & Gamble multitude of products. Instead, it's much easier and more useful to evaluate the trends and forecasts for personal care products, management's overall strategy for new product development, and the company's track record.

FIGURE 3-3: Procter & Gamble Sales and Income ($ millions)



Sales Consistency versus the Economy

Consistency, and conversely volatility, of sales and revenue are what a credit analyst is trying to determine. Consistent sales growth and pricing power are two of the marks of good credit. As stated in prior chapters, analysts should evaluate the consistency and growth prospects inherent in an economy and in an industry, and compare them to the company's performance. By combining this with an opinion of a company's product strength versus competitors' strengths, analysts can then project sales growth and pricing trends.

As an example, during a positive economic environment and in an industry with growing customer demands, a company with a strong product position can be expected to grow its sales at a faster rate than its competitors and increase its prices at a rate equal to or greater than the rate of inflation. In an economic or industry slowdown, the same company would still achieve better growth rates than its competitors, but its year-over-year sales and revenue comparisons would be weaker. Companies with average or weak market positions strive to achieve consistency (and rarely have it) and seek to achieve the growth rates inherent in their industry. During good economic periods, it's possible for companies with weak market positions to achieve healthy sales growth year over year. But when the economy weakens or when the industry slows down, weaker-positioned companies are negatively affected to a greater degree and faster than the stronger entities.

BUSINESS CONSISTENCY AND STABILITY

The consistency and stability of a corporation's businesses (measured by revenue, unit sales, profitability, and cash flow) are a key component of credit analysis, with consistency being considered a strength and volatility a weakness. Volatility occurs for many reasons, including the effects of business and economic cycles, competitive factors, product obsolescence, technological innovations, and, in general, shifts in demand for a company's products or services.

Companies achieve business stability by having either a strong competitive position supported by quality products or services with strong enough market positions to withstand shifts in the business and general economies, or significant diversity and managerial skill to navigate through the economic shifts. Business stability does not mean that a company's financial and operating performances remain unchanged. On the

contrary, business stability assumes that management can successfully proceed with its strategies with confidence because of the financial and nonfinancial strength of its operations. Yet if a company has a good measure of stability, there can be a more certain predictability of its cash flow generation.

The credit analyst's job is to incorporate the certainty or the uncertainty derived from the company's consistency or volatility into the credit decision. Since competitive position and market position were covered in this chapter already, this section will focus on the diversity of assets.

Operational Diversity

The breadth of an organization can be an important ingredient that brings stability to a business. But the sheer mass of assets is not as important as how that size and assets are used. In fact, a poorly utilized large asset usually becomes a larger financial headache than a poorly utilized small asset. Enron and WorldCom were huge companies that failed because of massive fraud that was designed to hide the fact that their businesses were not as successful as they were purported to be.

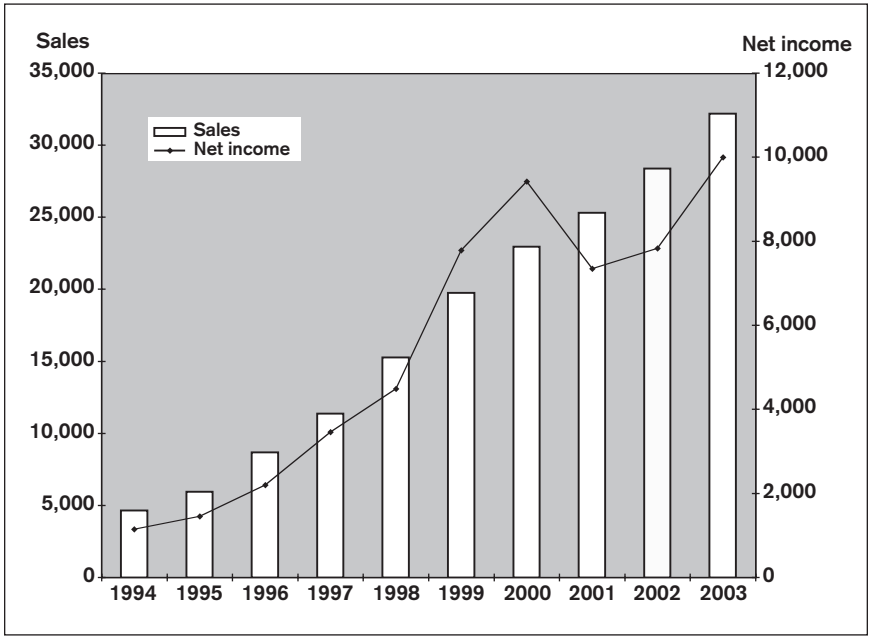
Yet being large does have its benefits. First of all, large corporations, whether they are national or global, mature or in growth mode, typically have some measure of operational diversity. *Operational diversity* could be several businesses, product lines, manufacturing plants, distribution outlets, or even types of customers. The benefit of true diversity is that it helps to smooth out the effects of business cycles and other more specific business developments. That is, if there is a sales slowdown in one business or a problem with one aspect of a business (e.g., a customer or a manufacturing plant), a diverse company could shift its activities to focus on its other assets. That's a clear advantage over small entities, which are usually more concentrated in terms of products, customers, suppliers, and geography, and may be unable to make similar shifts in activities. Credit analysts should be aware of this flexibility and determine whether a company is actually capable of using it. If so, then it is a strength.

Diversification often affects competition, too. When considering the barriers or hurdles to entry in a business (discussed in Chapter 2), larger entities are likely to have better diverse access to buyers and suppliers and therefore theoretically better competitive positions than small entities. That, of course, is a general statement that can be refuted at times in

specific situations. The best contrarian example is Microsoft, a very small company in the mid-1980s that had no particular advantages compared to the industry behemoth IBM. Yet it grew to be one of the largest, most successful companies in the world within 10 years via deft product management. (Microsoft's initial success was purchasing a disk operating system, DOS, from another small firm and then convincing IBM to incorporate DOS into its personal computers. See Microsoft's growth in revenue and income in Figure 3-4.) Today, Microsoft is a massive organization that utilizes its size advantages. It is the industry behemoth whose products have a dominant market position over customers and suppliers, who is a technology advancement leader, and who has billions of dollars of available cash to withstand enormous changes in its business environment.

The lesson is that large firms do have several advantages because of their size, but, while this is rare, small companies can succeed if they achieve a demonstrable market advantage. Therefore, market share analysis as discussed earlier in this chapter can provide some insight into a company's competitive position and thus another aspect of the stability of its business.

FIGURE 3-4: Microsoft Sales and Income ($ millions)



Financial Diversity

Operational diversity provides financial stability in a number of ways, one of which is by having a revenue, expense, and income mix coming from diverse products, plants, customers, and regions. While it may be unrealistic to look for perfect diversity, many organizations get significant stability in their financial performance by having multiple businesses delivering varied portions of their revenue and income. In these cases, management has the flexibility to shift resources (e.g., capital spending, marketing activities, human resources) among the business units based on the economic or business environment—and even during different business cycles or seasons—and still expect a consistent financial performance. Companies with dominant business units may achieve consistent financial performance for many reasons, but they probably do not have the same flexibility as a diverse company.

A good example is General Motors, which attempted to create diversity in the 1980s by purchasing Hughes Aircraft Corp. (later named Hughes Electronics Corp.) for $5.7 billion and Electronic Data Systems Corp. for $2.55 billion. But despite these huge investments, GM ultimately never created enough diversity because its automotive business continued to be the prevailing entity driving its credit quality. Eventually, these investments did pay benefits, as GM sold them off (in several increments) for substantial sums, bolstering its liquidity when cash generation from the automotive business was weak.

Asset Flexibility

Large companies often have some measure of financial flexibility because they have peripheral assets that they can sell in times of need. While this can be favorable for credit quality, asset sales should not always be viewed positively. Asset sales can be viewed negatively if the financial contribution from the departed asset will be missed (that is, if it is a key component of income and cash flow) or if the sale recognizes the failure to make the asset valuable enough to retain (and brings into question the success and value of other businesses). Conversely, being able to dispose of an asset that is not important to financial performance and turning that cash into something valuable is certainly positive. Still, corporations are not expected to make a regular practice of liquidating their assets, and companies that regularly sell off assets to support their capital needs have to be viewed skeptically. At some point, though, asset sales can cease to

be an option if a company exhausts the assets it has available to sell or the marketplace devalues the asset (if the company is viewed as being desperate to sell it). The credit analyst's responsibility is to calculate the benefit or detriment from the asset sale and subsequent use of proceeds.

Lack of flexibility is negative for all companies, especially small firms and those in cyclical industries. A simple setback for some companies could be a disaster for an entity without the financial wherewithal to survive it. Besides being able to sell off noncore assets, large companies can at times have a better ability to withstand economic or industry downturns because they are relied on by many others. Bankers, business counterparts, and employees might possibly be more tolerant during downturns and more willing to renegotiate agreements because of the importance of their business relationship.

For instance, a bank's exposure to a firm, especially a large one, can be quite extensive. Typically, when a company is struggling, banks waive covenant violations (albeit at higher banking fees) and may even lend more money to the entity if the bank evaluates the company as having reasonable longer-term prospects—that is, if it is confident that the company will be able to pay its financial obligations over the longer term. Small entities do not always get that sort of treatment from banks because they are often not as established in their business, do not have extensive business relationships to keep the business going, and do not have the financial support (cash or asset value) to give the bank collateral protection. Business counterparties may also give a company some leeway in a specific business deal if the overall relationship was important or difficult to replace. For example, union negotiations are always contentious, but ultimately employees do not want to lose their jobs by driving the company to be uncompetitive or in bankruptcy. In all of these cases, the balance of power in the negotiations can shift quickly, depending on which party has the leverage. Large corporations frequently have this leverage. Credit analysts should recognize the benefits of size but cannot take a company's size at face value. Instead analysts should evaluate how effective management is at taking advantage of the company's physical strengths.

REGULATIONS

> "Regulations set the rules but they don't guarantee success or failure. How management plays by the rules determines it."
>
> —Ron Barone, Managing Director, Standard & Poor's

If cyclicality and volatility are potential negatives, then the stability provided by governmental or regulatory rules is a positive. Correct? Not exactly. The impact of regulations can be quite varied—from benign to adversarial and from supportive to a hindrance. For it to be viewed favorably, regulatory treatment should be transparent and timely, and should allow for consistent financial performance. Yet that is not always the case. But whatever its impact is, it affects all companies in an industry. Ultimately, though, if all companies in a sector are playing by the same rules, then it is the effectiveness of a company's business strategies and execution that decides its credit quality, not how supportive the regulations are.

There can be many types of regulation. In Chapter 1 we discussed:

- How governments set the basic business rules and regulations in their particular region (local or national)
- The very wide range of areas that regulations can cover, including export/import restrictions, competition boundaries, service quality guidelines, antitrust legislation, subsidies, and the percentage of local or foreign ownership
- That regulations can and do affect the business strategies of individual companies

Every industry has certain regulatory requirements or constraints that influence business performance and how decisions are made. For example, forest products entities (paper mill operators, wood products manufacturers, and so on) have restrictions on tree cutting; oil and natural gas producers have rules on drilling wells; agricultural firms get subsidies; airlines have many operational rules; and many, if not all, companies must adhere to environmental guidelines.

Regulations on utilities (telephone, electricity, natural gas, and water) are even more influential, since local and national regulators set utility rates and therefore establish how utilities recover their costs and make a profit. Consequently, for much of the twentieth century, utilities were viewed as very strong credits because their financial performance had a certain safety net below it, creating something of a floor on performance. The fact that utilities had typically faced little or no competition also contributed to their strong credit quality. However, in the 1980s and 1990s, some aspects of U.S. telephone, electricity, and natural gas utilities (not water utilities) were deregulated by either national regulators or local regulators. In most cases this eliminated rate setting on portions of the

business and created free-market pricing instead. Therefore, parts of the utilities' businesses faced competition for the first time, e.g., the long-distance telephone business and the selling of electricity and natural gas.[3]

Regulatory Decisions

Around the world, the ways in which regulatory decisions are made can be very different and will reflect the unique circumstances, history, political parties in power, and culture of a country. For example, some political systems require legislative action in order to modify regulations, while other systems create separate regulatory bodies to make decisions. It's debatable as to which is the more supportive system for a company's performance and for a credit decision. It usually comes down to a case-by-case evaluation. Either way, no matter which industry is involved, there typically are agendas (some more politically motivated than others) in conflict with each other that eventually have to be resolved, such as:

- Establishing the lowest rates possible or supporting business growth with healthy investment returns
- Creating competition in the market or restricting foreign competition
- Providing outright support for struggling companies or permitting business failures
- Being environmentally friendly or building manufacturing capacity to meet consumer demands

The credit analyst's role, then, is to determine how influential those regulations are and their impacts on the revenue and income of a company, as well as its ability to compete. Do they set a floor on financial performance or a ceiling? Are they a safety net, or do they tie the company in knots? Also, since politicians inherently influence regulations, they are subject to change. Analysts have to pay very close attention to regulatory activity, because if there is a change, it could have a major impact on the credit decision. Like most political decisions, though, the process of getting regulatory action can be long-drawn-out and tortuous. Yet analysts have to follow all the twists and turns because many credit decisions just cannot wait for a regulatory body to make a decision. The analyst's current prediction of the regulatory outcome and its impact on the company will be a critical component of the credit decision.

CHAPTER SUMMARY

Business Risks

Business risks can be defined as all the factors that affect a company's financial performance and influence the specific strategy that its management employs. The risks themselves initially develop from the basic risks inherent in the industry or in the country in which a particular company operates. Analysts utilizing the building-block methodology will be able to identify the key factors to focus on for a company and eventually narrow down to the most important issues. Competitor analysis and an entity's competitive position are critically important to analyze, and this chapter also has focused on market position, business stability, and regulations.

Competitive analysis is, in essence, a comparison of one company versus another company. Identifying the key factors that a company competes on is the critical first step. Most competition is based on price, quality, customer service, and the ability to deliver in quantity and on time. But the important next step for credit analysts is to recognize the underlying factors that influence and ultimately determine the winners and losers in competition. For example, if competition is on price, the underlying driving factor will be a company's cost base versus its competitors'. That's where analysts should focus their time.

The strength of a company's market position is a very important part of credit analysis. It helps determine the consistency of sales demand and pricing power, which are two key components of a strong credit. Market share analysis can help, but it's important not to get fooled by market share. Most companies call themselves leaders in their industry, but that may not mean that they are strong credits or even successful. How markets are defined and how share is calculated can be of consequence. Since most companies have many products and services, narrow definitions of market share are not useful. Following the broader industry, consumer, and competitor trends is significant. The consistency of a company's performance is a result of the strength of its products and management strategies that develop and enhance those strengths.

Consistency and stability are considered strengths in credit analysis, whereas volatility is a weakness. Companies achieve consistency and stability through strong competitive positions and/or strong market positions that help them to withstand shifts in the business or economic environments. Diversity, too, brings stability. Having several business, product lines, manufacturing plants, distribution outlets, or even types of cus-

tomers can help to smooth out the effects of a business cycle. Varied access to buyers and suppliers can also benefit a company's competitive stance.

Financial flexibility is typical of good credits, and inflexibility can be disastrous for weak companies. Financial flexibility can come from diverse sources of revenues and income, or from a varied ability to access cash. In all of these circumstances, large companies have an advantage over small companies. Yet analysts cannot take a company's size for granted; instead, they should evaluate how well management utilizes its company's size and diversity.

Regulations can create stability, but not necessarily at a high performance level. Indeed, some regulations can be a real hindrance to the success of a company. It's the analyst's job to determine how regulations affect a company and its performance.

Analyzing the quality of the asset base and the business in general cannot be completed without an evaluation of the management team. The next chapter studies management's policies, philosophies, and performance.

NOTES

1. Michael Porter, *Competitive* Strategy p. 4. The Free Press, 1980.

2. In 2003, GM sold 4.7 million passenger cars and light trucks and vans in the United States, for a 28 percent market share. Toyota sold 1.9 million vehicles, for an 11 percent market share.

3. *Standard & Poor's Corporate Ratings Criteria* book has a whole section on regulation that is worth reading by analysts.

CHAPTER 4

The Management Factor

> "Companies with management cultures and strategies focused on rapid and aggressive growth in revenues, earnings, stock value, and/or executive compensation often create a heightened credit risk profile."
>
> —Cliff Griep, Executive Managing Director and Chief Credit Officer, Standard & Poor's

It would be an understatement to say that the role of management is pivotal to a company's performance and therefore its credit quality. Through most of this book, the importance of management, its strategies, its execution, and its decisions, is continually and incessantly reinforced. In addition, corporate management's financial philosophies and policies are a critically important component of credit analysis, since they establish the financial risk tolerance inherent in the company's actions. You should note that this chapter is deliberately placed between the chapters on business risk and financial risk.

While country qualities, the business environment, and the quality of a company's assets all set the framework and the path for success or failure, it is up to the management team to keep the company on that path and to utilize its assets effectively within the given environment to generate the best operating and financial performance possible. That is a daunting challenge for a management team, especially considering that it is competing against other managements with the same challenges. That is exactly why an evaluation of management is so important to the credit decision.

EVALUATING MANAGEMENT

Management should be assessed for its operational and financial successes and failures, but also for the amount of risk it is willing to accept in order to deploy its strategies and policies. An objective analysis based on management's track record is valuable. That is, what is the level of risk taken, what is the return on investment, and is this risk/return a commensurate trade-off?

Visible evidence of the success or failure of decision making as reflected in financial or operating performance is hard to refute. However,

some could argue that it is difficult to discern whether performance occurred because of good management, happened without any management influence, or was achieved despite management. That's a good point, but it is not sufficient to conclude an evaluation of management after just one review of its financial or operating track record. It occurs over time and in conjunction with a more subjective viewpoint.

Analysts have many opportunities to get to know a senior management team if they really want to. Quarterly and periodic financial analyst meetings and teleconferences, the annual shareholders' meeting, and the occasional road show before bond and stock offerings are some of the public meeting opportunities, and attendance at these events is a mandatory responsibility for any credit analyst. It is at these meetings that senior management shares its business strategies with analysts as best it can without divulging secrets to competitors.

Outside of those public meetings, analysts should take the additional opportunity to personally call or visit key executives to further probe their strategy and prospects, but also to better gauge management itself. It is with this combination of objective and subjective evaluation that analysts can best determine the degree of management's influence on company performance, the effectiveness of its execution of its strategy, and the level of risk it is willing to tolerate.

For example, strategy and operating plans should be viewed with an eye toward reality; if the goals are not realistic—in terms of industry dynamics or the business environment—then the analyst should be skeptical of the company's chances of success. Analysts should compare a company's performance with its previous stated operating plans, as this establishes management's credibility. Past deviance from strategy is an indicator of future deviance. During times of stress, management's credibility is an important consideration, since creditors either will rely on management's intentions toward its creditworthiness or will not trust management.

At this point, it is important to remember who owns the company and what is the mandate given to the senior managers. Companies are not owned by creditors; they are owned by public or private shareholders (although in bankruptcy cases, creditors may eventually become shareholders). Business strategy and financial policy are usually driven by shareholder desires for earnings growth and therefore common stock price growth. Credit lenders, on the other hand, want to get repaid and prefer that a company have consistent performance. There's plenty of overlap in the requirements of shareholders and creditors, as growing earnings and continuously improving financial performance meet both parameters.

Yet there's a conflict in the tolerance for risk taking. Shareholders often reward growth potential by bidding up the stock price, whereas creditors seek greater returns when risk is high, resulting in a greater cost to the company. So understanding the mindset of senior management is very important, as this will determine its level of risk taking. A management with a history of chasing growth aggressively should be viewed cautiously in comparison to a management that grows its company in a lock-step fashion. Aggressive firms enter new businesses or markets quickly—possibly without completed business plans—and frequently exit or restructure failures while taking losses on asset sales or write-offs. This may be offset by glorious financial successes, but credit analysts should consider the volatility appropriately, especially in comparison to other firms.

CORPORATE GOVERNANCE

Let's remember that Character is one of the Cs in credit analysis. Corporate governance, or the manner in which a company is managed, is another very important area for a credit analyst to evaluate. Management with high integrity manages the company with integrity in regard to business ethics, internal control systems, the corporate culture it nurtures, its business strategies, and the value it delivers to shareholders, creditors, employees, business counterparts, and customers.

To credit lenders and investors, integrity means that management is willing to repay its financial obligations on time and in full. This may sound surprising, but history is rife with business leaders who have had dubious intentions. Other qualities of a management with integrity that an analyst should be aware of are:

- Accessible to answer questions
- Answers questions without deception
- Discloses transparent information
- Discusses strategy and other activities openly
- Actually executes its stated strategy
- Never does anything surprising
- Is up front about challenges and problems

Managements with these qualities eventually become trusted because they are open and honest, and they provide information that is useful for a credit decision. Yet it is difficult to say that these qualities will

result in a higher opinion of a company's credit than would have been given without them. However, in the reverse, a management without these qualities may leave the analyst with many unanswered questions. Uncertainty should always result in a more conservative credit decision.

Corporate governance analysis involves more than just evaluating senior executives' integrity. It also involves the level of aggressiveness and risk taking in an organization, and the effectiveness of the checks and balances that keep decision making focused on the good of the company and not some other goal. Most corporations are managed with the proper focus. Still, there are pressures on corporate executives to continually generate better and stronger earnings, in the hope that this will lead to a rising common stock price.

Unfortunately, through the course of corporate history, there are common traits of companies that fall away from good corporate governance, leading to a disconnect from its best business strategy. Typically, in these cases, the tone is set by senior managers, who establish overly aggressive sales and profit targets, combined with excessive compensation policies that reward achieving the targets and do not tolerate failure. This type of culture breeds exaggeration of prospects and performance. It leads to aggressive accounting practices and lax internal controls. In most cases, it leads to sudden declines in performance and sizable write-offs of assets. In the worst cases, it results in outright fraud and then bankruptcy, e.g., Enron, WorldCom, and Parmalat.

Figure 4-1 is a helpful list of traits to consider, not only when evaluating a company's governance, but also when doing an overall evaluation of management. While any of these factors in isolation may not necessarily indicate problems, these behaviors can potentially create an environment susceptible to rapid credit deterioration at a corporation.

FIGURE 4-1: Governance, Management, and Accounting Risk Factors

Metric	Aggressive or High Risk	Proactive or Appropriate	Reactive or Passive
1. Degree of aggressiveness in company's business model, growth and acquisition strategy/pattern			
2. Aggressiveness of expansion into new/unproven products, business lines, industries, and/or markets			

FIGURE 4-1: Governance, Management, and Accounting Risk Factors (continued)

Metric	Aggressive or High Risk	Proactive or Appropriate	Reactive or Passive
3. Major shifts or U-turns in business or operating strategy			
4. History of restructurings, asset sales, and layoffs			
5. Aggressiveness in shareholder value creation or equity price appreciation strategy			
6. Degree of aggressiveness or excessiveness of CEO and senior executive compensation and benefits			
7. Overreliance on/excessive power of/domination by CEO and/or other senior executives			
8. High and/or unexpected senior management turnover/departures—(a high or unexplained turnover score should lead to a rating of "Aggressive/High Risk")			
9. Aggressive corporate culture and practices "Take no prisoners" corporate culture			
10. Frequency of litigation and legal disputes against company			
11. History of government or regulatory actions, judgments, or settlements against company			
12. Aggressiveness or complexity in corporate/operating/tax structure			
13. Aggressiveness/complexity in financial/leverage structure			
14. Financial stability—liquidity sensitive to triggers and/or contingents and/or access to nonoperating cash sources			
15. Degree of reliance on derivatives and off-balance-sheet structures for profitability and/or capital management			

FIGURE 4-1: Governance, Management, and Accounting Risk Factors (continued)

Metric	Aggressive or High Risk	Proactive or Appropriate	Reactive or Passive
16. Aggressive strategy/history of revenue or income recognition and/or understating costs or liabilities			
17. Aggressiveness, frequent changes, and/or complexity in accounting practices and reporting			

1. Degree of aggressiveness in company's business model, growth and acquisition strategy/pattern. Signals to be vigilant for:
   - A history of setting overly ambitious or optimistic growth targets/strategies (e.g., company projections and new business and product development or introduction plans that appear aggressive or overly optimistic)
   - Revenue growth materially in excess of peer-group average
   - Rapid growth through acquisitions
   - A history of paying significant premiums for acquisitions
   - "Serial" acquirer
   - Rapid growth projected or delivered despite unstable or unproven business model (e.g., a company in a deregulated industry and/or an industry subject to rapid technological change showing rapid growth from unproven or immature products or business lines)
   - Analyst difficulty in understanding reported results/financials because of lack of comparability between reporting periods as a result of the impact of successive acquisitions

2. Aggressiveness of expansion into new or unproven products, business lines, industries, and/or markets. Signals to be vigilant for:
   - A history of expansion into new lines of business or industries outside areas of traditional competency.

- Material expansion into overseas markets, especially those subject to sovereign/emerging market risk, as well as regulatory and other political risks.
- Material percentage of revenue growth (actual or projected) from new or unproven business lines and markets, especially those with questionable or uncertain profitability potential.

3. Major shifts or U-turns in business/operating strategy. Signals to be vigilant for:

- Aggressive diversification or new product strategy as a result of maturing traditional business or growth pressures, or the failure of a previously adopted strategy
- Material changes in pricing, marketing/advertising, or product value proposition/positioning strategies and tactics
- Major changes in ownership or in managerial, legal, regulatory, or operating framework
- Company retains restructuring consultant/expert

4. A history of restructurings, asset sales, and layoffs. Signals to be vigilant for:

- High "portfolio" turnover (buying and selling) of business lines, divisions, or subsidiaries
- Closure/sale/deemphasis of core business line(s)
- "Sale" of key assets while maintaining operating control
- A recurring pattern of special restructuring charge-offs, goodwill write-downs, and/or layoffs

5. Aggressiveness in shareholder value creation or equity price appreciation strategy. Signals to be vigilant for:

- Aggressive positioning as a growth stock, exemplified by putting too much emphasis on short-term (i.e., quarterly) performance
- High or rapid growth in P/E ratio
- Low dividend payout history
- History of aggressive stock buy-backs
- Material asset revaluations
- Creation of tracking stock(s)

6. Degree of aggressiveness or excessiveness of CEO and senior executive compensation and benefits. Signals to be vigilant for:
   - CEO total compensation materially higher than peer average (i.e., in top quartile for peer group or industry)
   - Senior executive compensation materially higher than peer average
   - CEO and/or senior executive team compensation heavily skewed toward stock-based compensation (options and grants)
   - Creation of a "culture of greed"— an above-normal or untoward compensation pattern
   - Link between company financial performance and executive compensation is primarily focused on the short-term horizon
   - The compensation committee does not articulate a clear compensation policy based upon meaningful individual or corporate performance hurdles
   - History of repricing options and/or any kind of stock awards at less than market value on date of grant. Also cancellation of options and replacement at lower price.
   - Severance or change-of-control agreements that would trigger excessive payments to the CEO and senior executives.
   - Special payments are made to executives without a clear purpose, or unconnected with any increase in performance (this includes "guaranteed" bonuses).
   - Compensation plans or provisions that create perverse incentives (i.e., payouts that encourage excessive acquisition activity or payouts on reaching a certain share price trading level)
   - Existence of unusual fringe benefits and loans to CEO and/or senior officers.

7. Overreliance on/excessive power of/domination by CEO or other senior executives. Signals to be vigilant for:
   - Cult of leader personality/high media profile/"hype"/hubris of CEO
   - High degree of dependence on CEO for strategic and operating decisions
   - Heavily dependent on CEO for corporate public/client/government relations (e.g., CEO is the sole or main spokesperson)

- Concentration of power at CEO level—inability or unwillingness to delegate
- Unclear succession plan
- Weak or "domineered" senior management team below the CEO
- Weak, ineffective, or "domineered" board of directors—board does not have an independent voice
- Creation of a sycophantic corporate culture (e.g., a culture that penalizes or creates disincentives for internal debate and independent or creative thinking, creating an environment in which only "good news" is acceptable to corporate chiefs)
- A long-established CEO or senior management team with significant ownership interest where structural complexity and/or leverage and/or opaqueness are present—e.g., a company that is closely held or, if public, in which management maintains significant ownership or a controlling interest

8. High and/or unexpected senior management or board of director turnover/departures. Signals to be vigilant for:

- Surprise departures (voluntary or forced) at senior levels
- Poorly explained departures or unusual turnover
- Lack of credibility in company explanation of departure(s)
- Company brings back former chairman/CEO/CFO or leading "rainmaker) after unexpected resignations or dismissals

9. Aggressive corporate culture and practices—"Take no prisoners" corporate culture. Signals to be vigilant for:

- Questionable/heavy-handed strategies and tactics with customers, employees, suppliers, accountants, bankers, regulators, or governments
- Heavy use of lobbyists and lawyers
- History of litigation in pursuit of business strategies and undue pressure on critics, e.g., lawsuits by company against company customers, employees, suppliers, accountants, bankers, regulators, or government entities
- "Spin": Aggressiveness of corporate communication and image building

10. Frequency of litigation and legal disputes against company. Signals to be vigilant for:

- Increasing incidence of litigation, or the threat thereof, from customers, competitors, regulators, shareholders, creditors, or government entities
- Lawsuits suggesting the development of an overly aggressive and/or illicit corporate culture, directed at such areas as management misrepresentations; product deficiency; excessive executive compensation and benefits/perks; company loans to executives; accounting and reporting fraud; fraudulent or coercive sales; price fixing and illegal "market cornering" activities; failure to supervise/management negligence
- Sizable contingent liabilities exist or have a material chance of developing, or the establishment of material reserves for future litigation costs/liabilities

11. History of government or regulatory actions, judgments, or settlements against company. Signals to be vigilant for:

- Increased incidence of regulatory scrutiny/actions/penalties (including forced restatement or refiling of various reports)
- Sizable contingent liabilities exist or have a material chance of developing

12. Aggressiveness or complexity in corporate/operating/tax/ownership structure. Signals to be vigilant for:

- Overfocus of management resources on creating complex corporate legal entity, operating, and tax structures (particularly if this is accompanied by intercompany asset sales or transfers and/or fee payments)
- Concern or suspicion that a web of overcomplexity or opaqueness may be being woven by management to hide problems in business or financing operations, including losses; declining margins; weak or negative cash flow; and/or illicit activity, such as tax and accounting fraud
- The existence of a seemingly excessive number of corporate legal entities or vehicles (with limited operational mandates)

- Heavy reliance on tax shelters or structures in order to maintain or maximize profitability, market capitalization, and/or net worth; heavy focus on tax strategy (tax minimization, tax credits)
- Inability or unwillingness of management to explain the reasons behind corporate/tax/ownership structure complexities

13. Aggressiveness/complexity in financial/leverage structure. Signals to be vigilant for:

- A high degree of aggressiveness in leverage
- Stability of capital structure susceptible to refinancing risk
- Overreliance on short-term debt
- Management inability to explain the rationale for capitalization structure and financing sources and uses
- Complexity/large number of financing subsidiaries and/or other financing vehicles within the corporate structure
- Overly structured financing arrangements

14. Financial stability—liquidity sensitive to (i) triggers or (ii) contingents or (iii) access to nonoperating sources of cash. Signals to be vigilant for:

- Existence of material triggers in debt, derivative, and operating agreements calling for repayment or collateralization of debt or contingents given certain predefined events
- Lack of credible contingency funding plan
- Overreliance on receivables sales or factoring
- Danger of tripping covenant thresholds
- Access/ability to borrow curtailed and/or increased cost of borrowing
- Dependence of financial stability (debt service or access to capital) on asset sales, extraordinary contingent realizations, or unusually large cash reserves (at borrower or subsidiaries)

15. Degree of reliance on derivatives and off-balance-sheet structures for profitability and/or capital management. Signals to be vigilant for:

- Heavy reliance for profitability and/or capital on the use of securitization, derivatives, and/or special-purpose vehicles (SPVs)

- Management inability or unwillingness to explain the rationale for and/or impact of securitizations, derivatives, and SPVs
- Heavy use of securitization, derivatives, and SPVs compared to peers
- Lack of clarity as to whether these techniques are being used to hedge or assume risk
- Nonprudent risk management practices and oversight
- Aggressive use of derivatives for risk taking (e.g., synthetic assets/positions) rather than prudential hedging

16. Aggressive strategy/history of revenue or income recognition and/or understating costs or liabilities. Signals to be vigilant for:

- Net income growth materially higher than operating cash flow growth
- Revenue and/or income growth materially higher than peers
- Aggressive use of pro forma adjustments to GAAP (or other accounting standards) income
- Litigation or regulatory action charging illicit financial reporting practices
- History of understating costs or liabilities
- History of nonrecurring items and special charges
- Large percentage of revenues and net income from nonoperating and/or nonrecurring sources

17. Aggressiveness, frequent changes, and/or complexity in accounting practices and reporting. Signals to be vigilant for:

- Frequent changes in accounting elections and treatments, especially those affecting revenue, cost, and liability reporting
- Frequent restatements or charges due to accounting errors, irregularities, and fraud, or unusual changes in estimates
- History of changes in or disputes with auditors
- Auditor providing qualified opinion or refusal to sign financials
- Exceptions to officers' certification or internal controls reporting
- Weak internal control environment
- Nontransparent or lacking financial disclosures

Source: David Wood and Cliff Griep, Standard & Poor's.

FINANCIAL POLICY

Accounting practices, spending levels, debt tolerance, merger activity, and asset sale frequency are all aspects of a management's financial policies. Each of them shapes a company's financial risk profile and has some bearing on its future financial performance. While corporate management is expected to attempt to make economic decisions in everything it does, those decisions (economic or otherwise) will differ from company to company because of the different financial policies and different risk orientations employed by each firm. These differences could be driven by various factors, including personal values, the business's dynamics, and/or shareholder values.

Unfortunately for lenders, business decisions are infrequently made "for the good of the creditors" (except in dire circumstances). Instead, business decisions are assumed to be "for the good of the business." Even so, since corporations are owned by shareholders and not by creditors, it should not be surprising if management's decisions, including its financial policies, are largely driven by shareholder demands. Theoretically this, too, should be "for the good of the business," but it may narrowly be focused on benefiting earnings.

For example, earnings growth goals could encourage management to pursue a strategy of aggressively leveraged acquisitions at any cost, rather than a careful strategy of balancing internal growth with acquisitions. On the premise that corporate management is under various pressures to perform, and that these pressures drive financial policies, the analyst's job is to determine how much business and financial risk management is willing to accept and how much it employs.

Corporate management that is blindly driven by quarter-to-quarter earnings growth no doubt has too narrow an emphasis. Worse yet, a similar culture can develop throughout a company as employees learn from their managers. The subtle signs of an aggressive organization that is focused solely on earnings growth can be found (not easily) in its accounting practices. Gradually more liberal revenue recognition and expense deferrals may lead to better earnings in the near term, but create tremendous pressure over the longer term to truly expand financial performance. Additional pressures could lead to further liberalization of accounting practices and eventually to unsustainable expectations.

Monitoring what corporate management says it will do versus what it actually does can be very telling. For example, an organization's leverage goals "need to be viewed in context of its past record and the financial dynamics affecting the business."[1] An entity that is increasing its cap-

ital spending beyond its cash-generating abilities should not be forecasting declining leverage unless there is a corresponding plan to sell assets or common equity. A skeptical analyst would question management on how exactly it plans to achieve both goals. The answers, and the company's subsequent performance, paint the risk-tolerance picture and maybe even give clues with regard to the integrity of management's words.

No corporation is expected to be risk-free. In fact, a riskless financial policy is usually suboptimal in the corporate world, as increasing use of debt (up to certain levels) is known to enhance overall returns on investment—assuming that the money was invested wisely. Financial policies should be consistent with the needs of the business and the environment affecting it. Growth industries typically require externally financed spending because the anticipated cash flows may not have been generated yet. Mature, established businesses may not have sufficient internal growth and may require acquisitions to meet their earnings growth goals. In these cases, the investment strategy may be appropriate for the business, but the question is how aggressive the financing strategy is in relation to the business.

Corporate managers are not usually constrained when it comes to financial policy decisions (with the exception of managers of start-up companies and financially troubled entities). In the review of the financial profile and performance (see the upcoming chapter on financial risk), analysts should be eyeing the level of aggressiveness (or conservatism). For instance, constant borrowing and a highly debt-leveraged balance sheet is an aggressive financial strategy for a volatile company that is generating negative free cash flow. But an entity with stable assets—with assured cash generation—can be leveraged more even if free cash flow is negative.

In our experience, corporate management rarely makes financial or business decisions that are solely designed to improve the company's credit profile. Instead, corporate management finds a credit risk level that meets their risk-tolerance views. They subsequently manage the company toward the twin goals of maintaining credit quality and meeting shareholder demands. This becomes abundantly clear after analyzing their financing and investing decisions. However, history tells us that it is very difficult for companies to consistently apply their financial policies and achieve these twin goals during business and economic downturns. Credit deterioration is at its heaviest during these periods. Therefore, how management revises its strategies during—and preferably before—changes in its business or in the economy can have an enormous impact on credit quality.

Financial policies set the tone for corporate risk tolerance and for the company's level of credit quality. Credit analysts need to be adept at recognizing the impact of management's financial policies and decisions:

- As to the culture they develop in the organization
- If they are consistent with announced goals and strategies
- If they are consistent with the business's dynamics
- As to their level of aggressiveness
- How they change with the environmental shifts affecting the business

CHAPTER SUMMARY

The Management Factor

The importance of management—its strategies, its execution, its decisions, its successes, and its failures—cannot be understated. It is not easy to determine the real impact that a management team has on a company, but a management's influence on the successes and failures of a company is irrefutable. Of course, the credit analyst is evaluating management's actions with an eye toward the degree to which they support credit quality. Since companies are owned by shareholders and not by creditors, the evaluation is also about management's tolerance for risk taking as well as its performance. Getting to know a management team and its proclivities is part of a credit analyst's job. There's plenty of opportunity to hear a management's strategies, but it takes some time to trust the managers' word.

Executives with integrity manage their companies with integrity. To a lender or investor, this means a willingness to repay financial obligations on time and in full, as well as being honest and transparent. Comparing the consistency of announced strategies with actual activities is one way to get an opinion of management's trustworthiness. But corporate governance analysis is more than just determining management's integrity; it is also important to monitor the stresses placed on a company, as this can and does influence management's actions. Shareholder demands for earnings growth can compel managers to act badly—that is, to pursue growth very aggressively or to vigorously account for revenues or expenses. There are many telltale traits that foretell governance risks that analysts should be keenly aware of.

Financial policies set the tone for all future decisions. While man-

agement is expected to make decisions based on sound economic analysis, those decisions will still be founded on the company's financial philosophies. No company should be completely riskless, but the financial risks that management accepts should be appropriate given the business and industry risks inherent in the company.

At this point, credit analysts will have completed the qualitative review of a company and all its risks. The cumulative impact of sovereign/country risks, industry risks, the specific company's business risks, and the influence of management should establish an opinion on whether the entity has high risk, average risk, or low risk. (See Chapter 11, "Measuring Credit Risk.") While this analysis is very useful to a credit analyst, it does not complete the entire risk picture yet. Now the analyst should evaluate the entity's financial performance and profile. In fact, a diligent credit evaluation of a company's financial performance and profile cannot and should not be done without an understanding of the level of qualitative risk inherent in the entity.

NOTES

1. *S&P Corporate Ratings Criteria*, p. 22.

CHAPTER 5

Financial Risk Analysis

"The degree of a firm's business risk sets the expectations for the financial risk it can afford at a particular credit level."

—Nick Riccio, Managing Director, Standard & Poor's

Financial risk analysis supports business risk analysis in a number of ways. It proves the value and quality of a business and attests to the expected growth rates. It can help to characterize management's actions as successful or otherwise. It identifies a company's financial ability to withstand shocks. Ultimately, it accounts for a company's ability to pay its obligations.

The benefit of first evaluating the qualitative risks inherent in a corporation is that it paints a picture of the business in terms of volatility, that is, the degree to which the company's business performance varies. Credit analysts should correlate that level of business volatility with the company's financial profile and performance.

For example, a company would be deemed a weak credit if it had volatile businesses—those considered high risk or very high risk—and an aggressive financial profile. Conversely, a strong credit would have moderate or low business risk with a conservative financial profile. The specific credit quality of a company on any scoring system would therefore be the result of a combined analysis of its country and industry environment, its businesses, and its financials (i.e., the building-block methodology). The question to be answered in this chapter, therefore, is how credit analysts should evaluate financial risk and performance, and therefore determine the difference between aggressive and conservative.

To start, it is helpful to have financial benchmark ratios with which to compare companies. Standard & Poor's publishes benchmarks in a generic form (Figure 5-1) and in a historical form (Figure 5-2). As we suggest later in Chapter 10, "Putting It All Together," every analyst (that is, every credit-giving institution) has to determine its own scoring system, but these benchmarks are useful nonetheless. The benchmarks in Figure 5-1 are guideposts and should not be deciding factors. There are many other ratios to consider. Nevertheless, you should recognize the correla-

tions between credit quality and business risk, as stronger credits have better financial performance than weaker credits, and weaker business positions require stronger financial performance to achieve the same credit quality as entities with stronger business positions.

While we will discuss the importance of analyzing profitability, the primary focus for a credit analyst should be on assessing the company's ability to repay its obligations. That is what credit analysis is all about: determining the credit's ability to repay its obligations on time and in full. Financial risk analysis is therefore focused on determining the credit's capacity to pay (capacity is one of the five Cs of credit analysis), which includes an analysis of how volatile that capacity is. Financial volatility is a mixture of business performance and the financial risk a management is willing to accept or is willing to employ. A volatile business can result in volatile financial performance; a more stable business would be expected to have more stable financial performance. Yet, as stated in the previous chapter, a management's financial policies set the tone for the company's risk tolerance and many times affect the aggressiveness of its business strategy, too.

Analysis of past and projected financial performance comes only after determining the riskiness of the company's financial policy. Like all good analysis, this has a great deal to do with "spreading the numbers" and comparing and contrasting many different financial ratios. There are hundreds of ratios that could be analyzed, but that is not really necessary. This chapter will identify the key ratios that need to be reviewed in order to complete an effective credit assessment.

Interestingly, different industries and companies may have additional ratios that are important to monitor. The point, though, is to know what you are looking for. It is important to remember that financial obligations are repaid with cash, not with accounting-adjusted earnings. Thus, there are different reasons to analyze specific ratios. We focus on four important areas: the balance sheet, profitability, cash generation, and financial flexibility. Why these four?

The balance sheet identifies the company's financial obligations and the asset quality that support those obligations. Analyzing just the debt/equity structure is not sufficient to determine credit quality, but comparing all debt obligations, including those off the balance sheet, with the cash generation ability of the assets is vital.

Profitability is a good measure of the viability, the volatility, the value, and the performance of the business, especially versus com-

petitors. Remember, shareholders own corporations, and therefore profit measures are a focus for corporate management.

Cash generation is important because cash is used to pay financial obligations. Comparing the ability to generate cash with the need for cash, including its use in repaying obligations, is the most critical component of financial risk analysis.

Financial flexibility recognizes the entity's ability to withstand fluctuations in business activity. Accessing cash and mitigating obligations is critical when the business environment shifts, especially for weak credits.

FIGURE 5-1: U.S. Industrials—Manufacturing, Service, and Transportation Companies
Funds from Operations/Total Debt Guidelines

	Rating Category				
Company Business Risk Profile	**AAA**	**AA**	**A**	**BBB**	**BB**
Well above average business position	30	40	50	60	70
Above average	20	25	40	50	60
Average		15	30	40	55
Below average			25	35	45
Well below average				25	35

Source: *Standard & Poor's Corporate Criteria Book*

FIGURE 5-2: Key Industrial Financial Ratios

	AAA	**AA**	**A**	**BBB**	**BB**	**B**	**CCC**
EBIT interest coverage	23.4	13.3	6.3	3.9	2.2	1.0	0.1
EBITDA interest coverage	25.3	16.9	8.5	5.4	3.2	1.7	0.7
FFO/total debt	214.2	65.7	42.2	30.6	19.7	10.4	3.2
Free operating CF/ total debt	156.6	33.6	23.3	12.8	7.3	1.5	(2.8)
Return on capital	35.0	26.6	18.1	13.1	11.5	8.0	1.2
Operating income/sales	23.4	24.0	18.1	15.5	15.4	14.7	8.8
Total debt/capital	5.0	35.9	42.6	47.0	57.7	75.1	91.7

Source: Standard & Poor's CreditStats

Figures 5-1 and 5-2 refer to the significance of actual ratio levels in relation to Standard & Poor's specific credit ratings. These are helpful in the credit decision process, but historical financial ratios should be used as an indicator of trends and for comparison with other companies. Furthermore, while past performance certainly is an indication of a company's strength and abilities, a credit decision has to be based on the company's abilities in the future. Thus, historical performance is a basis for a forecast and should be viewed in context of management's future strategies and the industry's dynamics. Once again, this is another reason for credit analysts to be well versed in the country and industry risks, since they are critical to any individual company's financial performance.

The last item to note is the importance of understanding the accounting that generates financial statements. Knowing how revenue, expenses, and debt obligations are booked not only helps to understand the underlying factors driving the ratios, but also can give an indication of the aggressiveness of management. Not knowing the important aspects of accounting will eventually leave a credit analyst at a disadvantage. Figure 5-3 lists all the major accounting factors to consider.

FIGURE 5-3: Accounting Checklist: Critical Areas to Focus On

General:

Which accounting system is used—U.S. GAAP, IAS, or some other?

Has there been a recent change in external auditors? Why?

Is the audit opinion clean? If not, what is the nature of the qualifications or exceptions?

Have there been recent SEC or other regulatory actions? Have there been recent restatements, late filings, or amended filings? If yes, why?

Are there qualifications to management's certification of the accuracy of financial statements?

Have there been any material recent changes in accounting approach or estimates, or reclassifications among accounts?

Has there been a recent change in accounting period?

FIGURE 5-3: Accounting Checklist: Critical Areas to Focus On (continued)

What is the impact of recent/pending adoption of changes in accounting standards?

Have there been significant related-party transactions?

Have there been significant subsequent events noted?

Consolidation Basis and Purchase Accounting:

Has the company grown mainly through internal development or through acquisitions? If through acquisitions, how have these been accounted for?

What is the relevant economic entity for analytic purposes?

Are all majority-owned subsidiaries consolidated?

What is the nature of equity-method and cost-method affiliates? Are there any nonconsolidated affiliates (including joint ventures) for which the company exerts a high degree of management control, is likely to end up with majority ownership, and/or guarantees debt?

Cash/Investments:

What is the nature of investments?

What is the valuation method? The book value of securities portfolio vs. market value?

Receivables—Trade and Finance:

What is the loss reserve methodology?

What is the adequacy of reserves relative to historical and expected loss experience?

What are the risk concentrations?

Inventories:

What valuation method is used—LIFO, FIFO, or average cost?

If LIFO is used, how significant are old inventory layers, and what has been the impact of LIFO liquidation credits on reported earnings?

Are any costs capitalized to inventory (e.g., overhead)?

What is the obsolescence policy?

FIGURE 5-3: Accounting Checklist: Critical Areas to Focus On (continued)

Fixed Assets:

What is the basis for valuing? (Historical cost is often not the norm outside the United States.)

What are the economic life assumptions?

What is the depreciation/amortization method?

Are there any idled assets? Any history of impairment charges?

Intangible Assets:

What is the nature of these? What gave rise to them?

What methods are used to value and amortize intangibles?

What are the economic life assumptions?

Benefits Obligations:

How appropriate are the assumptions regarding discount rate, future investment earnings, compensation increases, and medical cost inflation?

What is the gap between balance sheet liability and PBO/APBO (Pension Benefit Obligation and Accumulated Pension Benefit Obligation) and full economic liability?

Securitizations:

What is the business purpose?

What is the financial statement impact?

How appropriate are the assumptions for calculating gain-on-sale and balance sheet residual investments?

What is the nature of retained risks?

Deferred Taxes:

Is there a material net operating loss (NOL) position, and if so, is there a valuation allowance against this?

What is the relationship of P&L expense/credit to actual cash tax paid?

To what extent does the company engage in aggressive financial transactions designed specifically for tax avoidance?

FIGURE 5-3: Accounting Checklist: Critical Areas to Focus On (continued)

What significant tax exposure items are there, and are there reserves against these? What years are still open for review by tax authorities?

Other Liabilities:

What is included in "other liabilities"?

Propriety of reserves, including creation and reversal of reserved amounts?

Do commitments and contingencies (litigation, warranties, guarantees, firm commitments) exist?

Revenue and Expense Recognition:

Is the revenue recognition method any different from the point of sale? For example, is the percentage-of-completion method utilized?

Are there any remaining obligations or deliverables related to revenues?

How are sales allowances and discounts accounted for?

How is warranty expense accounted for?

Are there material noncash transactions (e.g., swaps, barter)?

Are interest, R&D, and advertising expensed or capitalized?

What is the nature of any nonoperating gains or losses?

Foreign exchange transaction and translation impacts?

Past impairment and/or restructuring charges?

Gains or losses on asset sales?

Discontinued obligations?

For stock option compensation, is an expense recognized? If so, using what valuation method?

Derivatives and Hedges:

What is the nature of the positions and their business purpose?

In particular, what are the derivative positions that do not qualify for hedge treatment, and why don't they qualify? Are any positions designated as being for trading purposes?

FIGURE 5-3: Accounting Checklist: Critical Areas to Focus On (continued)

What is the financial statement impact (e.g., realized vs. unrealized gains, hedge adjustments to carrying value of hedged assets and liabilities, MTM (Mark-to-market)of derivatives on the balance sheet and impact on the statement of cash flows)
What other significant rights and obligations are involved (e.g., triggers)?

Source: Scott Sprinzen and Neri Bukspan, Standard & Poor's

THE BALANCE SHEET

The balance sheet is just what it sounds like: a scale that indicates the balance between assets and liabilities. A company is more conservative if the balance sheet is asset-heavy and is more aggressive if the balance sheet is debt-heavy. The balance sheet is also only a snapshot in time, and unless it is compared over a representative period of time (three to five years), it can be misleading. While the balance sheet is a measure of the financial risk in a company, merely knowing the mix of assets versus debt is not sufficient to determine credit quality.

Analysts should have two purposes when evaluating the balance sheet. The first is to accurately identify and calculate the total amount of debt obligations. Focusing on just the traditional debt securities is not satisfactory, since a corporation has many other obligations. The challenge is that business and accounting complexity, and creativity in developing financial securities, makes the tallying of all debt obligations much more than just a line-by-line addition problem. Still, this is very important, since the credit analyst's main job is to determine the entity's capacity to pay its debt obligations on time and in full. Total debt obligations will be used in cash flow generation analysis.

The second purpose is to measure how aggressive or conservative the entity's balance sheet is, based on the level of debt leveraging and the quality of assets—as measured by its stability of cash flow and value—versus that of the debt obligations.

Any item on the balance sheet that has to be repaid, or that generates a liability, is a financial obligation. It is classified as debt if it has an established repayment maturity, a fixed interest stream, and mandatory

payments that cannot be deferred or ignored. Conversely, an equity security has no maturity, no mandatory income stream, and no mandatory repayment. Corporate treasurers have a wide range of debt securities at their disposal. Economics and market appetite determine which securities are utilized:

- At one end of the complexity spectrum are the relatively uncomplicated "traditional debt securities," i.e., commercial paper, bank loans, and long-term bonds (also known as debentures or notes).
- At the other end of the spectrum are the progressively more complicated "structured" transactions, e.g., project financing, single- and multi-asset-backed securities, and receivable securitization.
- In the middle of this complexity spectrum are hybrid debt/equity securities that have features similar to both debt and equity.

Off-Balance-Sheet Obligations

Nonpayment of any of these securities can and will result in legal proceedings, typically resulting in bankruptcy. There are many other obligations with various legal ramifications that are considered "off-balance-sheet," which means that they are not a line item on the company's balance sheet but nonetheless are obligations for the company. These obligations also have debt-like features and should be added to traditional, structured, and hybrid debt in calculating total debt obligations. Off-balance-sheet obligations include

- Postretirement medical liabilities
- Pension obligations
- Operating leases
- Guarantees
- Contingent obligations such as potential litigation settlements or judgments
- Receivables that have been factored, transferred, or securitized
- Take-or-pay contracts and obligations under throughput and deficiency agreements
- Debt of joint ventures and unconsolidated subsidiaries

Adding up off-balance-sheet obligations is not straightforward. There may be several methodologies to properly appraise each item.[1] But, in brief, each analyst should consider the economic realities of each of the items.

For example, for pensions and postretirement medical liabilities, the unfunded portions have to be financed somehow. That responsibility should be considered a debt obligation. The present value of the future payments on an operating lease is a good estimation of the lease's debt value. The actual amount of guaranteed debt and factored receivables are debt equivalents. With regard to contingent obligations, an estimation of how much the entity could have to pay is a reasonable methodology. Depending on the contractual terms, a percentage of a take-or-pay contract's present value could be used as debt. Finally, the debt of a venture or company that is less than 50 percent owned requires serious thought as to that entity's ability to support itself, and as to the willingness of or incentive for the parent company to support it. Many times, the parent company has no legal obligation to support this debt, and the debt covenants may specifically state that the debt is "nonrecourse" to the parent. Nevertheless, it should be assumed that management would make an economic judgment, which could result in financial support if the entity is strategically important.

Leverage Ratios

Once all financial obligations are totaled, there are several ratios that measure the degree of debt leverage used by the entity. Broadly, they measure the amount of debt utilized versus the total amount of capital employed. Specific variations are:

- Total on-balance-sheet debt divided by total on-balance-sheet debt plus common book equity
- Total on-balance-sheet debt plus total off-balance-sheet debt divided by total on-balance-sheet debt plus total off-balance-sheet debt plus common book equity
- Total on-balance-sheet debt divided by total on-balance-sheet debt plus the market value of common equity
- Total on-balance-sheet debt plus total off-balance-sheet debt divided by total on-balance-sheet debt plus total off-balance-sheet debt plus the market value of common equity

There are various ways to determine the aggressiveness of a balance sheet. The most common is by measuring debt leverage. The ratios just listed measure leverage in slightly different ways. Debt leveraging on a more aggressive balance sheet generally would be more than 50 percent of the capital employed, indicating that the company borrowed more money than the equity capital it generated. But the appropriate amount of leveraging for a company at a particular level of credit quality is more a matter of evaluating asset quality.

High-quality, stable assets—those with highly certain values and cash generation—can be leveraged more than assets of questionable value and cash flow. For example, a loan backed by cash can total as much as 100 percent of the cash, but a loan backed by an overvalued operating asset would more likely be for less than 50 percent of the asset's value. Viewed another way, at similar credit quality, a stable food-related entity, with value-retaining inventory and stable cash flows, would be able to leverage itself more than a volatile electronics manufacturer that may have more questionable inventory values and more variable cash flows. Accordingly, if a corporation operates in different businesses, an evaluation of asset quality for each entity is needed. As with all ratio analysis, comparison analysis is the best way to determine appropriate leveraging for an entity, that is, via a comparison of different companies' asset quality and leverage.

Asset Values

Regarding asset values, this book is not recommending detailed line-by-line asset valuation, but it may be useful to understand the difference between the asset values on the balance sheet and the real value of assets (note that two of the leverage ratios use the market value of common equity). That is, different assets have different degrees of surety of value. Cash and short-term financial investments have the highest surety of value. Accounts receivable and inventories can have high levels of certainty, too, but they are not without credit risk and valuation risks. Property, plant, and equipment—the operating assets that generate the cash flow—are the assets with the most variability because of the variability of the cash flows generated and thus the assets' value.

Furthermore, operating assets can easily be under- or overvalued on the balance sheet. For instance, goodwill associated with a recent acquisition can bloat asset totals, whereas well-depreciated assets (e.g., utility

assets) are usually very undervalued on the balance sheet. So, it is very important for analysts to understand the accounting that drives the way assets are booked.

PROFITABILITY

The profit potential of a company is a key determinant of the quality of that company's businesses. Accordingly, common stock and bond investors closely watch the revenue, expenses, and income of a company before and after committing to an investment. Stock investors in particular use earnings performance as one way to value common stock. Companies with strong earnings performances tend to have better access to external equity capital and higher stock valuations. Therefore, management pays very close attention to profitability.

But from a credit standpoint, the absolute levels of income alone do not help to determine credit quality. Also, we do not focus on the long-standing traditional interest coverage ratios (e.g., pretax interest coverage), since it takes cash, not accounting adjusted earnings, to pay debt interest. Instead, we focus on profitability ratios, such as profit margins and returns on investment, which are measures used to evaluate performance and to attest to the value of the businesses. Growth rates—in revenues and earnings—also measure performance and also help to validate management's expectations, which drive its strategies.

Profitability Ratios

There are many ways to define ratios, given the complexity of accounting standards and the myriad ways in which corporations can recognize revenues and expenses. For that reason, this book suggests sticking to relatively simple ratio calculations and calculating ratios consistently when comparing companies. Adjustments to maintain apples-to-apples comparisons are common, especially to exclude theoretically nonrecurring items such as write-offs, litigation reserves, and foreign exchange gains and losses. There can be many other revisions to reflect off-balance-sheet obligations or partially owned assets. With this as the premise, the more specific important "simple" ratio measures to analyze are:

Profit margins. How efficient are the operations? What percent of revenue becomes income? What percent of revenue becomes cash?

- Net income divided by revenue
- Earnings before interest and taxes (EBIT) divided by revenue
- Earnings before interest, taxes, and depreciation (EBITDA) divided by revenue
- Funds from operations divided by revenue (*see the upcoming section on Cash Flow Adequacy*)

Returns on investment. How profitable are the company's investment decisions?

- Net income divided by stockholder's equity
- Net income divided by total assets

Revenue and income growth. How fast is the company growing?

- Year over year percent changes in revenue, EBIT, and net income

There are four ways to assess these ratios. The actual ratio levels are reasonably important, but what are more important are the trends in the ratios, the forecast for the ratios, and the comparisons with industry competitors. Regarding the absolute levels, as a general guideline, profit margins and returns on investment

- In excess of 20 percent are considered strong.
- Between 10 and 20 percent are average.
- Below 10 percent are weak.

Growth rates of 7 to 10 percent are strong, and those between 0 and 2 percent are weak. That's helpful to know, as it indicates a measure of strength or weakness, but it doesn't give any indication of what's happening behind the scenes. Point-in-time analysis can be misleading unless it is accompanied by trend analysis and a forecast. For example, a company with profit margins and returns of 22 percent each could be considered a strong credit. But a much different assessment would result if the trends were a steady decline from 30 percent over the past five years and the forecast suggests 10 to 15 percent in coming years. Trend analysis and forecasting have to be tied to the assessment of the business environment and the company's market and competitive positions.

Peer Comparisons

Consequently, peer comparisons are equally important, as they put each ratio into a proper frame of reference. Profitability ratios can characterize the success of a business and provide excellent measures for benchmarking competitors in a sector. We are not recommending specific profitability benchmarks here because of the different earnings characteristics, accounting practices, and business cycles witnessed sector by sector and region by region. That is, what may be considered a strong performance in one industry may be weak in another.

For example, the pharmaceutical industry usually generates high profit margins and high returns on capital, but defense contractors generate low profit margins with high returns on capital. Despite the differences, the quality assessment of both types of companies may be considered the same. The analyst's assessment of whether profitability is aggressive or conservative should be based on peer comparisons and should take these sector differences into consideration. Ultimately, comparison of peer companies' profitability ratios should influence the evaluation of each company's competitive position—stronger profit ratios indicate a better competitive position.

Furthermore, if the peer ratios are trending differently or are forecasted to change differently (say, rising in one case and declining in the other), the quality assessment may shift, since the differing trends may indicate a change in competitive strength or market position. In particular, an increase or decrease in profit margins may be indicating a shift in the business dynamics; possibly the expense of doing business has changed or there was a change in prices. Similarly, changes in investment returns or in growth rates should lead to questions about asset performance, the competitive environment, the economy, and management's revised strategies.

Management's Influence

When forecasting future performance, it is important to consider a range of possibilities because even small shifts in the business and economic cycles, or in the competitive landscape, can have a meaningful impact on financial performance. As we discuss in Chapter 6, forecasts consider a base-case scenario, a stress-case scenario, and the default-case scenario. Key to this analysis is projecting management's actions during these scenarios.

A careful understanding of management's risk tolerance and financial policies should give insight into its potential future actions. For instance, an aggressive management may pursue debt-leveraged acquisitions during a slowdown in business activity to offset the earnings decline. A more conservative management in this situation would cut back on expenditures and save money for another day. Neither decision is right or wrong, but they do affect profitability forecasts and may revise opinions about the quality of the asset base (an acquisition strategy may indicate a weakness in the current businesses).

So, the profitability analysis has much to take into consideration: the absolute level, trends, forecasts, and comparisons. But since the analysis should look to the future performance, other factors have to be taken into account as well, such as management's strategies and the economic outlook. For example, a growth strategy, a spike in capital investments, or an acquisition plan will create an expectation for rising financial performance. Asset divestitures, actions by competitors, and shifts in the business or economic cycles will also have certain financial expectations attached to them. Therefore, profitability analysis is an excellent way to evaluate management's strategies as well as the degree to which those strategies are consistent with industry dynamics. If projections and actual performance do not line up, the analyst must question why or wonder what changed. The answers may result in a new financial forecast or a changed opinion on the business prospects.

CASH FLOW ADEQUACY

Donald Trump has been known to say that in real estate deals, "Cash is king." This is also true when it comes to credit quality. A corporation's cash and its cash flow are its number one assets. All of the analytical factors covered in this book up to this point are designed as a lead-in to the cash flow analysis. Industry and business risk analysis set the parameters for the size, growth, and stability of a company's business. These are proven by profitability analysis. Balance sheet analysis sizes up the company's debt obligations, which leads to the question as to the company's ability to pay those obligations. Cash flow analysis puts all the other analyses into perspective and leads the analyst to a credit decision.

Why? Debt obligations, interest payments, preferred and common dividends, accounts receivables, wages, capital expenditures, and almost every other expense, investment, liability and obligation are paid in cash—not with an accounting adjusted earnings figure. With that as the

premise, credit analysts should diligently understand and forecast how cash is generated and spent by the business. Since this is so important, Chapter 6 is dedicated to creating a cash flow forecasting model. This section of the book will explain the various cash flow ratios (see Table 5-1).

TABLE 5-1: Sample Cash Flow Statement: XYZ Corp.

(Mil. $)	2004	2003
Net income	59.7	54.9
Depreciation and amortization	18.8	17.0
Deferred taxes	11.6	10.7
Other noncash items	2.2	5.2
Funds from operations	**92.3**	**87.8**
Decrease (increase) in noncash current assets	(8.5)	10.3
Increase (decrease) in noncash current liabilities	13.7	(6.9)
Operating Cash Flow	**97.5**	**91.2**
Capital expenditures	26.3	24.5
Free Operating Cash Flow	**71.2**	**66.7**
Cash Dividends	3.5	3.2
Discretionary Cash Flow	**74.7**	**69.9**
(Acquisitions)	(33.5)	(73.6)
Asset disposals	16.2	11.9
Net other sources (uses) of cash	(7.7)	(18.6)
Prefinancing cash flow	**49.7**	**(10.4)**
Increase (decrease) in short-term debt	9.7	(35.5)
Increase (decrease) in long-term debt	(26.6)	35.0
Net sale (repurchase) of common equity	(35.4)	75.0
Net financing activity	(52.3)	74.5
Increase (decrease) in cash and securities	(2.6)	64.1
Cash and securities, beginning of year	53.6	117.7
Cash and securities, end of year	56.2	53.6

Defining Cash Flow

First, it is important to define cash flow, especially since there are so many different names for it. Cash flow—which also goes by the names *funds flow, funds from operations,* and *cash from operations*—is *net income adjusted for all noncash items factored into the income number, including depreciation and amortization, deferred taxes, write-offs, special charges, gains and losses on asset sales, foreign exchange gains and losses, and equity earnings or losses from joint ventures*. This is the most common and most used definition of cash flow, as it effectively identifies the amount of cash generated by business activities in a particular period.

This is the starting figure to use in the comparison funding analyses, i.e., the cash flow ratios used to evaluate how well cash generated finances outlays and obligations.

Many analysts use "earnings before interest, taxes, depreciation, and amortization" (EBITDA) as a proxy for cash flow and a component of various ratios.[2] EBITDA is useful in its simplicity, and it establishes an easy reference for comparing debt and debt interest. But it has its limitations, too. In fact, Moody's rightly notes in its published opinion on EBITDA (see Table 5-2) that it has both strengths and weaknesses. We agree with many of the points made by Moody's, including that EBITDA should not be the sole representation of cash flow. Yet we also do not believe that EBITDA should be left out of the evaluation of all the various types of cash flow, particular since so many analysts use it.

There are several other variations of cash flow to consider. All of these variations revise cash flow to take into account the different ways in which cash is used in business activities. It can be argued that some business activities have to occur before debt interest is paid, otherwise the business could not operate and cash would not be generated. For example, *operating cash flow* is the funds from operations adjusted for working capital changes. Changes in working capital are the short-term uses and receipt of cash resulting from the operation of the business, e.g., the receipt of cash from accounts receivable, the payment of accounts payable, the buildup or sell-off of inventories. The changes in working capital can either increase or decrease cash flow year to year: An increase in accounts receivable or inventories implies a use of cash (or borrowing through trade credit), whereas a decline in accounts payable or inventories implies the opposite. Many analysts prefer using operating cash flow, since it is a better representation of business activity cash flow. Indeed,

U.S. financial reporting standards require corporations to present cash flow in this fashion.

Free operating cash flow (or free cash flow) is used as a proxy for the amount of cash generated from core operations. Free operating cash flow is calculated by subtracting capital expenditures from operating cash flow. Capital investments are the fuel—the lifeblood—of business operations; without them, the business will not survive. Analysts have to recognize that changes in working capital and long-term capital investments have to be financed through either internal cash generation or external borrowing. Determining how much cash is left over after financing working capital and capital expenditures helps to identify how much external financing is needed. While knowing management's financial policies is necessary to determine the potential mix of debt and equity, free cash flow is a good tool to use to forecast the balance sheet, and it also begins to measure the company's financial flexibility.

Regarding flexibility, *discretionary cash flow* adds back common dividends to free cash flow, since these payouts are made at the company's discretion. Some analysts may also want to add back the portion of forecasted capital expenditures that is considered discretionary, such as a low-priority plant expansion. The purpose is to recognize the company's options during down cycles.

In Chapter 6, we recommend that credit analysts identify the amount of cash flow available for debt service (interest, principal, and other fixed payments, such as rent, operating leases, and so on). To arrive at that figure, interest payments and nonmaintenance capital spending are added back to free operating cash flow.

Another method of calculating free cash flow comes from a study done at Georgia Tech,[3] which noted the many ways in which free cash flow is reported in corporate America because there is no GAAP definition for it. Their suggested "benchmark definition" is "cash provided by operating activities less net capital expenditures (net of dispositions) and dividends on preferred stock."

Cash Flow Ratios

Since there are so many cash flow ratios to analyze, it is important to know what these ratios are evaluating and for which companies they are most useful. In general, cash flow ratios indicate the company's ability to repay

debt over the long term, to pay interest expense over the short term, and to finance capital outlays. The ratios that an analyst applies should always be looking to the future for the best indication of what credit quality will be.

While cash flow ratios are important in evaluating all credits, there should be an even greater emphasis on these ratios for companies at the weaker end of the credit scale. While companies with healthy business and financial positions generally have ready access to external cash to cover temporary shortfalls, weaker entities have fewer options and must rely more on internally generated cash. Related to this general guideline is that weaker companies face near-term vulnerabilities, and therefore a focus on paying debt interest expense and the level of immediate free cash is appropriate. While stronger entities have longer-term business risks, there can be a greater emphasis on servicing debt and capital expenditures over time.

Suggested cash flow ratios to track are debt payback ratios, which identify how much cash flow a firm has in relation to its total debt obligations; payment ratios, which refer to the operating income or cash flow available for servicing interest, principal, and other fixed charges; and capital investment coverage ratios, which track the cash flow available to finance capital expenditures.

Debt Payback Ratios:

- Funds from operations divided by total debt
- Operating cash flow divided by total debt
- Total debt divided by discretionary cash flow
- Total debt divided by EBITDA

Payment Ratios:

- EBITDA divided by interest expense
- Free operating cash flow plus interest expense divided by interest expense
- Free operating cash flow plus interest expense divided by interest expense plus annual debt maturities

Capital Investment Coverage Ratios:

- Funds from operations divided by capital expenditures
- Operating cash flow divided by capital expenditures

TABLE 5-2: Putting EBITDA In Perspective

Summary Opinion

- The use of EBITDA and related EBITDA ratios as a single measure of cash flow without consideration of other factors can be misleading.
- EBITDA is probably best assessed by breaking down its components into EBIT (earnings before interest and taxes) and depreciation and amortization. Generally speaking, the greater the percentage of EBIT in EBITDA, the stronger the underlying cash flow.
- EBITDA is relevant to determining cash flow when a company is in extremis. EBITDA remains a legitimate tool for analyzing low-rated credits at the bottom of the cycle. Its use is less appropriate, however, for high-rated and investment-grade credits, particularly midway through or at the top of the cycle.
- EBITDA is a better measurement for companies whose assets have longer lives—it is not a good tool for companies whose assets have shorter lives or for companies in industries that are undergoing a lot of technological change.
- EBITDA can easily be manipulated through aggressive accounting policies relating to revenue and expense recognition, asset writedowns and concomitant adjustments to depreciation schedules, excessive adjustments in deriving "adjusted pro forma EBITDA," and the timing of certain "ordinary course" asset sales.
- We find the ten critical failings of using EBITDA to be the following:
  1. EBITDA ignores changes in working capital and overstates cash flow in periods of working capital growth.
  2. EBITDA can be a misleading measure of liquidity.
  3. EBITDA does not consider the amount of required reinvestment, especially for companies with short-lived assets.
  4. EBITDA says nothing about the quality of earnings.
  5. EBITDA is an inadequate stand-alone measure for comparing acquisition multiples.
  6. EBITDA ignores distinctions in the quality of cash flows resulting from differing accounting policies—not all revenues are cash.
  7. EBITDA is not a common denominator for cross-border accounting conventions.
  8. EBITDA offers limited protection when used in indenture covenants.
  9. EBITDA can drift from the realm of reality.
  10. EBITDA is not well suited for the analysis of many industries because it ignores their unique attributes.

Source: Pamela Stumpp, Moody's Investors Service, June 2000 Special Comment.

For all of these ratios, total debt should be adjusted for off-balance-sheet obligations if appropriate. Likewise, interest expense should also be adjusted, either by using an appropriate implied interest rate (which is what we suggest) or by calculating the projected annual outlay for each off-balance-sheet obligation (which can become complicated).

LIQUIDITY AND FINANCIAL FLEXIBILITY

By now, you should know and understand that the focus of corporate credit analysis is on determining the risk that a company will run out of money and not be able to repay its financial obligations in full or in a timely manner. An entity has financial flexibility if, during times of need, it has options for obtaining cash (that is, liquidity) and thereby avoiding a payment default.

There are two main areas of focus in this analysis. The first is to identify the situations in which having financial flexibility is most important and then determining the amount of the cash requirements that are causing the liquidity concerns. The second focus is to estimate how much money the company can actually acquire when necessary. But liquidity analysis is not just a matter of adding up cash sources and cash uses. It is also not driven by ratios.

Liquidity analysis has a strong qualitative feature, yet it is another component in the building-block methodology that ties back to all the other parts of fundamental corporate credit analysis. Since cash needs usually become highly time-sensitive, liquidity analysis requires a clear understanding of a company's immediate and projected financial position. But that, in turn, requires insights gained from understanding the dynamics of the company's business environment, its industry sector, and the nature of its financial relationships, as well as management's business strategy, financial policies, and tendencies.

When Is Liquidity Needed?

Liquidity needs can be created by a number of factors and can occur in all qualities of companies. Of course, these needs are most common in companies with low creditworthiness. In fact, liquidity analysis is a requisite element of evaluating speculative-grade entities and should be given sig-

nificant weight in the final credit decision. This is explained more fully in Chapter 10, "Putting It All Together." Yet while financial flexibility may be the last line of defense for companies in distress, liquidity analysis is not just for companies that are in dire straits.

Indeed, gradual deterioration in a company's operating performance can also lead to liquidity problems. Even a company with a solid business position and moderate debt levels can experience liquidity concerns when faced with sudden adversity. In many cases, issuers that are "at risk" for developing liquidity concerns appear to be adequately funded until an unforeseen event actually occurs. Therefore, credit analysts should be on the lookout for situations that could cause a surge in cash outlays. Some examples of cases in which there could be a sudden surprise spike in cash needs include the following:

- A dramatic setback in the business caused by a crisis in customer confidence (e.g., the impact of a mad cow outbreak on the beef industry)
- A large adverse litigation judgment (e.g., tobacco or asbestos)
- An unforeseen event that adversely affects an entire industry (e.g., the impact of the September 11 terrorist attacks on the airline sector)
- An adverse change in commodity prices that requires a firm to post unanticipated margin call funds
- Real or alleged management impropriety, including accounting abuses (e.g., WorldCom, Enron, Tyco)

There are many other far more predictable events within a company's regular operating activities that can cause liquidity problems. A primary event is the maturity of a debt obligation. If managed properly, an entity's debt maturity schedule will spread over many years without any substantial peaks in any particular year. The components of a maturity or repayment schedule are not just the final maturity payments on long-term bonds, but also include amounts owed under commercial paper arrangements, sinking fund payments on long-term debt, borrowings under bank credit facilities with approaching expiration dates, and mandatory redemptions of preferred stock.

Analysts should also be aware that some loans and bonds could experience an acceleration of their maturities because of restrictive

covenants written into the debt agreements, including material adverse change (MAC) clauses, financial covenants, and rating triggers. In these cases, debt is accelerated after a certain stated event occurs, such as a major change in the company's business, the decline of a particular financial ratio below a certain level, or the downgrade of the company's credit rating to speculative grade (by Standard & Poor's and/or Moody's). When these covenants are present, analysts must regularly track the potential for a triggered event and the company's liquidity at that moment.

Other significant financial obligations, including those that are off-balance-sheet, also need to be considered because individually and certainly collectively they could require substantial liquidity. These include extraordinary capital expenditures, potential acquisitions, and payments associated with operating leases, required pension fund contributions, income taxes, and contingent liabilities such as lawsuit settlements, letters of credit, support agreements, subsidiary guarantees, and obligations arising from partnership or affiliate arrangements. Even when analyzing highly creditworthy corporations, it is necessary to be aware of the overall maturity structure of every financial obligation.

Liquidity Sources

In all of the previous scenarios, management has to quickly decide where it will get the cash to make the required payment. Having a greater variety of liquidity sources and a meaningful capability to access that money should be viewed favorably. There are three ways in which a company can attract cash: It can generate it internally, reduce cash outlays, or obtain it from external parties. Table 5-3 is a listing of the liquidity items that analysts should monitor.

An entity's internal sources of cash begin with its actual availability of surplus cash or short-term marketable securities. This, by definition, is the most easily accessible liquidity resource. Yet it should be recognized that many companies will use their cash hoard only as a last resort. Cash generated from operations is the next best source. Cash flow analysis should assess not only the stability or volatility of the cash generation, but also the discretionary nature of the capital expenditures and the flexibility in dividend policy, and therefore the variability of free operating cash flow. To effectively evaluate an entity's ability to generate free cash requires an understanding of the economy, the business cycle, and the company's operating needs.

Typically, cash generated internally will not be sufficient to fund a material spike in cash needs. Such a situation usually requires access to other people's money via the financial markets. In normal circumstances, commercial paper offers a reliable source of short-term liquidity for invest-

TABLE 5-3: Liquidity Checklist

Debt Profile:

- ✓ Long-term Debt Maturities
- ✓ Commercial Paper Outstanding

Bank Lines:

- ✓ Total Amount
- ✓ Available Amount
- ✓ Loan Maturity
- ✓ Covenants
- ✓ MAC Clause
- ✓ Debt Triggers
- ✓ Restrictive Covenants (head room)

Off-Balance-Sheet Obligations:

- ✓ Subsidiary Guarantees
- ✓ Support Agreements
- ✓ Joint Ventures
- ✓ Take-or-Pay Obligations
- ✓ Contingent Liabilities

Alternative Sources Of Liquidity:

- ✓ Free Cash Flow
- ✓ Cash/Liquid Assets
- ✓ Asset Sales
- ✓ Dividend Flexibility
- ✓ Capital Spending Flexibility
- ✓ Parental Support

Source: Standard & Poor's

ment-grade corporations. Given the short-term nature of commercial paper, investors in this security are very risk-averse. Access can be severely restricted in periods of market uncertainty or perceived financial distress (if not by the issuer, then by a counter party or similar industry peer). Therefore, readily accessible commercial paper backed up bank credit facilities is critically important insurance in case of a liquidity crisis.

Committed bank credit facilities, on the other hand, are generally an issuer's most reliable source of liquidity. However, it is important to understand the limitations on such facilities. In the analytical process, an issuer's availability, covenant structure, basis for calculating financial covenants, approvals required for changes to credit agreements and the character of bank relationships should be closely examined.

The bond and equity capital markets are also among the sources of liquidity that should be considered. This includes access to the entire range of financial securities available to a treasurer (as discussed in the section "The Balance Sheet"). Therefore, management's ability to factor or securitize liquid assets (such as its receivables) is a very important source of liquidity for some companies. For example, Ford's and General Motors's access to the commercial paper markets was substantially reduced following downgrades by the rating agencies in 2002. However, both companies successfully maintained sufficient liquidity levels by increasing the securitization of receivables. Most companies don't have the financial wherewithal that large corporations like Ford and General Motors have. In addition, as receptivity by the capital markets can vary dramatically in a short period of time, expectations about the availability of such sources should be tempered.

Lastly, the actual realizable proceeds from salable assets are a regular contributor to liquidity for many companies. While it shouldn't be surprising that large corporations have a large store of noncore assets that are potentially for sale, this is an area that requires constant evaluation. In many cases, management is unable to dispose of assets or business lines in its estimated time frame or at its expected level of proceeds. Evaluation of the assets to be sold is an add-on task, but it is necessary in order to understand the likelihood of the assets' sale and their value.

MANAGEMENT

The management factor is perhaps the most subjective part of liquidity and financial flexibility analysis. In many cases, an issuer's liquidity pro-

file is a reflection of its business strategy and financial policy. A management team that displays a willingness to operate with little financial cushion should be viewed as somewhat lacking from a financial policy standpoint. In some cases, the very nature of the business or financial situation may be challenging, and therefore management's skill and adeptness at providing adequate liquidity remains an important consideration. Financial challenges or not, there are best practices of financial prudence and preparedness that help to avoid liquidity crises. These actions include:

- Avoiding excessive reliance on short-term, confidence-sensitive debt
- Arranging manageable and well-distributed debt maturities
- Maintaining solid and well established relationships with its bank group
- Providing substantial headroom in bank loan covenants
- Ensuring adequate financial disclosure

CHAPTER SUMMARY

Financial Risks Measure Performance, Obligations, and Credit Strength

Financial risk analysis is the complement of business risk analysis and is the final building block of credit analysis that puts all the analyses into perspective. It validates the strengths and weaknesses of operating performance and of the business itself. It identifies the debt obligations and the entity's ability to pay them off. Lastly, it characterizes the company's ability to withstand shocks. It includes ratio analysis, but it's more than just comparing numbers. It's all about translating financial performance and risk into an evaluation of the consistency or volatility of a company, and therefore the company's longer-term ability to pay debt obligations. The analysis focuses on the balance sheet, profitability, cash generation, and financial flexibility. While these areas are related to each other, there is a distinct analytical opinion to derive from each.

The balance sheet provides a measure of financial risk, as it identifies all the debt obligations in comparison to assets. Analysts have two objectives. One is to accurately identify all debt obligations. Corporate treasurers have a wide range of financial securities at their disposal when

deciding how to finance their company. While it is assumed that they will make an economic decision, these securities vary in complexity from the simple traditional debt securities to hybrid debt/equity deals or the far more complex structured transactions. Calculating the outstanding debt commitment for each of these obligations is not straightforward at times. In addition, not all obligations are visible on the balance sheet. Many are off-balance-sheet, such as joint venture debt and operating leases. Whether the obligations are on- or off-balance-sheet, complex or simple, analysts have to determine the correct methodology to use in order to accurately add up the obligations. The second objective is to determine how aggressive or conservative the company's financing is. Once all obligations are identified, various debt leverage ratios and comparisons to asset values lead the analyst to an evaluation.

Profitability measures are very important, as they characterize the financial performance of operating assets. Corporate managers pay close attention to them for this reason. Profit margins, returns on investment, and growth rates are useful measures of quality, but they become even more valuable when they are viewed in the context of historical trends, future forecasts, and peer comparisons. Clearly, a rising or falling trend followed by a similar movement in the forecast is a telling sign in regards to the business performance.

Furthermore, trends and forecasts should correspond with business expectations. That is, a more competitive business environment should result in declining margins and returns; a growth strategy that is deemed successful by management could be validated by the change in margins and returns. A comparison with peers sets useful benchmarks for evaluating a company's competitive and market position.

Cash and cash generation are a company's number one financial asset because it takes cash to pay debt obligations and every other expense, obligation, and investment. There are many definitions of cash flow. Regardless of the version used, analysts should compare cash generation with total debt obligations (including those that are off-balance-sheet), debt interest payments, and capital expenditures, as each ratio gives insight into the company's ability to fund itself.

Financial flexibility is having the ability to access cash (i.e., liquidity) from different sources during times of need. Credit analysts first have to identify the situations in which having financial flexibility is important and then quantify the cash requirements. There are extreme circumstances that stress a company's cash position, such as large litigation judg-

ments and unforeseen events affecting whole industries. Then there are more typical situations, such as a near-term debt maturity and large capital expansions. Most of the time, tapping cash sources during these circumstances is a business-as-usual event. But for weak companies this could be a survival effort.

Besides cash on hand and free cash generation, there are many other sources of funds. Bank credit lines, commercial paper, and issuing securities in the bond and equity markets are typical ways to get other people's money. Analysts should also investigate the company's ability to sell assets, reduce dividend payouts, cut back on capital outlays, and receive financial support from a parent company.

NOTES

1. Standard & Poor's has done exhaustive analysis on this topic, too (in particular on pensions and postretirement medical liabilities); please see *Standard & Poor's Corporate Ratings Criteria*.

2. Financial reporting practices in some jurisdictions do not require cash flow statements. In these cases, analysts typically use EBITDA and derivations of it instead.

3. Dr. Charles W. Mulford, CPA, Director, Invesco Chair and Professor of Accounting, DuPree College of Management at the Georgia Institute of Technology on "Corporate Reporting Practices for Free Cash Flow."

CHAPTER 6

Cash Flow Forecasting and Modeling

> "A good financial model should remain simple, should focus on key cash flow drivers, and should clearly convey assumptions and conclusions."
>
> —Pascal Bernous, Director, Standard & Poor's

Let's suppose you are a credit analyst and you are researching Nokia, the international telecommunications company. In your research, you come across the following:

> On June 12, 2003, the Financial Times quoted Jorma Ollila, Nokia's chief executive, as saying that "while 'uncertainties' continued to 'impact demand,' the world handset market was capable of growing 10 percent in 2003 from the 405m handsets sold in 2002. The company [Nokia] also raised its estimates for the global number of mobile subscribers from 1.5bn to 1.6bn by 2005." At the same time, Nokia "reaffirmed its belief that it was increasing market share from the 38 percent achieved in the first quarter."

It is the role of companies' top brass to take a stand regarding the future of their business and to make decisions to steer their ships through this future. Through a top-down or bottom-up approach, the management of the firm prepares projections in order to budget the allocation of scarce resources.

This Nokia quote provides a good example of the types of "big picture" questions that a competent analyst would need to ask when assessing overall credit risk:

1. Do I believe that Nokia will be able to maintain its leading market share?
2. What investments will be required to achieve the firm's strategic objectives?

3. Assuming that Nokia can maintain a leading market share, what return on investment can be expected in the face of competition?

In having these questions answered, credit analysts will be able to bring together their views on the sector, the firm's competitive position, and its financial risk, and translate them into prospective cash flows showing the firm's future debt-servicing ability.

The first section of this chapter will address the practical questions regarding projections, ranging from definitions of often-used terms to more complex issues such as the choice of time horizon for the projections and limitations of financial forecasts.

The second section focuses on a fully developed case study, that of Coca-Cola, perhaps the world's best-known branded consumer products company. The objective is to provide an illustration of how to develop a financial model from start to finish, and how to interpret its results. This section concludes with a scenario analysis.

The last section is a condensed case study on Honda, the Japanese car manufacturer. The purpose was to provide another example focusing on a cyclical sector; therefore, only revenues and operating costs were modeled.

FINANCIAL PROJECTIONS: BUILDING BLOCKS

In this first section, we define the building blocks of financial projections and provide guidelines that the credit analyst should use to establish sound projections.

What Are Cash Flow Drivers?

Essentially, they are the economic and business variables[1] that directly affect cash flow generation: price per unit sold, volumes of units sold, sales per square foot, cost per ton, occupancy rates, cost of capital, and so on. Some cash flow drivers are industry-specific (sales per square foot for the retail sector, occupancy rates for the hotel industry), whereas others are more generic in nature, such as cost of capital or receivables turnover.

More generally, they are the main drivers that should be utilized to prepare sensitivity analysis in a financial forecast. In sectors where revenues are driven by a price/volume equation, the analyst will derive rev-

enues by forecasting product prices and volumes. In other sectors, such cash flow drivers may be more difficult to identify without a thorough knowledge of the sector. In such instances, a correlation with the macroeconomic environment may be useful. For example, corporate revenues will grow or decline as a function of the movement in a country's gross domestic product.

Should I Prepare Various Scenarios?

Instead of using only one set of assumptions to support a credit recommendation, credit analysts should prepare at least three scenarios:

1. A base case, which may be provided directly by the firm or use assumptions about the future derived from the recent past
2. A stress case, with assumptions reflecting very difficult economic and business conditions
3. A default case, where particular assumptions (discussed in Chapter 9) lead to a payment default of the firm.

In developing these scenarios, analysts form a better understanding of the "pressure points" that could reduce a firm's debt-servicing ability.

What Should Be My Time Horizon?

The ideal time horizon for a financial forecast should match that of the credit exposure. In instances where refinancing risk exists, this horizon expands beyond the maturity of the exposure. In other words, an exposure to a seven-year term loan with full repayment at maturity should be matched by a seven-year financial forecast. The present value of future cash flows should be sufficient to fully cover future debt obligations, and hence the horizon should be as long as required by a particular transaction.

Certain businesses related to essential needs (utilities, health care, certain foods and beverages, and real estate, among others) can display significant stability and predictability over longer time periods. However, for most businesses, it is difficult to forecast beyond two to three years with a high level of accuracy, even with excellent sector knowledge. Long-dated forecasts are inherently imprecise, but they will highlight essential trends. Thus, it is important to update financial projections on an ongoing basis along with the information flow affecting the entity.

How Complex Should My Model Be?

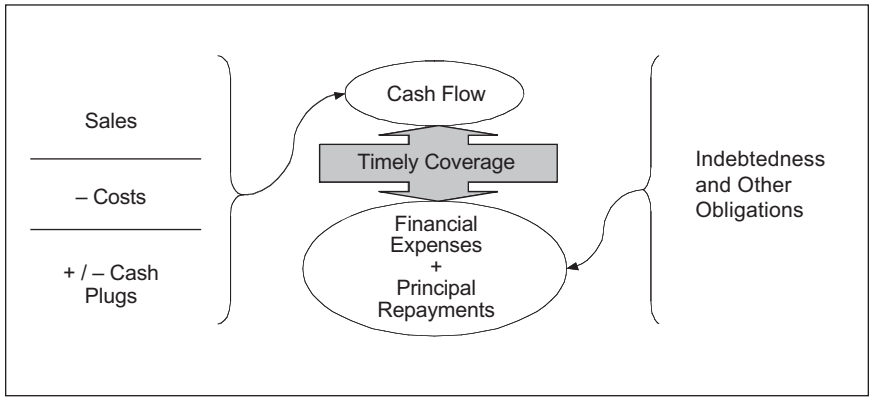
Modeling can take different forms, ranging from "back-of-the-envelope" approaches to more complex ones involving the use of stochastic (statistically based) methodologies, depending on the level of accuracy being sought.

- *Back-of-the-envelope.* This approach should not be discounted because it does not use loads of bits and bytes. For example, when a firm announces a large acquisition or a restructuring, analysts can quickly evaluate the impact on debt-service coverage by running a few numbers (for practical examples, refer to Part IV, "Cases in Credit Analysis"). Also, the annual reports of many firms involved in commodity sectors provide some measures of sensitivity to commodity price fluctuations. While not overly accurate, this approach will allow analysts to arrive at a range of potential outcomes fairly rapidly.
- *Deterministic.* With this approach, analysts determine a set number of assumptions based on sector and company knowledge, and translate these into cash flows and other credit ratios. This approach is widely utilized in both corporate budgeting and financial modeling, as it is fairly easy to develop. It will be explored more fully throughout this chapter.
- *Stochastic.* Instead of using a set number of assumptions, as in the previous approach, analysts can develop a range of probable inputs and use advanced techniques, such as Monte Carlo simulations, to arrive at a range of potential outcomes. This approach is often utilized in areas where cash flow–generating assets have historically shown a fairly predictable statistical behavior, such as real estate or car loan portfolios in structured finance.

What Is the Key Cash Flow Measure That I Should Focus on in My Projections?

Credit forecasts should test the capacity of a firm to service its debt obligations, and therefore modeling should always aim at identifying and measuring cash available for debt service, even if this figure is negative. As we will show in this chapter, this figure is derived by adding back debt service to funds from operations (FFO). As indicated in Chapter 5, we recommend that credit analysts identify the amount of cash flow available for debt service (interest, principal, and other fixed payments, such as rent, operating leases, and so on) as the diagram in Figure 6-1 shows.

FIGURE 6-1: Cash Is King!



Cash flow is a function of sales, costs, and cash plugs (working capital changes, capital spending, and so on); financial expenses and principal repayments depend on debt levels and the debt maturity schedule. Once these key figures are identified, credit analysts can modify the cash flow drivers to assess the firm's capacity to service its debt.

Can Past Performance Be a Good Indication of the Future?

Most financial projections take it for granted that the past can at times be a useful indicator of future performance. There is good reason for a bias against previous performance, as real-life business events can produce financial results that are anything but linear. An emerging market crisis can arise, competitors can react differently to industry dynamics than they did in the past, or a firm may simply decide to make a large acquisition or to build a new plant, as a result of industry dynamics or changing strategy.

But dismissing the past entirely would be as unwise as blindly projecting past performance into the future. The past is a tangible basis from which credit analysts can build their assumptions. Analysts must understand economic fundamentals, competitive forces, and corporate strategies in order to assess a firm's future. In particular, if a firm has consistently met past targets, it would be foolish to dismiss the firm's input.

Should Assumptions Vary across Sectors?

For the purpose of defining assumptions, we consolidate the five sector types defined in Chapter 2 into four groups:

1. In *mature* sectors, which are often *global* as well, analysts can assume that past performance should be an adequate starting point for a base-case scenario.
2. In *cyclical* sectors, analysts will use industry information to help determine at which point of the cycle commodity prices are and run scenarios accordingly.
3. In *highly competitive* or *fast-growing* sectors, assumptions will vary dramatically from sector to sector and from firm to firm; it is thus difficult to generalize, although it is fair to say that firms in such sectors need to invest large amounts to protect their competitive positions.
4. In *niche* sectors, assumptions will vary across firms and will generally be related to the assumptions for one of the three previous groups.

In addition to these explicit assumptions, credit analysts will need to ask themselves what implicit assumptions they are making. These cover a wide range, going from firm-specific assumptions regarding the absence of event risk to assumptions pertaining to the macroeconomic and sociopolitical environments. These implicit assumptions should at least be recognized in the recommendation.

What Are the Limitations of Financial Projections?

- First and foremost, the infamous adage "garbage in, garbage out!" should be remembered at all times. Preparing financial projections is not black magic, but it isn't guesswork, either: Analysts should make educated assumptions. Assuming that the mechanics of the model are sound, the quality of the output depends solely on the quality of the inputs. Simple checks can go a long way to limit errors. For instance, analysts should always make sure to keep the operating margin in sight. If it increases dramatically over the years, perhaps inflation was forgotten on the cost side.

- Second, financial forecasts measure a firm's capacity to service its debt, but not its willingness to do so. Put differently, management may at any time make a decision, such as making a debt-financed acquisition or paying an extraordinary dividend, that could have a significant negative impact on a firm's debt-servicing ability. Analysts should always accompany their projections with a qualitative assessment of industry dynamics, management strategy, and financial policies.
- Third, it is very difficult to include event risk in projections, such as wars, natural disasters, or fraud, unless credit analysts use highly sophisticated models.
- Lastly, preparing projections can prove tricky when the organizational structure is overly complex, such as in the case of private investment holding companies, or when key information is missing. Nevertheless, a fair attempt is better than no attempt, and it will have the added benefit of highlighting more precisely the points of discomfort regarding disclosure.

PREPARING FINANCIAL PROJECTIONS: THE COCA-COLA COMPANY—A CASE STUDY[2]

The purpose of this case is to provide the reader with a detailed step-by-step assessment of how credit assessment is performed. The Coca-Cola Company (Coke) has been chosen as the first case because, whether you drink its product or not, it is a brand name with global recognition. As part of the case pedagogy, you will be provided with actual financials, and we will walk you through the detailed process of credit analysis. To prepare the projections, we will follow the path outlined in Figure 6-1 by identifying

- Revenues
- Costs
- Cash plugs (working capital, capital spending, dividends, and so on)
- Debt service (debt, interest expense, and interest income)

Once all these building blocks have been identified, we show how credit analysts can measure the firm's debt-servicing capacity and how they can "stress-test" it.

But before building a spreadsheet, credit analysts need to first step back and review the firm's strategy, its financial policies, and the key

characteristics of its business risk, in order to help them better identify the cash flow drivers.

Coke: Business Risk Characteristics and Strategy

An analysis of the firm's competitive position would probably outline the following key aspects:

- The leading Coke brand, recognized by most consumers worldwide, and a leading market share in the global mature carbonated soft-drink business should translate into stable demand.
- A ferociously competitive environment, particularly with arch-rival Pepsi, but also with smaller competitors, should preclude significant pricing flexibility.
- An established bottling and distribution network should permit product extension.
- The constant requirement to invest in advertising to maintain the brand image should translate into significant quasi-fixed costs.
- Given that bottling, the most capital-intensive operation for Coke, is outsourced to third parties, capital spending requirements should remain modest relative to those in other, more capital-intensive businesses.

To compare and contrast this analytical assessment, here is an excerpt from Coke's 2003 annual report, outlining the firm's strategic objectives:

> Accelerate carbonated soft-drink growth, led by Coca-Cola
>
> Selectively broaden our family of beverage brands to drive profitable growth
>
> Grow system profitability and capability together with our bottling partners
>
> Serve customers with creativity and consistency to generate growth across all channels
>
> Direct investments to highest-potential areas across markets
>
> Drive efficiency and cost effectiveness everywhere

Source: The Coca-Cola Company, 2003 Annual Report.

In the following case study, we will assume that analysts have to prepare a forecast over a five-year period. The first step, as indicated earlier, is to identify the cash flow drivers of revenues, costs, cash plugs, and debt service.

Revenues

TABLE 6-1: Coca-Cola Revenues, 1998–2002

US$ (millions)	1999	2000	2001	2002	2003
Revenues	16,767	17,354	17,545	19,564	21,044
% change	2.9%	3.5%	1.1%	11.5%	7.6%

As Table 6-1 shows, Coke displayed low revenue growth in the years 1999–2001, in line with expectations, resulting from sector maturity. In 2002, the consolidation of German bottler CCEAG and somewhat better volume growth in the core U.S. market that same year resulted in a significant revenue increase. In 2003, volume growth declined to 3 percent, but revenues were boosted 5 percent by the weakness of the dollar relative to the Euro and the yen.

Key Drivers: Volumes

The 2002 annual report segments the world into four categories based on per capita consumption of Coke products[3]:

1. Emerging markets consume less than 50 servings per year per person and have an estimated population of 4.3 billion.
2. Developing markets consume 50–149 servings per year per person and have an estimated population of 800 million.
3. Developed markets consume 150–249 servings per year per person and have an estimated population of 600 million.
4. Leading-edge markets consume over 250 servings per year per person and have an estimated population of 500 million.

Also in the 2002 annual report (the 2003 version is less generous with this type of information), a table presents the volume growth rates for the past year, the past five years, and the past ten years for the different regions of the world.[4]

Having gone through these steps, the credit analyst is now in a position to derive the key driver of revenues based on servings growth. Because the objective is to have the ability to create various scenarios, three options are proposed:

1. A minimum number of servings combined with a minimum projected growth rate
2. A maximum number of servings combined with a maximum projected growth rate
3. An average number of servings combined with an average projected growth rate

Based on average serving figures derived from Table 6-2, analysts can derive estimated global growth rates for servings, which will serve as a key cash flow driver of revenues (see Table 6-3).

All three growth rates can be utilized in modeling future revenues for Coke, although we will use the average case to develop this scenario. The average growth rate of 3.8 percent will be utilized to model the base case.

> *Warning:* While the minimum growth rate of 2.2 percent appears overly punitive, analysts should recognize that Argentina actually experienced a severe *volume decline of 15 percent* at the height of the economic crisis in 2002 and a 0 percent growth rate over the past five years. This clearly indicates that Coke remains a discretionary product and that volume stagnation *is* a possible scenario in a severe downturn. It also shows the importance of country risk analysis, and demonstrates that reality may often show nonlinear trends.

Coke's growth initiatives (bottled water, Coke Vanilla, Coke Lemon, and so on) have already been taken into account in the calculated growth rates: In 2002, despite the introduction of new products in the United States, that market achieved only 3 percent volume growth; in 2003, as indicated earlier, overall volume growth did not exceed 3 percent, including acquisitions.

Key Drivers: Prices

Over the past three years, pricing flexibility has been marginal, as would be expected in such a competitive sector. In 2003, Coke reported that "price and product/geographic mix" accounted for only 1 percent of the revenue growth relative to 2002; in 2002, that impact was 3 percent relative to 2001, but the year before, there was no impact.

TABLE 6.2: Coke's Global Servings

	Population (in millions)	Servings per Capita Min.	Max.	Avg.	Total # of Servings Min.	Max.	Avg.
Emerging markets	4,300	0	49	24.5	0	210,700	105,350
Developing markets	800	50	149	99.5	40,000	119,200	79,600
Developed markets	600	150	249	199.5	90,000	149,400	119,700
Leading-edge markets	500	250	250	250	125,000	125,000	125,000
TOTAL	**6,200**	**450**	**697**	**574**	**255,000**	**604,300**	**429,650**

TABLE 6-3: Estimated Growth Rate

Worst	Best	Average.
255,000	604,300	429,650
260,500	635,348	445,799
2.2%	**5.1%**	**3.8%**

Wrapping Up Revenue Projections

Analysts should draw three key conclusions from the revenue analysis:

- Volume growth rate is expected to be between 2.2 and 5.1 percent, with an average at about 3.8 percent. Brand, geographic breadth, and leadership in the soft drink and juice markets should provide strong support for satisfactory growth in the foreseeable future. Conversely, product maturity should preclude rates of growth far in excess of global GDP growth. As a sobering reflection, analysts should remember the impact that the Argentinean economic crisis had on Coke consumption in that country.

Projected Growth Rate			Projected Servings		
Min.	Max.	Avg.	Min.	Max.	Avg.
5.0%	8.0%	6.5%	0	227,556	112,198
3.0%	5.0%	4.0%	41,200	125,160	82,784
2.0%	3.0%	2.5%	91,800	153,882	122,693
2.0%	3.0%	2.5%	127,500	128,750	128,125
			260,500	**635,348**	**445,799**

- The soft drink and juices markets remain highly competitive (particularly with archrival Pepsi), and pricing flexibility is thus highly unlikely. At best, the company can expect to pass on inflation increases to its customers, but even this is far from certain. For this illustration, we will assume that there are no changes in revenues resulting from variation in pricing.

Analysts can draw the preliminary conclusions shown in Table 6-4 regarding revenues, based on projected volume growth rates and 2003 revenues, which amounted to $21.0 billion.

TABLE 6-4: Projected Volume Growth Rates

US$ (millions)	Growth rate	2004	2005	2006	2007	2008
Revenues worst	2.2%	21,507	21,980	22,464	22,958	23,463
Revenues average	3.8%	21,844	22,674	23,535	24,053	24,582
Revenues best	5.1%	22,117	23,245	24,431	24,968	25,518

Caveats

Two significant caveats should be made:

- Coke does not own bottling operations. However, it keeps varying ownership interests, and at times consolidates certain underperforming operators. In 2002, Coke had an ownership interest of over 50 percent in Coca-Cola Erfrischerungsgetränke AG (CCEAG), the firm's German bottler, and consolidated its operations. This caused a meaningful swing in the firm's financials. When Coke completes such transactions in the future, this will again have a substantial impact on its financials.
- In the recent past, Coke did not make major acquisitions or divestitures. Should it carry out such a transaction, this would undoubtedly affect the firm's financials as well.

Operating Costs Key Drivers: Costs of Goods Sold (CGS) and Selling, General, and Administrative (SG&A) Costs

In mature businesses, such as that of Coca-Cola, the easiest approach to analyzing operating costs is to track operating margins over time and analyze the major components: cost of goods sold; selling, general, and administrative expenses, and depreciation (see Table 6-5). Whereas in most jurisdictions, depreciation is presented as a separate line item in the profit and loss statement, this is generally not the case in U.S. annual reports. Therefore, analysts must extract the depreciation from the cash flow statement, and add it back to operating income to get a picture of the company's operating earnings that is not influenced by investments.

For presentation purposes, we discuss depreciation later, along with capital spending. At this stage, suffice it to say that depreciation will move in tandem with capital expenditures.

Analysts will be able to derive two quick conclusions:

- The cost of goods sold numbers have displayed some variability over the past five years within 2.5 percentage points; a particular sharp rise in 2002, resulting from the consolidation of the somewhat lower-margin bottling business in Germany, continued to negatively affect the gross profit in 2003.

TABLE 6-5: Identifying Operating Cost Drivers

US$ (millions)	1999	2000	2001	2002	2003
Revenues	16,767	17,354	17,545	19,564	21,044
Cost of goods sold	–6,009	–6,204	–6,044	–7,105	–7,762
CGS as % of revenues	35.8%	35.7%	34.4%	36.3%	36.9%
Gross profit	10,758	11,150	11,501	12,459	13,282
Gross margin	64.2%	64.3%	65.6%	63.7%	63.1%
Selling, general, and administrative expenses	–5,963	–6,016	–6,149	–7,001	–7,488
SG&A as % of revenues	35.6%	34.7%	35.0%	35.8%	35.6%
Operating income*	4,795	5,134	5,352	5,458	5,794
Operating margin	28.6%	29.6%	30.5%	27.9%	27.5%
Depreciation	792	773	803	806	850
Earnings before interest, taxes, depreciation and amortization (EBITDA)	5,587	5,907	6,155	6,264	6,644
EBITDA margin	33.3%	34.0%	35.1%	32.0%	31.6%

* Other operating charges are excluded from the operating margin, as they are deemed nonrecurring.

- SG&A (including depreciation) as a percentage of sales has been remarkably stable over the past five years, within one percentage point, reflecting good cost control by management.

For the purpose of this illustration, we use the operating margin after depreciation, but it would also be possible to use EBITDA margin as a cost driver. Thus, the proposed operating cost drivers are outlined in Table 6-6.

TABLE 6-6: Proposed Cost Drivers

	Worst	Avg.	Best
Operating margin %	27.5%	28.8%	30.5%

For modeling purposes, analysts will have to decide whether they believe that more consolidations of bottlers are likely in the near future or not. If they believe that the company will go down that path, then margins are likely to contract further; if they don't, they can assume that Coke's operating margin will remain at or around 28 percent in the future. At this stage of the analysis, no other shocks will be assumed (see Table 6-7).

TABLE 6-7: Projected Operating Margin

US$ (millions)	Operating Margin % of Sales	2004	2005	2006	2007	2008
Operating margin—worst	27.5%	6,007	6,235	6,472	6,718	6,973
Operating margin—average	28.8%	6,291	6,235	6,472	6,718	6,973
Operating margin—best	30.5%	6,662	6,915	7,178	7,451	7,734

Other Income/Expenses and Interest Income/Expense

Interest expense and interest income are a function, in part, of the amount of debt outstanding at the end of the year and/or the cash position; the debt outstanding is a function of the firm's cash flow; and the firm's cash flow is a function of the cash interest expense or income, creating a circular reference.[5]

As a result of these issues, interest expense and interest income will be discussed later in the chapter, in the section on financial debt.

Key Drivers: Equity Income (Losses)

Coke's equity income and losses come from its investment in "bottling partners," accounted for using the equity method. As the name indicates, the equity method accounts for gains and losses on investments on the

basis of the company's equity in those investments. For example, if Coke owns a 38 percent share in another firm, Coke will record 38 percent of this firm's gains and losses. Although this provides an indication of the firm's profitability, it does not provide any indication about the level of cash dividend this firm pays its shareholders.

Coke's largest investment (and largest client) is Coca-Cola Enterprises Inc. (CCE), a public company listed on the New York Stock Exchange with 2003 sales of $17.3 billion, in which Coke had a 37 percent stake at the end of 2003. Other bottlers around the globe in which Coke had investments had aggregate revenues of $17.9 billion in 2002. Table 6-8 summarizes the key financial results.

Forecasting Tips: Operating and Administrative Costs

Here are a few key aspects that analysts should remember when evaluating CGS and SG&A:

Labor costs. Generally, labor costs tend to vary as a function of revenues over long periods, although "blips" can occur. They are also expected to increase over time as a result of inflation. In unionized environments, close attention should be paid to the results of collective bargaining. It takes evidence, and more than just management's conviction, that a firm can successfully downsize its operations with a measurable, favorable impact on its cost line. In boom periods, such as the one in the high-tech sector in the late 1990s, labor costs tend to increase disproportionately as a result of shortages of skilled workers in specific areas. Where talent retention is a key to success, such as in advertising, investment banking, or R&D-intensive businesses, labor costs should be analyzed carefully, and some should be assumed to be fixed.

Production costs. Analysts should break down production costs into meaningful subcategories, i.e., spending a lot of time modeling a production cost input that represents less than 10 percent of the cost base may not be very profitable. In capital-intensive sectors, energy, commodities, and sometimes chemicals often represent the key cost ingredients. In other sectors, such as pharmaceuticals, research and development are the more important costs. In many sectors, production costs are a mixed bag of energy, equipment maintenance, and some commodity inputs.

Sales and Administrative Costs. These represent generally a small proportion of overall costs, but at the same time are fairly fixed in nature. It is indeed difficult to eliminate a company's sales force, IT staff, and administrative support without jeopardizing the sheer survival of the company.

TABLE 6-8: Identifying Equity Income Drivers (1)

US$ (millions)	2001	2002	2003
Revenues CCE	14,999	16,058	17,330
Operating income CCE	601	1,364	1,577
Net income CCE	(321)	494	676
Operating income / sales	4.0%	8.5%	9.1%
Revenues other	19,740	17,714	19,797
Operating income other	1,770	1,744	1,666
Net income other	735	(630)	580
Operating income / sales	9.0%	9.8%	8.4%

Historical operating margins of the bottlers are less than 10 percent, which is weak even compared with other peer bottler/packaging firms. Relative to Coke's operating margin of close to 30 percent, the bottlers' contribution is significantly dilutive.

It is difficult to identify a discernible pattern of stable income from Coke's bottling partners, based on the results for the past five years, which are given in Table 6-9.

TABLE 6-9: Identifying Equity Income Drivers (2)

US$ (millions)	1999	2000	2001	2002	2003
Equity income	–184	–289	152	384	406
Equity investments	6,442	5,246	5,128	4,737	5,224
Income as % of investments	–2.86%	–5.51%	2.96%	8.11%	7.77%

Hence, the proposed equity income driver is outlined in Table 6-10.

TABLE 6-10: Proposed Equity Income Drivers

	Worst	Average	Best
Income as % of investments	–5.5%	2.1%	8.1%

Other Income/Loss

As its title indicates, this section position consolidates all income and loss items that are not accounted for under the more traditional headings. These typically include:

- Foreign exchanges gains and losses
- Accounting gains or losses incurred as a result of the sale of an asset
- Write-downs of certain investments from the level of their carrying value
- Restructuring charges

The Other Income/Loss item is generally very difficult to project. In the event that a firm has recorded significant recurring items under this heading in the past, credit analysts should build more headroom into the forecasts going forward to allow for it. This could also be the case if analysts have knowledge of an upcoming restructuring or acquisition, which could lead to significant one-time charges.

Gains on Issuances of Stock by Equity Investees

If a firm in which Coke has an equity investment issues stock to a third party at a price in excess of the book value at which Coke accounts for it, this position increases. For modeling purposes, one will assume that no such issuance will occur over the modeling time horizon.

Key Drivers: Cash Taxes

While the U.S. federal corporate tax rate is 35 percent, Table 6-11[6] shows that Coke's overall tax rate in 2003 was 20.9 percent, because of (1) the significant impact of non-U.S. tax rates on the earnings of Coke's foreign sub-

sidiaries , and (2) the significant "swing" factor associated with the earnings or losses of Coke's bottling partners and other investments reported under the equity method, which moved from a positive 2.9 percent in 2000 to a negative 2.4 percent in 2003.

TABLE 6-11: Identifying Tax Rate Drivers

Year ended December 31,	2003	2002	2001	2000
Statutory U.S. federal tax rate	35.0%	35.0%	35.0%	35.0%
State income taxes, net of federal benefit	0.9%	0.9	1.0	0.8
Earnings in jurisdictions taxed at rates different from the statutory U.S. federal rate	(10.6%)	(6.0)	(4.9)	(4.0)
Equity income or loss	(2.4%)	(2.0)	(0.9)	2.9
Other operating charges	(1.1%)	—	—	1.9
Write-down/sale of certain bottling investments	—	0.7	—	—
Other—net	(0.9%)	(0.9)	(0.4)	(0.6)
Effective rates	20.9%	27.7%	29.8%	36.0%

Credit analysts should remember that the amount of cash taxes paid is often different from the amount of taxes appearing in the income statement. However, it is very difficult to evaluate the difference unless it is disclosed.

Given the structural difference between U.S. and non-U.S. tax rates, the firm is unlikely to be taxed at its top bracket in the years to come. Using a tax rate of 36 percent, even for a pessimistic scenario, would be overly punitive, so we propose 32 percent for the worst-case scenario, as outlined in Table 6-12.

TABLE 6-12: Proposed Tax Rate Drivers

	Worst	Average	Best
Effective tax rate	32.0%	28.6%	20.9%

Cash Plugs

In this section, we discuss the missing component required to rebuild a cash flow statement. For a credit analyst, the paramount objective is to be able to successfully assess whether the firm is generating discretionary cash flow, and if so, how much. While the objective is simple, achieving it is another matter, as it requires rebuilding a good portion of the balance sheet as well.

This section provides a step-by-step approach to modeling cash plugs.

Key Drivers: Working Capital Requirements

In order to derive working capital requirements, credit analysts must establish historical measures of receivable, inventory, and payable turnover. While several measures exist, the *"days" turnover ratios* will be used here. If inventories have a turnover of 70 days (as has been the case for Coke on average over the past five years), this means that on average, the items purchased by Coke to produce finished products are replaced every 70 days. The turnover ratios for Coke are calculated in Table 6-13.

Forecasting Tips: Working Capital Turnover Ratios

The key formulas for calculating turnover ratios are as follows:

$$\text{Receivables turnover} = \frac{\text{Receivables}}{\text{Revenues}} \times 365 \text{ [days]}$$

$$\text{Inventory turnover} = \frac{\text{Inventory}}{\text{CGS}^1} \times 365 \text{ [days]}$$

$$\text{Payables turnover} = \frac{\text{Payables}}{\text{CGS}^1 + \text{SG\&A}^2} \times 365 \text{ [days]}$$

[1]CGS = cost of goods sold

[2]SG&A = selling, general and administrative expenses

TABLE 6-13: Identifying Working Capital Drivers

US$ (millions)	1999	2000	2001	2002
Revenues	16,767	17,354	17,545	19,564
Receivables	1,798	1,757	1,882	2,097
Receivables turnover (days)	37.6	37.3	37.7	37.0
Cost of goods sold	5,217	5,431	5,241	6,299
Inventories	1,076	1,066	1,055	1,294
Inventory turnover (days)	68.6	71.8	73.7	67.9
Cost of goods sold	5,217	5,431	5,241	6,299
Selling, general, and administrative costs	5,963	6,016	6,149	7,001
Total costs	11,180	11,447	11,390	13,300
Payables and accrued expenses	2,144	3,905	3,679	3,692
Payables turnover (days)	112	96	121	111

The historical receivables and inventory turnover ratios show stability. In contrast, payables and accrued expenses turnover is more variable, because of the inclusion in this item of such things as accrued marketing expenses, container deposits, and even certain restructuring costs. The proposed drivers for these ratios are given in Table 6-14.

TABLE 6-14: Proposed Working Capital Drivers

Days	Worst	Average	Best
Receivables turnover	37.7	37.2	36.2
Inventory turnover	73.7	68.3	59.7
Payables and accrued expenses turnover	121.2	104.5	92.5

2003	2004	2005	2006	2007	2008
21,044	21,079	21,880	22,712	23,575	21,844
2,091	2,232	2,317	2,405	2,497	2,592
36.2	37.2	37.2	37.2	37.2	37.2
7,762	7,929	8,231	8,543	8,868	9,205
1,252	1,488	1,544	1,603	1,664	1,727
59.7	68.3	68.3	68.3	68.3	68.3
7,762	7,929	8,231	8,543	8,868	9,205
7,488	7,820	8,117	8,426	8,746	9,078
15,250	15,198	15,776	16,375	16,997	18,283
4,058	4,543	4,716	4,895	5,081	5,274
93	105	105	105	105	105

Because of the marginal overall impact of changes in working capital requirements, credit analysts may decide to choose the average turnover ratio for all scenarios, to establish the firm's working capital requirements. The expectation is that for a mature business such as Coca-Cola, working capital requirements should be manageable, and projections confirm this (see Table 6-15). However, this step will be critical when analysts review companies in such sectors as the retail industry, where working capital management is paramount.

As a reminder, an increase in current assets indicates a corresponding increase in financing needs; conversely, an increase in payables indicates that the company has lengthened the timing of its payments to suppliers and will require less external financing. This is an important relationship for the analyst to focus on, as it provides a quick check on financial health.

A negative figure for changes in working capital requirements indicates a financing need that the company will have to manage, and a pos-

TABLE 6-15: Projected Working Capital

US$ (millions)	2003	2004	2005	2006	2007	2008
Total current assets	3,343	3,720	3,862	4,008	4,161	4,319
Total payables	4,058	4,543	4,716	4,895	5,081	5,274
Changes in current assets	-48	377	141	147	152	158
Changes in current liabilities	366	485	173	179	186	193
Changes in working capital requirements	414	108	31	32	34	35

itive figure indicates that the firm is freeing up working capital. The circumstances surrounding these changes will need to be explained, particularly if the movements are large.

Capital Spending and Depreciation

Capital spending reflects capitalized costs resulting from the purchase of assets. These assets usually have a long useful life; if they did not, they would be expensed as part of operating costs. There are two types of capital spending: nondiscretionary and discretionary.

- *Nondiscretionary capital spending.* The replacement of a printing press or the installation of pollution control equipment is the same as changing the brakes on your car: You may not like the financial cost, but you know it could kill you if you don't do it. Return on nondiscretionary capital spending is typically zero, based on traditional accounting measures.
- *Discretionary capital spending.* Firms will select projects that will result in either increased revenues or reduced costs through their capital budgeting process.

Forecasting Tips: Capital Spending and Depreciation

There are two ways of approaching capital spending for modeling purposes:

1. Simple approach. This method consists of deriving a historical ratio pegging capital spending to an income statement or balance sheet figure. This ratio is then utilized to project future capital spending requirements. This approach works well for mature businesses, but is not particularly helpful with cyclical firms, capital-intensive businesses, or firms that operate in extremely competitive environments.
2. Detailed approach. The other method requires credit analysts to have a good understanding of a firm's corporate strategy and to rely on industry data to forecast capital spending. Abundant industry research (financial and technical) exists for most sectors and should provide an excellent starting point for this approach. When dealing with smaller firms, due diligence may be an option, particularly to understand the difference between investments for maintenance, investments for growth, and exceptional items. Peer comparison can also be a helpful approach. This last approach is mostly used by corporations in capital budgeting exercises, or by very experienced analysts.

In both cases, we recommend that credit analysts base depreciation on the level of capital spending when preparing financial forecasts. Only if they have firm information that leads them to believe that there will be a gap between the time of the investment and the moment when depreciation will commence (such as in the case of the construction of a very large project) should analysts be prepared to have a mismatch.

In the case of Coca-Cola, analysts can use a historical ratio approach, such as capital spending as a percentage of sales, as the firm operates in a mature sector. Historical ratios for Coca-Cola are given in Table 6-16.

These ratios indicate significant stability in terms of investments in the business, particularly relative to depreciation over the past three years. Investing at a level just below depreciation is a goal that many firms in mature businesses strive for. This will permit credit analysts to forecast depreciation as a function of capital spending (see Table 6-17).

TABLE 6-16: Identifying Capital Spending Drivers

	1999	2000	2001	2002	2003
Capital spending/sales (%)	6.4%	4.2%	4.4%	4.3%	3.9%
Capital spending/assets (%)	25.1%	17.6%	17.3%	14.4%	13.3%
Capital spending/depreciation (×)	1.3	0.9	1.0	1.1	1.0

TABLE 6-17: Projected Capital Spending

US$ (millions)	2004	2005	2006	2007	2008
Revenues	21,844	22,674	23,535	24,430	25,358
Capital spending/sales (%)	4.5%	4.5%	4.5%	4.5%	4.5%
Capital spending	983	1,020	1,059	1,099	1,141
Depreciation	983	1,020	1,059	1,099	1,141
Capital spending/depreciation (×)	1.0	1.0	1.0	1.0	1.0

Acquisitions and Investments

Coke's track record demonstrates that it has not been shy about growing by acquisitions. However, the timing of such acquisitions remains unpredictable, as this activity is generally driven by opportunistic circumstances.

One useful method that credit analysts can apply in projecting an acquisition and investment activity figure is to compare this activity to sales. In using this approach, a review of the recent past shows that Coca-Cola made significant investments in 1999, representing over 14 percent of revenues, but the amount of investment leveled off in the following years (see Table 6-18).

TABLE 6-18: Identifying Investment Drivers

US$ (millions)	1999	2000	2001	2002	2003
Investing activity cash flow minus capital expenditures	–2,380	–432	–419	–336	–124
Investing activity minus capital expenditures/sales (%)	14.2%	2.5%	2.4%	1.7%	0.6%

Investing activity is discretionary, and the company can decide to close the tap in order to preserve cash. In order to remain conservative, credit analysts can decide to forecast that investing activity minus capital expenditures (capex) as a percentage of sales will remain at around 2.5 percent. The results are shown in Table 6-19.

TABLE 6-19: Projected Investments

US$ (millions)	2004	2005	2006	2007	2008
Total investing cash flow minus capital expenditures	546	567	588	611	634
Investing minus capital expenditures/sales (%) 2.5%	2.5%	2.5%	2.5%	2.5%	

Dividends

The typical dividend payout ratio compares dividends to net income, following an accounting logic in which dividends are subtracted from net income before the balance is transferred to retained earnings. For forecasting purposes, dividends will be calculated as a function of funds from operations (FFO), as shown in Table 6-20.

TABLE 6-20: Projected Dividends

US$ (millions)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Dividends	1,580	1,685	1,791	1,987	2,166	2,209	2,332	2,493	2,687	2,970
FFO	4,440	4,437	4,572	5,149	5,624	5,664	5,980	6,392	6,890	7,616
Dividends as % of FFO	35.6%	38.0%	39.2%	38.6%	38.5%	39.0%	39.0%	39.0%	39.0%	39.0%

In the case of Coca-Cola, the ratio of dividends to FFO ranges between a low of 35.6 percent in 1999 and a high of 39.2 percent in 2001. For illustration purposes, we set the projected dividend payout ratio at 39 percent of FFO.

Financial Debt, Interest Expense, and Interest Income

Financial Debt

Credit analysts can decide to model debt on a gross or net basis:

1. *Gross basis.* It is advisable to model gross debt when debt issues are few and when debt leverage is so high that liquidity issues could arise. To follow this approach, the analysts must have detailed information about each debt instrument, such as its ranking, coupon, maturity, and amortization schedule, if any. For instance, a senior secured debt instrument with a 6.25 percent coupon with bullet maturity on June 15, 2006, and paying interest twice a year on December 15 and June 15 will be easy to model.
2. *Net basis.* The second approach, and the one that is preferred for large corporations, consists in applying prefinancing cash flow to outstanding debt. Cash on hand, however, should not be netted against outstanding debt for modeling purposes.

We will review the impact of cash flow on debt in the following section.

Under either approaches, credit analysts need to make adjustments to financial debt to take into account debtlike liabilities, commitments, and contingencies. In the case of Coke, these include guarantees in the amount of $280 million, $3.1 billion in committed marketing and other expenditures, and pension liabilities.[7]

- Guarantees should be added to the debt without other adjustments, as they can be called upon at any time and therefore represent a debtlike obligation.
- Committed marketing and other expenditures can be looked at in two ways for the purpose of projections. If credit analysts are preparing a base case or a stress case, they should just treat these expenditures as part of future cost assumptions. If they are preparing a default case, as discussed in Chapter 9, they should look at this commitment as being debtlike.
- Pension liabilities are also debtlike obligations, as they represent a call on the company's future cash flows as deferred compensation is owed to employees.

Forecasting Tips: Adjusting for Pension Liabilities[8]

This is a highly technical topic that could be the subject of an entire book. Our simple ambition here is to provide some basics that will allow credit analysts to prepare certain adjustments for the Coke case.

1. The sum of the projected benefit obligations (PBO; $2,495 million at the end of 2003) and health-care obligations ($761 million) represents Coke's estimated obligations in respect to its employees (prepared on the basis of actuarial assumptions).
2. The fair value of plan assets ($2,024 million) represents the value of the investments held by the plan at a certain date.
3. The difference between (1) and (2), if positive, represents a plan shortfall, which is akin to a debt obligation, once adjusted for the corporate tax rate of 35 percent. For Coke, $801 million needs to be added to debt levels at the end of 2003.
4. Other adjustments could be made to equity and to cash flow, although the impact for Coke would be fairly small.[9]

Interest Expense and Interest Income

To calculate the average interest rate on the financial debt, the historical interest expense is divided by the average of the debt amount at the beginning of the year and at the end of the year. Likewise, the average rate of return on short-term investments is calculated by dividing the interest income by the average of the short-term investments at the beginning and the end of the year.

Forecasting Tips: Working Capital—Borrowing and Rate of Return Ratios

The key formulas for calculating historical "apparent" interest rates (borrowing and short-term investments) are

$$\text{Borrowing rate} = \frac{\text{Interest expense}}{(\text{Debt beginning of year} + \text{debt end of year})/2}$$

$$\text{Rate of return} = \frac{\text{Interest income}}{(\text{Short-term investments beginning of year} + \text{short-term investments end of year})/2}$$

In the case of Coca-Cola, a fairly low average borrowing rate reflects the fact that the firm borrows primarily in the U.S. markets. In contrast, the high average rate of return on short-term investments is the result of the company maintaining large balances in countries benefiting from high interest rates (see Table 6-21).

The overall reduction in borrowing costs reflects the lower interest-rate environment globally and some changes in the company's borrowing and cash management policies. Analysts should base interest-rate assumptions on macroeconomic assumptions. For modeling purposes, we made the assumption that borrowing costs would increase modestly as a result of a general economic pick-up. It was also assumed that the company would maintain a positive spread between borrowing costs and the rate of return on short-term investments as a result of the company's cash management policies. The projections for these rates are shown in Table 6-22.

TABLE 6-21: Identifying Average Borrowing Cost and Rate of Return

US$ (millions)	1999	2000	2001	2002	2003
Total debt	6,227	5,651	5,118	5,356	5,423
Interest expense	337	447	289	199	178
Average borrowing rate	5.92%	7.53%	5.37%	3.80%	3.30%
Short-term investments	1,812	1,892	1,934	2,345	3,482
Interest income	260	345	325	209	348
Average rate of return	14.37%	18.63%	16.99%	9.77%	11.95%

TABLE 6-22 : Projected Average Borrowing Cost and Rate of Return

US$ (millions)	2004	2005	2006	2007	2008
Average borrowing rate	4.00%	4.50%	4.50%	5.00%	5.00%
Average rate of return	10.00%	10.00%	10.00%	10.00%	10.00%

Cash Change (or How to Pull It All Together)

Once the net or gross debt approach and assumptions about borrowing cost are finalized, it is time to put it all together, as shown in Table 6-23.

This base case shows that Coke's credit standing is unlikely to deteriorate any time soon, at least based on the assumption that the past financials are a relatively good guide to the future. Based on the expected discretionary cash flow generation, the company is unlikely to entirely repay its debt, and will probably make use of its cash to increase dividends, buy back its shares, or make a sizable acquisition.

In modeling, the crucial part consists in applying the prefinancing cash flow to debt reduction or increase, which in turn will cause interest expense or interest income to fluctuate. The use of simple logical formulas in a spreadsheet can direct prefinancing cash flow to debt reduction

until the debt position turns negative (i.e., is entirely repaid) and then direct it to short-term investments.

At this point, once the actual model has been constructed, it is time to test it to ensure the best possible functionality.

TABLE 6-23: The Financial Forecasts

US$ (millions)	2003	2004	2005	2006	2007	2008
Revenues	21,044	21,844	22,674	23,535	24,430	25,358
Costs of goods sold	–7,762	–7,929	–8,231	–8,543	–8,868	–9,205
Gross profit	13,282	13,914	14,443	14,992	15,562	16,153
Selling, general, and administrative expenses	–7,488	–7,820	–8,117	–8,426	–8,746	–9,078
Other operating charges	–573					
Operating income	5,221	6,094	6,326	6,566	6,816	7,075
Equity income (loss)	406					
Other income (loss)	–138					
Gains on issuances of stock by equity investees	8					
Earnings before interest and taxes (EBIT)	5,497	6,094	6,326	6,566	6,816	7,075
Interest income	176	348	348	357	573	1023
Interest expense	–178	–181	–123	–39	0	0
Earnings before taxes (EBT)	5,495	6,262	6,551	6,884	7,389	8,098
Taxes	–1,148	–1,972	–2,064	–2,168	–2,328	–2,551

TABLE 6-23: The Financial Forecasts (continued)

US$ (millions)	2003	2004	2005	2006	2007	2008
Net income	4,347	4,289	4,488	4,715	5,061	5,547
Depreciation	850	983	1,020	1,059	1,099	1,141
Deferred income taxes	–188					
(Gains)/losses on asset sales	–5					
Other noncash items	620					
Funds from operations (FFO)	5,624	5,272	5,508	5,774	6,161	6,688
Net change in current assets and liabilities	–168	108	31	32	34	35
Operating cash flow	5,456	5,380	5,539	5,807	6,194	6,723
Capital spending	–812	–983	–1,020	–1,059	–1,099	–1,141
Free operating cash flow (FOCF)	4,644	4,397	4,519	4,748	5,095	5,582
Dividends	–2,166	–2,056	–2,148	–2,252	–2,403	–2,609
Discretionary cash flow	2,478	2,341	2,371	2,496	2,692	2,974
Other investing activities	–124	–546	–567	–588	–611	–634
Prefinancing cash flow	2,354	1,795	1,804	1,907	2,082	2,340
Total debt—beginning	5,356	5,423	3,628	1,824	–83	–2,165
Cash change	1,137*	1,795	1,804	1,907	2,082	2,340
Total debt—end	5,423	3,628	1,824	–83	–2,165	–4,505
Interest expense	–178	–181	–123	–39	0	0
Short-term investments	3,482	3,482	3,482	3,582	5,766	10,292

* The reason why the figures don't balance is that Coke did not use its prefinancing cash flow to reduce indebtedness in 2003, but rather increased its levels of short-term investments.

TABLE 6-24: Organizing All Cash Flow Drivers on the Same Worksheet

Drivers$	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
P&L Drivers										
Revenue growth	2.9%	3.5%	1.1%	11.5%	7.6%	3.8%	3.8%	3.8%	3.8%	3.8%
CGS as % of revenues	35.8%	35.7%	34.4%	36.3%	36.9%	36.3%	36.3%	36.3%	36.3%	36.3%
SG&A as % of sales	35.6%	34.7%	35.0%	35.8%	35.6%	35.8%	35.8%	35.8%	35.8%	35.8%
Taxes as % EBT	36.3%	36.0%	29.8%	27.7%	24.9%	31.5%	31.5%	31.5%	31.5%	31.5%
Average interest expense	8.5%	10.5%	8.0%	6.2%	6.0%	4.0%	4.5%	4.5%	5.0%	5.0%
Average interest income	14.4%	18.6%	17.0%	9.8%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Working Capital Drivers										
Receivables turnover (days)	37.6	37.3	37.7	37.0	36.2	37.2	37.2	37.2	37.2	37.2
Inventory turnover (days)	68.6	71.8	73.7	67.9	59.7	68.3	68.3	68.3	68.3	68.3
Payables turnover (days)	111.6	121.1	121.2	100.9	92.5	105	105	105	105	105
Investment drivers										
Capital spending/ sales (%)	6.4%	4.2%	4.4%	4.3%	3.9%	4.5%	4.5%	4.5%	4.5%	4.5%
Depreciation/sales (%)	4.7%	4.5%	4.6%	4.1%	4.0%	4.5%	4.5%	4.5%	4.5%	4.5%
Investing minus capex/sales (%)	14.2%	2.5%	2.4%	1.7%	0.6%	2.5%	2.5%	2.5%	2.5%	2.5%
Financing Drivers										
Dividend payout as % FFO	35.6%	38.0%	39.2%	38.6%	38.5%	39.0%	39.0%	39.0%	39.0%	39.0%

Wrapping Up the First Modeling Phase

The best way to organize the model is to place all inputs (or cash flow drivers) and outputs (credit measures) in a single spreadsheet. In the Coca-Cola case, it could look like Table 6-24.

Once all cash flow drivers have been identified and put on the same page, it is now possible to track all assumptions at once, without having to flip back and forth between different pages of a spreadsheet. In order to improve the functionality of the model, it is also useful to include desired outputs on the same page (see Table 6-25).

TABLE 6-25: Projected Credit Measures

Ratios	2003	2004	2005	2006	2007	2008
Gross margin	63.1%	63.7%	63.7%	63.7%	63.7%	63.7%
Operating margin	24.8%	27.9%	27.9%	27.9%	27.9%	27.9%
EBITDA interest coverage (×)	34.1	28.2	51.9	168.9	N/A	N/A
FFO/total debt	103.7%	145.3%	302.0%	N/A	N/A	N/A
Return on permanent capital %	28.2%	30.5%	30.9%	31.1%	28.7%	26.5%
FFO	5,624	5,272	5,508	5,774	6,161	6,688
Short-term investments	3,482	3,482	3,482	3,565	5,730	10,235
Total debt	5,423	3,628	1,824	–83	–2,165	–4,505

With all the inputs and outputs on the same page, it is much easier to vary the assumptions with a view to testing credit measures. It is also easier to test the integrity of the model before using it to support a credit recommendation.

The Coke Case: Stress Analysis

Credit analysts concluded from the base case that Coke is likely to generate vast amounts of cash in the future, to the point where most usual credit measures become meaningless, as all indebtedness will have been repaid and the firm will be sitting on a huge cash pile.

But what if revenue growth was below expectations, operating costs increased unexpectedly, and capital spending had to almost double for an extended period? In other words, what if archrival Pepsi came up with a new "killer" product and marketing campaign and declared an all-out price war on Coke, at the same time as Coke had serious difficulties with its bottlers?

One useful method used by credit analysts is to run a scenario analysis that includes stressing revenues, operating costs and capital spending to levels they believe are perfectly credible, to test the impact on credit measures, as is done in Table 6-26.

Forecasting Tips: Beware of "Bugs"—Model Risk

Beware—several "bugs" can slip into a model.

- First, formulas must be consistent throughout the different time series. The longer the formulas, the likelier it is that a sign could be reversed when calculating such things as interest expense and interest income.
- Second, analysts should check that they have not introduced circularity into their cash flow drivers. For instance, if capital spending is defined as a function of sales, and depreciation is calculated as a function of capital spending, depreciation will vary as a function of sales and capital spending, which may or may not be desired; analysts should just be aware of it.
- When using spreadsheets to model, it is very easy to introduce "bad cells risk," which can in turn provide inaccurate and dangerous results. To minimize this risk, when working in a team environment, it is always advisable to assign one person to be responsible for the master spreadsheet and for making all changes and updates.
- The goal of any useful model is to be transparent as it relates to inputs and outputs so that credit analysts can modify it when their needs change as well as to allow for scenario analysis.
- Models also need to be back-tested on a periodic basis to determine their level of accuracy.
- Remember that even the best models tend to be "precisely" wrong.
- Lastly, as entire lines were cut and pasted from one section to the other, some unintended links to older calculations may have remained. As a result, it is always important to test all the cash flow drivers to ensure that they have the intended impact.

TABLE 6-26: Establishing Stress Cash Flow Drivers

Drivers	2003	2004	2005	2006	2007	2008
P&L Drivers						
Revenue growth (%)	7.6%	–5.0%	–5.0%	–5.0%	–5.0%	–5.0%
CGS as % of revenues	36.9%	40.0%	40.0%	40.0%	40.0%	40.0%
SG&A as % of sales	35.6%	45.0%	45.0%	45.0%	45.0%	45.0%
Taxes as % of EBT	20.9%	38.0%	38.0%	38.0%	38.0%	38.0%
Average interest expense	3.30%	4.00%	4.50%	4.50%	5.00%	5.00%
Average interest income	6.04%	10.00%	10.00%	10.00%	10.00%	10.00%
Working Capital Drivers						
Receivables turnover (days)	36.2	37.2	37.2	37.2	37.2	37.2
Inventories turnover (days)	59.7	68.3	68.3	68.3	68.3	68.3
Payables turnover (days)	92.5	105	105	105	105	105
Investment Drivers						
Capital spending/ sales (%)	3.9%	9.0%	9.0%	9.0%	9.0%	9.0%
Depreciation/ sales (%)	4.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Investing minus capex/sales (%)	0.6%	2.5%	2.5%	2.5%	2.5%	2.5%
Financing Drivers						
Dividend payout as % of FFO	38.5%	39.0%	39.0%	39.0%	39.0%	39.0%
Ratios	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Gross margin	63.1%	60.0%	60.0%	60.0%	60.0%	60.0%
Operating margin	24.8%	15.0%	15.0%	15.0%	15.0%	15.0%
EBITDA interest coverage (×)	34.1	7.6	12.7	11.4	9.2	8.3
FFO/total debt	103.7%	66.4%	59.1%	53.0%	47.4%	42.8%
Return on permanent capital %	28.2%	15.2%	13.8%	12.5%	11.5%	10.5%
FFO	5,624	3,345	3,167	3,003	2,829	2,680
Short-term investments	3,482	3,482	3,482	3,482	3,482	3,482
Total debt	5,423	5,038	5,359	5,666	5,973	6,269

It should be noted that this scenario is fairly drastic, with a sales decline of 5 percent each year, a drop in the operating margin to 15 percent from 25 percent in 2003, a significant increase in the tax rate to 36 percent, and a steep rise in capital spending. Even with such an unlikely occurrence, this scenario shows that Coke would be unlikely to face an immediate liquidity crisis. The firm's credit measures would be deteriorating significantly, though, and its debt levels would be increasing (in this situation, short-term investments were held steady).

Obviously, many more scenarios could be prepared, but the point here is primarily to provide a practical demonstration of how to model, rather than to analyze the particular case of Coke.

Forecasting Tips: Stress Testing

Even with the best data, it remains difficult to establish the "right" level of scenario analysis and stress testing for each sector, as well as the probable time that it will take for situations to deteriorate. Here are a few guidelines:

- Firms with a high business risk or heavy debt burden usually come under stress for two key reasons.

  Rapidly weakening revenues, often coupled with higher-than-expected costs. For these firms, front-loading a 10 to 30 percent drop in revenues while maintaining costs fixed will provide a reasonable stress scenario.

  A liquidity crisis, generally due to a sudden loss of confidence on the part of short-term creditors (bankers and/or the capital markets). A rapid increase in interest rates, accompanied by modeling debt-refinancing problems, will test the firm's ability to raise cash quickly through other means (asset sales, equity capital, cash flow, and so on).

- Firms with strong credit profiles (those rated investment grade by the rating agencies) rarely default overnight, but they can be hit by events: adverse litigation settlements, or simply the expectation thereof; prolonged strikes; environmental or sanitary accidents; and so on. Event risk can cause a sudden drop in revenues, while firms must continue to pay fixed costs, or it can impose a heavy burden on cash flow, such as a litigation settlement. Analytical judgment will determine the right amount as well as the timing, although it is advised to front-load stress events to better evaluate their impact on cash flow generation.

- Cyclical industries benefit from extensive coverage from consultants and investment banks, permitting the use of historical minimum/maximum

bands for key cash flow drivers. For instance, vehicle (cars and commercial vehicles) sales in the U.K. have historically fluctuated between 1.7 million in 1981 and 2.9 million in 2003, with a cyclical peak in 1989 and another trough in 1992. New privately owned housing starts in the U.S. over the past 20 years have ranged between 1 million at the trough of the previous recession in 1991 and 1.85 million in 2003, with another cyclical trough in 2000. Coated paper No. 3 (the glossy type found in magazines) has fluctuated within a band of about $800 and $1,200 per ton. Analysts should be able to integrate these data into their cash flow models fairly easily, and evaluate the impact of an adverse environment on a particular firm's credit measures.

- As indicated earlier, firms in competitive environments (high-tech, pharmaceuticals, capital goods, and so on) generally need to invest heavily in their businesses in order to maintain their key competitive advantages, whether it is their market share, low production costs, or technological edge. In these sectors, it is important to stress rapid increases in capital spending requirements, among other factors.

Scenario analysis and the level of stress testing will be firm-specific, and analysts can use a combination of stress factors. In any event, they should ensure that stresses result in a declining operating margin and weakening cash flow generation. It is too easy to remain too soft!

THE HONDA MOTOR CO. LTD.– CASE STUDY

The Honda Motor case study will propose a forecasting approach for cyclical sectors—not just the automotive industry, but also many others such as the chemical, mining and metals, forest products, or oil and gas sectors. As with the previous case study in this chapter, the main objective is to introduce a consistent methodology that can be applied to assess credit risk. Importantly, the credit assessment model that we will construct is not for the purpose of providing an accurate forecast of Honda Motor.

In contrast to the Coke case study, the Honda Motor case study will focus solely on revenues and operating profit. The actual financial data will be used, and Honda's fiscal year ends March 31.

Honda: Business Risk Characteristics and Strategy

In conducting a rapid assessment of Honda, a credit analyst could quickly identify the four key points:

1. Honda is one of the world's leading and most profitable manufacturers of automobiles (and motorbikes), a sector that is notoriously cyclical because of global overcapacity.[10]
2. A strong brand built on a reputation for high product quality, affordable pricing, and good design has permitted Honda to gain market share on competitors, particularly in North America.
3. The company has a demonstrated ability to maintain lower operating costs relative to competitors (except for Toyota), thanks to innovative production processes, as well as a (mostly) nonunionized workforce.
4. The company has high capital spending requirements in order to maintain a competitive edge, in terms of both new product development and production processes.

Additionally, Honda has taken an innovative direction in its ability to make greater use of resources globally, under the "Made by Global Honda" approach, to improve production efficiency and cost competitiveness.

Stress-Level Determination

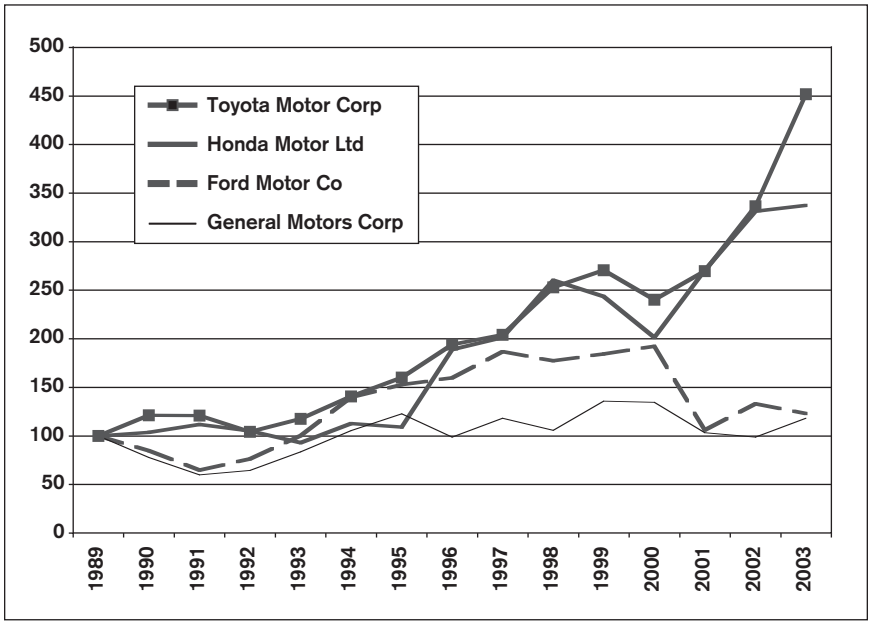
For a credit analyst, a simple way of determining the appropriate level of (financial) stress is to look at the most punitive swings recorded by industry peers during recent downturns. In the automotive sector, an appropriate stress level on EBITDA appears to be around 50 percent, as Figure 6-2 shows, if the 80 percent swing experienced by Ford in 2001 is excluded.

Hence the stresses prepared by credit analysts should aim at reflecting a 50 percent decline in EBITDA through a variation of revenue and cost inputs.

Revenues

In fiscal 2003, Honda derived around 82 percent of its revenues from car sales, 12 percent from motorbikes (Honda is the world's largest motorbike manufacturer) and the remainder from power products, such as boat

FIGURE 6-2: EBITDA Variation 1989–2003* (1989=100)



Data source: Compustat

engines and garden vehicles, and from its credit-financing arm. The same year, North American sales represented 57 percent of the total, Japan 25 percent, Europe 8 percent, and the rest of the world 9 percent.

As Figure 6-2 shows, Honda Motor has experienced significant cyclicality in its revenues and operating income over the past 10 years. Simultaneously (and this should not be forgotten), the firm enjoyed a spectacular growth during the same period, more than doubling revenues relative to the low point of 1994–1995.

Honda's revenues for its three families of products are driven by two variables:

- Volumes of units sold
- Price or operating income per unit sold

Key Revenue Drivers: Volumes

As Table 6-27 illustrates, car unit sales grew by 1 million units between 1996 and 2003 from a base of 1.9 million units, a remarkable achievement. However, there were significant hiccups along the way, with strong

growth in 1997 and 1998, followed by a halt in 1999, more strong growth in 2000, a slower pace in 2001 and 2002, and then another brisk increase in 2003. A similarly erratic, yet not concurrent pattern emerges from the volume sale of motorbikes, and even of power products.

TABLE 6-27: Identifying Volume and Growth Drivers

Unit sales	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cars	1,887	2,184	2,343	2,333	2,473	2,580	2,666	2,888	2,983
Motorcycles	5,488	5,325	5,257	4,295	4,436	5,118	6,095	8,080	9,206
Power products	2,268	2,521	2,857	3,412	4,057	3,884	3,926	4,584	5,047
Annual Growth Rates									
Cars		15.7%	7.3%	–0.4%	6.0%	4.3%	3.3%	8.3%	3.3%
Motorcycles		–3.0%	–1.3%	–18.3%	3.3%	15.4%	19.1%	32.6%	13.9%
Power products		11.2%	13.3%	19.4%	18.9%	–4.3%	1.1%	16.8%	10.1%

Outside of the 1999 blip, which was caused by a severe recession in Japan and Southeast Asia,[11] car unit sales slowed down significantly during 2001 and 2002, reflecting an economic downturn in North America, Honda's single most important market. Again, in 2004, car unit sales grew only slowly, reflecting intense competition. Likewise, motorbike volume sales were particularly sensitive to the Asian economic crisis, as Asia is the company's key market for that product segment.

In forecasting business cycles, credit analysts can use different approaches, some more sophisticated than others. At a minimum, they should prepare several scenarios that attempt to replicate an industry cycle:

- The first series in Table 6-28 shows the historical average growth rate, for reference only.
- The second series models an industry downturn in 2007 and 2008, or years 3 and 4 of the forecast.
- The last series front-loads the cyclical downturn (i.e., places it directly after the last fiscal year), resulting in the most severe stress.

TABLE 6-28: Projected Volume Growth

Unit sales growth (%)	2005	2006	2007	2008	2009
Historical Average (1996–2004)					
Cars	6.0	6.0	6.0	6.0	6.0
Motorcycles	7.7	7.7	7.7	7.7	7.7
Power products	10.8	10.8	10.8	10.8	10.8
Industry Cycle					
Cars	5.0	5.0	–20.0	–10.0	10.0
Motorcycles	10.0	10.0	–20.0	–10.0	10.0
Power products	10.0	10.0	–20.0	–10.0	10.0
Front-Loaded Industry Cycle					
Cars	–20.0	–10.0	5.0	10.0	15.0
Motorcycles	–20.0	–10.0	5.0	10.0	15.0
Power products	–20.0	–10.0	5.0	10.0	15.0

Other, more mathematically involved modeling options could involve the use of random processes such as Monte Carlo models, which would allow analysts to assign probability distributions to a number of variables. Such methodologies generally require solid historical data and may not be adequate for companies that have a short history or are operating in a changing environment.

Key Revenue Drivers: Prices

While prices are sensitive to demand conditions, they also reflect competition between manufacturers to gain market share and the pace of new model development (see Table 6-29).

To model sales price per unit, analysts can use the same approach that was taken for volumes, with one change with respect to the motorcycle segment. With Honda's strategy of focusing on penetration in emerging markets with lower disposable income, rather than maximizing profits, unit prices for motorbikes are likely to slope down over the next few years. Projected sales prices are shown in Table 6-30.

TABLE 6-29: Identifying Sales Price Drivers

Sales price per unit	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cars	1,755	1,936	2,028	2,138	2,006	2,028	2,224	2,230	2,210
Motorcycles	107	129	146	163	162	157	156	121	108
Power products	125	111	119	111	69	66	72	69	66
Cars		10.3%	4.8%	5.4%	–6.2%	1.1%	9.7%	0.3%	–0.9%
Motorcycles		21.4%	12.7%	11.8%	–0.7%	–2.9%	–1.2%	–22.2%	–10.8%
Power products		–10.6%	7.0%	–6.8%	–37.5%	–4.4%	8.5%	–4.5%	–4.1%

TABLE 6-30: Projected Sales Prices

Sales Price per Unit	2005	2006	2007	2008	2009
Historical Average (1996–2004)					
Cars	2,100	2,100	2,100	2,100	2,100
Motorcycles	143	143	143	143	143
Power products	86	86	86	86	86
Industry Cycle					
Cars	2,200	2,200	1,950	2,000	2,100
Motorcycles	120	110	95	95	110
Power products	70	70	60	60	70
Front-Loaded Industry Cycle					
Cars	1,900	2,000	2,100	2,200	2,350
Motorcycles	90	100	110	120	120
Power products	60	60	70	70	70

Before modeling sales price per unit, credit analysts should review Honda's EBITDA margin per product, to avoid double counting when preparing stresses.

Operating Costs

Honda's annual reports provide an excellent breakdown of the key financials, which enables credit analysts to reconstruct an EBITDA per unit figure for the company's three families of products (see Table 6-31). This neutralizes to some degree the impact of capital spending on operating margins and permits a better comparison between automobile producers.

TABLE 6-31: Identifying EBITDA per Unit Drivers

EBITDA per unit	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cars	85.9*	186.8	191.8	246.9	199.3	179.8	257.3	259.0	207.9
Motorcycles	13.3	17.8	19.9	19.9	15.0	14.8	15.1	10.4	7.3
Power products	7.0	7.1	10.6	11.8	5.1	1.6	2.7	3.4	3.4
EBITDA Margin per Unit									
Cars	4.9%	9.7%	9.5%	11.5%	9.9%	8.9%	11.6%	11.6%	9.4%
Motorcycles	12.4%	13.8%	13.7%	12.2%	9.2%	9.4%	9.7%	8.6%	6.8%
Power products	5.7%	6.4%	8.9%	10.6%	7.3%	2.5%	3.7%	4.9%	5.1%
Overall EBITDA margin	6.0%	10.0%	10.0%	11.6%	9.7%	8.7%	11.0%	11.0%	9.0%

* This figure is an outlier and should be treated with caution.

Table 6-31 shows that pricing and cost dynamics for cars broadly reflect the economic cycle in North America, Honda's main market. In phases of economic expansion, Honda is able to increase its sales price per unit to its customers (or limit "rebates" or "incentives"), as highlighted in Table 6-31. Conversely, during recessions, Honda has an important fixed cost base, causing operating margins to fluctuate significantly.

In its motorbike segment, the economics are quite different: As Honda strives to penetrate emerging markets, such as China, India, and Indonesia, it is focusing on volumes more than prices. The power products segment is too small to analyze in much detail, but it shows a weaker margin than cars and motorcycles, probably reflecting an even more competitive environment.

Combining Cash Flow Drivers in a Cyclical Sector

In most cyclical sectors, as indicated earlier, price per unit and volumes are the key cash flow drivers. However, it is important to keep an eye on the EBITDA margin.

For the purpose of this illustration, Table 6-32 shows only the front-loaded industry cycle scenario, which forecasts a drop in EBITDA of about 40 percent directly after the last fiscal year.

After walking through this step-by-step process, there are a number of additional conclusions that a credit analyst can now derive. Based on detailed projections, Honda should come through a downturn with little damage, unless the company encounters successive new product launch failures, an unlikely event, or external shocks. Even then, the firm has a very solid balance sheet and is well positioned relative to its competitors.

However, many firms engaged in cyclical sectors are not as successful as Honda Motor and would have difficulty dealing with EBITDA declines of this magnitude. For these firms, it is imperative that analysts understand their liquidity position and, in particular, ensure that they have committed bank lines that could allow them to "ride the trough of the wave."

CHAPTER SUMMARY

Cash Flow Forecasting and Modeling

Credit analysts prepare financial projections to test their analytical assumptions about the future creditworthiness of a firm. As mentioned in the previous chapters as well, there is no substitute for the fact that when it comes to credit and debt servicing, cash is king. To measure a borrower's debt-servicing ability, it is imperative that credit analysts focus on extracting a measure of operating cash flow before working capital changes and debt service (interest and principal payments), so that this figure can be measured against future debt service.

A cash flow model should be driven by the most important operating variables of a business, whether it be a price-volume equation, market share, costs, or any other drivers of a firm's competitiveness. They should also include assumptions about cash plugs, such as working capital changes, future investments, and dividends or other distributions. Debt and debt service assumptions (including contingent liabilities) should also be included.

TABLE 6-32: Projected Cash Flow Drivers

Drivers	2004	2005	2006	2007	2008	2009
Unit Growth (%)						
Car sales growth	3.3%	–20.0%	–10.0%	5.0%	10.0%	15.0%
Motorcycles sales growth	13.9%	–20.0%	–10.0%	5.0%	10.0%	15.0%
Power products sales growth	10.1%	–20.0%	–10.0%	5.0%	10.0%	10.0%
Sales Price per Unit (million yen)						
Cars	2,209.9	1,900.0	2,000.0	2,100.0	2,200.0	2,350.0
Motorcycles	108.2	90.0	100.0	110.0	120.0	120.0
Power products	65.7	60.0	60.0	70.0	70.0	70.0
EBITDA per Unit						
Cars	207.9	175.0	215.0	235.0	245.0	260.0
Motorcycles	7.3	8.0	9.0	10.0	10.0	11.0
Power products	3.4	2.0	3.0	3.0	3.0	4.0
EBITDA Margin (%)						
Cars	9.4%	9.2%	10.8%	11.2%	11.1%	11.1%
Motorcycles	6.8%	8.9%	9.0%	9.1%	8.3%	9.2%
Power products	5.1%	3.3%	5.0%	4.3%	4.3%	5.7%
Ratios	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
EBITDA variation	100.0	63.3	71.6	83.7	96.9	120.9
EBITDA margin (%)	9.0%	8.3%	9.9%	10.4%	10.4%	10.7%
EBIT/sales (%)	6.2%	5.5%	7.1%	7.6%	7.6%	7.9%
Depreciation/sales (%)	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%

Credit analysts should prepare three sets of scenarios: a base case, a stress case, and a default case. The assumptions underlying a base case, in most situations, should reflect the past three to five years. In cyclical sectors, assumptions should reflect the expectation of continuing supply and demand swings. Stress cases should reflect the worst possible *business* case, such as a prolonged recession, or include assumptions indicating the deterioration of the business model, such as loss of market share or product substitution. The default case is the subject of Chapter 9, "Estimating Recovery Prospects." Suffice it to say at this stage that it models a hypothetical point where cash flow is no longer sufficient to service the firm's debt.

The Coca-Cola case is a step-by-step development of a cash flow model. Cash flow drivers reflect the fact that Coke benefits from stable cash flows as a result of its strong business position and stable demand, two mutually reinforcing characteristics. Under the base-case assumptions, Coke should generate so much cash over the next few years that it will pay down its debt entirely and still have sufficient cash to make a significant acquisition, increase dividends and share repurchases, or simply hoard cash. If these assumptions were stressed drastically, reflecting a loss of market share to Pepsi and a string of unsuccessful acquisitions, Coke's credit measures would obviously deteriorate, but would probably remain satisfactory, at least over the next five years.

The Honda Motor case shows a very strong firm, yet in a cyclical and very competitive sector. To select stresses reflective of the industry's cycles, credit analysts can benchmark the impact of previous cycles on operating profitability. In the case of Honda, replicating the impact of the worst downturns obviously depresses credit measures, but also shows that the firm has significant wherewithal. However, weaker firms involved in cyclical activities would be likely to quickly face certain liquidity issues.

NOTES

1. Main sources of information include first and foremost the management's views on the firm's future, which can be obtained from analysts' meetings or communication with them; annual reports of firms in the sector; investment research; reports from industry associations, some of which can be obtained for free on the Web; and so on.

2. The purpose of these case studies is not to provide what the authors believe to be an accurate forecast, but to present a concrete, step-by-step introduction to financial forecasting. Analysts should be able to follow the same approach with a variety of firms, irrespective of

size, ownership, jurisdictions, or credit quality. All factual data included in the tables that follow are based on public information from The Coca Cola Company, including annual reports, SEC filings, and other documents; ratio calculations are the responsibility of the authors.

3. The Coca-Cola Company Annual Report 2002, p. 45.

4. The Coca-Cola Company Annual Report 2002, p. 44.

5. Spreadsheet programs can help us immensely. In Microsoft Excel, analysts should go into Tools, Options, and Calculation, tick the Iteration box, and fill in the number of desired Maximum Iterations. This will address this circular reference issue.

6. See The Coca Cola Company, Form 10-K (annual filing of audited results with the SEC), Note 15, page 91.

7. See Notes 11 and 14 from Form 10-K for fiscal year 2003.

8. Other adjustments to financials are proposed in the Air New Zealand case, Appendix E.

9. For a full discussion of the interpretation and impact of postretirement and health-care benefits, refer to Scott Sprinzen, Emmanuel Dubois-Pélerin, and Ralf Kortüm, "Adjusting Financials for Postretirement Liabilities," Standard & Poor's, March 2003; Scott Sprinzen, "Pitfalls of U.S. Pension Accounting and Disclosure," Standard & Poor's, March 2003; and Neri Bukspan, Emmanuel Dubois-Pélerin and Ralf Kortüm, "Navigating the International Pension Accounting Maze," Standard & Poor's, May 2003.

10. In 2002, about 56 million light vehicles were sold globally, but production capacity was around 77 million vehicles. *(PriceWaterhouseCoopers Global Automotive Financial Review, UBS Investment Research, Automobiles—Sales Trends.)*

11. The 1999 annual report indicated that volumes were down by almost 9 percent in Japan.

This page intentionally left blank.

PART II

Credit Risk of Debt Instruments

In the second part of this book, we discuss the credit risks inherent in the debt instruments used by corporations as sources of funding. Some of these risks are no longer tied to the firm's performance, but depend on the type of debt instrument utilized, how the different debt instruments issued by a firm stack up against one another, and the terms and conditions governing the relationship between borrower and creditor. Some other risks of debt instruments are indirectly related to the firm's capacity to generate cash flows when it comes to evaluating recovery prospects of each debt instrument in insolvency.

In Chapter 7, we discuss the characteristics and uses of the various debt instruments available to firms, such as loans and bonds. We introduce loan agreements and bond indentures and propose a step-by-step approach to analyze these documents.

In Chapter 8, we show that different debt instruments issued by the same firm can have different recovery prospects in insolvency. We discuss how the applicable insolvency regime, as well as subordination and collateral security, affects different groups of creditors when a firm is in financial distress.

In Chapter 9, we present scenarios that could cause firms to become insolvent, and we propose approaches for estimating the recovery prospects for a particular debt instrument, wrapping up this section on the credit risk of debt instruments.

CHAPTER 7

Debt Instruments and Documentation

"A covenant package is like a house: if well designed, it keeps the heat inside and intruders out; if not, it is drafty and the wrong people could end up with the keys."

—Emmanuel Dubois-Pélerin,
Managing Director, Standard & Poor's

When raising debt, a corporation can choose among various options: bonds or loans; short-term or long-term debt; private or public markets; secured, unsecured, or subordinated debt; asset-specific or general funding; and so on. Each debt instrument meets a particular need, a corporation should first identify this need. For instance, if a retailer is opening new stores, working capital requirements will increase, as it will need to fill the shelves with goods. A revolving bank line secured by receivables and inventories may best meet this requirement. In contrast, an airline company buying new airplanes may be best served by a form of lease financing, which is fairly standard in that sector.

The options available are also specific to the markets in which the funding is raised. In the United States, for instance, banks no longer play a significant role as lenders; instead, they package loans, retain a portion, and sell the vast majority to long-term investors, such as insurance companies or pension or mutual funds. In Europe or in Asia, banks still play a significant lending role, although they are starting to sell a small portion of these loans to institutional investors. In certain markets, certain debt instruments exist because of regulations or tax-related issues.

Finally, the terms and conditions of debt instruments will vary enormously, depending on the creditworthiness of the borrower and, to a lesser degree, when the debt instrument is contracted. In general terms, firms with the best credit standing will obtain longer-term and cheaper

funding with less restrictive conditions. But firms will also have better negotiating leverage, and will obtain more lenient lending conditions, during periods of economic expansion, when firms are recording good profits and banks are flush with cash. In some instances, it may be only a question of pricing.

In order to assess a debt instrument, credit analysts must be intimately familiar with the essential documents governing the relationships between lenders and borrowers. The main ones, loan agreements and bond indentures, are a form of contract and are made up of standard sections. It is the role of credit analysts to review these documents to ensure that they properly reflect their understanding of a given level of risk. While this chapter may be a little technical, it is an essential building block for the following one, which focuses on debt structures.

DEBT INSTRUMENTS

In this section, we provide an introduction to the most important corporate debt instruments, which include, of course, loans, bonds, and variations thereof almost *ad infinitum*. We describe these debt instruments and their likely use by corporate treasurers as a source of funding. However, if readers would like to have a more detailed explanation of the pricing of the market-based instruments, they should refer to a fixed-income textbook.[1]

Loans

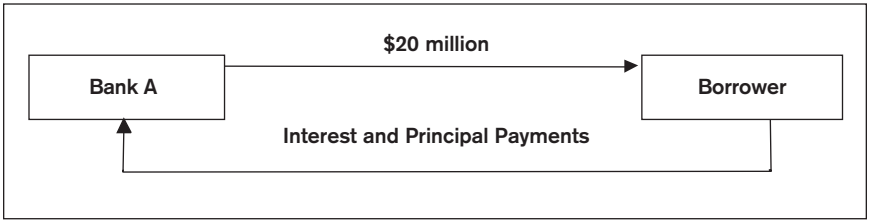
Corporate loans are typically extended by banks, but they can also be extended by nonbank financial institutions (insurance companies, investment firms, collateralized obligations vehicles or CDOs,[2] and so on), other corporations, or individual investors. Essentially, corporate loans take two forms: bilateral or syndications.

In both cases, credit analysts should make sure to differentiate between *uncommitted* and *committed* credit facilities. With an uncommitted credit facility, for example, a bank may agree to lend to a counterparty, but can renege on that commitment at any point. Under certain circumstances, the bank actually owns a put option on this loan commitment. In contrast, when a bank or a group of banks extends a committed credit facility for a certain term, it engages its capital during that entire period.

Bilateral Loans

This form of loan is the most simple. Bank A lends Corporation X $20 million for three years, with full repayment at maturity or with gradual amortization. Some of the amount may be utilized for working capital purposes and the rest to finance long-term assets. Figure 7-1 illustrates this concept.

FIGURE 7-1: Bilateral Lending



Bilateral loans are usually found at small to medium-sized firms, where banks are willing to take a large counterparty exposure, with no one to share the pain with in case the borrower experiences financial problems.

Syndicated Loans

First, let's define the concept: "A syndicated credit (this term, rather than 'loan' is used because the syndicated banking market offers products other than loans) is one in which two or more banks (the syndicate of lenders) contract with a borrower to provide (usually medium-term) credit on common terms and conditions governed by a common document (or set of documents)."[3] Credit facilities extended by a small group of banks are sometimes referred to as *club deals*.

In syndicated credits, borrowers select one or more banks to act as arrangers, with one member of the bank group typically being appointed as the agent bank. The agent coordinates all the negotiations, payments, and administration between the parties during the life of the transaction. Other banks are invited to participate in the loan. Figure 7-2 provides an overview of the roles of the various market participants in a syndicated credit.

Syndicated credits are one of the main forms of financing for corporations globally, particularly outside of the United States, where bond markets are not as developed. In 2000, at the peak of the economic cycle, the volume of issuance (the amount of new debt contracted) for the loan market was about US$2 trillion, but it has declined somewhat thereafter as a result of lower economic activity, as shown in Figure 7-3.

FIGURE 7-2: Syndicated Lending

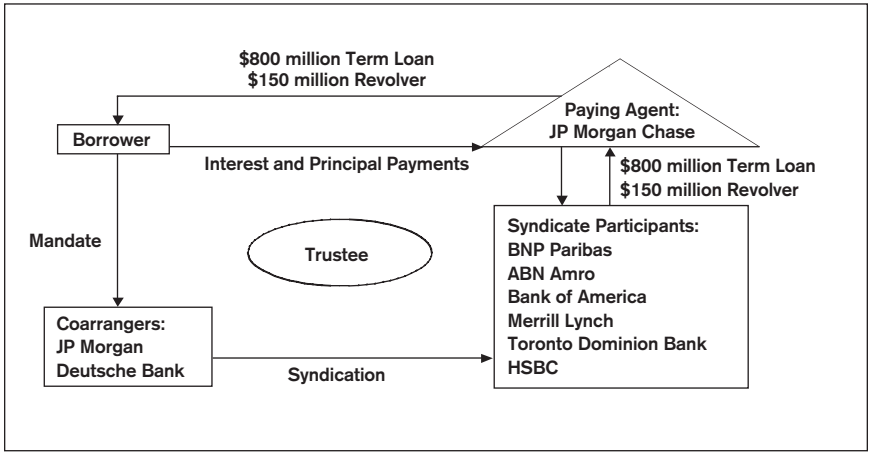
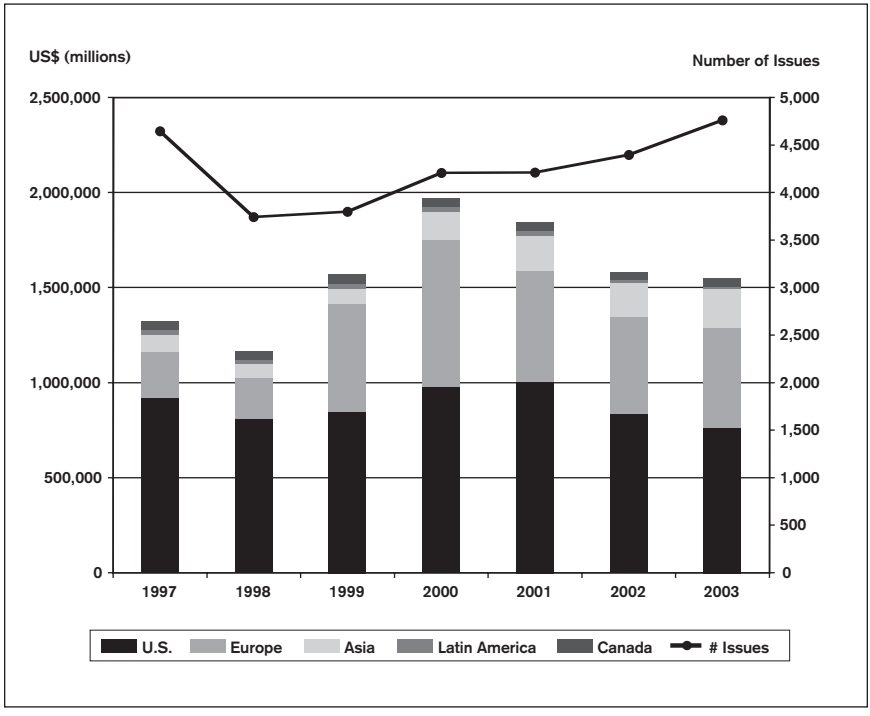


FIGURE 7-3: Syndicated Loans by Domicile of Issuer



Source: SDC Thomson Financial

The success of the syndicated credit market is due to its many advantages:

- Flexibility and rapidity of execution, even for very large amounts, as borrowers and creditors decide among themselves on the appropriate terms and conditions, with few public disclosure requirements
- Ability to share the risk with other banks
- Ability for banks to dispose of their exposure if required through the secondary market, particularly in the United States, but increasingly in Europe as well

One of the key limitations of the syndicated credit market is, in most cases, the lack of availability of credit beyond 10 years. In comparison, the bond market can extend easily to 30 years for counterparties with good-quality credit.

The key types of syndicated credits are the following:

- *Term loans* are extended by creditors for a period of up to 10 years, typically. Some term loans have a bullet maturity (the entire loan amount matures on one date), and some amortize over the course of the transaction. Pricing is typically off a LIBOR base[4] plus a margin (spread, expressed in basis points, where 100 basis points are equivalent to 1 percent) reflecting the credit risk. The facility may be drawn down in one or multiple currencies. The proceeds of term loans are typically utilized to finance fixed assets, such as property, plant, and equipment. Term loans are typically committed credit facilities, in that the banks commit to extending the money so long as the borrower is not in breach of the credit agreement. A mezzanine loan is a type of term loan with a bullet maturity that is subordinated to more senior debt (see the section on contractual subordination later in this chapter). Mezzanine debt is generally found in leveraged buyout financings (LBOs).[5] Other special types of term loans include commercial paper (discussed later in this chapter) backup facilities. In the event that a commercial paper program cannot be extended, the borrowing entity can use the bank facility to repay holders of commercial paper.
- *Revolving credit facilities* share many of the features of the term loan (LIBOR pricing, multicurrency options) but offer more flexibility in terms of drawdown, repayment, and re-drawdown.

Technically, each drawdown is repaid at the end of an interest period. even though the borrower can require the lenders to roll over the credit facility for another interest period. Revolving credit facilities are typically utilized to finance working capital requirements such as inventories or receivables. Standby credit facilities are an uncommitted version of revolving credit, meaning that banks can decide to pull out of the arrangement at a moment's notice.

Bonds, Notes, and Debentures

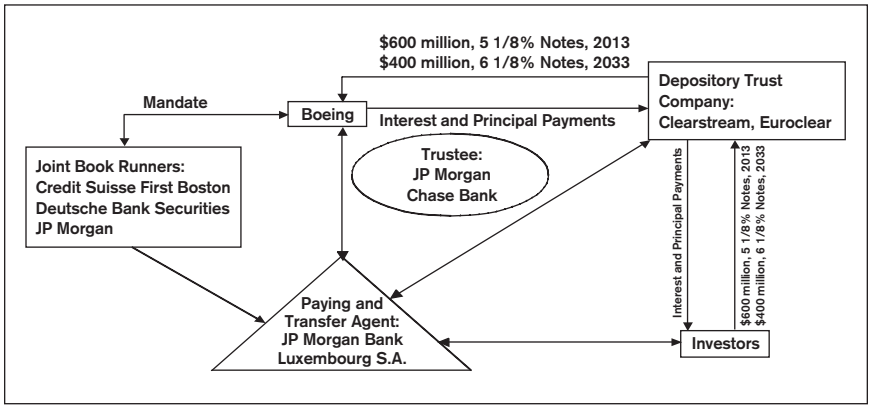
While they carry different names, bonds, notes, and debentures are debt obligations that are issued by borrowers directly into the public fixed-income markets and are often traded in a secondary market. They are governed by a contract called an indenture, the provisions of which are verified by a trustee during the life of the transaction as a representative of the interests of the bondholders.

In the United States, bonds, notes, and debentures are registered with the Securities and Exchange Commission. In other jurisdictions, they are registered with local regulators. Investors in long-term corporate debt instruments are typically insurance companies, pension funds, and mutual funds. Their tenure can extend to 30 years, and there are even some perpetual fixed-income instruments. Bonds, notes, and debentures are rarely issued for less than three years.

As shown in Figure 7-4, firms issuing longer-term debt instruments typically select one or a group of lead underwriter(s) (book runners), who will arrange to place the bond with investors. For very large bond issues, often referred to as jumbos, book runners join forces with co-managers in order to avoid a concentration of risk to a particular exposure. A paying agent is appointed by the book runners to administer the payments to investors and other negotiations during the life of the transaction, as is the case for syndicated loans, and a trustee is appointed to be the guardian of the provisions of the indenture. Large clearing and settlement systems exist for secondary trading. Figure 7-4 provides an outline of the roles of the various market participants in a bond transaction.

While loans are contracted between well-informed professionals, bonds, notes, and debentures are placed in the public markets, where they may be purchased by retail investors. Therefore, disclosure requirements are significantly higher than for loans to ensure the greatest amount of transparency. In particular, firms have to present audited financial state-

FIGURE 7-4: Bonds, Notes, and Debentures



ments on an annual basis, and unaudited ones on a quarterly basis. Other requirements may include a description of the risks associated with the issuer and the business environment, information on the highest salaries within the firm, and so on.

In the United States, it is customary for borrowers to require credit ratings from two nationally recognized statistical rating organizations[6] (NRSROs), such as Standard & Poor's or Moody's, in order to sell bonds in the markets. In other countries, the majority of large transactions also tend to be rated by those credit rating agencies.

As we discuss in more detail in Chapter 11, pricing is typically based on a government bond benchmark of the same duration, plus a spread to reflect risk.

Corporate bonds come in many shapes and colors, ranging from plain vanilla types to the most exotic versions involving derivative instruments of all stripes.[7] Here are a few of them:

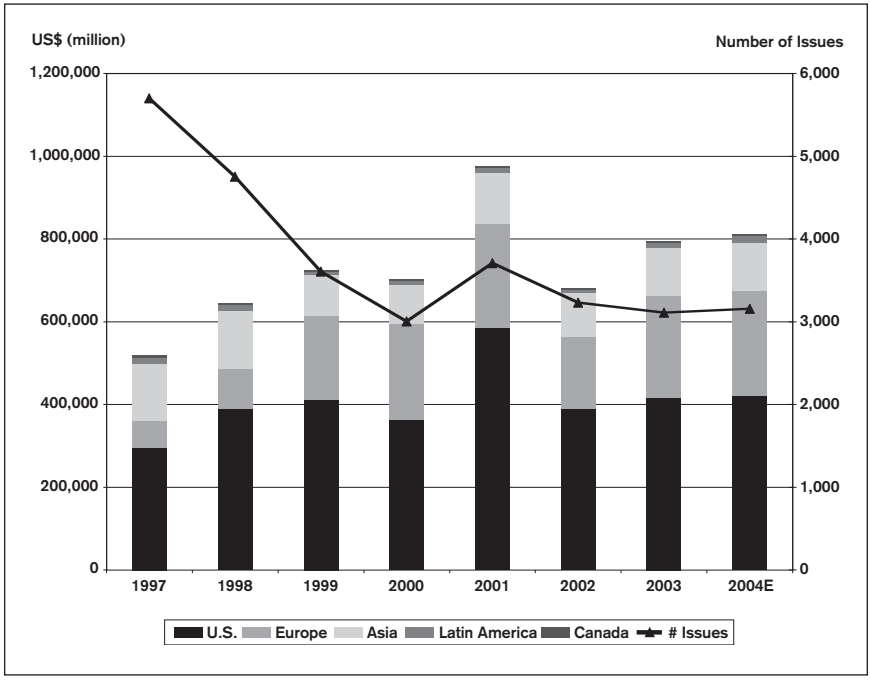
- *Notes* is the generic term utilized for plain vanilla bonds.
- *Debentures* usually describes unsecured long-term debt.
- *Mortgage bonds*, in contrast, are secured by a lien on real property.
- *Floating-rate bonds* are usually priced the same way as loans, off a LIBOR base.
- Bonds may have a call option embedded in them, allowing the borrower to redeem the bonds at a predetermined date if it so wishes, increasing the interest rate to reflect the fact that creditors may not be receiving income for the full term of the debt instrument.

- *Equipment trust certificates (ETCs)* are utilized to finance cars and locomotives and are collateralized by rolling stock (a version of ETCs is also used to finance aircrafts purchases).
- *Zero coupon bonds* are bonds on which cash interest accrues over the life of the bond. The capitalized interest is therefore paid to bondholders at the same time as the principal at maturity.

The global industrial bond market is generally measured in terms of new issuance (new borrowings or refinancing of existing ones), both in volumes and in number of issues (or debt instruments launched). Figure 7-5 shows that the United States remains by far the largest bond market for industrial firms globally, but that the European market has grown significantly over the past 8 years.

Since the late 1980s, a bond market has developed for highly leveraged firms (firms with a lot of debt). This market is a lot more volatile than

FIGURE 7-5: Total Industrial Issuance by Domicile



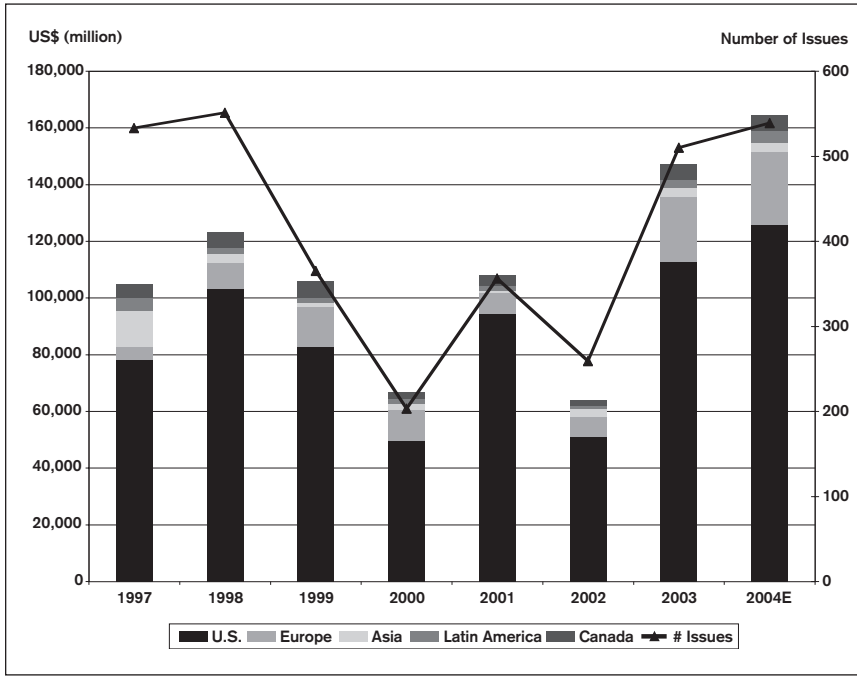
Source: SDC Thomson Financial

other loan or bond markets, and at times of economic pressures can almost entirely disappear. Like the bond market, the high-yield market, as it is often referred to, is quite large in the United States and is developing in Europe as well, albeit from a smaller base. Figure 7-6 shows this evolution.

Medium-Term Notes[8]

Medium-term notes (often referred to as MTNs) are a form of flexible financing available to borrowers with high to very high credit quality, as a longer-term extension of the commercial paper market (discussed later in the chapter). Large companies register MTN programs with dealers acting as agent, who in turn distribute them in the markets. While this makes MTNs very similar to bond financings, the key difference resides in the

FIGURE 7-6: Speculative Grade Industrial Issuance by Domicile



Source: SDC Thomson Financial

fact that dealers have no underwriting obligations and distribute MTNs on a best efforts basis.

Once it has registered an MTN program with the SEC, a borrower can enter the MTN market with offerings of different sizes and different coupons for different maturities. Typically, drawdowns from MTN programs are much smaller than standard bond issues, ranging between $20 and $50 million.

Private Placements

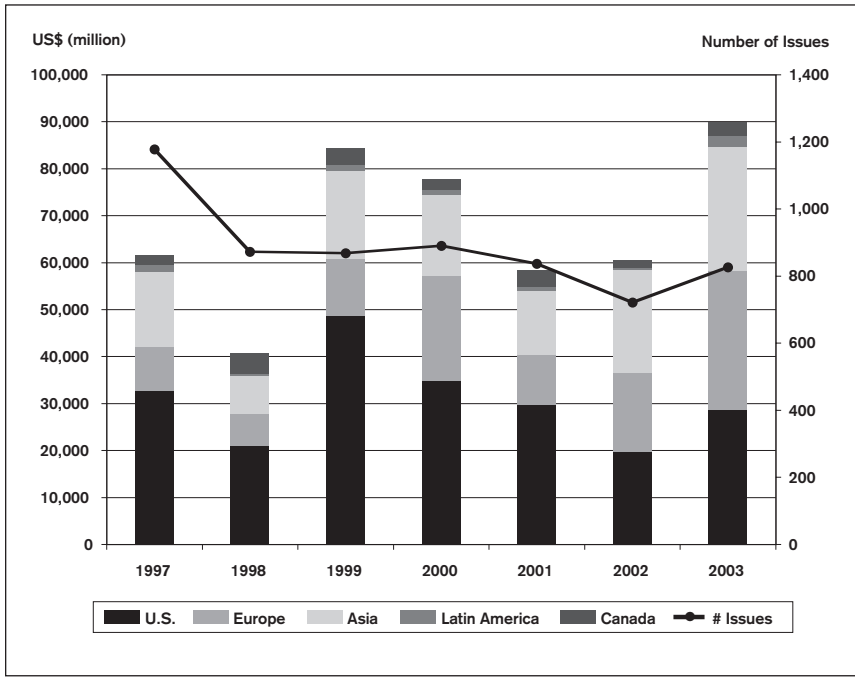
Private placements are halfway between loans and bonds; their term is typically of longer duration (up to 30 years), and they are placed primarily with insurance companies. Documentation and disclosure requirements are governed by what the parties to the debt instrument decide, making the process somewhat less onerous. Generally, private placements are smaller in size than either loans or bonds, and are utilized by corporate treasurers opportunistically to diversify their sources of funding.

As private placements are not always rated by credit rating agencies, the National Association of Insurance Commissioners (NAIC, a voluntary association of the chief insurance regulatory officials)[9] provides a credit assessment to its members in the United States. The objective is to ensure that insurance companies can measure the risks they are taking.

There are two main types of private placements in the United States:

- True private placements are bilateral arrangements between (typically) a borrower and an insurance company, whereby the insurance company advances long-term funds to the borrower. In most instances, these debt instruments are secured with collateral. Documentation and disclosure requirements reflect what both parties have decided.
- Regulation 144A (enacted in 1990) securities are private placements with standardized documentation that can be traded by professional investors but that retail investors are barred from trading. The majority of these securities are rated by the rating agencies. These securities can be registered with the SEC (with registration rights), providing increased liquidity for the issue and faster access to capital. For all intents and purposes, 144A securities with registration rights should be treated like bonds or debentures.

FIGURE 7-7: Private Placements by Domicile of Issuer



Source: SDC Thomson Financial

While the private placement market is essentially U.S.-based, it is also used heavily by non-U.S. borrowers, as Figure7-7 demonstrates.

Convertible Debt

Convertible debt instruments can take many forms, but this term generally describes a debt instrument that can be exchanged for a specified number of common shares at a predetermined ratio as and when the holder decides to do so. Because this debt instrument is convertible into equity, it is contractually subordinated to more senior debt types.[10] Convertible debt is typically issued for periods not exceeding 10 years, although in practice the length of time the issue is outstanding is shorter. The coupon is lower than that on traditional long-term debt, as investors will count on a successful conversion into equity to compensate them for the lower initial coupon.

Market participants favor this instrument when they perceive an upside potential to the borrower's fortunes:

- Firms involved in research on or development of new products, such as high-tech or biotechnology firms, may turn to convertible debt for financing. If the development is successful, the lender can exchange the debt instrument for equity and participate in the upside of the development. If the development is only mildly successful or fails entirely, the lender keeps the debt instrument.
- Firms that are in the midst of a restructuring may use convertible debt when investors believe that a turnaround is probable. As in the previous case, they can benefit from the upside if it materializes, and they have some downside protection with a debt instrument. From the firm's standpoint, this issuance of this debt instrument allows it to shore up its balance sheet at a time when senior lenders are refusing to contribute additional debt, and the stock price is so depressed that an equity issue would be uneconomic.
- Healthy, established firms may at times issue convertible debt if they strongly believe that their stock is undervalued, thereby delaying equity financing.
- In the context of mergers and acquisitions, convertible debt may be issued as an alternative to common stock for tax-deferral reasons.

From a credit standpoint, convertible debt is an interesting instrument, as it raises the particular issue of the amount of equity credit, if any, that should be awarded to convertible debt or variations thereof.

Hybrid Instruments

The most widely used hybrid instrument is simple preferred stock, but there are many other more complicated types of hybrids. In fact, the development of new and innovative hybrids has been a growth area for investment bankers for many years. Hybrids are usually developed with the intention of achieving the tax benefits afforded debt securities, but with an ability to defer repayment. The value of the "debt" portion of hybrids is not straightforward. Objectively, it could be the amounts that have repayment obligations (e.g., sinking fund payments and outright

maturities). Subjectively, just how deferrable the hybrid is could determine its debt value. An easy and very logical suggestion is to calculate these obligations in two ways, one with 100 percent of the hybrids' value and the other with 0 percent.[11]

Hybrids generally share several characteristics:

- For the more conservative ones, a mandatory conversion to equity
- Long-term maturity—generally over 20 years, with some perpetuals
- Some form of interest payment deferral in the event that the company experiences difficulties

When assessing the relative benefit of hybrid instruments to the firm, credit analysts should always remember that the firm made a conscious decision to issue hybrid instruments instead of common equity.

Commercial Paper and Other Sources of Short-Term Credit

Short-term debt instruments available to corporations in the money markets vary in name across jurisdictions but share many characteristics:

- Maturity of 364 days or less
- Availability only to the most creditworthy corporations
- Unsecured nature of obligations
- Proceeds generally used to finance working capital requirements

In the United States and other countries, the most common short-term corporate debt instrument is called commercial paper, often referred to as CP. Maturities can extend up to 364 days, but they typically range between 30 and 60 days. Commercial paper is primarily utilized by captive finance companies of large equipment manufacturers, such as General Electric, Siemens, or General Motors.

The key risk to investors is that market conditions and/or the creditworthiness of the borrower could change dramatically during the borrowing period, precluding a renewal or "rollover" of the borrowings for a new period. This has happened on occasion, often prompting a liquidity crisis for the borrower. In fact, it was such a crisis (the 1970 default of Penn Central's commercial paper) that crystallized the role of credit-rat-

ing agencies (see Chapter 11) in the U.S. financial markets. As a result, firms often make arrangements for alternative refinancing sources, generally referred to as *CP backup lines*. These lines of credit can take various forms, although the most common is a committed term loan. Other sources of liquidity mitigating refinancing risk could include cash or marketable securities, although credit analysts will have to judge the likelihood that these will be accessible, or that they will even be there at all at crunch time.

Bankers' acceptances (BA) are a form of short-term financing that is not as common as commercial paper, but is still utilized by banks and corporations alike to finance self-liquidating transaction. Bankers' acceptances are issued at a discount, and their maturity rarely exceeds six months. A BA is essentially a draft or letter of credit that has been accepted by a bank following a commercial transaction. Once accepted, BAs can be negotiated in the open markets as an obligation of the accepting bank.

Blurring Distinctions between the Bank Loan and the Bond Markets

Historically, there were four key distinctions between bonds and loans:

- Loans benefited from a more flexible underwriting process.
- Bonds could have longer terms than loans.
- Bonds paid fixed rates and loans floating rates.
- Bonds could be traded and loans could not.

The first two distinctions have endured in general terms. However, there has been a significant convergence in the other two aspects.

First, with the advent of interest-rate swaps,[12] borrowers and investors alike have been able to convert fixed and floating rates into the other seamlessly. Therefore, investors who require long-term floating-rate debt can buy a long-term bond and swap the fixed interest rate for a floating rate. Likewise, a bank underwriting a LIBOR-based loan can swap the floating rate for a fixed rate for balance sheet management purposes, if required.

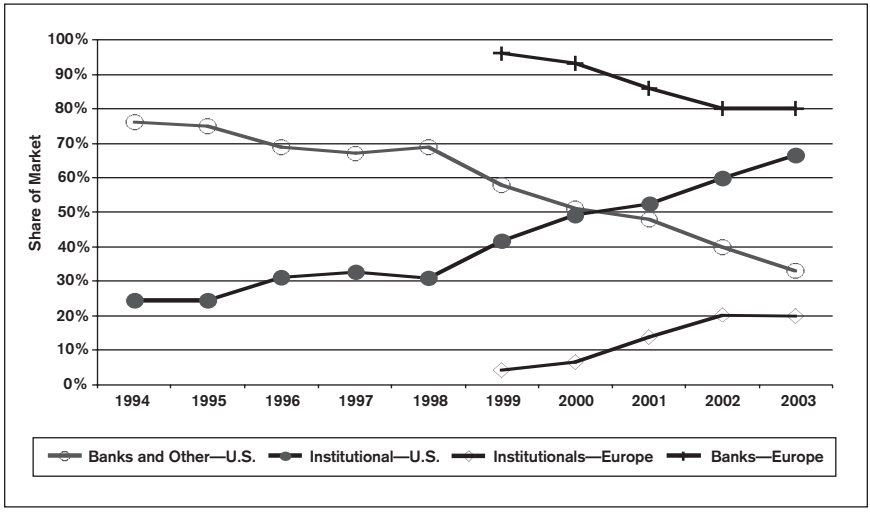
Second, loans are increasingly underwritten with transferability clauses, which allows them to be traded as easily as bonds. Although loan trading emerged in the 1980s as banks were disposing of distressed loans, the secondary market has evolved since to include "healthy" loans, as banks strive to minimize capital requirements.

A good example of the convergence between the two markets is found in the leveraged loan market. As shown in Figure 7-8, CDO managers today purchase about 70 percent of all U.S. leveraged loans. In Europe, this proportion rises to over 20 percent, a stark increase over five years ago. These investors purchase a portfolio of loans and use these loans (or, more specifically, the cash flow generated by the debt service on these loans) as collateral to issue structured notes. The complexity of the structure distracts from the key point, which is that since 2000, institutional investors have captured a very significant share of this very lucrative market, which once essentially belonged to the banks.

Other Sources of Corporate Financing

While giving an exhaustive list of the sources of corporate funding goes beyond the framework of this book, it is worth mentioning briefly another three. Even if they are off-balance-sheet liabilities, they should be considered akin to debt in ratio calculations, as they represent a call on cash.

FIGURE 7-8: Primary Market for Highly Leveraged Loans by Investor Type, 1994–2003



Excludes hybrids as well as all left and right agent commitments (including administative, syndication, and documentation agent as well as arranger).

Source: Standard & Poor's

- *Lease financing*. Capital leases are used to finance equipment purchases and are generally on-balance-sheet financings, as they are fully amortized and are not cancelable. In contrast, operating leases are more akin to rent, in that they are generally not fully amortized and contain a cancellation clause allowing the lessee to return the equipment before the expiration of the contract. Therefore, operating leases are generally off-balance-sheet liabilities.
- *Factoring*. A form of receivables financing, factoring is done through the assignment of receivables to a factoring company, which pays the assignor immediately, discounting the amount to reflect the collection time and risk.
- *Securitizations*. Firms also utilize securitizations as an alternative form of receivables financing. While similar in principle to factoring, securitizations do not make use of a third party in that receivables are sold directly to end investors. As we will see in the following chapter, securitization is a financing technique that is widely used by financial intermediaries to monetize financial assets.

AN INTRODUCTION TO CREDIT DOCUMENT ANALYSIS

First-time credit analysts should worry when they receive a stack of documents on their desk: It is usually 8:00 p.m. and the stack is thick. And when they flip the pages, their palms turn wet, and they break into a cold sweat: The documents make no sense, and they don't know where to start.

The rest of this chapter aims at providing a step-by-step approach to what credit analysts should be paying attention to in a standard credit agreement or bond indenture. While these documents can vary significantly depending on the particular debt instruments, they are generally structured along the same lines.

Key Documents

The key documents that credit analysts will review include:

- *Credit agreement or indenture.* The names vary depending on whether the credit is a loan or a bond, but in either case, this is the key document, as it governs the rights and obligations of

two parties, the debtor and the creditor, with respect to a particular debt instrument. As such, it is a form of contract. Loans are generally governed by a *credit agreement*, and bonds, notes, and debentures by an *indenture*. These contain a lot of ugly legal words that are difficult to understand and keep lawyers well fed. Unfortunately, credit analysts will have to pore over credit agreements and indentures to ensure that the right wording is there. Over the years, standard forms have emerged, particularly for documents governed by Anglo-Saxon law; these are often referred to as *boilerplate format*.

- *Term sheet.* Prospective investors or underwriters typically receive a *term sheet*, which is essentially a summary of the main terms and conditions of a debt instrument, whether loan or bond. In most cases, it is an evolving document during the underwriting period, as terms and conditions are negotiated between the issuer and its bankers, and prospective investors. Reviewing a term sheet permits a quick assessment of the key features of a transaction, but this does not replace a thorough review of the credit agreement or the indenture.
- *Prospectus.* When the marketing phase for a public debt instrument (as opposed to a loan) begins, the investment bankers or arrangers of the debt instrument will prepare a *prospectus*, also called an *offering memorandum* or *offering circular*. In the United States, this document is filed with the SEC and can be found on its Web archives. Even in its most abbreviated form, it contains the following key sections:
  - *A cover page* providing the name of the debt issuer, the amount of the proposed debt instrument, the interest rate (referred as the "coupon"), the maturity, the date of interest payments, the issue price, and the name of the clearing company and those of the book runners and managers
  - A brief description of the issuer
  - Selected financial information (more or less detailed)
  - A description of the debt securities (either the full indenture or an expanded term sheet)
  - A description of the use of the proceeds
  - A section defining how the actual transfer of money will take place between the various parties

- A notice about tax issues

In many instances, the prospectus is a fantastic source of information for credit analysts, as it contains a very detailed section on potential credit risks to the investors, as well as a copy of the latest audited financials.

- *Collateral agreement and other security documents.* In the event that the debt instrument is secured, a large body of documents to demonstrate the physical existence of the security and to govern the rights and obligations of the parties to the agreement will be included. It generally contains a collateral agreement, which describes the assets being offered as security, and states the nature of the agreement between the borrower and the creditors. It is supplemented by documents showing how the actual collateral taken was perfected and granted to the benefit of creditors. We will review all the aspects of security in the following chapter.

Key Sections of an Indenture or Credit Agreement[13]

In one order or another, credit analysts will find most of the following sections in indentures and agreements of debt instruments. For the less experienced credit analysts, bond indentures are a tad less unfriendly than loan agreements; for one thing, they have a nice cover page with some bold letters saying who the issuer is, what the amount of the transaction is, who the main banks are, and so on. In addition, they tend to be shorter, as they incorporate by default many documents that are filed separately with the regulators. In contrast, credit agreements are far more exhaustive, and often more convoluted to interpret.

We review here the key sections of an indenture and what they typically contain. As indicated earlier, differences will appear across jurisdictions and transactions, although the core aspects should remain fairly similar.

Interpretation: What Are These Words with a Capitalized First Letter?

The definitions section describes those terms of an agreement that are constantly used throughout the agreement and that are of significance for its functions. Usually, all defined terms are written with a first capital letter. The list can be very long, requiring a great deal of going back and forth between the definitions section and the other sections. Definitions will typically include such things as the Issuer (who the issuer of the obli-

gations is), GAAP (which Generally Accepted Accounting Principles are used as a basis for the accounting), and other such terms.

The Facilities: How Is the Money Going to Be Used?

This section simply describes the actual purpose of the facilities (working capital, term loan, CP backup, and so on) and the conditions of utilization (conditions precedent).

Utilization: When Will the Money Be Available, and How?

The utilization section defines the technicalities associated with each facility, such as currency and amount; drawdown conditions and dates, if any; interest period; and so on.

Repayment, Prepayment, and Cancellation: Can the Debt Instrument Be Prepaid?

This section governs the rights of a borrower to repay, prepay, and/or cancel a credit facility, including any breakage costs that may be included to compensate bankers or investors.

Costs of Utilization: What Is the Cost to the Borrower?

As the title suggests, this section governs the calculation of interest rates, margin, and other fees associated with the utilization of the credit facilities. While this is relatively straightforward in a bond indenture (it is stated on the cover page), it can be quite technical in loan agreements. Fees include commitment fees, which compensate the bank for tying up capital requirements; utilization fees, which simply increase the lender's margin; and arrangement and agent fees, which compensate the arranger(s) and the agent(s) for their work.

Increasingly, the pricing of syndicated loans (and some high-yield debt instruments) is driven by a ratings pricing grid, where pricing changes as a function of ratings assigned by credit rating agencies. Illustration 7-1 (the company shall remain anonymous) shows the inverse relation between credit ratings and the risk premium, expressed in terms of pricing.

In some other instances, pricing is tied to the performance of one or several credit ratios, such as coverage of interest expense by EBITDA or cash flow, total debt to capitalization, or both.

ILLUSTRATION 7-1: Ratings Pricing Grid
Adjustment to Margin

. . . the Margin will be determined by reference to the Company's external credit ratings (in relation to long-term unsecured debt) published by Standard & Poor's and Moody's as set out in the table below.

Credit Rating: Standard & Poor's	Moody's	Margin (percent per annum)
A+ or above	A1 or above	0.300
A	A2	0.350
A–	A3	0.400
BBB+	Baa1	0.500
BBB	Baa2	0.600
BBB—or lower (or if the Company ceases to have a rating)	Baa3 or lower (or if the Company ceases to have a rating)	0.750

If the credit ratings given to the Company by Standard & Poor's and Moody's are such that a different Margin is applicable to each rating, the applicable Margin will be the higher of the Margins applicable to the relevant two ratings as set out in the table above.

If at any time an external credit rating in relation to the Company's long-term unsecured debt is published by only one of Standard & Poor's or Moody's, the Margin will be determined by reference to the relevant credit rating published by that rating agency only.

Additional Payment Obligation: Are There Other Costs That Creditors Should Be Compensated For?

The purpose of this section is to preserve the profit margin of each lender. The justification for this is that since lenders charge on a cost plus margin basis, they have the right to be indemnified against all costs, no matter how incurred, other than overhead and overall net income taxes. However, in order not to impose an excessive charge on a borrower for the length of a deal, the borrower is customarily given the right to repay an individual lender if that lender makes certain claims under these provisions. These include certain taxes, costs, and other indemnities that relate to certain

events or situations (foreign borrowers or lenders, local taxes, change of law or regulations, currency movements, defaults, and so on).

Guarantee: Does Another Entity Guarantee the Debt Obligations?

In addition to the principal purpose of ensuring that, if a borrower does not meet its obligations under an agreement, then the guarantor will, a guarantee also serves two other purposes: It ensures that the guarantor exercises a supervisory function over a borrower, and, in certain circumstances, it secures noninterference from the guarantor. The latter purpose would arise, for example, when a central bank is guaranteeing a borrower's obligation and the lenders wish to ensure that it will not impose exchange controls or take other actions that would be to the detriment of the borrower's ability to repay.

Representations, Undertakings, and Events of Default

We develop this section fully in the following pages, as it governs all the obligations of the borrower. In contrast to the other sections, which are fairly factual, this section is often the focus of feisty negotiations between borrowers and creditors. It can be broken down into three distinct sections:

- The *representations* section contains statements by the borrower that it is who it is, that the company is in good shape, that it can do the deal, who the officers that can sign the deal are, that everything is legal, what the governing law is, that there is no default, and so on.
- The *undertakings* or covenants section contains the covenants, credit triggers, information pertaining to potential subordination, and other such aspects.
- The *events of default* section determines what constitutes an event of default.

Only in Loan Agreements—Changes to Parties: How Can the Loan Be Transferred (Sold) to Another Investor?

This section is particularly important in syndicated loans, as it outlines the terms and conditions for a transfer of a loan to another party. In other words, this section is essential if loans are to be traded in a secondary market.

Only in Loan Agreements—The Finance Parties: How Do Lenders and Agents Govern Their Relations?

The agreement must contain provisions governing the relationship of the lenders among themselves and the relationship between them and the agent bank (and arranger). In particular, provisions relieve the agent from responsibility for losses incurred by the lenders as a result of their participation. As such, there should be a confirmation from the lenders to the agent (and arranger) that each lender has made its own independent investigation of the financial condition of a borrower and has not relied upon information supplied by the agent (or arranger). In essence, the agent performs exclusively mechanical and operational functions, with the limits of its authority being defined by the lending syndicate.

Administration: How Are the Housekeeping Matters to Be Taken Care Of?

This section provides details about the communication between the parties, conventions and dates, potential waivers, and so on. It may contain the important setoff provision, which does or does not permit the application of credit balances in satisfaction of borrowings.

Governing Law and Enforcement: If Things Turn Sour, What Legal System Governs the Agreement?

It is essential for a particular system of law to be chosen to govern the interpretation of the contract. In an agreement with parties of several different nationalities, it is difficult to ascertain which law should ultimately prevail if a governing law is not specified at the outset.

ANALYZING A BOND INDENTURE OR A CREDIT AGREEMENT: A PRACTICAL ILLUSTRATION

To present the key credit aspects of a bond indenture, we will analyze the $300 million 6.50% Senior Notes due 2010 and the $200 million 7.00% Senior Notes due 2013, both issued in October 2003 by Boise Cascade Corporation, a U.S.-based forest products firm.

The selection of this particular bond indenture is deliberate: The company was making a major acquisition, and Standard & Poor's had announced that its credit rating on Boise Cascade would be downgraded to BB with a negative outlook from BB+ following the acquisition.

Generally, indentures for firms rated in the BB category by rating agencies provide a good mix of standard and restrictive terms and conditions. Firms with investment-grade ratings typically accept very few restrictive provisions; conversely, many speculative-grade debt obligations are secured by collateral.

The objective of this section is to provide a detailed, step-by-step analysis of a bond indenture, so that credit analysts learn to differentiate the key aspects from the less important ones. To be sure, we discuss only basic documentation aspects in this chapter; a full analysis, including priority-ranking aspects (subordination and security), will be tackled in the following chapter.

The summary of the offering is presented here:[14]

The Offering

The following summary of the terms of the notes is not complete. For a more detailed description of the notes, see "Description of Notes." Capitalized terms used in this summary are defined under "Description of Notes—Definitions."

Issuer	**Boise Cascade Corporation.**
Notes Offered	$300,000,000 principal amount of 6.50% Senior Notes due 2010 and $200,000,000 principal amount of 7.00% Senior Notes due 2013.
Maturity Dates	The 2010 notes mature on November 1, 2010 and the 2013 notes mature on November 1, 2013.
Interest Payment Dates	May 1 and November 1, beginning May 1, 2004.
Optional Redemption	We may redeem all or part of the 2010 notes at any time and the 2013 notes at any time before November 1, 2008, in each case at a price equal to 100% of their principal amount plus a make-whole premium stated under "Description of Notes—Optional Redemption." On or after November 1, 2008, we may redeem all or part of the 2013 notes at the applicable redemption prices stated under "Description of Notes—

	Optional Redemption." In addition, on or before November 1, 2006, we may, on one or more occasions, use the net proceeds from one or more equity offerings to redeem up to 35% of the 2010 notes and the 2013 notes at a price equal to 106.50% and 107.00% of their principal amount, respectively, plus accrued and unpaid interest to the redemption date.
Offer to Repurchase	If we undergo a change of control, as defined in "Description of Notes—Definitions" beginning on page S-74 of this prospectus supplement, you may require us to repurchase all or part of the notes at a price equal to 101% of their principal amount plus accrued and unpaid interest to the repurchase date. If we sell a portion, but less than all or substantially all, of our assets under certain circumstances, we will use the cash proceeds of such asset sale remaining after other permitted uses to offer to repurchase the notes at a price equal to 100% of their principal amount plus accrued and unpaid interest to the repurchase date. After a fall away event, as described below, these note repurchase obligations no longer apply.
Permitted Spin-Off Transaction	The indenture governing the notes will permit a spin-off, split-up, split-off or other transaction involving the dividend, distribution or transfer by us of all or some portion of one or more of our business units. To make this dividend, distribution or transfer: • the company created by the spin-off must complete a registered exchange offer in which it offers holders of the notes the opportunity to exchange their notes for notes of the new company with terms substantially identical to those of the notes; • the company created by the spin-off must be able to incur at least $1.00 of additional debt pursuant to the fixed charge coverage ratio test set forth under "Description of Notes—Covenants—Incurrence of Indebtedness and Issuance of Preferred Stock" after giving pro forma effect to the spin-off transaction;

- each series of new notes issued in the exchange offer has ratings at least as high as the highest ratings given to the corresponding series of the notes in the one-year period immediately prior to the consummation of the spin-off transaction;
- immediately after such transaction, no default or event of default exists;
- the company created by the spin-off assumes all obligations of Boise under the notes and the indenture pursuant to agreements reasonably satisfactory to the trustee, whereupon Boise's obligation in respect of the notes exchanged for such notes of the new company shall be fully satisfied and discharged; and
- we must offer to repurchase all of the notes at a price equal to 100% of the principal amount of the notes plus accrued and unpaid interest to the repurchase date.

Covenants

Unless and until the notes receive an investment grade rating from two or more nationally recognized statistical rating organizations and other conditions are satisfied, which we refer to as a fall away event, the indenture will, among other things, limit our ability and the ability of our restricted subsidiaries to:

- pay dividends on our stock or repurchase our stock;
- make investments;
- borrow money and issue preferred stock;
- create liens;
- restrict the ability of our restricted subsidiaries to pay dividends or make other transfers to us;
- consolidate or merge with another person or sell all or substantially all of our assets and our restricted subsidiaries' assets to another person;
- engage in certain transactions with affiliates;
- enter into sale and leaseback transactions; and
- expand into unrelated businesses.

	After a fall away event, some of the above limitations will no longer apply to either series of notes. The indenture will, however, among other things, limit our ability to: • borrow money by restricted subsidiaries; • create liens on principal properties held by us or our restricted subsidiaries; • consolidate or merge with another person or sell all or substantially all of our assets and our restricted subsidiaries' assets to another person; and • enter into sale and leaseback transactions affecting principal properties held by us or our restricted subsidiaries. These covenants are subject to important exceptions. For more detail, see "Description of Notes—Covenants."
Use of Proceeds	We intend to use the net proceeds of this offering to repay borrowings under our revolving credit agreement, to provide cash necessary for the OfficeMax transaction and for other general corporate purposes.

There are three possible ways of reviewing financial documentation. The first one, reading the indenture starting on the first page and ending at the last one, is definitely a bad choice; the second is reserved for the pros, and even then contains some pitfalls, as it consists of browsing through the summary terms and conditions, assuming that there is no hidden surprise. The third way, which we develop here, consists of two steps: identifying factual information and identifying credit information.

Identifying Factual Information

First, credit analysts must identify factual information about the debt obligations, which can usually be derived from the cover page and/or the summary terms and conditions. There are 10 critical questions that the credit analyst should ask in order to gain a greater understanding of a bond offering. Table 7-1 outlines those 10 questions.

TABLE 7-1: Critical Questions

1. Who is the issuer?

Boise Cascade Corporation (by reference, « Boise »)

Because Boise Cascade is a well-known listed company in the United States, credit analysts will not need to go further. In other instances, it may be necessary to check certificates of incorporation or local commerce registries.

2. Where is the issuer incorporated?

State of Delaware, United States. The principal office is in Boise, Idaho.

This information is not in the prospectus supplement for the notes, but is contained in the "Master Prospectus" used to issue many forms of securities.*

3. What is the relationship with the parent company?

Boise is the parent company.

This point is particularly crucial from a credit standpoint, as we will see in the following chapter (see structural subordination), as many firms issue debt obligations through subsidiaries. Credit analysts need to spend sufficient time verifying this.

4. What is the debt amount issued and currency?

Two debt issues (collectively, the Notes):

- $300 million Notes (1)
- $200 million Notes (2)

5. What are the price and the coupon?

Both debt obligations were issued at an underwriting discount, for a price of 98.25 percent. The coupons are (1) 6.50 percent and (2) 7.00 percent.

Analysts should ensure that the imputed yield of the bonds is in line with market expectations for the credit.

6. What is the maturity?

(1) 2010
(2) 2013

It is also a good indication of market perception for analysts to see if a company with a non-investment-grade rating can issue longer-term debt.

7. What are the interest payment dates?

Semiannual on May 1 and November 1 of each year for both debt obligations.

8. What is the rank of debt obligations?

The Notes are unsecured obligations and rank pari passu with existing and future unsecured senior indebtedness of Boise.

This is stated openly on page S-51 of the Prospectus. Like the answer to question 3, this point is particularly crucial from a credit standpoint and will be developed further in the following chapter.

9. What is the governing law?†

The law of the State of Delaware, United States.

This information is not in the prospectus supplement for the notes, but is contained in the "Master Prospectus" used to issue many forms of securities.

10. What is the intended use of the proceeds?

Repay revolving credit, finance the OfficeMax acquisition, and other purposes.

There are two references in the Prospectus to the use of proceeds. The first is outlined in the summary terms and conditions. The second is on page S-25, and is far more detailed. In particular, it provides a clearer picture of the acquisition price for OfficeMax, which will allow credit analysts to prepare a pro forma capital structure and evaluate how much of the revolver will be repaid.

---

*http://www.sec.gov/Archives/edgar/data/12978/000091205702016107/a2077704zs-3a.htm, p. 4.

†http://www.sec.gov/Archives/edgar/data/12978/000091205702016107/a2077704zs-3a.htm, p. 23.

Identifying Credit Information

The second step begins with a thorough review of the definitions in a manner that we illustrate here. Following this review, the credit analyst should identify the following points:

1. Is the firm in good standing?
2. Are there any restrictions on the activities of the firm?
3. Are there any credit cliffs or triggers[15]?
4. Are there any financial covenants? If so, what are they, and what is their credit impact?
5. Are there any nonfinancial covenants? If so, what are they, and what is their credit impact?
6. What constitutes a default?
7. What remedies exist in an event of default?

Is the Firm in Good Standing?

In credit agreements, this information is usually contained in a section entitled "Representations and Warranties"; it does not always appear in bond indentures. This section usually says that:

- The firm is in good standing.
- The firm can enter into such a transaction.
- The officers signing the deal have the authority to do so.
- The regulators, tax authority, and other necessary parties approve of this transaction.
- The last financials are reporting a true picture of the company.
- There have not been material changes since the last financials.
- There are no outstanding lawsuits or environmental issues, or if there are, what these are.
- The firm is not in breach of other transactions.

This information should be taken at face value. It has two major advantages: First, it puts the firm's management on the hook in case things turn out differently from what was expected; and second, analysts can decide to dig a little deeper if they believe that there are some gaps between the representations made by the company and other information available.

Are There Any Restrictions on the Activities of the Firm?

This information is usually contained in a core definition titled "Permitted Business." In the Boise Cascade indenture, two parts need to be placed together:

- "Permitted Business" means any business conducted by Boise and its Restricted Subsidiaries on the date of the indenture, any reasonable extension thereof, and any additional business reasonably related, incidental, ancillary, or complementary thereto".
- Boise will not, and will not permit any Restricted Subsidiary to, engage in any business other than a Permitted Business, except to such extent as would not be material to Boise and its Restricted Subsidiaries.

In other words, Boise can continue to engage in forest products and paper distribution, but cannot suddenly decide to start a car-leasing business or buy a chocolate factory. This type of restriction would not be incorporated in the indenture of an investment-grade firm. From a credit standpoint, it has the advantage of narrowing down the firm's business focus.

Are There Any Credit Cliffs or Triggers?

Credit cliffs and triggers are provisions that generally allow bondholders to force borrowers to redeem particular debt instruments if the status of the firm should change or if its performance deteriorates substantially.

Most, if not all, indentures contain at least a change of control provision, which gives the bondholders the option of requiring the firm to repurchase the bonds. The Boise Cascade indenture is no exception (p. S-54):

> If a Change of control occurs at any time . . ., unless Boise has exercised its right to redeem the notes . . ., each holder of notes will have the right to require Boise to repurchase all or any part . . . of that holder's notes pursuant to a Change of Control offer on the terms set forth in the indenture for a repurchase in cash equal to 101% of the aggregate principal amount of notes repurchased plus accrued and unpaid interest on the notes repurchased, to the date of repurchase.

The change of control provision essentially allows the bondholders to require that they be bought out if they do not like the new owner of the firm. They are unlikely to exercise this option if the owner is of higher credit quality.

There are other provisions that protect bondholders if the performance of the firm deteriorates. Credit analysts should analyze them thoroughly, as they can have unwanted consequences. Credit cliffs essentially tie pricing on a debt instrument to credit performance, measured in terms of credit ratios or as a function of the level of credit ratings assigned by credit rating agencies.

Certain indentures of companies rated in the A or high BBB categories contain an embedded put in the event that credit ratings are downgraded into the speculative-grade category (below BBB- or Baa3). In other words, if credit ratings go below a certain threshold, the debt holders can demand that the company repay that particular debt instrument.

In such a scenario, a company could be downgraded by a rating agency to BB+, the first rating in the speculative-grade category, as a result of an adverse economic environment. While a rating in the BB category indicates a degree of vulnerability to default greater than that indicated by an investment-grade rating, it certainly does not foresee the imminence of default. However, the firm would be suddenly faced with the need to refinance that debt instrument at a time when access to debt markets may have become difficult. Thus, a rating downgrade can turn an adverse situation into an outright liquidity crisis.

This is an example of a very perverse covenant, which credit analysts must be particularly wary about, particularly in a difficult economic and credit environment.

Are There Any Financial Covenants? If So, What Are They, and What Is Their Credit Impact?

This is generally the crux of the indenture, the area that will cause the most friction between lender and borrower. Financial covenants are generally the most onerous for a firm, and a breach could have severe consequences, as we will see. In order to calculate financial covenants, each term of the calculation must be defined in its most intricate details.

Anyone who has ever read a package of financial covenants (and one can lead a perfectly happy—even happier—life without going through this masochistic process) will find it extremely tedious and even distressing. The trick is to go straight to the definitions, which are listed alphabetically.

The Boise Cascade indenture contains three fairly common, yet key, financial covenants, given in Table 7-2.

TABLE 7-2: Deconstructing the Financial Covenants

1. The first covenant says that Boise Cascade can incur additional debt only if the fixed charge coverage ratio is at least 2.0 to 1.0.

Incurrence of Indebtedness . . .

Boise will not . . . incur any Indebtedness (including Acquired Debt) . . .; provided, however, that Boise may incur Indebtedness (including Acquired Debt) . . . if the Fixed Charge Coverage Ratio for Boise's most recently ended four full fiscal quarters for which internal financial statements are available . . . would have been at least 2.0 to 1 determined on a pro forma basis.

2. The second covenant says that Boise Cascade can dispose of its cash flow (pay dividends, make acquisitions, pay subordinated noteholders, and make investments) only if the debt test in (1) is met.

Restricted payments

Boise will not, and will not permit any of its Restricted Subsidiaries to, directly or indirectly:

(1) declare or pay any dividend . . .;
(2) purchase, redeem or otherwise acquire or retire for value . . . any Equity Interest of Boise;
(3) make any payment on . . . any Indebtedness that is subordinated to the notes . . .;
(4) make any Restricted Investments . . .,

(all such payments and other actions set forth in these clauses (1) through (4) above being collectively referred to as "Restricted Payments"),

unless, at the time of and after giving effect to such Restricted Payments

(1) no Default or Event of Default has occurred and is continuing;
(2) Boise could incur at least $1.00 of additional Indebtedness pursuant to the Fixed Charge Coverage Ratio . . . ."

3. The third covenant says that Boise Cascade can merge, consolidate, or sell assets only if the debt test in (1) is met.

Merger, consolidation or Sale of Assets

The indenture provides that no consolidation or merger of Boise with or into any other corporation . . . may be made unless:

(1) the surviving corporation or acquiring Person shall be a corporation organized and existing under the laws of the United States of America . . .;
(2) immediately after giving effect to such transaction, no Event of Default . . . shall have happened and be continuing;
(3) Boise has delivered the required officers' certificate and opinion of counsel to the trustee; and
(4) . . . Boise or the Person formed by or surviving any such consolidation or merger (if other than Boise) . . . will . . . be permitted to incur at least $1.00 of additional Indebtedness.

In the convoluted logic of lawyers, these three covenants essentially are subject to the same restriction: Boise's hands are tied unless its fixed charge coverage ratio (defined later) is at least two times. If analysts read the document in its entirety, they will see that there are many more caveats. If this does not enhance per se the capacity of the firm to service its debt, at least it strengthens the company's willingness to take care of its creditors prior to pursuing shareholder value initiatives.

READING THE DEFINITIONS OF A BOND INDENTURE OR A LOAN AGREEMENT

Definitions in an agreement are like Russian dolls: One needs to find the smallest one, the one that is in one piece (i.e., that does not refer to another definition) before moving on in the game. Analysts should start with these core, nonfissile definitions, and then gradually rank them.

In order to fully understand the financial covenants outlined above, and particularly the basis for the calculation of the Fixed Charge Coverage Ratio, credit analysts need to refer to the defined terms. Table 7-3 illustrates this process with the Boise Cascade indenture.

TABLE 7-3: Deconstructing the Definitions

Definition of Fixed Charge Coverage Ratio

"Fixed Charges Coverage ratio" means, with respect to any Person for any four-quarter period, the ratio of the Consolidated Cash Flow . . . for such period to the Fixed Charges for such period.

Building blocks for Fixed Charge Coverage Ratio: Consolidated Cash Flow and Fixed Charges

"Consolidated cash flow," means, with respect to any specified Person for any period, the Consolidated Net Income of Such Person plus:

(1) an amount equal to any non-routine loss plus any net loss realized by such Person or any of its Restricted Subsidiaries in connection with an Asset Sale, to the extent such losses were deducted in computing Consolidated Net Income; plus

(2) provision for taxes based on income and profits of such Person and its Restricted Subsidiaries for such period, to the extent that such provision for taxes was deducted in computing such Consolidated Net Income; plus
(3) Consolidated Interest Expense . . .; plus
(4 depreciation, depletion, amortization (including amortization of goodwill and other intangibles . . .; plus
(5) any unusual or nonrecurring charges or expenses . . .; minus
(6) an amount equal to any non-routine gain . . . in connection with an Asset Sale . . .; minus
(7) non-cash items increasing such Consolidated Net Income for such period, other than the accrual of revenue in the ordinary course of business,

in each case, on a consolidated basis and determined in accordance with GAAP.

"Fixed Charges" means, with respect to any specified Person for any period, the sum, without duplication, of:

(1) the Consolidated Interest Expense . . .; plus
(2) any interest expense on Indebtedness . . . that is Guaranteed by such Person or of its Restricted Subsidiaries or secured by a Lien on assets of such Person or one of its restricted subsidiaries . . . but only to the extent of the Guarantee or Lien on such Indebtedness; plus
(3) all dividends . . . on any series of preferred stock.

Building blocks for Consolidated Cash Flow and Fixed Charges: Consolidated Net Income, Consolidated Interest Expense, and Indebtedness

"Consolidated Net Income" means . . . the aggregate of Net Income of such Person and its Restricted Subsidiaries for such period, on a consolidated basis, determined in accordance with GAAP.

"Consolidated Interest Expense" means, for any period, the total interest expense of a Person and its consolidated Restricted Subsidiaries in accordance with GAAP, net of any interest income relating to the obligations giving rise to such interest expense, plus, to the extent not included in such interest expense and to the extent incurred by such Person or its restricted Subsidiaries, without duplication:

(1) interest expense attributable to Capital Lease Obligations and imputed interest with respect to Attributable debt;
(2) amortization debt discount;
(3) capitalized interest;
(4) non-cash interest expense;
(5) commissions, discounts and other fees and charges owed with respect to letters of credit and bankers' acceptance financings;
(6) net costs associated with interest rate swap, cap or collar agreements and other agreements designed to protect such Person against fluctuations in interest rate;
(7) the interest component of any deferred payment obligations; and any premiums, fees, discounts, expenses and losses on the sale of Receivables and Related Assets (and any amortization thereof) payable in connection with a Receivables program.

"Indebtedness" means, with respect to any specified Person, any indebtedness of such Person, whether or not contingent and without duplication:
(1) in respect of borrowed money;
(2) evidenced by bonds, notes, debentures or similar instruments or letters of credit (or reimbursement agreements in respect thereof);
(3) in respect of bankers' acceptances;
(4) representing Capital Lease Obligations;
(5) representing the balance deferred and unpaid of the purchase price of any property, except any such balance that constitutes an accrued expense or trade payable, or similar obligations to trade creditors; or
(6) representing Hedging Obligations.[16]

Building blocks of Consolidated Net Income, Consolidated Interest Expense, and Indebtedness: Unrestricted Subsidiary, Restricted Subsidiary, Permitted Business

"Unrestricted Subsidiary" means each Subsidiary of:
Boise that is designated by the Board of Directors . . . as an Unrestricted Subsidiary pursuant to a resolution of the Board of Directors . . ., but only to the extent that each such Subsidiary:

(1) has no Indebtedness;
(2) is not party to any agreement, contract . . . with Boise or any Restricted Subsidiary of Boise unless the terms of any such agreement, contract . . . are no less favorable to Boise or such

Restricted Subsidiary than those that might be obtained at the time from Persons who are not Affiliates of Boise . . .;

(3) is a Person with respect to which neither Boise nor any of its Restricted Subsidiaries has any direct or indirect obligation (a) to subscribe for additional Equity Interests or (b) to maintain or preserve such Person's financial condition . . .; and

(4) has not guaranteed or otherwise directly or indirectly provided credit support for any Indebtedness of Boise or any of its Restricted Subsidiaries.

"Restricted Subsidiary" of a Person means any Subsidiary of the referenced Person that is not an Unrestricted Subsidiary.

"Permitted Business" means any business conducted by Boise and its Restricted Subsidiaries on the date of the indenture.

Core definitions

"Net Income" means, with respect to any specified Person, the net income (loss) of such Person, determined in accordance with GAAP.

"Person" means any individual, corporation, partnership, joint venture, association, joint-stock company, trust, unincorporated organization, limited liability company or government or other entity.

"Subsidiary" means, with respect to any specified Person:

(1) Any corporation, association or other business entity of which more than 50% of the total voting power . . . is at the time owned or controlled, directly or indirectly, by that Person.

Are There Any Nonfinancial Covenants? If So, What Are They, and What Is Their Credit Impact?

Not only must the firm perform financially, but it also has certain obligations vis-à-vis its creditors in terms of reporting, provision of security, maintenance of its business, and so on.

In the Boise Cascade indenture, we highlight two such provisions and add a third drawn from another indenture, as we believe it to be important.

- Reports

  Whether or not required by the SEC, so long as any notes are outstanding, Boise will furnish to the trustee, within the time periods specified in the SEC's rules and regulations:

all quarterly and annual financial information that would be required to be contained in a filing with the SEC on Forms 10-Q and 10-K . . . .

all current reports that would be required to be filed with the SEC on Form 8-K.

- Liens

Boise will not, and will not permit any of its Restricted Subsidiaries to, directly or indirectly create, incur . . . any Lien securing Indebtedness . . . on any asset now owned or hereafter acquired, unless all payments due under the indenture and the notes are secured on an equal and ratable basis with (or prior to) the obligations so secured until such time as obligations are no longer secured by a Lien.

The second covenant, limitation on liens, is often referred to as a negative pledge. It essentially says that the borrower commits to deliver the same security to creditors of this particular debt instrument if it raises new secured debt.

These are "boilerplate" nonfinancial covenants found in many indentures. Many others also exist: "obligation of maintenance of insurance" and "compliance with other agreements," for example.

Another fairly common covenant relates to the Maintenance of Principal Properties, of which an example is found in a prospectus filed by Boeing Co.,[17] the global aerospace firm:

> The indentures provide that we will cause all of our principal properties to be maintained and kept in good condition, repair and working order and supplied with all necessary equipment. We will cause such repairs, renewals, replacements and improvements to be made to our principal properties that, in our judgment, are required in order to continue to carry on the business conducted at our principal properties. However, the indentures do not prevent us from discontinuing the operation or maintenance or disposing of any principal property if we determine that the action is desirable.

What Constitutes a Default?

Each indenture or agreement has an extensive definition of what constitutes a default. There are usually two broad types of events of default: the most serious one, generally defined as "failure to pay" (interest and principal), which, if not remedied, can rapidly lead to the acceleration of the obligations (see the next section); and a somewhat more benign one that is generally triggered by a breach of covenants, and for which remedies are usually defined in the indenture. As indentures try to be exhaustive, bankruptcy and insolvency are obviously also defined as events of default.

FAILURE TO PAY

Here is an example of an event of default clause triggered by "failure to pay."

> With respect to each series of notes . . ., each of the following is an "Event of Default":
>
> - Default for 30 days in the payment when due of interest on such notes;
> - Default in payment when due of the principal of or premium, if any, on such notes;

The 30-day period is often called the *cure period*; it can vary from one bond indenture to another, although it rarely exceeds 90 days.

BREACH OF COVENANT

Agreements or indentures generally include a "catchall" event of default clause, often referred to as a *material adverse change clause* (or MAC clause), which will cover such things as timely disclosure, audits, board decisions, and so on. Here is an example of a definition of an event of default caused by a covenant breach.

> Failure by Boise or any of its Restricted Subsidiaries for 60 days after notice from the trustee or the holders of at least 25% in aggregate principal amount of either series of the notes outstanding to comply with any of the other agreements in the indenture. (p. S-69)

Cross-Default Provisions

Additionally, lenders must protect themselves in the event that a related entity defaults on other obligations. This clause is called a "cross-default" provision and essentially provides that, should one entity default, it would constitute an event of default for all other group members. Here is an illustration (which shall remain anonymous):

Cross Default

Any Financial Indebtedness of a member or members of the Group in excess of £15,000,000 or its equivalent in other currencies in aggregate:

- is not paid when due or within any applicable grace period in any agreement relating to that Financial Indebtedness; or
- becomes due and payable (or capable of being declared due and payable) before its normal maturity or is placed upon demand (or any commitment for any such indebtedness is cancelled or suspended) by reason of a default or event of default however described.

It appears obvious that if a firm is unable to service a bond or a loan, it is likely to be unable to service its other obligations. Only in extremely rare situations would a firm selectively default on one obligation while continuing to service its other indebtedness.

However, in situations where there are less well-defined relationships between various legal entities, credit analysts must ensure that no cross-default provisions exist.

What Remedies Exist in an Event of Default?

Creditors are given two options to remedy a default:

- *Acceleration.* If creditors feel that their exposure to the borrower is in jeopardy, they can ask to be repaid immediately, irrespective of the final maturity of the obligation. This process is known as *acceleration*.

  In the case of an Event of Default described above in clause (7) (e.g. bankruptcy or insolvency of Boise), all outstanding notes will become due and payable immediately without further action or notice. If any other Event of Default occurs and is continuing, the trustee or the holders of at least 25% in principal amount of the

then outstanding notes of the applicable series may declare that series of notes to be due and payable immediately. (p. S-70)

- *Waiver.* In the event of a minor covenant breach, or one that creditors believe can be remedied without jeopardizing their exposure, creditors may decide to give the company a chance to fix the problem. In that situation, creditors in effect waive their rights to enforce the event of default. In order to protect creditors, waivers cannot be accepted by less than the majority of creditors; additionally, waivers apply only to "minor" events of default, such as covenant breaches. Breach of covenant caused by a failure to pay generally cannot be remedied.

  With respect to either series of notes, *the holders of a majority in aggregate principal amount of notes* of that series then outstanding by notice to the trustee *may on behalf of the holders of that series of notes waive any existing Default or Event of Default a*nd its consequences under the indenture *except a continuing Default or Event of Default in the payment of interest or premium, or the principal of, that series of notes.* (p. S-70)

In the case of a waiver, a provision restricts firms from selectively inducing lenders to consent:

Payments for Consent

Boise will not . . . pay any consideration to . . . any holder of notes or as . . . an inducement to any consent, waiver or amendment of any of the terms or provisions of the indenture . . . unless such consideration is offered to be paid and is paid to all holders of the notes, pro-rata based on the principal amount of the notes held by such holders. (p. S-69)

CHAPTER SUMMARY

Debt Instruments and Documentation

In gaining a greater understanding of the specific financial obligations of a corporate credit, it is essential for credit analysts to be familiar with the different sources of funding available to corporations. In addition to "plain

vanilla" debt instruments, such as loans and bonds, a great diversity of debt types exists, such as medium-term notes, private placements, convertible debt, hybrid debt-equity instruments, and commercial paper, among others. Each instrument meets different needs, whether it is to fund short- or long-term requirements, to appeal to certain investor types, to finance specific asset types, or to fit with a particular corporate situation.

The relationship between borrower and creditors is governed by a contract, called a loan agreement or bond indenture in the case of these specific debt instruments. It is essential that credit analysts are familiar with the format and content of these documents, and how to interpret them. Certain aspects are factual, such as the interest rate, the utilization and timing of the proceeds, and the repayment or prepayment of the debt instruments. Others are far more prescriptive and describe what conditions are necessary for the credit to be available, and what happens when these conditions are no longer met.

This section is generally called *undertakings* in a loan agreement and *covenants* in a bond indenture, and it is there only for borrowers with a lower credit standing. It provides, among other things, that the firm should restrict its activities to its current ones, that future investments are limited to a certain amount, that pricing of the debt instrument may increase should certain credit ratios deteriorate, and that the entire debt instrument may become due and payable immediately if certain credit measures or other conditions are no longer met.

The analysis of the Boise Cascade bond indenture uses a step-by-step approach to a real-life example that credit analysts can refer to for future analysis of unsecured "plain vanilla" debt instruments with certain restrictive financial covenants. In particular, it shows how an event of default is identified and when it can be remedied. It is essential for credit analysts to be comfortable with this type of debt documentation before moving on to the next chapter, which deals with priority ranking and debt structures.

NOTES

1. One of the better known is Frank J. Fabozzi (ed.), *The Handbook of Fixed Income Securities*, 6th ed, McGraw-Hill, 2001.

2. A CDO is essentially a repackaging of a portfolio of loans or bonds. A special-purpose entity, created for the sole objective of holding the portfolio, issues (generally highly rated) bonds in the public markets to finance the acquisition of the portfolio. The debt service of these bonds is in turn secured by the cash flows from the portfolio.

3. Tony Rhodes, *Syndicated Lending, Practice and Documentation*, 3d ed. (London: Euromoney Books, 2000), p. 13. Most of the material in this section was drawn from this very thorough book on the syndicated loan market.

4. London Interbank Offered Rate, a rate at which time deposits are offered by banks to other prime institutions in the financial marketplace.

5. A leveraged buyout is a form of acquisition finance, typically sponsored by venture capitalists or private equity firms, in which the target firm is loaded with debt upon acquisition and is restructured to maximize cash flows. We discuss LBOs more fully at the end of Chapter 8.

6. Credit rating agencies are more fully discussed in Chapter 11.

7. A good description of the different types of bonds and their mechanics can be found in Frank J. Fabozzi (ed.), *The Handbook of Fixed Income Securities*, 6th ed., particularly in Chapter 11, "Corporate Bonds."

8. Medium-term notes are more fully described in Frank J. Fabozzi (ed.), *The Handbook of Fixed Income Securities*, 6th ed., p. 283.

9. The credit evaluations are performed by the Securities Valuation Office (SVO) of the NAIC.

10. See Chapter 8.

11. Credit rating agencies have discussed the equity content of hybrid instruments extensively. Standard & Poor's, in *Corporate Ratings Criteria* (pp. 89–91), identifies five characteristics of equity: (1) It provides value to the firm; (2) it requires no ongoing payments that could lead to default; (3) it has no maturity or repayment requirement; (4) it provides a cushion for creditors in case of default; and (5) it is expected to remain a permanent feature of the enterprise's capital structure.

12. "An interest rate swap is an agreement whereby two parties (called counterparties) agree to exchange periodic interest payments," Anand. K. Bhattacharya and Frank J. Fabozzi "Interest Rate Swaps," in Frank J. Fabozzi (ed.), *The Handbook of Fixed Income Securities*, 6th ed., p. 1298

13. This section borrows significantly from Tony Rhodes, *Syndicated Lending, Practice and Documentation*, 3d ed. (London: Euromoney Books, 2000), pp. 243ff.

14. A full description of the notes can be found in the U.S. Securities and Exchange Commission's Web site at http://www.sec.gov/Archives/edgar/data/12978/0001 4746 903033570/a2119739z424b5.htm.

15. Cliffs and triggers are explained later in the chapter.

16. Defined as obligations under "currency exchange, interest rate or commodity swap agreements."

17. http://www.sec.gov/Archives/edgar/data/12927/000091205702036387/a2089520z424 b3.htm, p. 11, September 20, 2002.

CHAPTER 8

Insolvency Regimes and Debt Structures

"When analyzing debt structures, always follow the money!"

—James Penrose, General Counsel and
Managing Director, Standard & Poor's

The first part of this book focused on credit risks that are inherent to the firm and its environment. These risks determine the capacity and willingness of a firm to service its debt obligations in a timely fashion.

But once a firm falls on hard times and can no longer service its debt, the nature of the credit risk changes; each creditor has to make up its mind as to what position it will adopt. In most cases, creditors have the following options: Cut their losses and sell their debt instrument for the best possible price, but generally at a discount, or stick around and hope for better times.

In order to make an educated decision in a case of financial distress or outright default, creditors should evaluate the firm's recovery prospects. To do this, they need to understand the applicable pre-insolvency and insolvency procedures and the credit risks that are specific to the debt instrument they hold. As we will see in this chapter, creditors may have more influence over the insolvency process in some jurisdictions than in others. But above all, they need to understand the debt structure of the borrower, and where their debt instrument stands relative to the debt instruments of other creditors.

First, we consider the different treatment of creditors in various insolvency regimes. In particular, credit analysts should be able to determine what influence creditors will have over the process, should corporate distress occur, and, in the event that they benefit from collateral in support of the debt, how enforceable this security is.

Second, we present priority ranking, the most important driver of recovery. Priority ranking essentially defines the order in which creditors will be paid in insolvency. Credit analysts should be able to determine the degree of subordination that creditors are subject to or the support through collateral that they have.

Finally, we discuss asset-based transactions, such as financings of projects, infrastructure, real estate, or transportation equipment. The structure of these transactions differs significantly from traditional corporate financings.

INSOLVENCY REGIMES

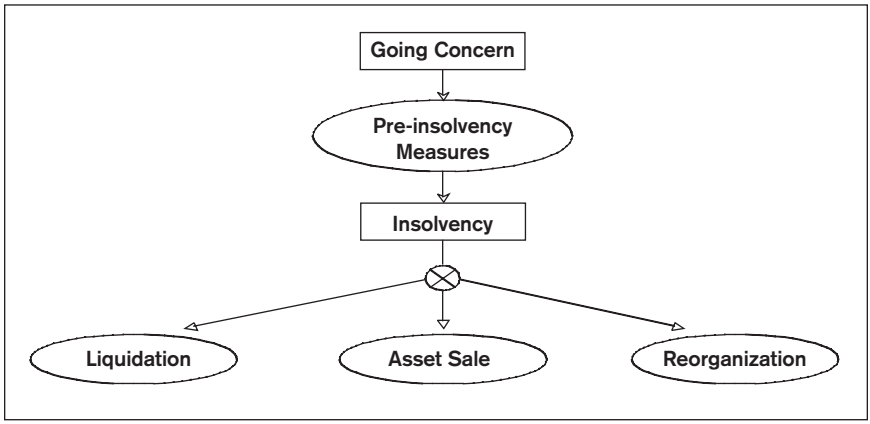
While there are significant differences among insolvency regimes, all of them try to balance the interests of debtors and creditors, with varying degrees of success. On the one hand, debtors need to be protected against unduly aggressive creditors seeking preferential treatment in times of difficulty; and on the other hand, creditors require a process to protect their investments in the form of debt obligations owed to them. It would greatly exceed the scope of this book to explain the origin of these differences, but suffice it to say that they have emerged over time primarily as a result of political choices and differences of doctrine about such things as private property and employment.

Distress and Insolvency Procedures

As shown in Figure 8-1, the possible outcomes of distress and insolvency are essentially the same in most jurisdictions:

- *Pre-insolvency measures.* Prior to becoming insolvent, a firm may elect, or be enticed, to get outside help, whether or not it is supervised by a judicial or administrative body.
- *Liquidation.* In situations where economic survival is not deemed possible, the bankruptcy court and/or the lenders can decide to liquidate the firm's assets. The practice differs across jurisdictions and according to asset types. In some countries, an administrator is selected by the court to liquidate the company's assets; after liquidation, the court allocates the proceeds from the liquidation to creditors according to their rank and the value

FIGURE 8-1: Distress and Insolvency Outcomes



of their claims relative to the value of the assets, or of creditors' collateral, if any, at the time of the bankruptcy. In other countries (U.K., Holland), secured creditors are allowed to repossess the collateral and liquidate it themselves. Liquidation is the most favored route in many jurisdictions for small companies. In the United States and in France, liquidation represents around 90 percent[1] of all bankruptcy outcomes.

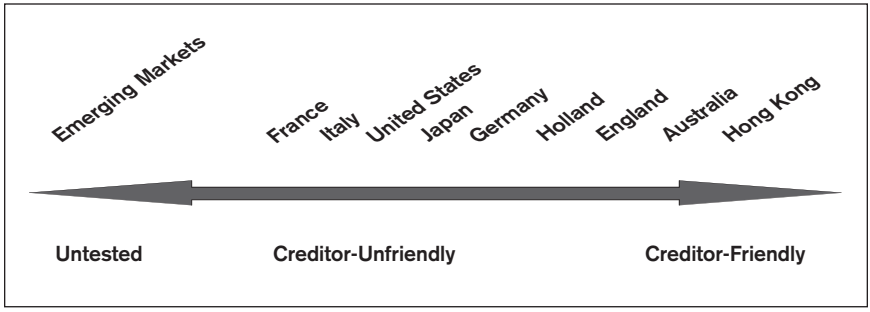
- *Asset sale.* Another possible outcome, at least for larger firms, is that the firm (or its assets) will be sold to a third party.
- *Reorganization.* In most jurisdictions, this is the favored route for large companies, as it preserves employment, a key political concern. A restructuring plan is prepared by an administrator and voted on by the various stakeholders, or imposed by the courts in certain jurisdictions. The plan will probably entail a series of cost-cutting measures and strategic initiatives, and may or may not include asset sales or conversion of debt to equity.

Creditor-Friendly and Creditor-Unfriendly Regimes

While somewhat reductive, it is possible to present insolvency regimes on an axis, going from the more "creditor-friendly" to untested regimes through the more "creditor-unfriendly" (see Figure 8-2). With the latter,

the outcome to creditors is usually less certain both in terms of time to recovery and absolute amount of the recovery, whereas the former generally provide more clarity in terms of both timing and process.

FIGURE 8-2: Creditor-Friendly and -Unfriendly Insolvency Regimes



Three factors influence how creditor-friendly or -unfriendly an insolvency regime is:

- The degree of influence or control that creditors can exert during the distress and insolvency procedures
- Security enforcement, when the debt is secured
- Legal risks that may be specific to particular jurisdictions

Influence of Creditors over the Distress and Insolvency Procedures

Courts generally guide the insolvency process everywhere, but their degree of control or influence varies dramatically among the countries surveyed. It is just as important to assess the avenues available to deal with a situation of distress outside a formal insolvency process.

At one end of the spectrum, the French insolvency is notoriously creditor-unfriendly for large industrial firms that are in financial distress. Courts generally make all the key decisions in the process, and the input of creditors is (at best) on the same level as that of other stakeholders, such as employees or potential acquirers. In particular, courts will make the final decision as to whether a firm should be liquidated or restructured, whether assets should be sold through an auction or through a private sale, and how long the process will last. All these aspects can make

the French system somewhat opaque for creditors of large firms. In the event that the courts impose a restructuring, recoveries can take years.

At the other end of the spectrum, the U.K. insolvency system is particularly favorable to creditors, although the new Enterprise Act 2002 is expected to make it less so. In particular, creditors can appoint an administrative receiver, and if they have a properly registered charge over certain assets, or fixed and floating charges[2] over all assets of the company, they can generally take control of these assets, or of the entire company, with minimal court intervention. However, while the process appears to be fairly transparent, administration costs tend to be very high.

Between these two extremes lie other insolvency regimes:

- The U.S. Chapter 11 (court-led restructuring, as opposed to Chapter 7, liquidation) tends to be more debtor-friendly in that it imposes an automatic stay (see next section) on creditors' claims and prevents creditors from enforcing their security or collateral. In contrast to the French system, it generally provides secured creditors with significant negotiating power, although clearly not as strong as in the U.K. system.
- The German system, in contrast, appears to have found an interesting balance between debtors and creditors. Under that system, the courts cannot force secured creditors into an unwanted reorganization. While the courts do indeed appoint an administrator in insolvency, that administrator takes its instructions from the creditors' committee, giving creditors a significant say over the ultimate outcome.
- The Japanese system is also fairly creditor-friendly in that there is no stay in the Civil Rehabilitation (*minji saisei*) process, the more utilized of two systems in Japan. The other system, the Corporate Reorganization (*kaisha kousei*) process, often results in a stay, but is used far less often.[3] Although secured creditors cannot nominate their own administrative receivers, as they can in the United States, they can enforce collateral in the event of either reorganization or liquidation. The only exceptions include the aforementioned stay; a temporary, court-ordered suspension of the foreclosure process under certain strict conditions (rarely used), and, under the Civil Rehabilitation process only, the removal by the courts of the collateral (see the discussion of "adequate protection" later in the chapter) on the condition that creditors are paid proceeds equivalent to the value of the collateral.

- Credit analysts should exert great caution when dealing with jurisdictions where the insolvency system is untested, or where the resolution of previous cases has been murky. In certain emerging markets, business, political, and judicial interests may be intertwined, making it difficult for outsiders to stake their claims in a proper court of law.

Security Enforcement

In creditor-friendly jurisdictions, such as Hong Kong, the U.K., or Holland, secured creditors can appoint an administrative receiver or the equivalent, who may effectively take over from the current owners and shareholders, provided that a certain number of conditions are met. Therefore, creditors can act swiftly to choose the best course of action to protect their interests. Few other parties can interfere with the process. However, if creditors do not meet the proper conditions for appointing an administrative receiver, the process is similar to that described for debtor-friendly regimes.

In creditor-unfriendly regimes, security enforcement may take a long time and, in some jurisdictions, be murky.

- Secured creditors may retain their priority ranking, but may not be able to repossess the collateral, particularly when a reorganization is accepted.
- Once a reorganization plan has been accepted, the process varies significantly across jurisdictions. In certain jurisdictions, creditors can decide to cut their losses and be replaced by specialist lenders providing debtor-in-possession (DIP) financing. In other jurisdictions, where DIP lenders do not exist, creditors are stuck with the terms of the restructuring until the debtor repays or refinances its debts or defaults again.
- Even if secured creditors can repossess the collateral, foreclosure may be a long and tortuous process, and a costly one.
- In a number of jurisdictions, the bankruptcy court can decide to replace the pledged collateral with something deemed by the court to be equally valuable ("adequate protection"). In a restructuring, this would typically happen if the pledged asset is considered essential to continue to run the business, but the secured creditor insists on an early exit. In the United States and France, two jurisdictions where adequate protection is used by the courts, this clause has been hotly contested by many creditors.

Key Legal Risks for Creditors in Insolvency

While bankruptcy laws are generally fairly clear, in practice, an insolvency process is a tortuous one in which courts try to balance the diverging interests of various stakeholders, adding some of their own views. While it would exceed the scope of this book to analyze each jurisdiction from a creditor's standpoint,[4] there are a few legal risks for creditors that are common to a number of jurisdictions. They include:

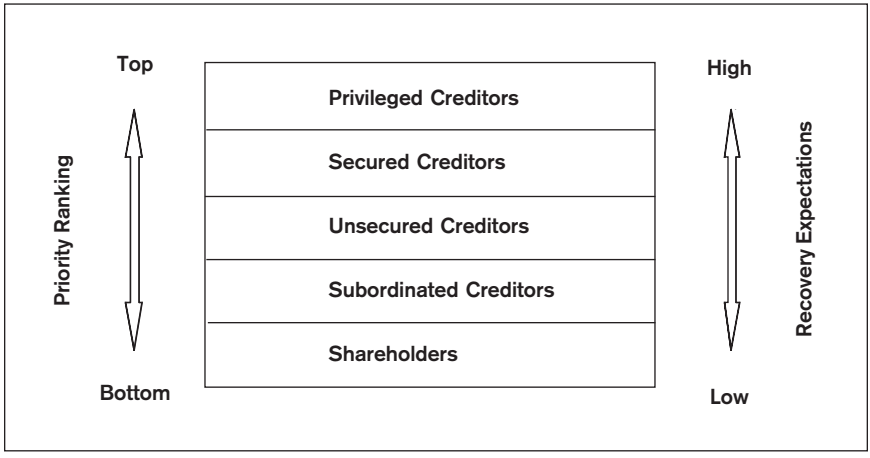
- *Stay on claims.* A stay is an order from the bankruptcy court preventing creditors from collecting their claims or enforcing collateral against an insolvent firm. Court-ordered stays vary significantly across jurisdictions and range from a few months to a few years. The bankruptcy court or an administrative body draws up a list of all claims at that precise moment and orders them in ranks established by law. In other words, the bankruptcy court stops the movie and takes the film away. The stay typically lasts until the court and various stakeholders decide whether the firm can be rescued. With a stay, creditors are unable to assess how much they will receive in compensation for their claims or when they will receive it. From the firm's standpoint, however, a well-timed stay can provide the owners and/or the management some breathing room to see if the firm can be restarted on a firmer financial footing.
- *Preference or twilight period.* This may sound like science fiction, but it is just a legal concept meant to indicate that the period before the actual distress is recorded in court will be intensely scrutinized by magistrates to ensure that no stakeholders tried to unduly enhance their position relative to others. For instance, if creditors were seen to have secured their exposure with a mortgage on a company's real estate in the months prior to default, the court could overturn this change and deem these creditors to be unsecured. The length of the preference period varies dramatically across jurisdictions, ranging from just a few months (Germany) to several years (France, Italy, and the United States).
- *Limitations on upstream guarantees* (discussed later in this chapter). In a number of jurisdictions, the law imposes restrictions on or is simply not clear about upstream guarantees. It is conceivable that these limitations would surface only upon insolvency.

INTRODUCTION TO PRIORITY RANKING

Once a company becomes insolvent, all stakeholders jockey to try to recover as much as possible, whether they are suppliers, employees, the government, banks, investors, or even shareholders. To avoid confusion at already stressful times, bankruptcy laws in most jurisdictions sort creditors into classes that determine the order in which they can make their claims. This concept is called priority ranking, and it has a significant bearing on recovery expectations.

A firm's creditors can generally be divided into five distinct classes, as shown in Figure 8-3. People often refer to the relative seniority of the various classes of debt.

FIGURE 8-3: Priority Ranking



- *Privileged creditors* sit at the top of the pyramid and will be paid immediately. Claims at this level include, at a minimum, fees paid to insolvency professionals, including administrators, receivers, and court expenses. Depending on the jurisdictions, they may also include certain wages and benefits, and tax liabilities.
- *Secured creditors* come next; this class includes creditors that benefit from collateral security in support of their credit. These creditors are generally financial creditors, some wages and benefits and payments to certain suppliers may also be included. We discuss secured creditors more fully later in this chapter.

- *Unsecured creditors* are the vast majority of creditors, such as financial creditors, the majority of suppliers, and wages.
- *Subordinated creditors* include creditors who have formally agreed to be paid after other creditors, generally in return for higher payments, or are subordinated because of the organizational structure of the group. We discuss subordinated creditors more fully in this chapter.
- *Shareholders* are at the bottom of the totem pole and get paid last.

The higher creditors are in the priority ranking (Figure 8-3), the greater their chances of recovery; conversely, common shareholders generally can expect to recover very little in insolvency. The rest of this chapter is dedicated to discussing how debt structures benefit or penalize creditors in insolvency.

An Illustration of Priority Ranking

Let's assume that a young couple decides to purchase their first house, the value of which is $200,000 including transaction costs. They have $50,000 in savings, and the bank will lend them $100,000 against a first mortgage on the house. The bride's grandmother decides to help them by loaning them the balance of $50,000 at a preferential interest rate.

The purchase of the house is summarized in Table 8-1.

TABLE 8-1: Uses and Sources of Funds

Uses of Funds			Sources of Funds
Purchase of house	$200,000	$100,000	Mortgage loan from bank
		$50,000	Loan from grandmother
		$50,000	Down payment
Total house value	$200,000	$200,000	Total financing

After a couple of years, things take a turn for the worst (at least financially): Both husband and wife lose their jobs in the midst of a recession and can no longer service their mortgage. After a grace period, the

bank seizes the house and sells it to recover its loan, which has become past due. As a result of a weak real estate market in the middle of the recession, the bank is only able to sell the house for $140,000 after paying $20,000 in transaction costs (including foreclosure), as shown in Table 8-2 (for the purpose of this illustration, let's assume that the couple had reduced their mortgage loan by $5,000).

TABLE 8-2: Proceeds from House Sale

Sale price	$160,000
– Transaction costs	– 20,000
Net sale price	$140,000
– Mortgage loan outstanding	– 95,000
Surplus to grandmother	$45,000
Surplus to couple	$ 0

In this transaction, the bank recouped its exposure. The grandmother, who needed the money for long-term care, received the surplus of $45,000, but lost $5,000 of her initial loan. The young couple lost all their investment, or equity.

In this example, the bank was in control of the situation because it had a loan secured by a mortgage on the house. The grandmother had an unsecured loan, which did not give her any control over the situation; however, the young couple's equity limited the grandmother's downside somewhat. The couple had neither control of the situation nor any cushion to protect their investment.

As we will see, trying to differentiate the relative credit risks of various creditor groups can become quite complex.

PRIORITY RANKING: SUBORDINATED CREDITORS

Creditors are subordinated when they rank lower than other creditor groups, either by design or because of circumstances. By definition, the recovery prospects of subordinated creditors in insolvency are worse than

those of more senior creditors. Both creditors and investors acknowledge this greater risk level, and it is reflected in the higher interest rate charged to subordinated debt compared with more senior debt, other things being equal. In the next sections, we discuss the analytical treatment of contractual and structural subordination.

Contractual Subordination

Generally, contractual subordination indicates an explicit agreement from the subordinated debt holders that more senior debt does or may (at a future date) exist.

There are two types of contractual subordination. The first, which we will call ultimate contractual subordination, recognizes that the holders of more senior debt would recover more in the event of a default. The second, which we refer to as going-concern subordination, is far more extensive, as with this form of subordination, the holders of the subordinated debt will be paid interest only after the holders of more senior debt have been paid.

Ultimate Contractual Subordination

The following example illustrates the concept of contractual subordination.

In April 2001, Pogo Producing Company, an independent oil and gas exploration and production company based in Houston, Texas, issued $200 million 8 1/4 percent Series B Senior Subordinated Notes due 2011. Firms with high leverage, such as Pogo at the time, tend to use subordinated debt to extend their debt maturity profile and strengthen their balance sheets. The description of the notes[5] states:

> The notes :
>
> are unsecured obligations of the Company; . . .
>
> are *subordinated in right of payment to all existing and future Senior Indebtedness* of the Company;
>
> are senior in right of payment to all existing and future Subordinated Indebtedness of the Company; and
>
> rank equally with all Pari Passu Indebtedness.

This description is followed by an extensive definition (five pages) of the contractual subordination. Here are the main excerpts:

"Subordination"

Payments of and distributions on or with respect to the Notes Obligations are subordinated, to the extent set forth in the Indenture, in right of payment to the prior payment in full in cash or Cash Equivalents of all existing and future Senior Indebtedness, which includes, without limitation, all Credit Agreement Obligations of the Company. The notes rank prior in right of payment only to other Indebtedness of the Company, which is, by its terms, subordinated in right of payment of the notes. In addition, the Note Obligations are effectively subordinated to all creditors of the Company's Subsidiaries, including trade creditors.

In the event of:

(1) any insolvency or bankruptcy case or proceeding, or any receivership, liquidation, reorganization or other similar case or proceeding in connection therewith, related to the Company (or its creditors, as such) or its properties and assets, or

(2) any liquidation, dissolution or other winding-up of the Company, whether voluntary or involuntary, or

(3) any assignment for the benefit of creditors or other marshalling of assets or liabilities of the Company

all Senior Indebtedness of the Company must be paid in full in cash or Cash Equivalents before any direct or indirect payment or distribution, whether in cash, property or securities . . ., is made on account of the Note Obligations. . . .

By reason of such subordination, in the event of liquidation, receivership, reorganization or insolvency, creditors of the Company who are holders of Senior Indebtedness may recover more, rateably, than the Holders of the notes, and funds which would be otherwise payable to the Holders of the notes will be paid to the holders of the Senior Indebtedness to the extent necessary to pay the Senior Indebtedness in full, and the Company may be unable to meet its obligations in full with respect to the notes. (p. 35)

The description and definition of the subordination is eminently clear: It states that the subordinated obligations rank junior to other sen-

ior indebtedness in the event of insolvency, and hence will be paid only after senior indebtedness has been repaid in full.

Going-Concern Subordination

With this approach, debt holders subordinate their rights to receive both interest and principal payments until more senior debt has been duly serviced. In other words, they cannot call a default until more senior debt holders have been repaid. Various mechanisms exist to defer interest payments on the outstanding debt in the event of nonpayment. Certain debt instruments permit interest payment to be capitalized (or "rolled up"); others opt for a paid-in-kind (PIK) approach, referring to the practice of having interest payments made with common or preferred stock.

Although the terms are tailored to each transaction, the principle remains the same. Here is an extract[6] from the term sheet of a deeply subordinated debt instrument, called here junior mezzanine, that illustrates the underlying idea.

> **Junior Mezzanine yield**
>
> 7% per annum *to be capitalized yearly and payable upon final repayment or prepayment*, as the case may be;
>
> Euribor plus a Margin of 3% per annum to be capitalized until March 2005; from March 2005, payment of the former interests will be subject to certain performance tests to be agreed. *In the event that these ratios are not met, non-payment of interests under the Junior Mezzanine will not constitute an event of default.*

Firms utilizing going-concern subordination generally have limited access to the debt market, either because they are in a start-up mode or because they are experiencing financial distress. We will discuss going-concern subordination more fully toward the end of this chapter in the context of intercreditor agreements.

Structural Subordination

Structural subordination generally arises from the existence of liabilities with various entities of the same group, and refers to the respective position of the various creditors relative to the group's assets in an event of insolvency.

Before illustrating structural subordination through a practical example, we review some of the features affecting creditors' position in insolvency.

- Experience shows that in the vast majority of jurisdictions, the default of one key entity in a group results in a group default.[7]
- Creditors with claims on shares in another company that are rendered illiquid by an event of default are always worse off in insolvency than creditors with claims on real assets, such as cash, receivables, inventories, or equipment.
- As was discussed at the beginning of this chapter, creditors are ranked in classes by law in most jurisdictions.

As a matter of principle, credit analysts should always start by examining the parent company's assets, including shares, loans, financial assets such as shares in unrelated companies, and cash.

We illustrate this situation with the example of the Michelin group, the French tire manufacturer.[8] A word of caution: Structural subordination can take many forms, but the Michelin situation was selected because it raises several interesting points.

FIGURE 8-4: Organizational Structure of the Michelin Group

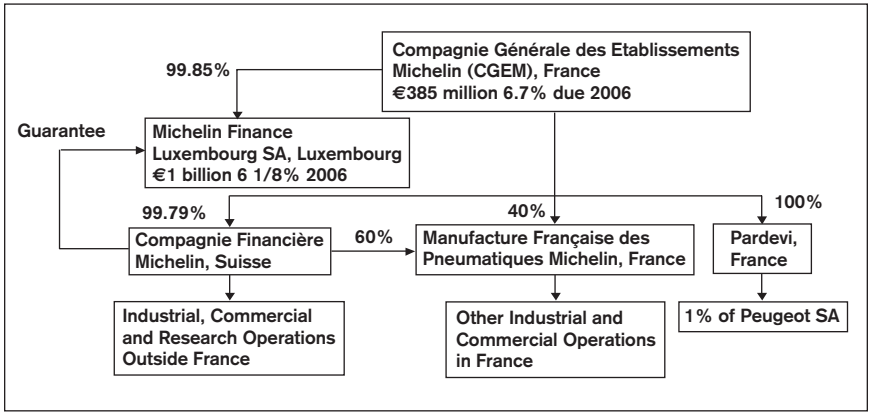


Figure 8-4 shows that:

- Both Compagnie Générale des Etablissements Michelin (CGEM) and Compagnie Financière Michelin (CFM) issue debt directly; in addition, CFM guarantees debt issued by other subsidiaries.
- CGEM is based in France and is the holding company and consolidating entity for the group, although it does not directly hold any operating assets.

- CGEM holds 99.79 percent of CFM, the subholding and finance company for the group, based in Switzerland.
- CGEM holds a 40 percent interest in Manufacture Française des Pneumatiques Michelin (MFPM), the operating entity in France.
- CFM holds a 60 percent interest in MFPM and controls the vast majority of the group's operating assets outside of France.

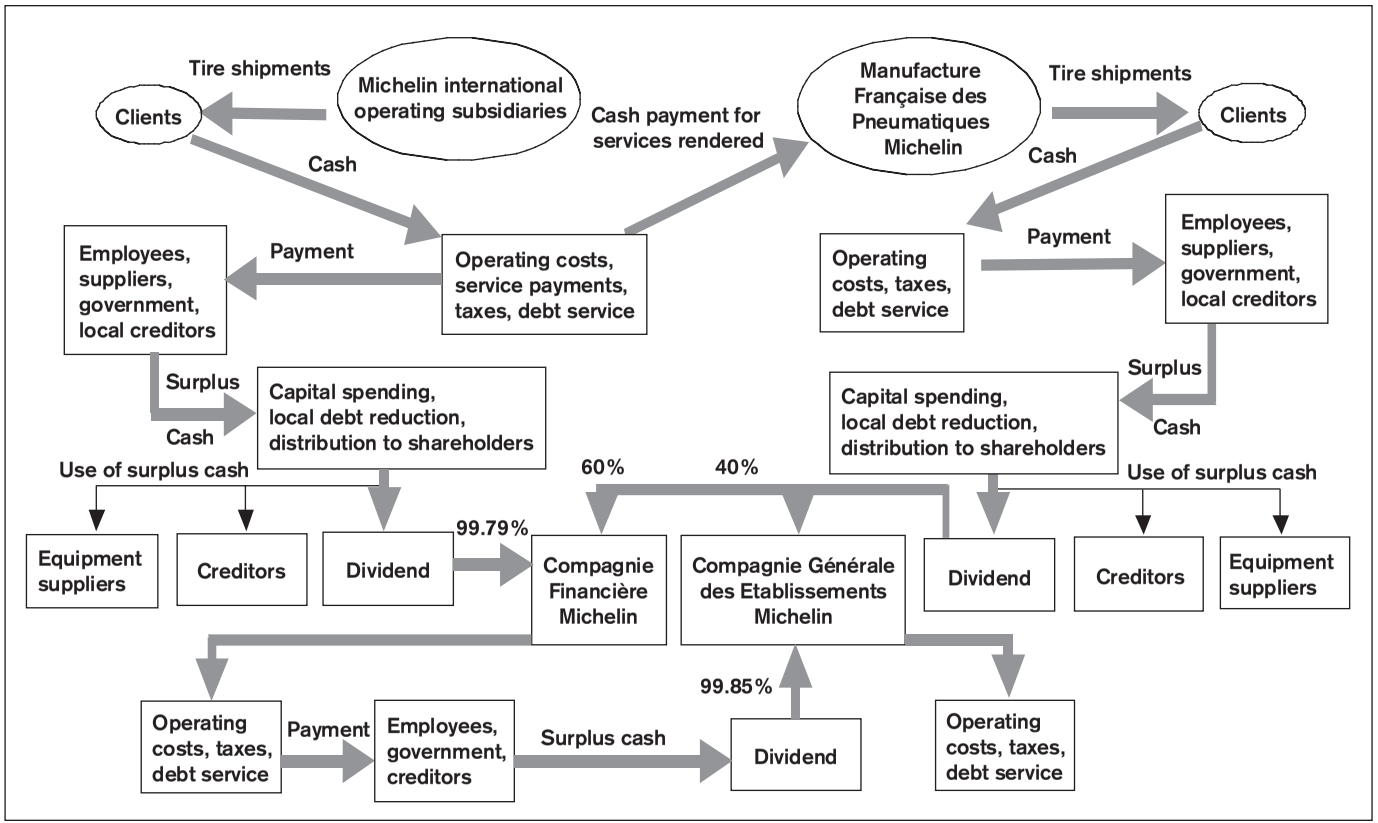
CGEM has issued €305 million in senior unsecured debt due 2006; and CFM guarantees €1 billion in senior unsecured notes due 2006, issued by Michelin Finance Luxembourg SA, a finance entity wholly owned by CGEM. The question credit analysts should ask themselves is whether both issues have the same risk profile, or whether investors require the same return.

To understand the relative position of these two debt issues, credit analysts need to revise the organizational chart of the group and draw the path taken by the cash until it reaches each borrower. Follow the arrows in Figure 8-5 as an example.

In this diagram, we see that:

- All operating subsidiaries (including MFPM) are in most cases the legal owners of the equipment and the ones billing the clients.
- As such, they are closest to the cash, but they must also pay operating expenses (raw materials, suppliers, wages, and so on) and local taxes and service local debt, if any.
- They also make service payments to MFPM, which provides central services such as R&D and general administrative support.
- Only after they make these payments can they dispose of discretionary cash flow, which, as for any other firm, can be utilized for:
  - Capital spending
  - Acquisitions (unlikely, as these activities are generally centralised)
  - Extraordinary debt repayments
  - Dividends to shareholders
- CFM receives the vast majority of operating subsidiary dividends, including 60 percent of MFPM dividends and 99.8 percent of all international subsidiaries' dividends.

FIGURE 8-5: The flow of cash at Michelin



- It is only after CFM has paid its own modest operating expenses and serviced its own large debt that it can pay a dividend to the ultimate parent and holding company, CGEM.

Now let's imagine what would happen in the unlikely event that one of the three key entities (CGEM, CFM, or MFPM) defaulted and the group was restructured, or the assets were liquidated to satisfy creditors' claims. The likely course of event would be as follows:

- Financial creditors of CGEM or CFM, the two key funding entities for the group, remain subordinated to creditors of Michelin's operating subsidiaries (including MFPM), who will get first claim on the operating assets (CGEM and CFM are only shareholders of these entities and, as such, do not directly own any operating assets).
- Michelin's operating subsidiaries are unlikely to have significant financial creditors, as the vast majority of the funding is done at CGEM and CFM.
- Once prior-ranking obligations have been satisfied (modest creditors at operating companies and all other liabilities), creditors of CFM can take control of whatever economic substance is left within the international subsidiaries.
- As CFM is the majority shareholder of MFPM, its creditors would be likely to be in a better position than those of CGEM in terms of the realization of the assets of the French operating entity.
- Only after all of CFM's creditors have been satisfied would the creditors of CGEM be in a position to liquidate whatever is left over.

Importantly (since numerous companies have cascades of intermediate holding companies), apart from MFPM's, it is indifferent from the standpoint of CGEM's creditors, it does not matter whether operating company assets are at CFM or lower: As long as intermediate holdings have debt, their existence increases subordination.

As this illustration shows, this type of structure subordinates creditors of the holding company (CGEM) to creditors of the entities closer (there may be other intermediate holding companies) to the operating assets (CFM), both in terms of ongoing debt service and in terms of ultimate recovery in the event of a default. To reflect this risk of loss in case of default, creditors should require a higher return on debt instruments

issued by CGEM than on debt instruments issued by CFM. It is because the subordination results from the organizational structure of the firm that it is called *structural subordination*.[9]

Treatment of Structural Subordination by Credit Rating Agencies

Rating agencies have developed an impressive body of criteria to distinguish creditors. Standard & Poor's "notching guidelines" explain why not all debt instruments of the same group are rated the same.

> As a rough measure of asset availability, Standard & Poor's looks at the percentage of priority debt and other liabilities relative to all available assets. When this ratio reaches certain threshold levels, the disadvantaged debt is rated one or two notches below the corporate rating, as mentioned above. These threshold levels take into account that it normally takes more than $1 of book assets to satisfy $1 of priority debt. (In the case of secured debt—which limits the priority to the collateral pledged—the remaining assets are still less likely to suffice to repay the unsecured debt, inasmuch as the collateral ordinarily consists of the firm's better assets and often substantially exceeds the amount of the debt).
>
> For investment grade companies, the threshold is 20%. That is, if priority debt and liabilities equal 20% or more of the firm's assets, the lower-priority debt (unsecured, subordinated, or holding company) is rated one notch below the corporate credit rating.
>
> If the corporate credit rating is speculative grade, there are two threshold levels. If priority obligations equal even 15% of the assets, the lower-priority debt is penalized one notch. When priority debt and other liabilities amount to 30% of the assets, lower-priority debt is substantially disadvantaged, and is, therefore, differentiated by two notches.

Standard & Poor's Corporate Ratings Criteria, 2002, pp. 63–64.

The determinant utilized by Standard & Poor's (the amount of priority debt) has been verified by empirical studies in the United States,[10] which confirm that the "debt cushion" is one of the key determinants of recovery for the senior debt. Although useful in differentiating the rela-

tive ranking of debt instruments, this approach does not quantify the potential risk of loss.

We concluded in our earlier analysis that the debt instrument issued by Michelin Finance Luxembourg SA, an investment vehicle wholly owned by CGEM, has a lower credit risk than that issued by CGEM directly, solely because it benefited from the guarantee of CFM. In other words, the guarantee places the credit risk of the issuer on a par with that of the guarantor, CFM.

While the preceding illustration described a fairly well-documented case of structural subordination, the actual level of subordination is often difficult to assess precisely, given the lack of publicly available information.[11] Analysts must gauge whether the amount of priority liabilities could impair recovery prospects for creditors of the parent company. Credit analysts should remain aware that real-life situations do not easily fit one mold and that they will have to use subjective judgment a lot.

Mitigants of Structural Subordination

Being conscious of structural subordination issues, and the additional funding cost that they raise for corporations, market participants have developed structures that may mitigate or even cancel out the subordination. Credit analysts should be aware of these mitigating factors, as well as other structures that lessen the impact of structural subordination. To help in this process, we have identified a number of common structures.

Upstream Guarantees

For various reasons, firms with international operations tend to incur debt or debtlike obligations locally. Large capital goods firms, such as Siemens, Toshiba, or General Electric, will fund projects locally for tax reasons; they, and many others, will also rent space, incurring operating lease obligations that are debtlike in nature; finally, they will employ large numbers of people and will contribute to local pension schemes that are also debtlike.

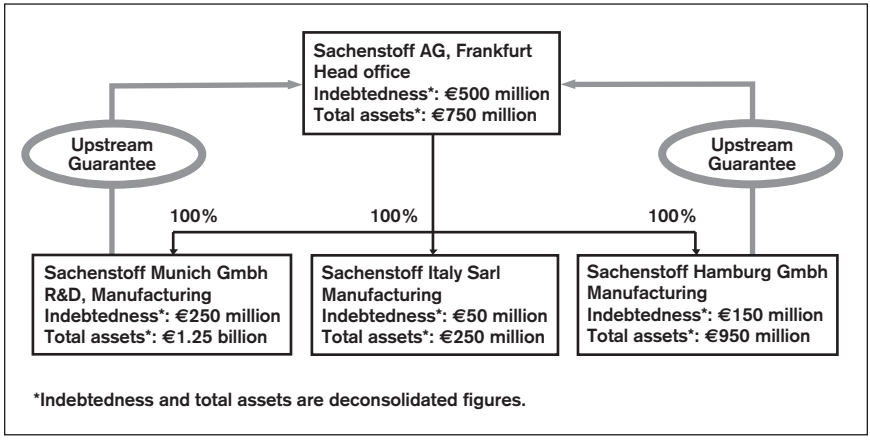
In other situations, companies such as Michelin utilize separate financing units to raise funds. Often, but not always, this is the sole purpose of these entities, and they do not have any tangible assets.

In order to mitigate structural subordination, those entities within the group with the greatest amount of economic substance irrevocably guarantee the obligations of the parent company or the issuing entity on a senior basis. In the event of default, the assets of both entities would probably be lumped together and would have to satisfy the obligations (at

least those benefiting from a guarantee) of both guarantor and beneficiary. As a result of the guarantee, the debt obligations of both entities would share the same level of seniority and would rank *pari passu*. The pari passu clause is very common in credit agreements of all stripes and simply indicates that there is no subordination of any type between two classes of debt. Put differently, it means that creditors owning the two debt instruments are on equal footing, or at *par*.

Figure 8-6 demonstrates how an upstream guarantee offsets the structural subordination (this is a fictional situation).

FIGURE 8-6: Subordination Mitigant: Upstream Guarantees



- Sachenstoff AG, the parent company, plays an administrative role; as such, its only assets are a few buildings where its marketing, IT, and accounting departments are located.
- However, the parent company also plays a treasury function and has issued a €500 million bond.
- The company operates through three wholly owned subsidiaries, Sachenstoff Munich Gmbh, Sachenstoff Hamburg, and Sachenstoff Italy Sarl, which operate the manufacturing divisions and engage in R&D.
- For historical and tax reasons, all three subsidiaries have incurred some indebtedness to finance their operations.
- In order to ensure that the creditors of the parent rank equal to the creditors of subsidiaries, the subsidiaries guarantee the obli-

gations of the parent on a senior basis (even if the subsidiaries have no financial liabilities).

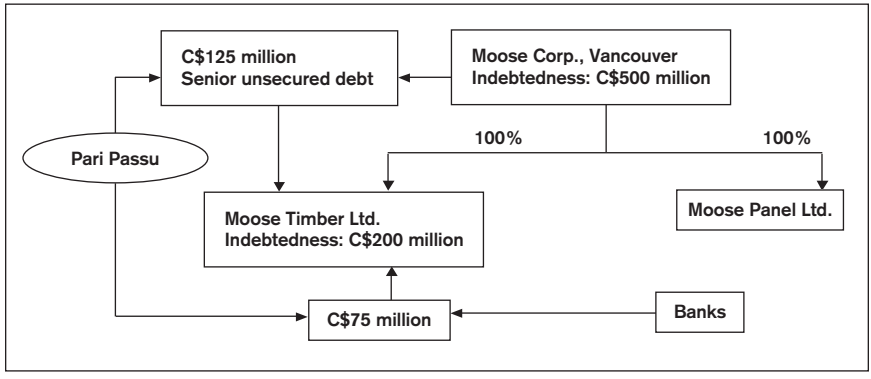
Upstream guarantees are very effective in cancelling out structural subordination, although the language of the guarantee should be checked closely. In most jurisdictions, a senior officer and/or a resolution of the board of the guarantor must state that the guarantor is authorized to guarantee the obligations of its parent. Also, as for any guarantees, it should use such words as *unconditional* and *irrevocable* and should waive any defenses available to the guarantor.

While permitted, provided certain conditions are met, the use of upstream guarantees may be limited in certain jurisdictions (France, the United States, Sweden, and Italy, among others) as a result of a potential for fraudulent conveyance. Such laws have been put in place to avoid the situation where a distressed subsidiary could convey economic substance to another entity through an upstream guarantee, in an attempt to protect its assets against creditors' claims. In certain jurisdictions, the legal form of incorporation of the guarantor may prevent it from extending guarantees, raising the risk that the guarantee could be invalid at the time when it is required. As a result of these risks, credit analysts should always require a legal opinion.

Intercompany Loans

Another way of overcoming structural subordination, sometimes used in tandem with upstream guarantees,[12] involves the use of intercompany loans from the parent to the entities that control the operating assets. This

FIGURE 8-7: Subordination Mitigant: Inter-Company Loans



approach is less direct and more complicated to document than upstream guarantees.

When a parent company extends a loan to a subsidiary, as in Figure 8-7, it is not only the shareholder of the subsidiary, but also its creditor. This loan, if documented properly, could also rank *pari passu* with other obligations of the subsidiary, thereby eliminating structural subordination risk.

In summary, for these types of structures to work, credit analysts should ensure that the loans are long term (so that they will still be outstanding if a potential default occurs), senior, well documented, and extended to the larger, cash-generating subsidiaries.

Portfolio Diversity and Concentration of Liabilities

Other mitigants of structural subordination, and of the risk of lower recovery prospects for parent company creditors, include the diversity of the holding company's asset portfolio and the concentration of liabilities within the portfolio.

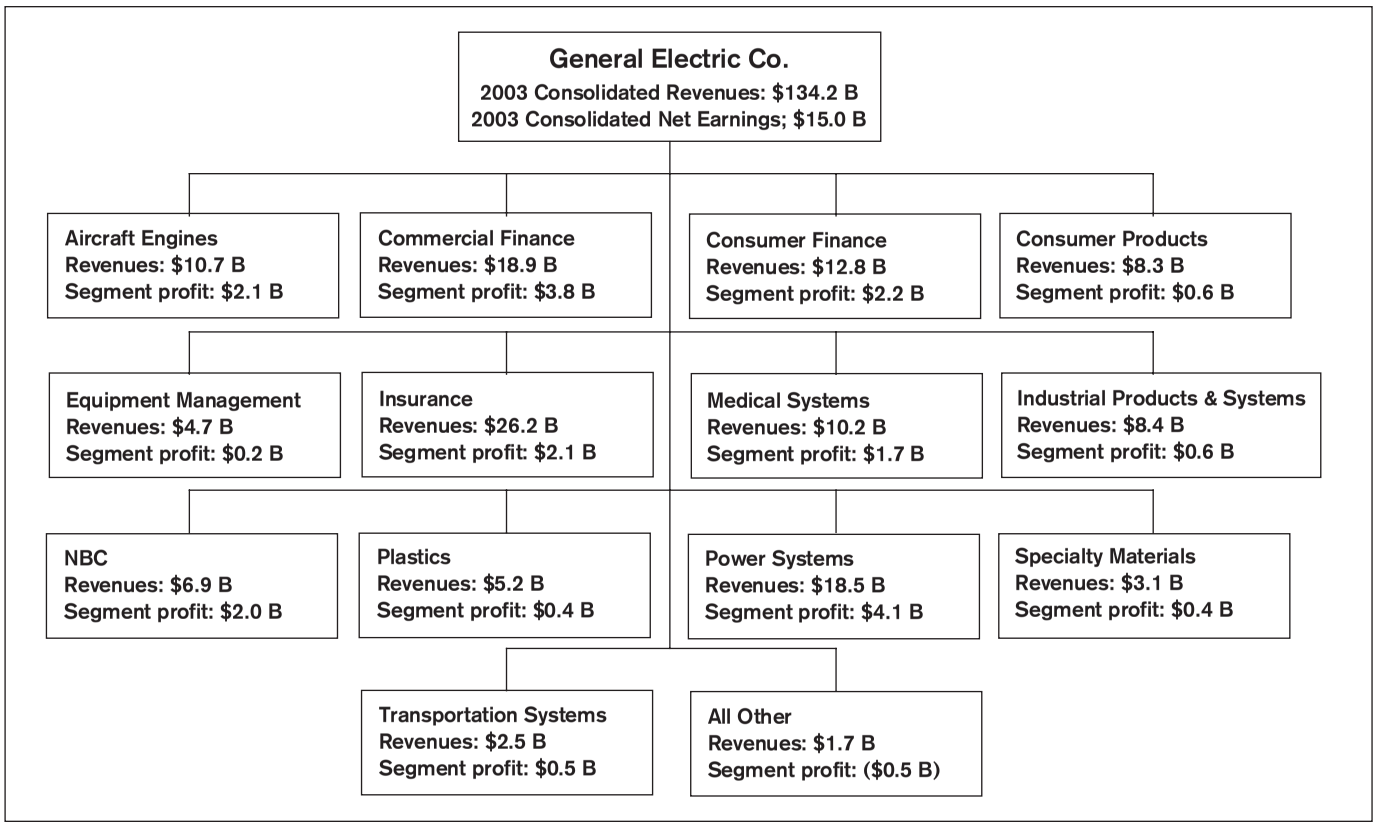
In the first case, recovery prospects for creditors of the parent company would be enhanced if the operating assets of subsidiaries—measured as a percentage of total current and fixed assets—are diversified geographically and are organized as separate business units (the analysis should focus on geographic and business deconsolidation). In the event that a diversified holding company that engaged in many different businesses, such as General Electric Co., experienced financial distress, it would be unlikely that all of the divisions would experience the same level of distress at the same time.

As Figure 8-8 shows, GE reports financial information for 14 businesses, which are themselves made up of numerous subdivisions; GE breaks down its businesses between short- and long-cycle sectors; finally, the firm operates in over 100 countries and has manufacturing facilities in more than 25 nations. In credit risk management terms, such a structure reflects a high level of de-correlation that would result in higher recovery prospects; however, in real terms, the cost of chasing the money is likely to be high.

Conversely, concentration of liabilities in only certain subsidiaries could indicate that economic value is preserved in others that are less indebted. In the event of a default of the parent, that value would hopefully be accessible to the creditors of the parent company.

Other mitigating factors could include the presence of significant operating assets at the parent level that would offset some of the structural subordination risk.

FIGURE 8-8: Subordination Mitigant: Portfolio Diversity



Industrial versus Investment Holding Companies

Once in a while, credit analysts may encounter "strange" or byzantine entities, the business of which is unclear: They control or have ownership interests in a variety of firms, which may or may not be in the same lines of business. To make things more complicated, analysts will find debt obligations at different levels of the organization.

To better understand these entities, analysts should first differentiate between industrial companies that maintain operations through partly or wholly owned subsidiaries and investment holding companies that have investments in publicly traded industrial firms.

Industrial holding companies would have the following characteristics:

- The subsidiaries are engaged in similar lines of business.
- The parent and its subsidiaries share the same name.
- The majority of the subsidiaries are wholly owned (or clearly majority owned).
- The parent and the subsidiaries have the same support services (administrative, IT, and so on) and other levels of vertical integration.
- Cash management and treasury are handled centrally, local regulations permitting.

The vast majority of global firms are structured in this fashion. The default of one key subsidiary would be likely to trigger a cascade of defaults all the way to the parent, because of the close integration. As a result, the approach to structural subordination should be to measure the amount of priority liabilities relative to parent liabilities. For industrial holding companies, the corporate credit analysis should focus on a consolidated approach.

Investment holding companies would have a different set of characteristics:

- The investment holding company regularly buys and sells investments.
- The investment portfolio shows a degree of business diversification and avoids major concentrations.
- The investments are generally minority stakes and are generally liquid (publicly listed firms).
- There is no business integration or cash pooling.

In contrast to industrial holding companies, investment holding companies such as IFIL from Italy, Investor AB from Sweden, or Wendel Investissement from France will be assessed on the liquidity and diversity of their portfolios (a useful test is to compare net debt with portfolio asset value), and to a

lesser degree on the dividend payout capacity of their investments. If one investment turns sour and defaults, it would not trigger defaults in other parts of the portfolio. As a result, debt at the holding company is not likely to be structurally subordinated to debt held by firms that are part of the investment portfolio. Put differently, structural subordination risk is not relevant, since the corporate credit analysis will not be based on a consolidated view, but directly on the parent's balance sheet.

When one investment constitutes a significant percentage of assets or income, the holding company controls a majority stake that must be consolidated in its accounts, or a combination of these, a mixed approach using industrial and investment company methodology should be used.

PRIORITY RANKING: SECURED CREDITORS

Creditors are secured when they benefit from security or collateral (both terms will be used interchangeably) in support of a debt instrument. The underlying rationale is simple: If the company defaults, the lender can repossess and realize the collateral to satisfy its claims against the company.

As with most simple things, the devil is in the details. In secured lending, it is necessary to ensure that a security package will be effective when it is needed, in other words, in an event of default. A lender may want to achieve two very different objectives by requiring collateral:

- It may want to ensure that no other financial creditors will rank more senior in insolvency, enhancing its recovery prospects.
- It may want to achieve full recovery in an event of default.

These two approaches have spawned different types of transactions. In this section, we present different types of collateral and their respective quality and liquidity.

Collateral: Pledgeable Assets

Many different types of collateral exist, and they can be classified by underlying asset types (financial, physical, intangible) or by degree of liquidity. Also, their use and efficacy in insolvency will vary significantly across jurisdictions. Table 8-3 lists the most common types of collateral with some general comments on their quality and liquidity.

TABLE 8-3: Types of Collateral

	Type of Collateral	Comments on Quality and Liquidity
Financial	Cash/bank accounts	The most liquid form of collateral. Foreign exchange risk exists if liabilities are in a different currency from the cash.
	Traded securities	Very liquid if investments are short-term (less than 30 days) fixed-income instruments that are at least A-rated by a rating agency. Quality and liquidity decline with longer-term, lower-rated instruments or equities.
	Receivables (including rents)	Generally liquid, because of their self-liquidating nature. To assess quality, analysts must consider turnover, historical rates of delinquencies and write-offs, and client, sector, or geographic concentrations.
	Insurance policies	Generally liquid if the insurance company of good quality and the contract is strong.
Physical	Inventories/ stocks	Less liquid form of collateral. Finished stocks, semifinished goods, and raw materials should be differentiated, with the last generally being the most liquid.
	Transportation equipment	Less liquid form of collateral. Include cars, trucks, vessels, aircraft, and trains ("rolling stock"). Liquidity and quality depend on age and state of repair and the conditions in the underlying markets (freight, airlines, and so on).
	Real estate (buildings)	Less liquid form of collateral. Includes residential, office, commercial, or industrial buildings. Quality and liquidity depend on location, state of repair, and conditions in the underlying markets for office, commercial, and industrial real estate.
	Equipment	Less liquid form of collateral. Includes a wide range of assets. Liquidity and quality depend on state of repair and age of equipment, economic use, and so on.
	Rights and patents	Less liquid form of collateral. Include copyrights for print, music, and images and patents for pharmaceuticals, technology, and so on. Quality and liquidity depend on diversity of rights/patents portfolio, "shelf

		life" of the underlying product, and transferability clauses.
Intangible	Contracts and concessions	Less liquid form of collateral. Include a wide range of business agreements (construction, services, and so on). Quality and liquidity will depend on counterparties to the contract, the strength of the agreement, and transferability clauses.
	Nontraded securities	Least liquid form of collateral. Include shares in subsidiaries held by a parent company. Quality and liquidity depend on the level of economic interdependence between different parts of the organization.
	Intangible assets	Least liquid form of collateral. Include goodwill and brands (including "fonds de commerce" in France). Quality and liquidity are always very difficult to assess in insolvency, as value is typically tied to the good fortunes of the firm..

In Table 8-3, collateral was grouped into four different subgroups:

- *Collateral secured by financial assets.* These are the most liquid assets and the easiest to assess in terms of quality, as credit analysts can obtain volatility and/or performance data. These types of collateral usually lend themselves to a fairly reliable valuation process.
- *Collateral secured by tangible assets.* Liquidity will range from good-quality for inventories of raw materials (it is fairly easy to sell stocks of grain or barrels of oil in most markets) to less than satisfactory for outdated equipment (who would buy equipment to make black-and-white computer screens?). In most markets for real estate and transportation assets, there is a significant body of data that permits satisfactory valuation. As we will see later in this chapter, both types of assets can be subject to fairly complex forms of financing, as most jurisdictions provide particular legal frameworks for borrowers and creditors.
- *Collateral secured by agreements of various types.* Unless a firm can demonstrate a significant track record and diversity of its rights, patents, or contracts, the liquidity and quality of these will be

difficult to ascertain. Even if these agreements are transferable to a new owner, it is not certain that the counterparties to the agreement will agree to work with that owner, or that the new owner will have the technical ability to sell or perform under these agreements.

- *Intangible assets and shares in subsidiaries.* Both forms of collateral can provide some degree of support for a particular financing, although valuing this support will be very difficult, perhaps impossible. In both cases, the value of the collateral is related to the value of the company itself, and in insolvency, the value of the latter would probably be severely impaired.

Granting and Perfecting Collateral

Granting Collateral

Borrowers and creditors need to document by contract that the security interest was created and granted to the secured counterparty, normally a financing institution, or a trustee, collateral agent, depository, or other fiduciary.

To ensure that this has been done correctly, the credit analyst must identify certain key words and documents.

- In the Offering Circular, the description of the securities should include the word *secured*.
- There should be a "granting" clause in the clauses that start with *whereas* (the "recitals")
- In addition to the Offering Circular, there should be security agreements, mortgages, pledge agreements, charges, or deeds, the "granting" provisions of which should mirror those of the Offering Circular.

The key sentence to create a security interest should read along those lines:

> . . . to secure payment of the Bonds, the Issuer has granted, bargained, assigned, transferred, conveyed, mortgaged, pledged and confirm and does hereby grant, bargain, assign, transfer, convey, mortgage, pledge and confirm a first (second, third, . . .) priority interest in and mortgage lien (charge) on all right, title and interest in . . .

In the following example,[13] drawn from the Guarantee and Collateral Agreement made by MedQuest, Inc., an insurance company, and its bankers, the borrower pledges all its assets as collateral to secure its debt obligations:

> "Each Grantor hereby *assigns and transfers* to the Administrative Agent, and hereby grants the Administrative Agent, for the ratable benefit of the Lenders, *a security interest* in such Grantor's right, title and interest *in all of the following property now owned or at any time hereafter acquired by such Grantor or in which such Grantor now has or at any time in the future may acquire any right, title or interest* (collectively, the "Collateral"), *as collateral security for the prompt and complete payment and performance when due* (whether at the stated maturity, by acceleration or otherwise) *of such Grantor's Obligations*,:
>
> (a) all Accounts;
>
> (b) all Chattel Paper;
>
> (c) all Contracts;
>
> (d) all Deposit Accounts;
>
> (e) all Documents;
>
> (f) all Equipment;
>
> (g) all General Intangibles;
>
> (h) all Instruments;
>
> (i) all Intellectual Property;
>
> (j) all Inventory;
>
> (k) all Investment Property;
>
> (l) all Letter-of-Credit Rights;
>
> (m) all Goods;
>
> (n) all other property not otherwise described above;
>
> (o) all books and records pertaining to the Collateral; and
>
> (p) to the extent not otherwise included, all Proceeds, Supporting Obligations and products of any and all of the foregoing and all collateral security and guarantees given by any Person with respect to any of the foregoing; . . .

It is absolutely essential for borrowers and lenders to document the nature of the security, but it is not a sufficient step to ensure that the collateral will really be there when it is required.

Perfection of Collateral

Even before thinking about the value of the collateral, creditors must verify that the borrower has publicly filed and stated that the beneficiary of the collateral has prior rights to the pledged collateral.

In other words, this means that, for many forms of collateral, the pledge must be recorded in a public registry. In its simplest form, an interest in a real estate property is recorded with the Registrar of Deeds in the United States, in the Conservation des Hypothèques in France, or in the *houmu kyoku* in Japan (registry offices for all deeds). Several forms of collateral (real estate, intellectual property, transportation equipment) have such registries in many countries.

In case of insolvency, should there be claims from several creditors using the same collateral as security, perfection ensures that these would be ranked according to the date of registration.

Depending on the jurisdiction and the type of collateral, creditors should be concerned that perfection can lapse after a set number of years, or if the borrower changes its name or status. If perfection lapses, secured creditors lose their priority, and after they re-perfect, they will rank junior to creditors who used to rank after them.

The following covenant, drawn from the Medquest Inc. Guarantee and Collateral Agreement (see previous page), is a good illustration of the borrower's obligation to maintain perfection.

> Maintenance of perfected security interest; further documentation
>
> (a) Such Grantor shall maintain the security interest created by this Agreement as a perfected security interest having at least the priority described [earlier in the document] and shall use commercially reasonable efforts to defend such security interest against any material claims and demands of all Persons whomsoever (other than Persons claiming by, through or under the Admnistrative Agent), subject to the rights of such Grantor under the Loan Documents to dispose of the Collateral.

Financial assets are perfected by contract, which will confirm the identity of the ultimate beneficiary of such assets. Because contracts remain of a private nature, it will be difficult for creditors to be absolutely certain that there will be no competing claims when they want to repossess the collateral, unless they have actual possession.

Even very experienced credit analysts will request a legal opinion from their lawyers to ensure that the security has been properly perfected and to confirm priority ranking at closing.

If the legal opinion confirms perfection and priority ranking, and the language indicated in the previous section appears in the security package, chances are that the collateral should be effective in insolvency. However, this does not provide any indication about the likely course of events during the insolvency process, nor does it provide any indication about the value of the collateral.

ASSET-BASED TRANSACTIONS

Secured lending has evolved to include financings of power projects; real estate; transportation assets such as railroad equipment, aircraft, and ships; and even the vast field of securitizations. These types of financing, called structured finance by many market participants, have in common a specific well-defined set of cash flows that can be isolated to an individual asset or pool of assets.

These assets are discrete in nature, and they have an identifiable value that is independent from that of the firm that operates or uses them. In the case of a building, a tenant can usually be replaced by another one; likewise, if American Airlines no longer utilizes certain aircrafts, perhaps Singapore Airlines will.

Structured finance transactions maximize debt leverage by enhancing cash flow predictability and recovery prospects through a combination of:

- Transfer of assets into a single-purpose financing vehicle
- Appointment of servicers and trustees
- Modeling of cash flows to assess payment probability
- Enhancement of credit by "tranching" debt into various subordinated layers
- Establishment of a liquidity facility
- Tailor-making debt terms, to be governed by covenants and triggers

Structured finance is the logical continuation of plain vanilla secured lending, and is sometimes referred to as "secured loans on steroids."

An entire book could be dedicated to credit analysis of structured financings, given the variety and complexity of such transactions, which are primarily private. The modest ambition of this section is to review each building block outlined earlier in order to provide an introduction to the key concepts.

True Sale and Bankruptcy Remoteness

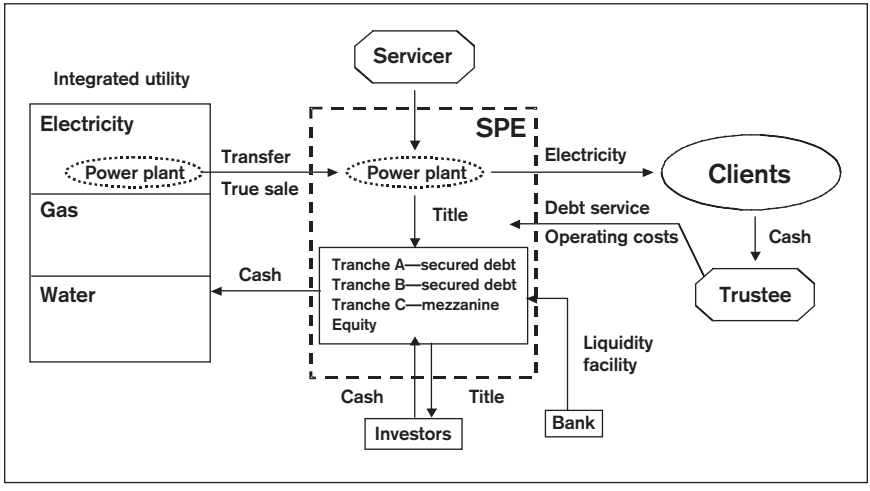
The underlying principle of structured finance is to provide certainty to creditors that they will have the legal capacity to control the secured assets in the event of distress, and that their claims to these assets will not be contested in or out of bankruptcy.

To that end, the underlying assets must be transferred from the existing operator to a "special-purpose entity" (SPE), in such a way that these assets will not be considered part of the operator's estate and that the cash flows from them will not be subject to a stay in the event of the bankruptcy of that operator. This process is known as a true sale. For instance, in aircraft finance, creditors should be able to repossess the aircraft that served as collateral for a secured loan without having to go through a full bankruptcy process of the underlying airline company. With this process, assets are placed in a vehicle that is bankruptcy-remote. Figure 8-9 shows the roles of the various entities before and after a true sale.

The SPE should have the following five characteristics:

- Restrictions on objects and powers
- Debt limitations
- Independent director
- No merger or reorganization
- Separateness

FIGURE 8-9: Generic Structured Finance Transaction



It should be said that, barring a specific legal framework guaranteeing bankruptcy-remoteness, legal risks exist even with the most robust structures. In rare instances, bankruptcy courts have reconsolidated the assets with those of the operating company, effectively unwinding the SPE and the protections it affords its creditors.

- *Restrictions on objects and powers.* The fundamental characteristic of an SPE is that its corporate objects and powers are restricted as closely as possible to the bare activities necessary to effect the transaction. The corporation's reason for existence is expressed in the "objects" clause of its articles of incorporation. Save for the power to conduct operations reasonably incidental to the SPE's primary business, inflexibility of purpose has its advantages.
- *Debt limitations.* A characteristic related to the foregoing is the restriction on issuance of other debt by an SPE; other debt suggests other business, and other business, in turn, may suggest other credit risks.
- *Independent director.* In many structured transactions, a non-SPE operating entity parent establishes the SPE. The directors of the parent may also serve as the directors of the SPE. These interlocking directorates present a potential conflict of interest: If the parent becomes insolvent at a time when the SPE is performing adequately, the directors of the parent entity may have an incentive to bridge the corporate separateness of the SPE and its parent by filing for bankruptcy for the SPE and consolidating its assets with those of the parent. The organic documents of the SPE may require that in voting on bankruptcy matters, the independent director take into account the interests of the noteholders as well as the stockholders.
- *No merger or reorganization.* This requirement ensures that any merger with a non-SPE or any reorganization, dissolution, liquidation, consolidation, merger, or asset sale will not undermine the bankruptcy-remote status of the SPE.
- *Separateness.* The SPE must hold itself out to the world as an independent entity, on the theory that if the entity does not act as if it had independent existence, there is no reason to assume that a court will conclude that it has one.[14] This means also, very practically, that the SPE must have separate accounts through which the cash flows to avoid any confusion.

Credit analysis is supposed to assess the capacity and the willingness to service debt in a timely fashion. By effectively restricting the strategic and operating flexibility of the SPE's management, these five characteristics, taken together, strongly limit the potential unwillingness of that management to service its debt obligations.

Servicers and Trustees

In the absence of an operator for the assets that are transferred to an SPE, the new owners must hire external help to operate the assets and perform control functions.

- In a structured finance transaction, the *servicer* is the firm that operates the assets on behalf of the new owners. In the case of aircraft and shipping transactions or project finance, the servicer may be the same firm as the original operator. In real estate transactions, the servicer may be a property management company. In the event that the servicer "disappears" during the course of the transaction, credit analysts must be able to identify another firm that could perform the same tasks (sometimes referred to as a "back-up servicer").
- The *trustee* is an entity, preferably totally independent from the servicer or the original owner of the assets, whose role is to collect payments from the servicer and to perform monitoring, custodial, and administrative functions. In particular, it is the role of the trustee to ensure that funds received on behalf of the SPE are not available to the servicer, particularly in the event of a default of the latter ("commingling risk").

Identification of Cash Flow Drivers and Modeling

If, in most respects, asset insulation and bankruptcy-remoteness take care of debt-servicing willingness, cash flow modeling should permit credit analysts to get a good idea of the SPE's debt-servicing capacity.

Because the activity of the SPE is limited to a single purpose (to own and receive the cash flows from a building, a power plant, aircraft, or other such assets), it is possible to develop very detailed cash flow models and stress the key cash flow drivers to determine how much is available for debt service. Most structured finance transactions focus on key measurements such as the "debt-service coverage ratio" (DSCR), which is

in most cases defined as free cash after cash taxes and maintenance capital expenditures, but before debt service. This, in turn, will determine the maximum debt leverage the transaction can withstand, making assumptions concerning debt costs and amortization requirements.

Typical cash flow models for structured transactions are very long and complex spreadsheets that break down key revenue, cost, and investment drivers in minute detail. If contingencies exist, such as business interruption, pension costs, guarantees, or others, every effort will be made to quantify these and include them in the cash flow model.

As in other modeling exercises, credit analysts should not lose track of the "big picture," which often can be summarized in terms of price and volumes, costs and maintenance capital expenditures, and can follow the approaches developed elsewhere in this book.

Debt Term, Priority Ranking, and Intercreditor Agreements

Once free cash flow (as defined in Chapter 6) and debt service has been identified and modeled, creditors and borrowers have to begin the real structuring work. This will include negotiations of debt term, priority ranking within the capital structure, agreements governing relationships between the various debt holders, and debt amortization.

- Debt term is a function of the entity's business risk and competitive environment, or, to put it differently, of cash flow predictability and volatility. Creditors may be willing to advance money for 30 years or more with a bullet repayment at maturity for a water utility, given a supportive regulatory environment and well-maintained operating assets. Conversely, lenders seldom lend for more than 10 years in typical leveraged buyouts (LBOs), with part of the debt fully amortizing. Borrowers will manage to wrest better terms and conditions from creditors if there is liquidity in the credit markets, but when times are tight, lenders can be more restrictive.
- Most structured finance transactions have several debt layers, often referred to as "tranches" or debt classes, which are contractually subordinated to one another. In plain vanilla LBO structures, secured bank debt ranks senior to a high-yield bond or mezzanine loan, which in turn ranks senior to shareholder loans or vendor financing. In more complex transactions, such

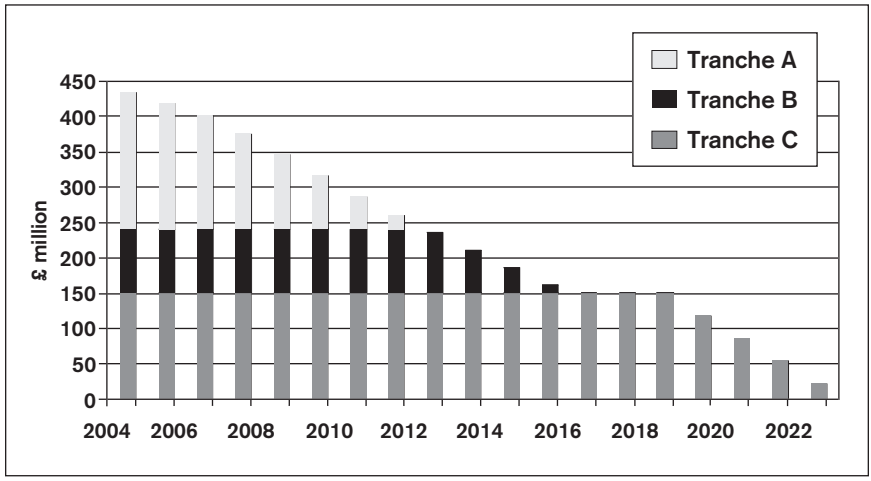
as corporate securitizations[15] or project financings, there can be even more numerous debt classes, which can be called tranche A, tranche B, and so on.

- Intercreditor agreements govern relationships between the different classes of creditors and generally restrict subordinated creditors from accelerating their claims in case of nonpayment. This aspect is absolutely fundamental. Cash available for debt service goes first to the most senior debt class, then to the next one if there is enough cash left, and so on. If the subordinated debt cannot be serviced, interest may be capitalized (or "rolled up"), or paid in kind (PIK often in the form of preferred or common stock), but the holders of that debt class cannot call a default. This "waterfall" process means that each debt tranche has a different default risk. Provided that the legal structure is robust, this leads creditors to require a different risk premium for each debt class, and credit rating agencies to assign a different rating to each debt tranche.
- The seniormost debt not only has priority in being serviced, as described earlier, but also has to be amortized before other debt tranches are. Credit analysts should view with the utmost suspicion any attempt to tamper with the principle of sequential amortization for any debt class that does not rank pari passu (see Figure 8-10). If this principle were betrayed, it would change the agreed-upon priority ranking, with more junior debt holders being repaid first.

Liquidity Facility

In a structured transaction, a liquidity facility can play two roles. The first, most transparent one is to provide a liquidity bridge in the event of a mismatch between the time when cash flows are collected and the time when debt service is due. Second, a liquidity facility provides comfort to creditors. In particular, there may be some uncertainty in the minds of creditors as to whether they would be able to seize control of the assets immediately in the event of financial distress—the outcome may be certain (the bankruptcy court will award control of the assets to the creditors), but the timing of it is not. In this instance, a liquidity facility dedicated to the seniormost debt holders would act as a substitute for debt service during that time, preventing an actual default.

FIGURE 8-10: Sequential Debt Amortization



Covenants, Triggers, Security, and Documentation Requirements

Structured finance transactions are tailor-made and can take months to put together, although a level of standardization has developed, particularly for the more common types, such as LBOs. Despite the complexity, creditors all try to achieve as great a degree of control over the cash flow as possible through various means.

- The use of covenants in structured transactions is the same as in plain vanilla corporate debt transactions: They determine what the operator of the asset can and cannot do (please refer to Chapter 7).
- Triggers are generally financial covenants that, when breached, prompt a particular action to protect bondholders from a deteriorating situation. The most common trigger in such transactions is based on a debt service ratio coverage (DSCR). Structured finance may include one or several thresholds. In the first case, a breach of the trigger would be an event of default. However, certain transactions may be structured in such a way that if a first threshold is breached, bondholders have the right to appoint a consultant to review the operations of the company;

a second threshold may permit creditors to appoint a receiver or change management, effectively giving the creditors the right to restructure or sell the assets.

- The security package for structured transactions is generally very thorough, as creditors will ensure that no asset remains uncollateralized. Therefore, it will include all present and future financial, fixed, and intangible assets, as well as contractual claims, and can be very tedious to review. Additionally, the security package is completed by strong negative pledge language to ensure that no other creditors, present or future, may at any time threaten the established priority ranking of existing creditors.
- Documentation requirements are exceedingly high in structured transactions. Creditors generally ask for independent legal opinions on pretty much everything that matters, ranging from the essential true sale to collateral registration.

APPENDIX: LBOs AT A GLANCE

Leveraged buyout transactions (LBOs) are at one end of the structured finance spectrum, in that they have most of the characteristics indicated earlier, with the exception of the all-important bankruptcy remoteness. In the leveraged loan market, LBO transactions represent by the largest category, with smaller uses made by acquisitions and refinancing of existing leveraged transactions.

In a typical LBO, a private equity sponsor,[16] or a group of them, buys an existing business with the help of significant debt leverage. Large firms that are spinning off entire divisions often sell them to private equity sponsors. In other instances, private equity sponsors acquire smaller, publicly or family-owned firms.

Their objective is to rapidly increase the target company's cash flow generation by increasing revenues and reducing costs. While private equity firms usually do not take dividends, they look for a short- to medium term (two to three years) "exit strategy," which may include a sale to a competitor of the target company, an initial public offering (IPO) on the stock market, or even a refinancing of the debt in the form of a secondary LBO.

A Fairly Uniform Capital Structure

The capital structures of most LBO transactions are broadly similar, although differences exist between the United States and Europe (see Figure 8-11):

- Between 40 and 50 percent of the total is made up of senior secured debt, which is in turn generally subdivided into several tranches (generally two in the United States and three in Europe) and a revolving credit facility, all ranking pari passu with one another and priced on a floating (LIBOR plus spread) basis:
  - Revolving credit facility, generally committed for three to five years
  - Term loan A, amortizing
  - Term loans B and C, with bullet repayment, which are longer-term than term loan A

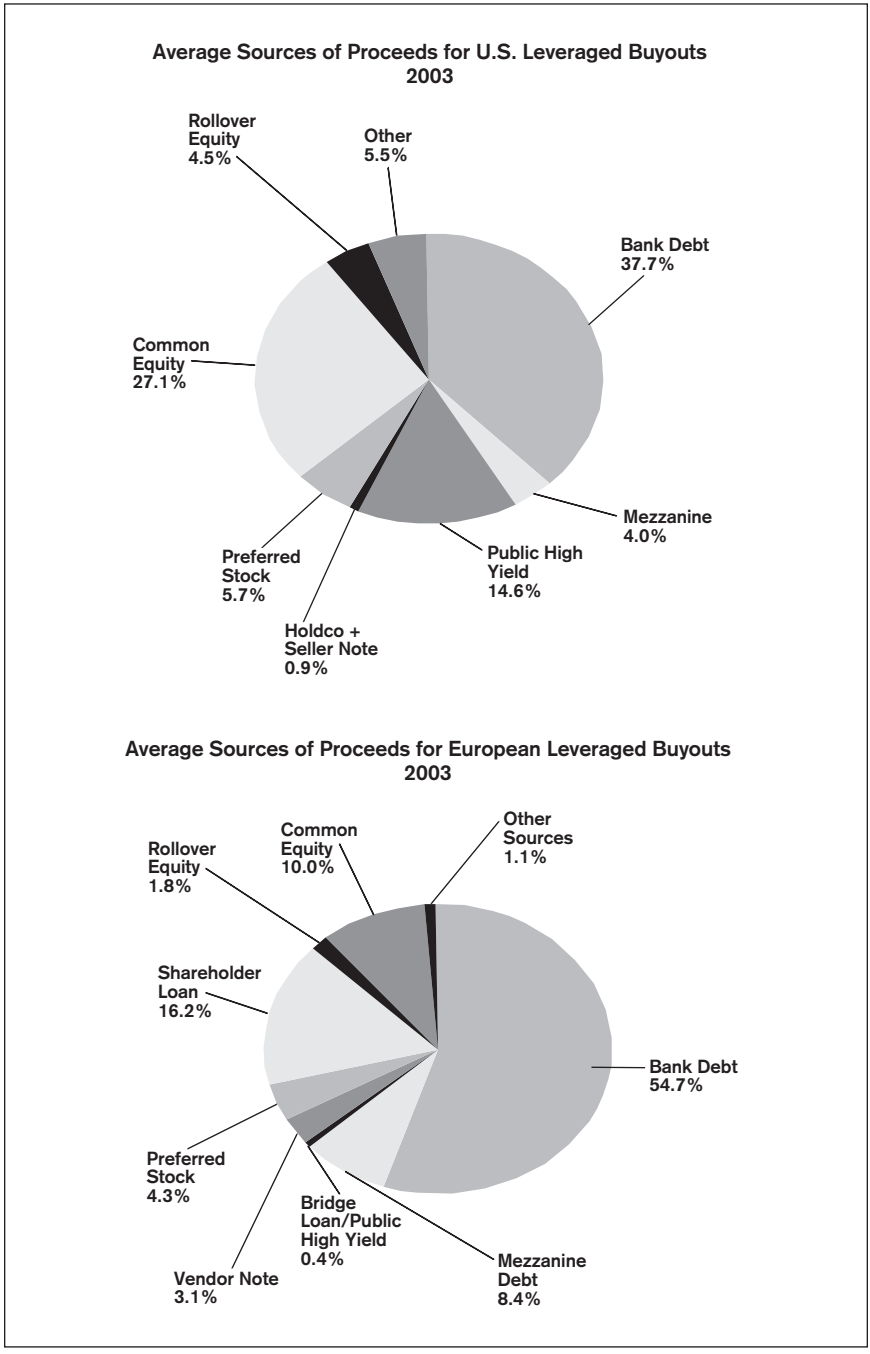
  All tranches may be sold down to banks and investors.
- About 10 to 20 percent of the total is made up of subordinated debt in the form of a high-yield bond or a mezzanine loan. The term of this debt varies between 7 and 12 years, sometimes reaching 15 years in very favorable market conditions for firms with the best credit standing. The spreads on the subordinated debt reflect the higher risks associated with the less favorable priority ranking. In certain instances, creditors may have to accept PIK interest or having their interests capitalized if the borrower experiences financial stress, with no ability to accelerate their obligations.
- The balance of the capital structure is typically made up of common equity, deeply subordinated shareholders' loans, and/or vendor financing.

Standardized Documentation and Covenant Package

In a typical LBO transaction, borrowers are subject to strict operating and financial constraints, in addition to a full-fledged security package. This includes:

- Restrictions on objects, as in the case of a bankruptcy-remote vehicle, severely limiting the activities of the firm

FIGURE 8-11: LBO Sources of Proceeds



- Restrictions on additional indebtedness, investments, and dividends, as well as mergers and acquisitions, placing further operating and financial constraints on the firm
- An event of default definition (see Chapter 5 and previous discussions in this chapter) based on the breach of financial covenants, allowing creditors to take remedial action if necessary
- Standard financial covenant triggers, including total debt/EBITDA, senior debt/EBITDA, interest coverage, and so on
- Cash sweep provisions, in certain instances, requiring excess cash after operating costs and capital expenditures to be used for automatic debt repayment
- A security package, which typically includes all of the firm's assets as collateral and provides upstream guarantees from all subsidiaries, where feasible

In addition, the documentation will include all the typical representations and warranties found in loan documentation.

Cash Flow Modeling

Businesses subject to an LBO are generally, but not always, involved in well-identifiable activities, and hence lend themselves to fairly detailed cash flow modeling and risk identification. To be sure, credit analysts should not expect to find businesses that are as simple as those found in true asset-based finance. Additionally, the range of sectors touched by LBO financing is extremely wide.

The modeling approach will be very similar to that developed elsewhere in this book, with a focus on maximizing debt leverage while maintaining acceptable, yet stretched cash flow coverage.

CHAPTER SUMMARY

Insolvency Regimes and Debt Structures

In the event a corporation experiences financial distress or becomes outright insolvent, creditors will worry about recovering their investment. Insolvency regimes and the structure of a particular debt instrument play an essential role in assessing how much creditors can expect to receive and when they can expect to see their money.

Insolvency regimes are not all born equal. Some of them are creditor-friendly, in that they give the more senior creditors a meaningful role in the insolvency process and permit rapid enforcement of collateral when a debt instrument is secured. In other jurisdictions, the courts make the key decisions with little input from creditors, subjecting them to significant legal risks and lengthy recovery procedures. Finally, the insolvency regimes are untested in some emerging markets, where business, political, and judicial interests may be related, making it difficult for outsiders to stake their claims in a proper court of law.

Generally, insolvency regimes define the order of seniority in which creditors will be repaid in insolvency. In most cases, priority ranking, as this order is called, places certain claims, such as insolvency fees, certain wages, and taxes, in the first position. Secured creditors, e.g., creditors benefiting from collateral security, come next. They are followed by unsecured creditors, which may include both financial creditors and other claims, such as employees' wages, unfunded pension liabilities, or accounts payables to suppliers. Subordinated debt holders come next, followed only by equity holders.

Creditors are subordinated either through a contractual agreement that states that investors in a particular debt instrument agree to have their claims rank below those of other creditors or because the entity they are exposed to for the source of debt payments is further removed from operations than other entities in a particular group. The Michelin case demonstrates the effect of structural subordination, as this latter point is called.

Secured creditors can benefit from various types of collateral, providing more or less credit support depending on the type of collateral and the insolvency regime. In any event, credit analysts should ensure that the documentation reflects the fact that the collateral has been granted and perfected properly.

Asset-based transactions rely on secured lending techniques and are a vast area of the fixed-income universe. These transactions rely on legal techniques that permit the cash flow–generating entity to be insulated from other parties and limit its purpose. Credit analysts should rely on cash flow modeling to understand how much debt this entity can withstand and what other legal protections should be provided.

Leveraged buyout (LBO) transactions are very interesting from an analytical standpoint, as they apply secured lending techniques to businesses that are not truly homogeneous or limited in purpose, unlike other asset-based transactions. The LBO market is very large, and credit analysts should be comfortable analyzing such structures.

NOTES

1. Deloitte & Touche, L'entreprise en difficulté en France, Prévention—Reprise, décembre 2002 (« Distressed firms in France, Prevention—Take-over », December 2002). See also Arnaud de Servigny, Julian Franks, Sergei Davydenko, "Recovery Rates for European SMEs," Standard & Poor's Risk Solutions, June 2004.

2. Both charges are security interests, which place secured creditors in a very strong position in insolvency. The fixed charge applies to property, plant, equipment, and book debts. The floating charge applies to any present and future assets of the company, including cash, marketable securities, receivables, and inventories.

3. In 2003, only 46 firms filed under that system, compared with 819 under the Civil Rehabilitation process.

4. Standard & Poor's, Moody's, and Fitch (the three leading credit rating agencies) have all published excellent reports on insolvency regimes and practices in various jurisdictions from a creditor's standpoint.

5. See the filing with the Securities and Exchange Commission at www.sec.gov/archives/edgar/data/230463/000089924301500300/d424b3.txt, pp. 32–36.

6. This transaction, like most LBO transactions, is private in nature; hence the source cannot be disclosed.

7. In the United States, most courts would look at the economic substance available in the entire group, irrespective of the legal structure ("substantive consolidation").

8. The information used to develop this case was drawn *exclusively* from Michelin's annual reports and Web site.

9. Naturally, it may combine with contractual subordination if an entity issues both senior and junior debt.

10. Roger Bos, Kevin Kelhoffer, and David Keisman, "Ultimate Recovery in an Era of Record Defaults," Standard & Poor's, July 2002.

11. Although most European jurisdictions require the publication of unconsolidated, individual parent company accounts and notes, those are often cursory. Also, the multiplication of issuing vehicles makes capturing the "top-level" system a challenge. Eventually, the nature of parental claims to operating companies requires more details (see the discussion of downstream loans) to be analytically worthwhile.

12. In Italy, for instance, the downstream loan effectively reflects the corporate benefit received by the upstream guarantee, strongly lessening the legal risk of the guarantee.

13. http://www.sec.gov/Archives/edgar/data/723785/000104746902004136/a2090306zex-10_2.txt

Guarantee and Collateral Agreement made by MQ associates, inc. MedQuest, Inc., as borrower and certain of its subsidiaries in favor of Wachovia Bank, National Association, as Administrative Agent dated as of August 15, 2002, available at http://www.sec.gov/Archives/edgar/data/723785/000104746902004136/a2090306zex-10_2.txt.

14. Perhaps the most common external threat is the twin danger of "piercing the veil" and "substantive consolidation." Piercing the veil is the remedy exercised by a court when a controlling entity, such as the parent of an SPE, so disregards the separate corporate identity of the SPE that the enterprises are seen as effectively commingled. Substantive consolidation is the evolved product of the former strategy—the tracing of assets through corporate barriers, as refined and perfected through the Bankruptcy Code.

15. In particular, see Blaise Ganguin, Apea Koranteng, Michael Wilkins, and Adele Archer, "Balancing Cash Flow Predictability and Debt Capacity in Corporate Securitisations" in Fabozzi, Frank J./Chaudhry, Moorad (eds.), *The Handbook of European Structured Financial Products,* Frank J. Fabozzi Series, John Wiley & Sons, 2004.

16. Private equity sponsors are financial investors, often but not always tied to banking groups.

CHAPTER 9

Estimating Recovery Prospects

"Assigning a distressed value to performing assets in anticipation of the worst is very tricky: it requires the analyst to identify the conditions of a storm when the sun is shining."

—Barbara Ridpath,
Managing Director, Standard & Poor's

You may think that Arthur Andersen, the U.S.-based global accounting firm; Moulinex, a French maker of household appliances; and Le Méridien, a world-class hotel chain based in the U.K., are three very different firms. However, think again, as they all have one overriding common characteristic: All three defaulted in the fairly recent past.

In 2002, after limping along for numerous months, Arthur Andersen declared bankruptcy when it was unable to salvage its tarnished reputation. Faulty audit work for energy giant Enron and criminal charges against the firm had caused key accounting clients to leave in droves, quickly squeezing vital cash flow. In 2001, after several attempts to restructure the firm, Moulinex disappeared (its divisions were taken over by various competitors) because its products could no longer match better and cheaper ones from competitors. Lastly, Le Méridien defaulted simply because it got caught with too much debt when hotel occupancy rates dropped dramatically after the terrorist attacks of September 11, 2001, in the United States. These are three examples of firms in different industries with a common attribute: default. There are numerous lessons to be learned.

For example, when attempting to project a default scenario for a particular firm, credit analysts should first identify the reasons why something could go wrong. In situations where debt service is already tight, a modest drop in revenues or operating profitability may be sufficient to tip the scale. In other instances, such as in the case of Coke, which was out-

lined extensively in Chapter 6, it is more difficult to detect what event or series of events could cause a default, e.g., a secular trend combined with very significant competitive pressures.

In most cases, firms default because they no longer have enough cash to meet their obligations to their employees, suppliers, and creditors, or even to the government. Firms also can withhold funds from creditors in anticipation of filing for bankruptcy protection. In this instance, they may have the ability but not the willingness to pay prepetition creditors. And experience shows that firms generally default on all their obligations at once.

When assessing recovery prospects, the key determinant is the relative position of creditors' claims, or the priority ranking of the various debt instruments. To put it differently, recovery levels will vary dramatically across debt instruments, depending on their ranking. But to estimate the actual recovery prospects, credit analysts should prepare a valuation of the firm or of specific assets in order to assess the actual prospects of recovery for each debt instrument, as we discuss extensively in this chapter.

In this chapter, we discuss different approaches to estimating recovery prospects for particular debt instruments:

- We look at the reasons why businesses fail. Businesses may have too much debt, they may simply be in a very stressed environment, or they may have a bit of both. In rare cases, an external shock may cause businesses to fail.
- After briefly reviewing the discounted cash flow valuation approach, we discuss various approaches to valuing whole businesses through a fictional case study, Mousetrap Corp.
- We then propose standard cash flow stresses to be applied in various situations.
- We conclude by presenting guidelines for assessing discrete collateral, such as cash, inventories, or real property.

TYPES OF DEFAULTS

Too Much Debt, but OK Business

A number of LBO transactions fail because the shareholders or sponsors were just too greedy: They piled a maximum amount of debt on the target company, counting on a quick turnaround to improve cash flows and service that debt. This improvement in cash flow is usually obtained

either through the sale of noncore assets or through improved management or cost cutting.

While this strategy may work, timing must also be on the side of the owners. If the LBO is linked to a cyclical industry and the business climate suddenly turns south, the probability of a default is increased. The company's demise may be caused by a sudden cyclical downturn, poor timing of strategic decisions, or a combination of the two.

As indicated earlier, this was the case for the LBO on the hotel chain Le Méridien: The transaction closed shortly after the tragic events of September 11, 2001, which exacerbated the impact of the recession on world travel and hotel occupancy rates. Already short of cash, the chain embarked on an ambitious investment program to improve the comfort of the hotels. Some of the hotel properties were placed in receivership in August 2003. While the hotel industry is extremely competitive, the Le Méridien chain is hardly a bad business: Its hotels are in great locations, cater to the upper end of the market, and, some could argue, are well managed.

Brand-name companies that default, such as Le Méridien, are generally excellent candidates for a debt restructuring. In such situations, existing shareholders usually lose control of the firm and sometimes lose their entire investment. The restructuring could take the form of an extension of debt terms (amortizing debt turned into a bullet repayment, a three-year maturity extended to a seven-year one, and so on); a coercive debt-to-equity swap, where the lower-ranking creditors see some of their debt turned into equity; or even an actual debt forgiveness, where not only do the shareholders lose their stake entirely, but creditors must also forgo part of their claims. An asset sale or liquidation is less likely, as the underlying business remains satisfactory.

Poor Business, Average Finances

Financially weak, undiversified firms in very competitive environments fall into this category. Substitution or obsolescence is a particularly common issue in technology-intensive sectors. At the beginning of the book, we talked about the fate of the whip and buggy business with the development of the automobile. Typewriters, vinyl records, and videotapes have disappeared, or are in the process of disappearing, as computers, compact discs, and DVDs gradually replace them. Cost inefficiencies or significant loss of market share can also wreak havoc and lead to a default. In such instances, it is more difficult to predict a postdefault sce-

nario; in certain instances, the business may be restructured; in others, it will be sold or simply liquidated.

Poor Business and Poor Finances

A firm that tries to make up for its lack of competitiveness by reinvesting aggressively in the business, but is hit by a cyclical downturn is a good example of the trap that management can fall into. Another possible situation could arise in a speculative bubble, with a rapid build-up of capacity that is not met by a corresponding increase in demand. Witness the (almost) global real estate crisis of the early 1990s and the Internet and telecom bubble 10 years later. In both situations, a restructuring is possible, but is likely to take some time—possibly up to a decade. Certain sectors that were pronounced dead by their detractors manage to reinvent themselves, such as shipbuilding in France. It is too early to say whether the many U.S. telecommunications companies that defaulted in the early part of the new millennium will re-emerge and become profitable in the future.

External or Internal Shocks

Although it is a fairly rare occurrence, a firm may default because of an external shock. In Arthur Andersen's case, the firm's franchise was tied too closely with that of Enron, the bankrupt energy firm, causing its clients to leave in droves. Shocks can come from within (accidents, fraud, and so on) or from outside (litigation, natural catastrophe, war, and so on). Because of their exceptional nature, shocks are by definition very difficult to predict, and their impact is even more difficult to foresee.

VALUING AN ENTERPRISE IN A DISTRESSED SCENARIO

In the event that all the assets of the company are pledged as collateral, or if the debt is unsecured, credit analysts should prepare an enterprise valuation of the firm, as piecemeal liquidation of the assets is unlikely, particularly if the firm is large. In such instances, the most likely course of action will be a reorganization of the business, and credit analysts should assess the value of the business as a going concern.

Distressed enterprise valuation is best done through a mix of discounted cash flow and market value approaches, as it permits assessment

of the key cash flow drivers. Other valuation approaches (replacement value, options-based value, or Monte Carlo) can be useful sanity checks.

But before proposing an approach to distress valuation, it is important to provide a word of caution. At their best, projections are a crude attempt to map the future. Adding an overlay of distress, restructuring, or even insolvency proceedings turns an already difficult exercise into a nearly impossible mission. In Chapter 8, we discussed the numerous legal risks that exist along the road to restructuring, implying a high degree of uncertainty for creditors.

However, in most jurisdictions, there are investors who make a living out of such situations. They typically buy the distressed debt at a significant discount or become the new owners of the distressed assets through a debt-to-equity swap, where the more junior debt tranches essentially become the new equity. These investors have a thorough knowledge of the insolvency system and have developed significant expertise in dealing with such situations; but they also have the time to wait for a turnaround, something that large institutional investors are not necessarily willing to take.

Hence, even if distressed valuation results are likely to provide only a general direction, it is always better to prepare such a valuation than to do nothing and wait until things happen.

ENTERPRISE VALUATION: AN ILLUSTRATION FROM A CREDITOR'S PERSPECTIVE

The following illustration is fictional, but it is typical of a situation involving an overleveraged LBO. Let's assume that the firm is involved in a light industrial sector, correlated to business cycles with a medium level of capital intensity.

Background

Mousetrap Corp. had revenues of $1 billion and EBITDA of $150 million in 1998. Its sales had grown consistently by 10 percent for a few years, and its EBITDA margin had been stable at 15 percent. While its business was doing generally well, its balance sheet was less glorious: Mousetrap Corp. had a lot of debt, and its debt/EBITDA ratio was 4.6 times.[1] The firm had a five-year committed $150 million revolving credit facility, drawn to the extent of $34 million at the end of fiscal 1998, and a seven-year $350 mil-

lion loan, both secured by company assets; and a ten-year $300 million high-yield bond (unsecured).

In 1999, revenue growth slowed to 5 percent year-over-year, and its EBITDA margin dropped to 12 percent, despite some cost cutting. The following year, revenues were flat, and the EBITDA margin dipped to 8 percent. In 2001, the economy was down, as measured by negative GDP growth. Also, revenues dropped by 10 percent year-over-year, and its EBITDA margin fell to just 2 percent. By the end of that year, the company's revolving credit facility had reached $172 million and was overdrawn by $22 million. Total debt ballooned to $822 million, EBITDA no longer covered interest expense, and Mousetrap Corp. could no longer service its debt: It had defaulted.

Figure 9-1 is a representation of the point of default, where EBITDA no longer covers interest expense.

FIGURE 9-1: Mousetrap Corp.'s Point of Default

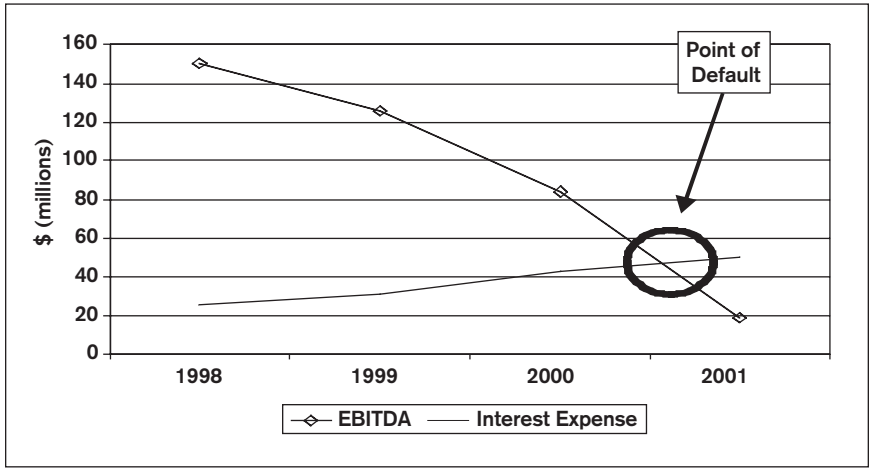


Table 9-1 gives a summary of the key financial figures for Mousetrap Corp. in the years preceding the default and what it would have looked like immediately thereafter, had the company been allowed to continue. In particular, its cost of capital increased dramatically as the company became distressed. Based on these financials, the value of the enterprise would be dismal, and creditors would have equally poor recovery prospects.

TABLE 9-1: Mousetrap Corp.: Key Historical Financial Figures (1998–2001)

Year	Revenue Growth	Revenues	EBITDA/ Sales	EBITDA	Interest Expense	Capital expenditures/ Sales	Free Cash Flow before Debt Service	Ending Debt
1998	10.0%	1,000	15.0%	150	–26	7.0%	45	684
1999	5.0%	1,050	12.0%	126	–31	7.0%	27	688
2000	0.0%	1,050	8.0%	84	–43	7.0%	–1	731
2001	–10.0%	945	2.0%	19	–50	7.0%	–41	822

Now, as we all know, the mousetrap sector may be cyclical because of well-known factors (some overcapacity, demand linked to economic growth), but it is not about to disappear; and Mousetrap Corp. produces and distributes good mousetraps and has a decent market share. But existing management overinvested in the recent past (capital expenditures represented 7 percent of sales), with weak resulting returns, and the company's operating profitability did not compare well with competitors'.

To assess the company's recovery prospects, credit analysts may want to establish an enterprise value. In the spirit of good valuation methodology, they need to approach the distress valuation from different angles, and then combine the results to arrive at a final figure.

Calculating the Enterprise Value: The Discounted Cash Flow Approach

The most thorough approach to assessing an enterprise value is the discounted cash flow approach. This approach forces the analyst preparing it to test all assumptions underlying cash flow forecasts, along the lines presented in Chapter 6. The reader who is familiar with corporate finance theory knows that this methodology applies to all valuations, not only distressed ones. The sidebar is a rapid reminder of the theory.

When preparing a discounted cash flow analysis, credit analysts have to make an essential assumption: The firm may be restructured, but

it will be salvaged. The alternative would be to assume that it is beyond repair and that the assets will be liquidated, in which case the discounted cash flow methodology does not apply.

Credit analysts must stress the cash flows, to reflect the business and financial distress. However, they should assume that the cost of capital will be that of a firm that has returned to a "normal" (as opposed to a distressed) state or that of a willing buyer.

Credit analysts have to make a number of assumptions to calculate free cash flows[2] after tax (see Table 9-2), the cost of capital (see Table 9-3), and the terminal value.

Free cash flow assumptions:

- A new management will be brought in to implement cost-control measures and stabilize operating profitability before growing the company again.
- Revenues will decline further over the next two years before stabilizing following reorganization initiatives, and will grow again with the next up cycle.
- In the latter years, the growth rate is limited to 2 percent, in line with inflation.
- The tax rate is fixed at 35 percent.
- Capital spending as a percentage of sales will be reduced in the early years in line with cash conservation measures.
- Weighted average cost of capital (WACC) assumptions:
  - Analysts may use the current (risk-free) rate for a 10-year government security, which is set at 2.5 percent in this illustration.
  - The risk premium (or spread) should reflect that of a firm in the mousetrap sector at the time when the default occurs.
  - Likewise, the beta should reflect the beta for industry peers.
  - The market premium can vary between 3 and 7 percent, and for the purpose of this calculation, analysts can take the midpoint of 5 percent, a figure often used by professional valuators.
  - The relative weight of debt versus equity can be established at 50 percent, if we assume that this represents the industry average.
  - Last but not least, the growth rate in perpetuity is set at 2 percent to reflect the expected future rate of inflation.

TABLE 9-2: Mousetrap Corp.: Key Projected Financial Figures (2002–2011)

Year	Revenue Growth	Revenues	EBITDA/Sales	EBITDA	Depreciation as % of Revenue	Depreciation	Tax Rate	Cash Taxes	Capital Expenditure /Sales	Capex	Free Cash Flow
2002	–5.0%	898	6.0%	54	4.0%	36	35.0%	6	3.0%	27	21
2003	–5.0%	853	7.0%	60	4.0%	34	35.0%	9	4.0%	34	17
2004	0.0%	853	10.0%	85	4.0%	34	35.0%	18	4.0%	34	33
2005	3.0%	878	10.0%	88	4.0%	35	35.0%	18	4.0%	35	34
2006	3.0%	905	10.0%	90	4.0%	36	35.0%	19	4.0%	36	35
2007	3.0%	932	12.0%	112	4.0%	37	35.0%	26	4.0%	37	48
2008	3.0%	960	12.0%	115	4.5%	43	35.0%	25	4.5%	43	47
2009	2.0%	979	12.0%	117	4.5%	44	35.0%	26	4.5%	44	48
2010	2.0%	999	10.0%	100	5.0%	50	35.0%	17	5.0%	50	32
2011	2.0%	1,019	10.0%	102	5.0%	51	35.0%	18	5.0%	51	33
Terminal	2.0%	1,039	10.0%	104	5.0%	52	35.0%	18	5.0%	52	34

TABLE 9-3: Mousetrap Corp.: Cost of Capital Assumptions (2002–2011)

Years	Risk-Free Rate	Spread	Cost of Debt	Beta	Market Premium	Cost of Equity	Debt to Capital Ratio	WACC
2002	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%
2003	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%
2004	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%
2005	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%
2006	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%
2007	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%
2008	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%
2009	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%
2010	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%
2011	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%
Terminal	2.5%	1.5%	4.0%	1.5	5.0%	10.0%	50.00%	10.0%

Based on the above assumptions, credit analysts should arrive at an estimated discounted cash flow value for Mousetrap Corp. of

DCFV = $579 million

This is a first and necessary step toward assessing the value of Mousetrap Corp., but it is not a sufficient one. As we indicated at the outset, credit analysts (or anyone preparing a valuation) should test this first approach with a second one based on market value.

Discounted Cash Flows: The Theory[3]

The discounted cash flow (DCF) approach remains one of the most utilized approaches for determining the value of a firm. To credit analysts, using a DCF approach is helpful in stressing cash flow drivers and in estimating the firm's distressed value. In using this approach, an underlying assumption is that the firm can be restructured, and hence is treated as a going concern, albeit at a potentially steep discount from the current value.

As a reminder, the general approach to discounted cash flows is that of the net present value including a terminal value (a perpetuity).

EQUATION 9-1

$$\text{Enterprise value} = \sum_{t=1}^{t=n} \frac{FCF_t}{(1+WACC)^t} + \frac{FCF_{t+1}}{(WACC-g)^{t+1}}$$

Where

N is the expected life of the firm

FCF_t is the free cash flow after tax to the firm in period t; $FCF = EBITDA - cash\ interest - cash\ taxes - capex \pm changes\ in\ working\ capital$

$WACC$ is weighted average cost of capital (defined later in the chapter)

FCF_{t+1} is expected cash flow in perpetuity

g is an estimated growth rate in perpetuity (if necessary, this figure can be negative, if the analyst believes the firm or the sector is in decline)

The weighted average cost of capital is computed as follows:

EQUATION 9-2

$$WACC = (X \times \textit{cost of debt}) + [(1 - X) \times \textit{cost of equity}]$$

Where

$$X = \frac{\textit{total debt}}{\textit{total debt} + \textit{equity}}$$

if debt is 100 and equity is 60, $X = \frac{100}{100 + 60} = 62.5\%$

Cost of debt = (*risk-free rate* + *risk premium*) × (1 – *t*); in practice, the debt cost is simply given in the debt documentation, or is found by using a firm's external credit rating is used to derive the risk premium

Cost of equity is *market premium* (or risk-free rate) + β (*expected market return – risk-free rate*); this equation is derived from the capital asset pricing model (CAPM)[4]

β is essentially, the slope coefficient in the linear regression equation between one particular stock and the overall market; beta is a measure of systemic or market risk for a particular stock, and will tend toward 1.0 over long periods. A firm's beta typically increases in the event of distress. Bloomberg is a good source of information to determine a firm's beta

t + 1 is the weighted average cost of capital of the terminal value; it is discounted with a factor equivalent to that used for the last period

Credit analysts should remember that the greatest value is to be found in the terminal value, or the second part of equation 9-1. Because of this, they should approach the terminal cash flow value with significant circumspection. Also, as a practical matter, they should assume that the growth factor *g* is no higher than the rate of inflation, particularly if the company has undergone distress.

Calculating the Enterprise Value: The Market Value Approach

The market value approach, if not the most thorough, is definitely the most practical and the most popular. Let's simply assume that we want to sell a three-year-old Toyota Corolla with 40,000 kilometers (about 25,000 miles) on the odometer. If we want to know how much it could fetch, we will simply buy a secondhand-car magazine and look for similar cars with about the same mileage.

Without knowing it, we are instinctively using the market value approach, looking for the price that willing buyers and sellers would be prepared to settle for at a given time. The advantage of the market value approach is that it can be used for either discrete assets (real estate, transportation equipment, patents, and so on) or entire businesses.

The limitation of this approach, when it is used for nonhomogeneous assets such as firms, is that it is very difficult to find firms that are exact peers, nor is it easy to adjust financials to make them fully comparable. Some metrics are used across sectors such as market value to revenues, market value to EBITDA, and market value to EBIT. Others are sector-specific, such as market value per ton (or tonne), per square foot (or square meter), or per average R&D.

When applying this approach to firms, credit analysts need to select sector peers and ensure that all financials are adjusted to make them more comparable. Key adjustments include the following:

- Market value should be limited to equity and interest-bearing debt, leaving out cash and long-term investments.
- All extraordinary items should be eliminated from revenues, EBITDA, or EBIT.

In the case of Mousetrap Corp., the most commonly used multiple is market value to EBITDA (market value to revenues is provided for reference). Mousetrap's closest competitors are Mouse Solutions Inc. and Rat Track Plc, but there is one other, much bigger and more diversified firm, TrapAll Corp. Table 9-4 gives the multiples for Mousetrap's competitors.

Before calculating the projected market value of Mousetrap Corp., credit analysts need to adjust the firm's projected EBITDA to reflect a steady state. Based on the projections established for the discounted value, it is estimated to be $104 million at the time where the terminal value is calculated.

TABLE 9-4: Mousetrap Corp.'s Competitors: Market Value Multiples

Company Name	Revenues (millions)	EBITDA (millions)	Market Value (millions)	Market Value to Revenues	Market Value to EBITDA
Mouse Solutions Inc.	$555	$95	$599	1.08 ×	6.3 ×
Rat Track Plc	£431	£71	£419	0.97 ×	5.9 ×
TrapAll Corp.	$3233	$469	$3330	1.03 ×	7.1 ×
Median				1.03 ×	6.3 ×

Also, credit analysts may want to adjust the median EBITDA multiple down to 6.1 times, as it is driven up by that of TrapAll Corp., a much bigger and more diversified firm.

Based on these assumptions, credit analysts should arrive at an estimated market value for Mousetrap Corp. of

MV = $634 million

For true market valuations, credit analysts may want to choose a few more peers than in this example, if at all possible.

Incorporating the Expected Time to Recovery into Recovery Estimates

Although assessing the time to recovery is difficult in most circumstances, credit analysts should make an attempt to evaluate this fickle point, as it will determine in part the discount factor. In most cases, time to recovery depends on the level of control or influence of creditors in a particular insolvency regime, their bargaining power relative to other creditors, and, in the event security exists, the enforceability of that security. In untested jurisdictions, credit analysts should be particularly careful not to expect fast recoveries.

For most insolvency regimes, we recommend that credit analysts use three separate buckets:

- Less than six months, reflecting debt instruments that are secured by good-quality financial collateral, or collateral benefiting from particular legal provisions
- Over six months but less than 30 months for debt instruments that are secured by discrete collateral (receivables, inventory, real estate, transportation equipment, and so on), or where certain businesses may be liquidated
- Over 30 months for other situations, including unsecured debt

The higher the hurdle rate is, the greater the impact of the passage of time will weigh on recoveries.

Estimating the Recovery Prospects of Mousetrap Corp.

Once the valuation exercise has been completed, credit analysts decide how they will weigh the different approaches in order to arrive at a final figure or range. In the case of Mousetrap Corp., they may want to weigh the discounted cash flow a little more, as the number of industry peers was not sufficient to be statistically significant.

Mousetrap Corp. EV = (2/3 × DCFV of $580 million) + (1/3 × MV of $634 million)

EV = $598 million or $600 million

To assess the recovery prospects for each class of creditors, we lay them out in the first column of Table 9-5 as was outlined in Chapter 8. As for the rest of the case, we came up with hypothetical numbers for both privileged creditors and nonfinancial, unsecured suppliers.

Once the claim amounts are listed in the third column, credit analysts can simply estimate the recovery prospect for each class of creditors, using the priority ranking of claims based on the estimated enterprise value. This preliminary estimate is nondiscounted, i.e., no adjustment has been made for the estimated time it will take for creditors to recover their claims.

As we indicated in the previous section, credit analysts must incorporate the impact of the time to recovery to produce discounted recovery prospects. The assumptions laid out in the last column shows that privileged creditors would be repaid immediately, secured creditors within two and a half years, and unsecured creditors in more than 30 months. On

TABLE 9-5: Mousetrap Corp.: Undiscounted Recovery Estimates

Priority Ranking	Type of Claim	Claims Amount ($)	Undiscounted Recovery Prospects Enterprise Value = $600 million	Expected Time to Recovery of Claims
Privileged creditors	Legal and restructuring fees, certain wages and taxes	$35 million	100%	Less than 6 months
Secured creditors	Revolving credit facility	$100 million	100%	< 30 months
	Term loan	$350 million	100%	> 30 months
Unsecured	High-yield bond	$300 million	33%	> 30 months
	Suppliers and other nonfinancial creditors	$45 million	33%	> 30 months

a discounted basis (assuming a hurdle rate of 10 percent), privileged creditors are repaid entirely, but the expectation for secured creditors drops from a comfortable full recovery to just below the 100 percent level.

A Last Sanity Check: Approximating Sustainable Debt Levels

Bankers will be prepared to extend a rescue financing package for a distressed firm only if the restructuring plan shows that the firm's cash flows will be sufficient to service its debt. One way to get an indication of a sustainable debt level after a reorganization is to determine the point at which unlevered free cash flow covers debt service at all times. In other words, debt is an output based on debt-service capacity, not an input.

We suggest the following approach:

- The first step, as in the enterprise value approach, is to assess free cash flow before debt service, but after cash taxes, changes in working capital, and maintenance capex.
- The second step is to assume that bankers are prepared to provide distress financing (debtor-in-possession, or DIP), but will require a fixed charge financial covenant giving them a 10 to 20 percent cushion, which will result in a maximum debt service lower than the unlevered free cash flow by 10 to 20 percent.

- The third step is to make certain assumptions about the overall debt cost, including required amortization, knowing that most firms emerging from a reorganization are typically rated in the single B category by credit rating agencies (hence a spread of between 250 and 400 basis points).
- The last step is to divide the normalized cash flow by the overall debt cost to obtain a sustainable debt amount.

In the case of Mousetrap Corp., the key figures are given in Table 9-6.

TABLE 9-6: Mousetrap Corp.: Approximating Maximum Debt Levels

	Unlevered FCF	Covenant Protection	Maximum Debt Service	Cost of Debt	Maximum Debt Service
2002	21	1.1	19	6.00%	317
2003	17	1.1	15	6.00%	250
2004	33	1.1	30	6.00%	500
2005	34	1.1	32	6.00%	533
2006	35	1.1	33	6.00%	550
2007	48	1.1	41	6.00%	683
2008	47	1.1	38	6.00%	633
2009	48	1.1	33	6.00%	550
2010	32	1.1	22	6.00%	367
2011	33	1.1	23	6.00%	383

Based on these results, the credit analyst can devise the following scenario:

- During the first two years, cash flows, and hence debt-servicing capacity, remain weak as the new management puts the restructuring initiatives in place.
- Assuming a risk-free rate of 2.5 percent and a spread of 350 basis points, the maximum sustainable debt level ranges between $250 million and $320 million.

- During the following four years, cash flows improve as the restructuring initiatives have a positive impact on the firm.
- The maximum sustainable debt level increases during that period to between $500 million and $680 million.
- During the last four years, the visibility on the business declines, and so do the underlying cash flow assumptions, leading to lower debt capacity.

Based on this scenario, the most likely outcome of the default will be the following for the creditors:

- First, senior secured creditors, with total debt outstanding of $450 million at the time of default, are likely to recover between 55 ($250 million of $450 million) and 66 percent ($300 million of $450 million).
- For the balance of their exposure, the secured creditors are likely to receive a deeply subordinated debt or quasi-equity instrument that will start paying a coupon or dividend only after the fortunes of the firm improve.
- The unsecured creditors (investors in the high-yield bonds) may receive an even more deeply subordinated debt instrument or may see their debt simply converted into common equity (some debt forgiveness could even be required).
- Any senior debt that is part of the refinancing package should have an amortization feature, given the longer-term uncertainty about the business.

Other Valuation Approaches

While the discounted cash flow and market value approaches are the best known, several other valuation methodologies exist. Other valuation approaches include:

- *Replacement cost.* For many types of assets, a third approach is to ask what the intrinsic value of the asset is. It asks how much it would cost to replace a particular asset at some point in time, or how much an asset would fetch in the market if it were to be

liquidated. While this approach can be useful for discrete assets, such as houses, cars, equipment, or even inventories, it is not as practical for entire firms unless an actual liquidation is probable, which remains rare for larger industrial firms.

- *Options-based valuation*. The basic premise when using such models is to assume that the value of certain assets is contingent on certain events occurring. For instance, a mining company may decide to exploit or temporarily shut down a mine depending on the price of copper. The authors are not aware of any attempt to apply these models to distressed firms.

MODELING RECOVERY EXPECTATIONS IN ENTERPRISE VALUATION: THE EVER-IMPORTANT BUSINESS RISK

Determining a Time Horizon for the Cash Flows

The probable term of a loan or a bond depends on the predictability of cash flows, among other things (such as market liquidity): The more predictability, the easier it will be for borrowers to receive long-dated debt. As a result, credit analysts will need to go back to their industry and business risk analysis to assess the various competitive factors.

For cyclical businesses that do not show the greatest predictability, it is likely that creditors will require some degree of amortization, as they will see the business less like an annuity and more like a depreciating asset. Conversely, other firms will display more cash flow predictability because of the nature of the business, or as a result of the underlying assets. In particular, businesses that benefit from some degree of regulatory protection or that own discrete assets that are valuable (such as real estate) may be viewed as candidates for longer-term debt, even if they are emerging from distress.

Cash flow predictability should not be confused with cash flow volatility. The first simply means that the underlying business is not about to disappear as a result of substitution or other competitive threats. The second indicates that cash flows could experience significant swings over time as a result of competitive factors.

Modeling Point of Default and Cash Flows

Where a restructuring is anticipated, credit analysts must model the value of the business, which will continue to operate during and after the restructuring or will be sold as a going concern.

For this, we propose the following approach for each of the three default types, as shown in Table 9-7.

TABLE 9-7: Default Types

Too Much Debt, Business OK	Bad Business, OK Finances	Bad Business and Bad Finances
All debt facilities are fully drawn; there are some overdrafts; debt service costs increase	Revenues and margins contract dramatically; there is little debt service increase	Revenues and margins contract; all debt facilities are fully drawn; there are some overdrafts; debt service costs increase
Point of default is during a cyclical downturn [EBITDA – cash taxes – capex < interest expense + scheduled debt repayment]	Point of default may be, but is not necessarily, during a cyclical downturn; otherwise the same	Point of default may be, but is not necessarily, during a cyclical downturn; otherwise the same
Cash flows to stabilize at no more than 10% below point of default because of a combination of economic cycle and operating measures	Point of stabilization of cash flows is difficult to assess; they may slide by 30 to 50% below point of default, or more.	Point of stabilization of cash flows is difficult to assess; they may slide by 30 to 50% below point of default, or more.
Pickup in revenues and margins within 3 years after cyclical trough	If any, pickup in revenues and margins 5 to 10 years after cyclical trough	If any, pickup in revenues and margins 5 to 10 after cyclical trough

Cost of Capital

The general approach will vary depending on whether the credit analysts believe the business can be restructured or whether it will be sold or liquidated and closed down.

Restructuring Assumption

If they believe the business can be restructured, analysts should make the following assumptions:

- *Cost of debt.* In the event that the cost of debt is not available, analysts should assume that it is in line with that of a firm emerging from a restructuring that would have a credit rating in the B category (B-, B, B+), which is fairly typical. If sufficient information is available, they can establish a different cost for each of the debt instruments in the postinsolvency capital structure (secured, unsecured, subordinated, preferred shares). Also, they can assume that the cost of debt will decline over the course of the restructuring as the company's fortunes improve.
- *Cost of equity.* Although it is far thornier to establish the cost of equity, credit analysts should not worry too much: A distressed firm does not have much equity. In a restructuring scenario, however, it can be assumed that the little equity there is will be penalized by a fairly high value for beta, probably between 2 and 3, or even higher. If analysts assume a successful restructuring, the value of the beta will trend down toward a value of 1.0 during the course of the restructuring. The other values are not company-specific and are as described earlier.

Asset Sale Assumption

In the second scenario, analysts should assume that the buyer is an industry player, with a cost of capital that reflects the sector average. This information is available from Bloomberg or from other data providers such as MarketScope. In the case of Mousetrap Corp., the cost of debt may reflect that of a BBB-rated firm, with spreads ranging between 120 and 250 basis points over the risk-free rate; the value of the beta will hover between 0.8 and 1.2; and the market premium will range between 3 and 7 percent, with an average around 5 percent.

In such a scenario, analysts can assume that an arbitrage will take place between the acquirer's cost of capital, and the cost of capital of the distressed firm on a stand-alone basis.

VALUING DISCRETE ASSETS IN A DISTRESS SCENARIO

Certain credit transactions are secured by specific assets that have a value that is independent from the vagaries of the business and that can be identified easily. They may be financial assets, such as cash, marketable securities, and receivables, or tangible assets, such as inventories, physical plant, intellectual property, or equipment. The valuation approach will be different from the one presented in the previous section on the enterprise valuation.

In such instances, credit analysts should focus solely on the market value of the assets, not their book value, as the latter becomes meaningless in a distressed scenario. This is the reason why it is important to order an independent valuation and to thoroughly analyze the underlying assumptions.

Most banks and institutional investors have developed detailed approaches to assess the maximum exposure that can be taken against each asset type. The following outlines the basics of discrete asset valuation for each asset type.

Cash

Assessing the value of cash held as collateral requires receiving a statement from the depositing institution stating that the money is there and is accessible to be drawn upon by creditors under specified circumstances and at any time. Also, the depositing institution should indicate that the cash is unencumbered, i.e., that it is not being held as collateral for another beneficiary. The key risks include the credit standing of the depositing counterparty, foreign exchange risk if the cash is held in a different currency from the debt obligations, and, potentially, country risk. Also, in the case of cash pooling agreements within a group, credit analysts must understand the arrangements made to segregate funds coming from different contributors.

Marketable Securities

Clearly, securities—equity and fixed income, private and public—are not all born equal, and this is even more true if they are held as collateral. Creditors will have a strong preference for fixed-income, short-term securities of the highest quality (Treasury bills); they can be marked to market

in most jurisdictions, and therefore are easy to value. Unless counterparty and/or country risk exists, creditors should be prepared to advance between 80 and 100 percent of the face amount of these securities.

When lower-quality fixed-income instruments that cannot be marked to market as easily are held as collateral, lenders will approach the valuation differently depending on whether the collateral is one instrument or a portfolio. If it is the former, lenders can use an option-based valuation, a credit rating–based one, or a mix of both. If the latter, lenders will consider the following key aspects:

- The default risk of each instrument (measured as a probability of default with external credit ratings)
- The recovery prospects, in case of default of the obligor
- The concentration risk (obligor, sector, country)
- Financial models that can assess the actual loss risk are available.

For publicly traded shares, the advance rate should be calculated on the basis of the historical volatility of the stock.

Receivables[5]

Most banks lend between 60 and 80 percent of eligible, good-quality receivables outstanding. Eligible receivables generally include only those that are collected within 60 or 90 days, although variations exist across sectors (infrastructure firms working with governments may be paid only after 180 days or more). It is critical that lenders receive on a monthly basis a certificate (representations and warranties) signed by an officer of the borrower confirming the value of receivables. Good-quality receivables are a banker's favorite form of collateral because of their self-liquidating nature: The credit advance is repaid when clients pay their bills. Mechanisms such as wind-downs can be put in place to terminate the credit facility if the collection rate deteriorates past a certain level.

Inventories

Most banks lend between 30 and 70 percent of the amount of inventories at a given date, with significant differences across sectors and between raw materials, semifinished inventories, and finished inventories. By def-

inition, the more generic the nature of the stocks, the more practical it will be to liquidate them in case of distress. Stocks that are deemed to retain the most value in the event of liquidation include first and foremost raw materials, which can be sold easily.

Semifinished and finished products are harder to liquidate because competitors may not be interested in the products or they may be obsolete, or because the entity that produced them will no longer be around for future maintenance.

With inventories, credit analysts enter the world of tangible assets, which are much more difficult to evaluate. While there are various accounting approaches for valuing them (LIFO, FIFO, and so on), inventories are accounted for at cost in most jurisdictions. However, in a default scenario, credit analysts will be more interested in establishing how much they can receive at that very moment (the market value) rather than how much the inventories are recorded at (the book value). For that, it is preferable to ask the help of liquidators, which specialize in such situations.

Immovable Property

Real estate is one of the surest values, although, as for many things, the devil is in the details. Significant differences exist between a mining pit in Argentina and an office building in Tokyo, although both can be considered real estate. As for other asset types, the more generic the property, such as residential real estate, the higher the advance levels will be.

For instance, banks are often prepared to advance up to 90 percent for the purchase of an apartment or a residential home, provided it is in a good location and a good state of repair. The valuation will be based on a mix of three different approaches: similar market transactions in the area, the replacement value of the property, and a discounted cash flow approach based on an imputed rental value of the property. In contrast, the advance rate on a shopping mall may be at best 50 percent if it is located in a suburban area where the only employer is a large capital goods company that is relocating its operations to a lower-cost region of the world.

Likewise, advance rates for industrial properties will tend to be more conservative. The advance rate on raw undeveloped land is approximately 50 percent as well. This shows the level of risk that banks are willing to take and the risk-sharing relationship that they are interested in keeping with the borrower.

When dealing with real estate, creditors often look at what is known as the alternative use value, or the value of a building (including transformation costs) assuming that it is used for another purpose (for example, a gas station turned into a fast-food outlet). For this, creditors must be well aware of planning restrictions and potential contingent liabilities, such as environmental risk (asbestos, soil remediation, and so on). At the bare minimum, subject to the restrictions and contingencies mentioned previously, bankers can always look at the value of the undeveloped land.

Equipment

Leasing companies have excellent databases tracking the value of a wide array of equipment, ranging from printing presses to computers to cars. As with immovable property, the more generic the equipment, the easier it will be to dispose of in insolvency, as the value is disconnected from the underlying business. If the equipment is not generic, its value will be correlated with the value of the firm. In many cases, the advance rates exceed 70 percent, as repossession is triggered by nonpayment, not by a full-fledged insolvency process, making the administrative procedures related to collateral enforcement easier and faster.

Obsolescence plays a key role in the valuation of equipment. Transportation equipment is a specialized area of secured lending, as certain countries have specific laws governing the financing of trains (rolling stock), ships, and airplanes. A well-established secondary market exists, which allows specialized credit analysts to track on a monthly basis, for example, the value of a 10-year-old dry bulk Panamax ship[6] anywhere around the planet.

In summary, credit analysts should be very prudent concerning equipment as collateral: In instances where the underlying asset truly has a value independent from the business and where an established secondary market exists, the collateral will have a true value; in other instances, it can be used as support, but no more.

Intangible Assets

In addition to financial and tangible assets, a broad array of intangible assets exists, including concessions, contracts, rights, patents, brands, and outright goodwill. Credit analysts should approach intangible assets the

same way that they approach other types of collateral, and ask themselves if these assets have a value that is independent from the business. In most cases, intangible assets are self-referencing: If the business "tanks," there is a good chance that the value of the intangible will decline accordingly. In other words, there is a strong connection between the value of the collateral and that of the business.

In certain situations, though, certain concessions, contracts, rights, and patents can carry a real value. For instance, a concession such as that of Eurotunnel, the train tunnel underneath the Channel between France and England, definitely has a value, although, as lenders found out, it was not as high as was initially anticipated. Likewise, music, publishing, or film rights also have a value, even if it is difficult to appraise.

Recovery Prospects: Last Words of Wisdom

As we indicated at the outset of this section, predicting recovery values before or during insolvency is fraught with difficulties. At each turn, the credit analyst needs to make quantitative assumptions in order to arrive at free cash flows. More importantly, the analyst needs to assume that the process triggered by the default would be cost-free, yet this is rarely the case. At this point it is important to evaluate the main qualitative factors that have a tendency to affect recovery values:

- *Insolvency costs.* As we discuss in Chapter 11, costs related to a default vary dramatically across jurisdictions and according to the nature of the default (technical or failure to pay), but are generally quite high.
- *Applicability of insolvency regime.* Where the assets of the insolvent firm are all located in the same country, the local insolvency regime typically applies. In situations where the assets are located in different countries, all bets are off: The process could be drawn out until all the parties agree on an acceptable course of action. Particularly if employment could be jeopardized by a reorganization, there could be significant political pressure to bend the process.
- *Priority ranking.* Credit analysts should not be fooled into thinking that debt holders are the only ones to have claims against an insolvent firm. Firms have suppliers, extend guarantees, contract for rents or leases, enter into agreements or contracts, are

involved in litigation, and have workers and pensioners, among others, in the course of business. In the event of insolvency, some claims, such as wages, rents, leases, and pensions, may be ranked at least equal to, if not higher than, certain claims of financial creditors. Credit analysts may want to take these various factors into account in developing their model. They should also detail the various classes of debt and their relative cost.

- *Cyclicality of recoveries.* As recent work shows[7], recoveries should be viewed as a distribution at the portfolio level. For instance, the succession of defaults in the telecommunication sector in 2001 and 2002 caused recoveries of assets in this sector to remain very depressed. Investors prepared to work out problem debt exposures over a long time period may be able to achieve higher recoveries.

CHAPTER SUMMARY

Estimating Recovery Prospects

There are several reasons why firms default: Some simply have too much debt; others have the wrong business model or are in a very difficult business; some default because of a combination of the first two reasons; and a few are subject to internal or external shocks. It is essential that credit analysts start their recovery analysis by determining which one of these four potential scenarios is the most likely to cause the demise of a firm, because it will affect the analytical approach. For this portion of the analysis, it is important for the credit analyst to take a pessimistic view.

The next step is to determine the priority ranking of the debt instruments, as discussed in the previous chapter. For secured debt, credit analysts must identify whether the asset securing the debt is likely to have a value independent from that of the business, such as real estate, transportation equipment, or financial assets, in which case the assets should be valued on a stand-alone basis. If the debt is secured by a pledge over all assets or only specific assets or if the debt is unsecured or subordinated, credit analysts should value the corporation as a whole.

In the latter situation, assuming that the business can be restructured, a discounted cash flow valuation should be used in tandem with a market value approach. In this case, the underlying assumption is that the value will reflect what a willing buyer and a willing seller are expected to pay, reflecting the going-concern value of the business. The Mousetrap

Corp. case, a fictional situation, shows a step-by-step valuation process and what to do with it. When valuing a firm, credit analysts should start with the business risk, as this analysis will offer guidance regarding cash flow drivers. Importantly, when using such models, it is important for the credit analyst to realize that they are only tools to point you in the right direction, not a substitute for also using common sense.

When an asset that has a value independent from the business secures a debt instrument, credit analysts should follow valuation guidelines that are specific to that asset. In their valuation, they should incorporate their expectations as to the timing of the realization of that asset, which may be jurisdiction-specific. For these asset types, credit analysts should be able to follow comparable market values better than for whole businesses.

NOTES

1. Standard & Poor's 2003 CreditStats show that the five-year median for the total debt/EBITDA ratio for firms rated BBB was 2.4 times. Chapter 11 explains the rating scales of credit rating agencies.

2. Free cash flow is defined in Chapter 6 as operating cash flow minus capex, unless specified otherwise.

3. For a full and in-depth discussion of valuation, we recommend Chapter 30, "Valuing Equity in Distressed Firms," in Aswath Damodaran, *Investment Valuation*, Wiley, 2002.

4. We will refer readers to their favorite corporate finance textbook, which undoubtedly spends a considerable amount of time on CAPM. One such reference is J. William Petty, Arthur J. Keown, David F. Scott, John D. Martin, and David W. McPeak, *Basic Financial Management* (Canadian Edition) Scarborough, Prentice Hall Canada Inc., 1994.

5. Many revolving credit facilities, the purpose of which is to finance working capital requirements, are secured by both receivables and inventories. Advance levels are usually determined by what is known as a *borrowing base*, calculated on the basis of a combination of eligible receivables and inventories times the maximum advance level for each type of asset.

6. A common type of vessel that is the maximum size that can pass through the Panama Canal and is used for grain, coking coal, and other such dry products.

7. See Arnaud de Servigny and Olivier Renault, "Measuring and Managing Credit Risk," McGraw-Hill, 2004. The excellent Chapter 4 reviews the recent quantitative advances in the field of loss given default and suggest approaches of its own.

This page intentionally left blank.

PART III

Measuring Credit Risk

In the third part of this book, we bring together our discussions on credit risks inherent to the corporation and to the debt instruments, the topics of the first two parts of this book.

In Chapter 10, we propose a scoring system that students and practitioners preparing the case studies presented in the appendices can utilize for their credit assessments. It is meant to be a practical guide for ranking the default risk of a borrower and the recovery prospects of particular debt instruments. It is complemented by five credit risk profiles of different types of corporations.

In Chapter 11, we discuss how credit risk scoring is utilized in today's world of finance to estimate the pricing of debt instruments and the risk of loss. In particular, we provide a brief overview of the Basel II Accords and the proposed approach to credit risk measurement in relation to capital allocation. We also discuss the role played by credit rating agencies in the development of credit risk measurement, in terms of both default and recoveries.

CHAPTER 10

Putting It All Together: Credit Ranking

"In today's world of risk management, a credit risk ranking system must be able to capture both default risk and recovery expectations."

—Bill Chew, Managing Director, Standard & Poor's

In the previous chapters, we focused on the key building blocks of corporate credit analysis. Going from the general to the specific, we reviewed sovereign, sector, and business risks; then we discussed financial risks; and finally we turned to credit risks specific to debt instruments.

In order for credit analysis to be useful, it is essential to have the tools to differentiate credit quality not just between clearly good and bad credit, but along the subtler spectrum that ties risk and reward. Market participants utilize credit ratings to help them determine the appropriate risk premium when a new debt instrument is issued; banks generally utilize an internal scoring system to calculate the capital allocation that is suitable for a particular risk and to monitor their portfolio; and investors make use of ratings both for pricing and for benchmarking purposes among various fixed-income instruments.

In this section, we provide a framework for scoring credit risk by pulling together all the previous sections of this book. This approach is designed to assist in ranking firms according to credit quality, and also to track the evolution of credit quality over time.

From a conceptual standpoint, the credit score assigned to a given firm is a proxy for the default probability, or, to put it differently, the likelihood that the firm will service its debt in a timely fashion. The score assigned to a debt instrument represents the recovery expectation, or what the creditor can expect to recoup, should a default occur. Put together, the probability of default and the recovery expectation provide a good indication of the probability of loss to creditors.

PROPOSED TEMPLATE FOR CORPORATE CREDIT SCORE

Credit Scale and Credit Direction

Table 10-1 is a credit score matrix that is divided into five categories, ranging from "very low risk" to "very high risk." Each category is subdivided in two to provide more granularity to the scale. For illustrative purposes, the scale ranges from 1 (least credit risk) to 10 (default).

TABLE 10-1: Credit Score Matrix

Corporate Credit Risk	
Very low risk	1
	2
Low risk	3
	4
Moderate risk	5
	6
High risk	7
	8
Very high risk	9
	10

We now discuss in more detail how the scoring should be applied.

Scoring Business and Financial Risks

For the business and financial risk analysis, we use a scale ranging from 1 (least amount of risk) to 10 (most amount of risk), similar to the one used for the overall corporate credit score (see Table 10-2). It is essential that the scores reflect a forward-looking view.

TABLE 10-2: Business and Financial Risk Score Matrix

Business Risk		Financial Risk	
Very low risk	1	Very conservative	1
	2		2
Low risk	3	Conservative	3
	4		4
Moderate risk	5	Moderate	5
	6		6
High risk	7	Aggressive	7
	8		8
Very high risk	9	Very aggressive	9
	10		10

Industry and Business Risk Scores

In Chapter 2, we characterized industries as having a high, medium, or low level of credit risk. Although these categories limit the credit quality for the majority of the participants in a particular industry, they do not prevent the best ones from achieving the best business risk scores. The starting point for scoring the business risk is to identify the applicable competitive factors (see Chapter 3), then determine how the firm being analyzed stacks up against these. In Table 10-3, we selected a forestry firm for illustration purposes.

Competitive factors should be weighted to reflect their relative contribution to firms' performance within a particular sector. Table 10-3

TABLE 10-3: Business Risk Scoring

Industry Risk		High
Keys to Success	**Weighting**	**Scores**
Cost position	50%	7
Diversity	30%	8
Integration	20%	4
Total	**100%**	**6.7**

shows that in the forestry industry, as in many other cyclical sectors, having a low-cost position is paramount; diversity (geographic and products) and vertical integration (control over the fiber supply, be it wood or recycled paper) are important as well, but to a lesser extent.

Financial Risk and Credit Ratios

As discussed in Chapter 5, the four key measures of financial risk are based on a firm's profitability, balance sheet, cash flow adequacy, and financial flexibility. To score the first three, credit analysts should use a combination of prospective credit ratios derived from a cash flow model, and historical ratios demonstrating the firm's track record. Benchmark ratios that could be expected for various classes of risk are presented later in this chapter. The score of financial flexibility is based on more qualitative criteria, discussed in Chapter 5.

The cash flow adequacy score should be weighted more, unless the debt service ratios are very tight. In such circumstances, the financial flexibility score should be weighted more (one could even argue that in situations of financial distress, ratios become irrelevant, and the sole analytical focus should be on financial flexibility). The scores in Table 10-4 should be viewed more like guidelines than rigid rules.

In the following example, the scores reflect average to weaker-than-average credit measures, and satisfactory financial flexibility. The weighting applied is 15 percent for both profitability and balance sheet scores, 40 percent for cash flow adequacy, and 30 percent for financial flexibility. When reviewing ratios, credit analysts should always benchmark them with industry peers, as well as firms that are in the same class of risk.

TABLE 10-4: Financial Risk Scoring

	Weighting	Scores
Profitability	10%-25%	6
Balance Sheet	10%-25%	5
Cash flow adequacy	10%-50%	6
Financial flexibility	30%-70%	4
Total	**100%**	**5.1**

Management Strategy, Corporate Governance, Accounting Quality

"Soft factors" such as management strategy and financial policy should be incorporated into financial projections. In addition, in the event that there are any overriding issues, such as poor accounting quality or questionable corporate governance, these factors should be taken into account to moderate scoring. However, adequate management performance and good corporate governance should not be used to prop scores up.

Country Risk

As discussed in Chapter 1, country risk can have great influence on the credit quality of a corporation. Generally, developed countries have relatively low risks, while emerging countries have very high risks. Correspondingly, companies in emerging countries will have their overall credit scores limited, but those of companies in developed countries will typically not be limited at all. Credit analysts may use the entire credit scoring scale for corporations operating in the lowest-risk countries and corporations that are so globally diverse that country risk is diffused (e.g., Exxon or Toyota). Conversely, credit analysts should limit to lower categories the scores of firms operating in high-risk countries, even if a standalone analysis would lead to a higher score.

Weighting the Business Risk and Financial Risk Scores

The next step is to determine the appropriate weighting for the business and financial risk. The general rule is, the worse the credit, the more emphasis credit analysts should place on the financial score. To put it differently, when things get bad, what should matter most to credit analysts is a thorough understanding of how the firm will meet its next interest and/or principal payment: Liquidity analysis outweighs all the other analytical categories.

Table 10-5 proposes guidelines for weighting business and financial risk.

Another way of thinking about the relationship between business and financial risks would be to allow more aggressive credit ratios

when the business risk is lower. Let's take the case of water utilities: In most cases, both supply and demand are generally fairly predictable, and once the pipes are in the ground and maintained properly, the cost of running a water utility is very predictable. Hence cash flow predictability and volatility should be fairly good, allowing a higher level of financial risk.

TABLE 10-5: Business and Financial Risk Weighting

Business Risk	Business Risk Weighting	Financial Risk Weighting
Very low risk	50–70%	30–50%
Low risk	50–60%	40–50%
Moderate	40–50%	50–60%
High risk	20–40%	60–80%
Very high risk	10–20%	80–90%

Assigning a Corporate Credit Score

When consolidating scores, credit analysts should prepare a table that looks like Table 10-6.

TABLE 10-6: Business/Financial Risk Illustration

BUSINESS RISK			FINANCIAL RISK		
Keys to Success	**Weight**	**Score**	**Measures**	**Weight**	**Score**
Cost position	50%	7	Profitability	10%	6
Diversity	30%	8	Balance sheet	10%	5
Integration	20%	4	Cash flow adequacy	40%	6
			Financial flexibility	40%	4
Business risk score	7	6.7	Financial risk score	5	5.1

Table 10-7 is a helpful way to combine business and financial risk attributes and merge them into an overall corporate credit score. As stated earlier, this score is based on a scale ranging from 1 (best) to 10 (worst) and reflects the evaluation of this firm's capacity to service its debt in a timely fashion. To put it differently, this score represents a default probability.

TABLE 10-7: Corporate Credit Score: An Illustration

	Scores	Weight	Weighted Scores
Business risk	7	40%	2.8
Financial risk	5	60%	3.0
Default risk score	**6**	←	**5.8**
"Soft factor" discount	**None**		
Country risk cap	**None**		
Final corporate credit score		**6**	

DISTINCTION BETWEEN VARIOUS CLASSES OF RISK

This section provides a guide to differentiate between the five classes of risk outlined at the outset of this chapter. We provide typical characteristics for business, financial, and liquidity risks that credit analysts are likely to find in most credits. However, credit analysts should not be surprised if they find situations that do not easily fit the proposed buckets; it happens all the time in the world of credit. With the other tools provided in this book, however, credit analysts should be able to piece together the missing links to arrive at a full picture of a borrower's credit profile.

Very Low Credit Risk

Business Risk Characteristics

- Uncontested leader in a global, well-established sector, with positive demand fundamentals
- Widely diversified and stable sources of cash flows, resulting in little cash flow volatility and high predictability
- Recognized track record of growth and success, both organically and through acquisitions
- Examples of sectors: pharmaceuticals, oil and gas, branded consumer goods.

Financial Risk

Standard & Poor's 'AA' Rating Ratio Medians, 2000–2002[1]

	Total Debt/ Capital (%)	Funds from Operations/ Total Debt (%)	Free Operating Cash Flow Total Debt (%)	EBITDA Interest Coverage (×)
2002	37.6	66.2	36.8	15.9
2001	36.6	66.3	36.7	14.7
2000	37.0	54.5	17.9	12.2

Source: Standard & Poor's CreditStats

- Growth combined with maintenance of low debt leverage, sometimes even net cash position.
- Consistent dividend distribution.

Liquidity

- Consistent and significant generation of free and discretionary cash flow

- Uninterrupted access to short- and long-term debt markets, as well as equity markets
- Significant undrawn bank and capital market short-term debt facilities

Low Credit Risk

Business Risk Characteristics

- Leader in a more competitive sector, or in control of a narrower segment of the sector with very favorable demand characteristics
- Business position may be supported by regulatory protection or incumbent position
- Diversified sources of cash flows, competitive operations
- Examples of sectors: retail, telecoms, utilities, cyclicals (best-in-class)

Financial Risk

Standard & Poor's 'A' Rating Ratio Medians, 2000–2002[1]

	Total Debt/ Capital (%)	Funds from Operations/ Total Debt (%)	Free Operating Cash Flow Total Debt (%)	EBITDA Interest Coverage (x)
2002	40.6	42.7	23.1	10.0
2001	41.2	41.8	22.6	8.2
2000	42.8	42.2	13.5	8.4

Source: Standard & Poor's CreditStats

- Superior operating profitability due to leading position, track record of success.
- Growth with maintenance of low debt leverage.
- If business risk characteristics are very favorable, debt leverage may be moderately higher because of growth by acquisitions.

Liquidity

- Consistent free and discretionary cash flow generation outside of large acquisitions.
- Access to short- and long-term debt markets, as well as equity markets.
- May have committed bank facilities for 3 to 5 years.

Moderate Credit Risk

Business Risk Characteristics

- Large, established competitors of the sector leaders, or
- Leaders of sectors with less attractive characteristics (airlines, building materials, packaging, certain high-tech subsegments), or
- Successful niche players with little indebtedness, or benefiting from a particular competitive factor (brand, rights, regulation, equipment, or natural endowment)

Financial Risk

Standard & Poor's 'BBB' Rating Ratio Medians, 2000–2002[1]

	Total Debt/ Capital (%)	Funds from Operations/ Total Debt (%)	Free Operating Cash Flow Total Debt (%)	EBITDA Interest Coverage (x)
2002	46.3	30.7	16.8	5.5
2001	47.9	27.6	13.7	5.0
2000	48.6	27.8	8.9	5.1

Source: Standard & Poor's CreditStats

- Finances typically more aggressive, owing to capital-intensive nature of business, or simply because of more aggressive financial policies.

- Debt-servicing capacity unquestioned over next 3 years.
- Free cash flow generation may depend on business cycle, particularly for cyclical sectors.
- Modest dividend payments should be possible, but perhaps not through the entire cycle.

Liquidity

- Debt capital markets may not always be available, particularly for emerging-market firms.
- Because of potential refinancing issues, it is essential for firms to have 3 to 5 years committed bank facilities, which may be subject to financial covenants.

High Credit Risk

Business Risk Characteristics

- Second-tier players in a global sector with less favorable characteristics, or
- Firms with a worse-than-average operating profile, or
- Firms, potentially industry leaders, with very high debt levels due to over-investment at the top of the business cycle.

Financial Risk

Standard & Poor's 'BB' Rating Ratio Medians, 2000–2002[1]

	Total Debt/ Capital (%)	Funds from Operations/ Total Debt (%)	Free Operating Cash Flow Total Debt (%)	EBITDA Interest Coverage (x)
2002	57.5	19.5	8.5	3.2
2001	59.2	18.1	7.6	3.0
2000	64.8	16.5	4.0	2.9

Source: Standard & Poor's CreditStats

- Tight debt-servicing ratios, but debt service from operating cash flow should be secure for the next 24 months.
- Cash flow volatility expected through the cycle.
- Capital structure is typically leveraged.
- Acquisitions and dividends are unlikely from free cash flow.

Liquidity

- Free cash flow generation only in favorable phase of business cycle.
- Discretionary cash flow, if any, is likely to be marginal.
- Bank debt is subject to financial covenants and may be secured.
- Access to debt capital markets could be unpredictable and depends on the credit cycle.
- Committed credit facilities for 3 to 5 years are essential.

Comment: This is the typical category for LBOs, although discretionary cash flow generation to repay debt, albeit modest, would be expected.

Very High Credit Risk

Business Risk Characteristics

- Struggling competitors in sectors with unfavorable characteristics (airlines, theme parks, shipping, packaging), or
- Firms with operating issues, such as outdated equipment, reliance on a high-risk asset, or the wrong business model.

Comment: A subcategory could be added for firms experiencing outright distress.

Financial Risk

Standard & Poor's 'B' Rating Ratio Medians, 2000–2002[1]

	Total Debt/ Capital (%)	Funds from Operations/ Total Debt (%)	Free Operating Cash Flow Total Debt (%)	EBITDA Interest Coverage (x)
2002	78.5	10.8	2.5	1.8
2001	80.0	8.7	1.6	1.6
2000	81.8	8.4	(1.5)	1.6

Source: Standard & Poor's CreditStats

- Debt-servicing ratios are tight, and the firm may have to cut down capital spending, and even perhaps its operating costs.
- No dividend payments; discretionary cash flow is typically negative, although free operating cash flow may be marginally positive.
- Capital structure is typically highly leveraged.

Liquidity

- Debt service is not secure over the next 12 months, or sometimes less, and depends on a favorable economic environment or a positive restructuring outcome.
- Bank debt is secured and is subject to tight financial covenants.
- As refinancing options are very uncertain, long-dated debt is essential, as are committed bank lines with 3 to 5 years maturity.

RANKING RECOVERY EXPECTATIONS

To assess recovery expectations, credit analysts should utilize the valuation approaches discussed in Chapter 9. We propose a five-point scale to differentiate recovery expectations investors may have for different debt instruments (see Table 10-8).

TABLE 10-8: Recovery Scores

Net Loss Risk	Recovery Expectations	Recovery Score
Very low risk	100%	1
Low risk	75–100%	2
Moderate risk	50–75%	3
High risk	25–50%	4
Very high risk	0–25%	5

One may wonder why we propose a separate scale when recovery expectation figures might suffice. To assess recovery prospects on a single debt instrument, a percentage range may indeed be enough. However, it is important to remember that since we are assessing large portfolios of debt instruments, scores can be tracked over time and amalgamated better than recovery expectation ranges can be, particularly in the admittedly imprecise world of recoveries.

Valuation, Priority Ranking, and Recoveries

The first step in assigning a recovery score is to estimate recovery prospects, as developed in Chapter 9. Credit analysts must establish whether the debt instrument or debt instruments are:

- Secured by a pledge over the entire business or unsecured. In this case, credit analysts will use an enterprise valuation, assuming that the business will be restructured. In the event it is beyond repair, analysts need to evaluate the liquidation value of the assets.
- Secured by collateral security, the value of which is independent from the underlying business, such as vehicles, buildings, or aircrafts. In that case, credit analysts will assess the value of the collateral on the basis of comparable transactions.

The next step is to compare the estimated value with the liabilities ranked according to established priority claims. Table 10-9 shows a fictional illustration of how priority ranking works in insolvency.

TABLE 10-9: Scoring Recoveries: An Illustration

Priority Ranking of Claims	Type of Claim	Claims Amount ($)	Expected Time to Recovery	Recovery Prospects Enterprise Value = $800	Recovery Score
Privileged creditors	Legal fees, certain wages and taxes	75	Up to 6 months	100%	**1**
Secured creditors	Secured debt	400	< 30 months	100%	**1**
Unsecured creditors	Unsecured debt, suppliers and other nonfinancial creditors	700	> 30 months	46%	**4**
Subordinated creditors	Subordinated debt	0	> 30 months		
Shareholders	Shares	350	> 30 months	0%	**N/A**

In this illustration, we presented recovery values on an undiscounted basis. Although assessing the time to recovery is difficult in most circumstances, credit analysts should make an attempt to evaluate this fickle point, as it will affect the discount factor. In most cases, time to recovery depends on the level of control or influence of creditors in a particular insolvency regime, their bargaining power relative to other creditors, and, in the event that security exists, the enforceability of that security. In untested jurisdictions, credit analysts should be particularly vigilant not to expect fast recoveries.

For most insolvency regimes, we recommend that credit analysts use three separate buckets presented in Chapter 9 to assess the impact of insolvency jurisdictions on recoveries. Assuming a hurdle rate of 10 percent in this illustration, the recovery rate for both privileged and secured creditors would remain unchanged at 100 percent. If unsecured creditors have to wait five years, their recovery prospects would drop to only 37

percent! In our scoring scale, however, unsecured creditors would be scored a "4" on both discounted and undiscounted bases.

Assessing Recoveries for Structural Subordination

Debt instruments of operating subsidiaries are typically in a structurally senior position to holding company debt (see the Michelin case in Chapter 8). When assessing the recovery prospects of debt instruments of holding companies, debt that is structurally senior should be listed with priority liabilities in a table like Table 10-9.

CHAPTER SUMMARY

Ranking Credit Quality

Credit analysis is not performed in a vacuum: The objective is to be able to compare and contrast the relative risks of different investments. For this, a scoring system is required to bring together the various risks identified throughout this book. The authors propose here a scale of 1 (Best) to 10 (Worst), representing five classes of risk: very low risk, low risk, moderate risk, high risk, and very high risk. In order to assess credit risks, two different scores should be assigned.

The first should reflect the capacity of a firm to service its debt obligations in a timely manner. Put negatively, this score will represent a firm-specific default probability. We call it the corporate credit score. To arrive at this score, credit analysts should first identify the country and industry characteristics of the borrower and compare its competitive position with those of industry peers. The resulting business risk score should be contrasted with a financial risk score, reflecting profitability, cash flow adequacy, balance sheet, and financial flexibility measures. Finally, the resulting corporate credit score should be moderated in the event that management risk is deemed higher than what would be expected as a result of poor governance, strategy issues, aggressive accounting, or a mix of these factors. When assigning a corporate credit score, credit analysts should always remember to have a forward-looking view.

The second score should reflect the recovery that a creditor may expect, should a default occur. Recovery expectations are a function of the

seniority of the debt instrument, the type of collateral, if any, and the insolvency regime, as discussed in Chapter 8. While recovery expectations are best expressed in percentages of a particular debt instrument's amount outstanding at default, the authors recommend that it be expressed on a scale, to better track migration over time.

NOTES

1. Statistics by rating category are published by Standard & Poor's on an annual basis.

CHAPTER 11

Measuring Credit Risk: Pricing and Credit Risk Management

"Credit risk is undoubtedly the new frontier in finance, just as interest rate risk and asset and liability management were fifteen years ago."

—Arnaud de Servigny and Olivier Renault (2004)

Credit scoring is not done in a vacuum; in today's world, it is an essential tool for pricing debt instruments and for credit risk management. In the previous chapter, we presented a scoring system that permits the ranking of default risk and recovery expectations, respectively. Combined with the exposure at default (EAD), a probability of default (PD) and a probability of recovery (LGD, loss-given-default, or "1 - recovery") provide a probability of expected loss (EL)[1] for a given debt instrument or a pool of debt instruments, so that the following equation can be written:

$$EL = EAD \times PD \times (1 - LGD)$$

As we will see in this chapter, credit rating agencies have tracked the performance of their credit ratings over time, and have concluded that they contain significant predictive power with respect to default. If a credit analyst knows that the three-year probability of default for a firm is 8.2 percent, and the recovery expectation (discounted) on a particular debt instrument worth 100 issued by that firm is between 50 and 75 percent, the probability of net loss on that particular debt instrument ranges between 2.1 percent and 4.1 percent.

Of course, many more items could be added to make this calculation more accurate, including correlations, market risk information, and other aspects. This is the subject of a lot of significant academic work.

Defaults and recoveries, however, remain the two essential components of loss calculations.

This chapter discusses practical applications of credit ratings from rating agencies in pricing debt instruments, whether bonds or loans. It also presents the application of internal ratings systems by banks in the context of the Basel II Accords, the objective of which is to ensure a robust international banking system through prudent capital allocation. In conclusion, this chapter provides a brief overview of credit rating agencies, their rating scales, and the validation of their work through default and migration statistics; the most important credit models are also discussed in that section.

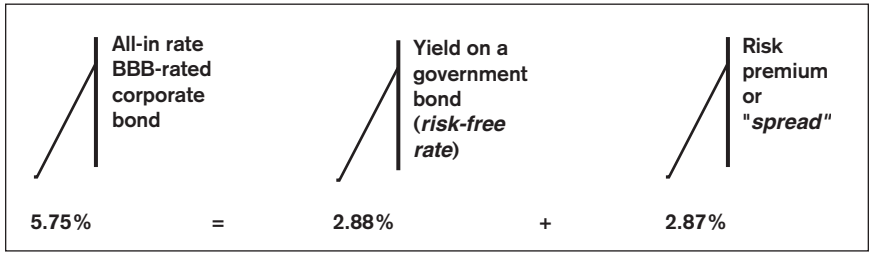
COMBINING CORPORATE CREDIT AND RECOVERY SCORES: FIXED-INCOME PRICING AND RISK ALLOCATION

The combination of probability of default (PD) and recovery expectations (LGD) provides an essential contribution in the world of finance, in particular regarding the pricing of debt securities and the calculation of capital and risk charges in risk management. We discuss briefly the use of credit ratings for these practical ends.

The Use of Corporate and Recovery Scores in Pricing Debt Securities

As Figure 11-1 shows, the price of a debt security is made up of two key elements: the risk-free rate, generally defined as the yield on a government bond; and a risk premium, or spread, reflecting the credit risk (a combination of default probability and recovery expectations), and a liquidity

FIGURE 11-1: Bond Pricing

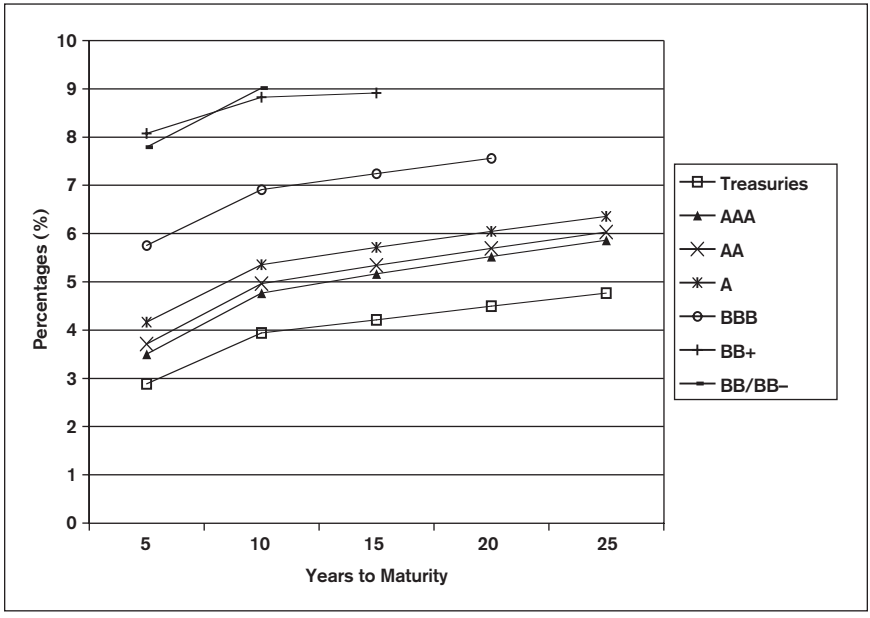


factor, representing the supply and demand characteristics of a particular market at a given time.

In general terms, the higher the credit risk, the higher the risk premium an investor will require in order to buy a debt instrument. With the popularization of credit ratings, market participants are increasingly utilizing these as a proxy to assess the suitability of the offered spread on any rated debt instrument.

While spreads incorporate other types of information, the correlation between ratings and spreads is quite clear in the following chart (Figure 11-2). (*Treasuries* indicates the risk-free rate.)

FIGURE 11-2: Treasury and Corporate Bond Yields



Source: Standard & Poor's Global Fixed Income Research

Credit ratings are not only utilized as a benchmark for debentures, bonds, or notes. As was discussed in Chapter 7, many loan agreements contain ratings pricing grids linking the interest rate on a loan to particular ratings. In this respect, the significant granularity of the rating scales (the Standard & Poor's and Fitch scales each have 22 categories, Moody's 18 categories, and Fitch's 22 categories) provides sufficient differentiation to form an equally granular risk-reward curve.

The Use of Credit Ratings and Scores in Risk Management: The Basel Capital Accords

Bank regulators require that banks allocate capital in relation to the risks incurred, in accordance with the principle of prudence: To protect depositors in an even manner, banks with a high-risk credit portfolio must allocate more capital than a bank that invests all its deposits in high-grade government bonds. The rationale is that this regulatory capital will serve as a cushion to absorb losses in the event of defaults in the loan portfolio.

The central objective of the Basel Committee on Banking Supervision, established in 1975 by the central bank governors of the Group of Ten countries,[2] is to ensure the stability of the international banking system by promoting a common approach to the assessment of capital adequacy. A first measurement framework was established in 1988 and required a one-size-fits-all approach to credit risk with the application of a capital-to-risk-weighted-assets (including operational and market risks) ratio (the so-called Cooke ratio).

After witnessing a decade of improved risk management research and practices, the Basel Committee proposed a more extensive and risk-sensitive approach for measuring credit and operational risks in 1999, usually referred to as Basel II.[3] The specific goals of this new accord include:

- Promote safety and soundness in the financial system
- Enhance competitive equality
- Provide a more comprehensive approach to addressing risks
- Contain approaches to capital adequacy that are appropriately sensitive to the degree of risk involved in a bank's positions and activities
- Focus on internationally active banks, although the underlying principles should be suitable for application to banks of varying levels of complexity and sophistication

To achieve these goals, the Basel Committee would like to promote three mutually self-reinforcing pillars: minimum capital requirements, supervisory review, and market discipline.

Essentially, Basel II proposes two approaches to capital adequacy, the standard approach and the internal ratings-based approach, or IRB, thereby recognizing varying degrees of sophistication in banks' risk man-

agement capabilities. For both approaches, Basel II also introduced explicit capital requirements for operational risk that address aspects relating to banks' systems and processes, which are of noncredit nature.

As the new accord will serve as a basis for the respective national regulators to enforce capital adequacy requirements for all banks, all classes of assets (from sovereign to retail assets) are specified in detail. Guidelines for credit risk mitigators, such as collateral, guarantees, credit derivatives, maturity, and currency mismatches, are also introduced.

We briefly review both approaches, but only as they relate to corporate credit risk, as this is the topic of this book. De Servigny and Renault (2004) give a thorough presentation of the Second Basel Accord, its benefits and shortcomings. They provide an excellent illustration of the practical application of the outcome of credit analysis for the wider purpose of risk management, although the reader should remember that the new accord is not yet in place and that changes could still take place before implementation.

The Standardized Approach

In this approach, various types of counterparties are assigned risk weights based on assessments by external credit assessment institutions (ECAIs), such as rating agencies. It is intended to be utilized by banks that do not benefit from advanced risk management systems.

Risk Weights for Corporates

Credit Assessment	AAA to AA–	A+ to A–	BBB+ to BB–	Below BB–	Unrated
Risk weights	20%	50%	100%	150%	100%

It is worth noting that the proposed risk weights assume that unrated counterparties are on average rated BB– or more. This was motivated by the fact that in the majority of countries, corporations do not require a rating in order to borrow from banks, and the Basel Committee was unwilling to cause the cost of funding for small and midsize firms to increase by requiring them to receive a rating, as this could potentially have a detrimental macro-economic effect.

This places a significant burden on bank regulators, who will have to ensure that banks that have large exposures to unrated entities and follow the standardized approach remain properly capitalized. To achieve this, regulators can monitor the national delinquency rate, although this approach is significantly more reactive than a more refined risk management approach.

In the proposed framework of the standardized approach, credit risk mitigators, such as collateral, include primarily fungible assets, such as cash, securities, and gold. Little consideration is given to standard forms of collateral available to corporations, such as receivables, inventory, and real property such as plant and equipment.

The Internal Ratings-Based Approach

The Basel Committee provides the option to utilize a more sophisticated approach for banks that have developed advanced risk management systems. As its name indicates, the internal ratings-based approach (IRB) allows banks to utilize their own rating scale. With this approach, the burden of proof shifts to the banks themselves, subject to approval from the regulators. The IRB is subdivided into two approaches, the "foundation" IRB and the "advanced" IRB,[4] but for the purpose of this brief discussion, we present only the building blocks common to both approaches.

Banks polled for the IRB approaches have internal ratings scales with an average of ten categories for performing loans and three for nonperforming ones, which provides a much more granular approach to risk than the five buckets proposed in the standardized approach. With IRB, the Basel Committee proposes risk weights that are specific to various asset-classes.

One critical eligibility factor is that banks must show that their models are calibrated on robust and long default and recovery time series. Equally critical is the breadth of data to avoid bias in the development of models, which may arise as the result of geographic and sector specialization.

With IRB, credit mitigators used in calculating LGD differ significantly between the foundation and advanced approaches. With the foundation approach, prescriptive buckets are used across jurisdictions, asset classes, sectors, and shareholding structures. In particular, unsecured and subordinated claims are assigned 45 percent and 75 percent LGD weights, which implies that a subordinated creditor is expected to recover 25 percent on average and an unsecured creditor 45 percent on average. As for secured claims, the Basel Committee proposed using the same methodology as in

the standardized approach for financial collateral, and a slightly more developed one for residential and commercial real estate.

The proposed LGD methodology in the advanced approach remains vague, leaving it to the banks and the regulators to develop and formalize the data. Banks that can demonstrate strong underwriting capabilities in the form of better contracts and, even more importantly, superior skills in working out problem loans could gain a precious competitive advantage over their peers in terms of capital allocation.

HOW CORPORATE CREDIT AND RECOVERY SCORES OR RATINGS ARE USED

A corporate credit score is a proxy for default risk, and a recovery score is a proxy for recovery expectations. Combined, these two scores should present a view on probability of loss. As these scores are followed over time, they enable investors to monitor the risk profile of both single assets and portfolios.

Corporate Credit Scores and Ratings

In risk management terms, a corporate credit score or rating is a default probability, the most important building block of credit risk. Essentially, it is the expression on a continuum of the likelihood that a default will occur. For many market participants, the measure of credit was binary until quite recently: Either the credit was accepted, usually based on reputation, or it was rejected. Once the credit was accepted and the risk was on the books, the creditor or investor was expected to hold it until maturity or until a default occurred.

A significant contribution to better understanding of the probabilities of default came from credit rating agencies when they began aggregating rating data and tracking them over time.

Rating Agencies and Rating Scales

Before diving into the statistical results, let's briefly present the respective scales of the three major rating agencies, Standard & Poor's, Moody's, and Fitch (see Table 11-1). It should be noted that all three agencies define their ratings as "opinions" about the creditworthiness of an obligor. While the symbols differ somewhat, the three scales are broadly similar.

TABLE 11-1: Credit Rating Agencies' Scales

Description	Standard & Poor's	Fitch	Moody's
Highest quality	AAA	AAA	Aaa
High quality	AA+	AA+	Aa1
	AA	AA	Aa2
	AA–	AA–	Aa3
Strong payment capacity	A+	A+	A1
	A	A	A2
	A–	A–	A3
Adequate payment capacity	BBB+	BBB+	Baa1
	BBB	BBB	Baa2
	BBB–	BBB–	Baa3
Likely to fulfill obligations; ongoing uncertainty	BB+	BB+	Ba1
	BB	BB	Ba2
	BB–	BB–	Ba3
High-risk obligations	B+	B+	B1
	B	B	B2
	B–	B–	B3
Current vulnerability to default	CCC+	CCC	Caa
	CCC		
	CCC–		
	CC	CC	Ca
	C	C	
Default	D	DDD, DD, D	D

A Brief History of Rating Agencies[5]

While mercantile credit agencies emerged in the nineteenth century to rate merchants' ability to meet their financial obligations, it was in 1909 that John Moody started to rate U.S. railroad bonds. Poor's Publishing Company issued its first ratings in 1916, Standard Statistics Company in 1922, and the Fitch Publishing Company in 1924. The merger of Standard Statistics and Poor's Publishing took place in 1941, creating Standard & Poor's. In the late

1990s, Fitch acquired a number of smaller rating agencies (IBCA, Duff & Phelps, and so on) that had emerged in the interim, and to this day, Standard & Poor's, Moody's, and Fitch remain the dominant players in credit ratings.

The default of Penn Central on $82 million of commercial paper in 1970 created a crisis of confidence in a market that had grown more on the basis of reputation than of analysis, causing other firms to default when investors refused to extend their commercial paper. Issuers began to seek credit ratings, which permitted rating agencies to start charging for their ratings, instead of collecting revenues from subscriptions. This was a significant turning point for rating agencies, as they were able to give more support to their research.

As the use of ratings was growing, the Securities & Exchange Commission started applying the status of Nationally Recognized Statistical Rating Organizations (NRSRO) in 1975 to agencies whose credit ratings could be used to determine net capital requirements for broker-dealers. While seven agencies had NRSRO status in the 1980s, there were three at the end of 2002: Standard & Poor's, Moody's, and Fitch. In early 2003, the SEC granted NRSRO status to Dominion Bond Rating Service (DBRS), a small agency based in Toronto, Canada. To obtain this status, an agency must demonstrate to the SEC the integrity of its policies and internal procedures, as well as its independence through its ownership, financial resources, and staff. But the SEC has also placed a substantial weight on the acceptance by the market of the agencies' ratings.

Outside the United States, other rating agencies emerged in the 1970s and 1980s, particularly in Canada [Canadian Bond Rating Service (CBRS) in 1972, DBRS in 1977] and in Japan (Japanese Bond Rating Institute in 1975, Japanese Credit Rating Agency in 1985, and Nippon Investor Service in 1985). While in Japan, the domestic rating agencies continue to play a significant role, the three largest international agencies are playing an increasingly dominant role in all areas of the credit markets, ranging from plain vanilla U.S. municipal bonds to synthetic securitizations to emerging market debt.

Rating Agencies' Corporate Default Studies: Cumulative Default Rates

Every year, rating agencies publish studies discussing the behavior of rating pools during the year under review. The cumulative default rates table shown in Table 11-2 observes annual defaults by rating categories on a static pool of rated entities. Structured finance vehicles and public-sector and sovereign issuers are typically excluded from these studies.

TABLE 11-2: 2003 Not Rated (N.R.)-Adjusted Cumulative Average Default Rates (%)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
AAA	0.00	0.00	0.03	0.07	0.11	0.20	0.30	0.47
AA	0.01	0.03	0.08	0.17	0.28	0.42	0.61	0.77
A	0.05	0.15	0.30	0.48	0.71	0.94	1.19	1.46
BBB	0.36	0.96	1.61	2.58	3.53	4.49	5.33	6.10
BB	1.47	4.49	8.18	11.69	14.77	17.99	20.43	22.63
BB	6.72	14.99	22.19	27.83	31.99	35.37	38.56	41.25
CCC	30.95	40.35	46.43	51.25	56.77	58.74	59.46	59.85

	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
AAA	0.54	0.61	0.61	0.61	0.61	0.75	0.92
AA	0.90	1.06	1.20	1.37	1.51	1.63	1.77
A	1.78	2.10	2.37	2.60	2.84	3.08	3.46
BBB	6.77	7.60	8.48	9.34	10.22	11.28	12.44
BB	24.85	26.61	28.47	29.76	30.99	31.70	32.56
BB	42.90	44.59	45.84	46.92	47.71	48.68	49.57
CCC	61.57	62.92	63.41	63.41	63.41	64.25	64.25

Source: Standard & Poor's Risk Solutions CreditPro 6.2

The following observations can be made from this corporate default study:

- There is a clear correlation between ratings and default probability: the better the rating, the lower the probability of default; the worse the rating, the higher the probability of default.
- The probability of default increases rapidly in the early years, but it tends to slow down later on.
- The steps in terms of probability of default become wider as ratings get worse, and there is a particularly large step between the

BBB and BB categories, or between the two sides of the investment grade–speculative grade cutoff.

- The level of defaults changes from year to year when default rates are tracked over time.

Rating Agencies' Corporate Default Studies: Rating Migration Analysis

Migration tables are a key complement to the cumulative default rate statistics: They show the likelihood that a rating will migrate upward or downward over time (see Table 11-3). For a one-year transition matrix, all rating movements between letter categories are recorded from the beginning of the year through year-end.

TABLE 11-3: 2003 Average One-Year N.R.-Adjusted Transition Rates

	Rating at Year-End (%)							
	AAA	AA	A	BBB	BB	B	CCC	D
AAA	93.06	6.29	0.45	0.14	0.06	0.00	0.00	0.00
AA	0.59	90.99	7.59	0.61	0.06	0.11	0.02	0.01
A	0.05	2.11	91.43	5.63	0.47	0.19	0.04	0.04
BBB	0.03	0.23	4.44	88.98	4.70	0.95	0.28	0.39
BB	0.04	0.09	0.44	6.07	82.73	7.89	1.22	1.53
B	0.00	0.08	0.29	0.41	5.32	82.06	4.90	6.95
CCC	0.10	0.00	0.31	0.63	1.57	9.97	55.82	31.58

Source: Standard & Poor's Risk Solutions CreditPro 6.2

Key findings from the migration table are:

- Overall, ratings display significant stability.
- Higher ratings show less volatility than lower ratings.
- Multiyear transition matrices show that the instruments with lower original ratings take less time to default.

The cumulative default rates and migration tables provide some reassurance about the relevance of credit analysis as a predictor of default in general, and about the work of credit rating agencies in particular.

Statistical Models, Scoring Systems, and Bankruptcy Predictors

While credit rating agencies have emerged as the preeminent source of expert credit analysis for the public debt markets, academics and risk managers have been busy developing statistical models to predict the likelihood of bankruptcy, primarily for the purpose of bank risk management. The underlying assumption of these models is that statistically meaningful behaviors can be identified that allow analysts to evaluate the probabilities of default. The banking sector has been very keen to develop credit models for obvious reasons: A robust model presents an obvious cost-benefit advantage over an expert-based approach. In addition, models have the benefit of using homogeneous inputs, thus standardizing data collection. While the focus of this book is not on risk management, it remains important to briefly review some of the existing credit models.

To be sure, this rapid review of models related to credit risk aims primarily at illustrating some of the developments and does not pretend to be exhaustive. Certain models, such as KMV Credit Monitor, will be looked at in more detail later in the chapter.

The Z-Score

Developed by Edward Altman,[6] the original Z-score relied on multidiscriminant analysis to identify variables providing information about the likelihood of bankruptcy. The function was fitted as follows:

$$Z = (1.2 \times A) + (1.4 \times B) + (3.3 \times C) + (0.6 \times D) + (1.0 \times E)$$

Where

A = net working capital/total assets

B = retained earnings/total assets

C = EBIT/total assets

D = market value of common and preferred stock/book value of debt

E = sales/total assets

The first four variables are expressed as percentages. In this model, the larger the Z-score is, the lower the probability of default over the next two years.

Merton Model

Perhaps one of the most famous models utilized in fixed-income risk management is the Merton model, developed in 1974.[7] In this model, credit risk is appraised by using the principles of options pricing, establishing a relationship between credit risk and the financial structure of the firm. It assumes in particular that shareholders hold a call option on the firm and that creditors sell a put option. A default occurs upon the maturity of the debt if the value of the firm is lower than the strike price of the put option.

KMV Credit Monitor

This model's approach is based on the Merton model. It relies on stock prices, or implicit stock prices derived from stocks with similar characteristics, for the calculation of the asset value of the firm at any point in time. The asset value of the firm is then compared with a default threshold, defined empirically as the sum of the observed firm's long-term debt and half of its short-term debt. The outcome is plotted against a probability of default called Expected Default Frequency (EDF). This tool is utilized by many market participants, mostly as an early warning signal, under the assumption that markets are efficient. One of its key limitations, though, is pricing availability.

Banking and Rating Agency Credit Models

The majority of credit models developed by banks combine quantitative and qualitative factors, based on the default experience of the bank. Approaches vary widely, ranging from decision-tree analysis and scorecards to multiple regressions and discriminant analyses. Their robustness is usually tested against rating agencies' default and rating migration studies.

Recovery Scores and Ratings

There have been few, if any, comprehensive recovery studies anywhere in the world on any particular asset class that can be compared to the extensive corporate default studies of the two leading rating agencies, Standard & Poor's and Moody's. Under the impetus of the Basel Committee (dis-

cussed earlier in the chapter) a number of initiatives are underway to remedy this shortcoming, but the task is immense if one thinks that it has taken the rating agencies between 20 and 30 years to come up with the fairly robust default data.

The best statistics in the public domain come from Standard & Poor's, which has collected data in the United States and from academic research in the United Kingdom.

The U.S. Experience

Standard & Poor's LossStats™ database has tracked over 1,600 defaults on public debt between 1988 and 2001. Among other things, the data provide the sector of the defaulted firm, the notional amount at default, the various debt instruments, the date of the default, the priority ranking, the type of collateral, if any, supporting the debt instruments, the last price of the debt prior to default, and the first price at emergence. Table 11-4 gives average data.

TABLE 11-4: 1998–2002 Ultimate Recovery Rate Averages

Instrument Type	Discounted Ultimate Recovery (%)	Standard Deviation (%)	Observations
Secured bank debt	74.1	32.4	331
Senior secured bonds	45.8	36.5	42
Senior unsecured bonds	36.8	35.1	198
Senior subordinated bonds	21.3	30.8	116
Subordinated bonds	15.0	24.7	55
Junior subordinated bonds	2.5	4.1	4

Source: Standard & Poor's LossStats™ Database

Results are broadly in line with expectations:

- Higher-ranking debt, such as secured bank debt, shows the highest recoveries, and the more junior debt, such as junior subordinated debt, shows the lowest levels of recovery

- Bank debt shows significantly higher recoveries than public debt.

When analyzing recovery drivers of bank debt in particular, Standard & Poor's identified two fairly predictable outcomes in the U.S. context:

- Collateral, and particularly a pledge of all assets, yields higher recoveries.
- A higher debt cushion, defined as the amount of debt ranking junior to the bank debt, implies higher recoveries for that bank debt (see Table 11-5).

TABLE 11-5: 1988–2003 Ultimate Recovery Values by Structure

	Discounted Ultimate Recovery (%)	Standard Deviation (%)	Observations
All bank debt	78.3	30.1	852
Any debt cushion (1%–95%)	79.9	29.8	745
Any debt cushion and any collateral	80.6	29.1	712
50% debt cushion and any collateral	88.7	23.7	402
50% debt cushion and all assets	89.0	22.3	244

Source : Standard & Poor's LossStats™ Database

Other conclusions from these reports include the following:

- Debt secured by more fungible collateral tends to show higher recoveries than debt secured by less tangible assets.
- The level of recoveries is correlated with the economic cycle.
- Surprisingly, the relationship between the sector and the level of recoveries does *not* appear to be a key determinant of recoveries.
- Equally surprisingly, a meaningful correlation was found between recoveries and the initial rating of the firm (when the firm was first rated).

Generally, these findings are encouraging, in that a number of key determinants of recoveries were confirmed. However, they should also be treated with great caution, as the volatility of the results remains fairly high, as reflected by the wide variation in the results (see standard deviations in Tables 11-4 and 11-5).

The U.K. Experience

In the United Kingdom, a study by Prof. Julian Franks and Oren Sussman[8] provides interesting insight into an insolvency regime that is far more creditor-friendly than the U.S. system. It should be noted that the average size of the firms studied is much smaller than in the United States, as the median turnover of the U.K. firms was less than £5 million (about $7.5 million). The sample, although relatively small, is still meaningful and included over 500 firms drawn from three different banks between 1997 and 1998.

The conclusions from this study are very interesting:

- Bank debt is highly collateralized and in the large majority of cases, the security includes a floating charge that allows the bank to exercise control over the insolvency procedure. . . .
- The rescue process is elaborate. . . . On average companies remain in the central rescue unit about 7.5 months. There is no evidence of automatic liquidation upon default. About 75 percent of companies survive. . . .
- The bank uses its control rights to encourage (or force) distressed firms to undergo restructuring, which includes downsizing and managerial replacement. . . .
- During rescue the bank frequently receives substantial repayment of loans outstanding. Trade creditors appear to be passive and maintain or even slightly expand their credit outstanding. . . .
- About one quarter of the proceeds of receivership is taken up in costs. These costs appear high. . . . Costs are an important issue since unsecured creditors receive only a small fraction of the proceeds and yet have little say in the insolvency procedure.
- About 44 percent of companies in receivership are sold as going concerns. However, since definitions of going concern are imprecise, these figures should be treated with some caution.

While research on recoveries is still in its early stages, preliminary findings are pointing in the direction of a fairly complex behavior, reflect-

ing a variety of constraints more than a mechanistic approach. In particular, it shows that restructuring is generally favored over liquidation for a variety of reasons, which is a key element.

Portfolio Effect in Credit Risk

The risk of loss in a debt instruments portfolio is generally lower than the sum of its parts because of the benefits of diversification. This objective can be achieved by mixing debt instruments from different sectors, countries, or credit qualities, which should dilute the risk related to any one particular debt instrument. Avoiding "putting all our eggs in the same basket" permits us, in turn, to steer clear of concentrations, as the economic fortunes of sectors, countries, or even credit qualities do not generally all move exactly in lockstep, even if a degree of correlation may exist.

Basel II takes into account the portfolio effect as a risk mitigant in its algorithm. Likewise, portfolio models such as Standard & Poor's CDO Evaluator also take portfolio diversification into account. These models are utilized in risk management to calculate the risk of loss on portfolios.

CHAPTER SUMMARY

Measuring Credit Risk

In the world of credit, the combination of a probability of default with an expectation of recovery provides a powerful tool: the probability of net loss. Debt market participants use this information for two purposes: pricing and portfolio monitoring.

The pricing of a debt instrument is determined by the risk-free rate and a risk premium, or spread. The latter is a function of the probability of default by the borrower, the recovery expectation on a particular debt instrument, and supply and demand conditions in the debt markets at a given time. Although there may be exceptions, spreads are generally directly correlated with credit ratings from credit rating agencies. Also, lenders may require the pricing of loans to vary as a function of the credit rating of the borrower. Although recovery ratings are still new, the authors expect them to become equally important in the pricing of debt instruments.

Credit scoring is equally important for portfolio monitoring purposes. The Basel II Accord, which advocates stability for the international banking system through a common approach to capital allocation, pro-

vides that banks may use internal scoring systems. While the proposed scoring approach used by Basel II is far more complex and detailed than the one recommended in this book, the spirit is the same: a focus on the probability of default and recovery expectations. Once a robust system is in place, banks can monitor the credit risk of their portfolios.

It would be unfit to finish a book on corporate credit analysis without referring to the pioneering work that the credit rating agencies done over the years. Founded nearly a century ago, their activity focuses essentially on assigning what we called in this book a corporate credit score, or a probability of default. The predictive power of credit ratings is validated through the studies published annually discussing the behavior of rating pools during a given period. These studies show, among many other things, that there is a clear correlation between the level of ratings and the default frequency; they also demonstrate that credit ratings display significant stability, but that the higher ratings are more stable than the lower ones. Credit models that are calibrated to predict default probabilities also exist.

NOTES

1. Net loss, another concept, includes portfolio effects such as correlations or co-movements, which we describe briefly at the end of this chapter.

2. These countries are Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Sweden, Switzerland, the United Kingdom, and the United States. The committee usually holds its meetings at the Bank for International Settlements in Basel, Switzerland, where its permanent Secretariat is located.

3. The original consultative document package on the New Basel Capital Accord released in January 2001 (updated several times), as well as all Basel Committee papers, is available on the Bank of International Settlements Web site at http://www.bis.org.

4. See "Overview of the New Basel Capital Accord," January 2001, p. 2. Under the "foundation" IRB approach, banks "meeting robust supervisory standards will input their own assessment of the probability of default associated with the obligor. Estimates of additional risk factors, such as loss incurred by the bank given a default and the expected exposure at default, will be derived through the application of standardized supervisory estimates." Under the "advanced" IRB approach, banks with the most sophisticated risk management systems will be able to estimate more of the risk components through internal estimates.

5. This section borrows significantly from Richard Cantor and Frank Packer, *The Credit Rating Industry*, Federal Reserve Board of New York, Summer–Fall 1994.

6. Edward I. Altman, "Financial Ratios, Discriminant, and the Prediction of Corporate Bankruptcy," *Journal of Finance*, September 1968.

7. Robert Merton, "On the Pricing of Corporate Debt: The Risk Structure of Interest Rates," *Journal of Finance*, 1974. Robert Merton, a professor at Harvard Business School, won the Nobel Prize in Economics in 1997 for his work in options pricing.

8. Julian Franks and Oren Sussman, "The Cycle of Corporate Distress, Rescue and Dissolution: A Study of Small and Medium Size UK Companies," April 19, 2000. In the study, rescue reflects the process of sending the credit file from the branch to a central unit within the bank that specializes in financial distress.

This page intentionally left blank.

PART IV

Appendices A to G: Cases in Credit Analysis

In this last section of the book, we provide actual situations in which credit analysis can be applied. In our experience, learning and understanding theory and proper procedures is important, but applying theory and procedures in real-life circumstances is when true learning occurs. With the assistance of several senior Standard & Poor's analysts, we provide here seven cases that offer significant training material for students and practitioners alike.

These case studies are complemented by keys to success for the sectors related to the cases. These keys are identified during the industry risk analysis process and analyzed during the business risk and financial risk analysis processes. In each case, we provide the key factors to analyze, the measurement used to evaluate performance, and an explanation on how to interpret performance.

The cases are diverse, covering situations that arose in North America, South America, Europe, and the Pacific Rim, and that involved mergers (AT&T–Comcast, MGM–Mirage, Kellogg–Keebler), foreign ownership in a merger (Air New Zealand–Ansett–Singapore Airlines), sovereign issues (Repsol/YPF), peer comparisons (U.S. forestry), and recovery analysis (Yell LBO).

APPENDIX A

AT&T COMCAST

Richard Siderman, Managing Director and Senior Telecommunications Analyst, Standard & Poor's

You are a senior communications sector credit analyst at a large, influential mutual fund company. You receive a phone call from the chief financial officer of Comcast Corp. informing you of the acquisition (described later in the Appendix), which was just announced publicly. He shares some brief details on the new company, AT&T Comcast, but not much more. Your firm has a substantial investment in Comcast's bonds.

The investment committee is anxious to decide whether to hold or sell the bonds. You have two hours to prepare an assessment and present it to the investment committee so that the committee can decide. Using the Cable Industry Keys to Success Factors starting on page 315, prepare a concise business assessment, highlighting key strengths and concerns for the merged entity. Discuss key financial credit measures and the importance of those measures to the analysis. Your recommendation to the investment committee should indicate the direction of credit quality for the combined company.

The following areas should be addressed in the analysis:

- Identify the positive considerations and key risk factors associated with the acquisition. How will the acquisition affect Comcast's competitive position?
- Identify and discuss the impact of the acquisition on the key financial credit measures.
- Will this acquisition improve or reduce Comcast's credit quality? Does the new company merit an investment-grade rating? Provide supporting factors for your recommendation.
- Based on your assessment of the direction of Comcast's credit quality, should your firm hold or sell the bonds?
- List the most important questions that you would pose to Comcast's executive management team. Explain why these

questions are important to your analysis. Suggest their potential answers and how those answers would affect your credit decision.

CURRENT RATINGS (PRIOR TO ANNOUNCED TRANSACTION)

Prior to the divestiture of AT&T Broadband, AT&T has a senior debt rating of A with a negative outlook.

Comcast Corp. has a senior debt rating of BBB with a negative outlook.

INDUSTRY OVERVIEW

Cable system operators (also known as MSOs) derive revenues from monthly subscriber fees, sales of pay-per-view movies and events, advertising, and carriage fees from home shopping channels. Revenues are expected to grow at an annual rate of 4 to 6 percent, driven by growth in broadband services and subscriber fee increases. Subscriber growth has plateaued at around 69 percent penetration of U.S. television homes.

Over the past five years (1996–2001), the cable industry has invested around $60 billion in infrastructure upgrades and facility improvements to allow the delivery of advanced services like digital cable, high-speed Internet access, and video on-demand. As a result, cable operators have been operating in the red for years. Investors have become increasingly concerned about the expected levels of profitability that the industry will ultimately generate. Over the intermediate term, capital expenditures are expected to decline to around $10 billion per year, as much of the infrastructure investment is nearing completion.

Revenues are primarily derived from monthly subscriber fees, which constitute 65 to 70 percent of sales. Cable operators also make money by selling commercial spots on advertiser-supported programming and by offering home shopping services, on which they receive a share of sales in their service area from the provider. Sales growth is expected from expanding pay-per-view services and from interactive services such as broadband Internet access. Cable operators generally pay programming networks either a monthly fee (per subscriber) or a percentage of gross receipts. Rising programming costs are a major industry concern. As of January 2002, 98.2 percent of total U.S. households owned television sets.

Competition

For the most part, cable operators enjoy well-protected market positions as the only cable television providers in their service areas. However, direct broadcast services (DBS), utilizing satellite technology, have experienced tremendous growth in the past few years. The DBS industry added about 2.6 million new subscribers in 2001, and had nearly 17.4 million subscribers by the end of that year. DBS operators can exploit regions where cable systems are outdated and slow to upgrade. DBS providers aggressively compete with MSOs by marketing multiple set-top deals, free dish installations, and various discounts. However, the high-speed Internet access offered by DBS operators lacks certain appealing features of that offered by cable system operators.

The seven leading broadcast networks have continually lost market share to cable channels over the past several years. Recent surveys indicate the broadcast networks' share of prime-time viewership has slipped to about 50 percent and cable's share has grown to nearly 46 percent.

Regulatory Environment

The Telecommunications Act of 1996 permitted telephone companies and cable operators to enter each other's lines of business. This law also has relaxed rules that previously limited both companies' absolute size and their relative size in a given market. FCC rules previously barred cable companies from controlling more than 30 percent of the nation's total pay-TV market. The deregulated climate has promoted consolidation within the cable industry. The merger of two of the largest MSOs is unlikely to raise any regulatory concern.

TABLE A-1: Financial Forecast—AT&T Comcast

	2002F	2003F
Sales	$19 billion	$21 billion
EBITDA	$4.8 billion	$6 billion
Interest expense	$2.4 billion	$2 billion
Total debt	$30 billion	$24 billion
Subscribers	22 million	24 million

THE AT&T BROADBAND TRANSACTION

On December 19, 2001, AT&T and Comcast Corporation announced that their boards of directors had approved a definitive agreement to combine AT&T Broadband with Comcast in a transaction valued at $72 billion.

The new company, to be called AT&T Comcast Corporation, would be one of the leading and most powerful communications, media, and entertainment companies in the world. It would have approximately 22 million subscribers and a major presence in 17 of the United States's 20 largest metropolitan areas. It would be the world's leading provider of broadband video, voice, and data services, with expected annual revenue of approximately $19 billion.

Terms of the Agreement

- Under the terms of the definitive agreement, AT&T would spin off AT&T Broadband and simultaneously merge it with Comcast, forming a new company to be called AT&T Comcast.
- AT&T shareholders would receive approximately 0.34 share of AT&T Comcast Corporation for each share of AT&T they owned. Comcast shareholders would receive one share of AT&T Comcast Corporation for each Comcast share they owned.
- AT&T Comcast Corporation's assets would consist of both companies' cable TV systems, as well as AT&T's interests in cable television joint ventures and its 25.5 percent interest in Time Warner Entertainment and Comcast's interest in QVC, E! Entertainment, The Golf Channel, and other entertainment properties.
- Comcast's Roberts family would control one-third of the vote of the new company and would maintain a significant degree of management control.

Comcast Corporation

Comcast Corporation had revenues of $9.674 billion in 2001 and earnings before interest, taxes, depreciation, and amortization (EBITDA) of $2.7 billion. Total debt was about $12 billion, offset somewhat by investments and cash of nearly $3 billion. Capital expenditures were about $2.1 billion.

Comcast realized double-digit percentage revenue and cash flow increases and achieved modest basic subscriber growth in 2001, despite

heavy competition from satellite TV operators. Comcast's cable systems produce healthy operating cash flow margins. The company's systems have been rebuilt and are benefiting from good growth in highly profitable digital and high-speed data services. Comcast's management is well regarded and among the best in the cable television industry.

AT&T Broadband

In comparison, AT&T Broadband experienced year-over-year basic subscriber losses of about 4 percent and has among the poorest operating margins in the industry. About 20 percent of its systems are well below the bandwidth capacity needed to offer higher-margin digital and high-speed data services. Therefore, capital investments for systems upgrades to AT&T Broadband's systems are likely to exceed $2.5 billion in each of the next two years.

Considerations

Management believes that it will be able to recognize about $6 billion of proceeds for its 25 percent stake in Time Warner Entertainment and various joint ventures in which it has a minority stake. The proceeds will be used to reduce debt, but not until 2003, when the sales will be completed.

A financial forecast for the merged companies is given in Table A-1, and financial ratio guidelines correlated to credit ratings in Table A-2. Information on the company's competitors is given in Table A-3.

TABLE A-2: S&P's Cable Television Financial Ratio Guidelines

Rating Category	A	BBB	BB	B
EBITDA to interest expense (×)	Greater than 4.2	2.8–5.0	1.2–2.9	Less than 1.5
Debt to EBITDA (×)	Less than 3.3	2.8–4.5	4.0–8.5	Greater than 7.5
Debt to subscriber	Less than $1,300	$1,000–$1,500	$1,300–$2,300	Greater than $2,000

TABLE A-3: Top Cable System Operators (December 2001)

System Operator	Basic Subscribers
AT&T Broadband	13,560,000
Time Warner Cable	12,798,000
Comcast Cable	8,471,000
Charter Communications	6,953,000
Cox Communications	6,237,000
Adelphia Communications	5,810,000
Cablevision Systems	3,010,000
Mediacom LLC	1,595,000
Insight Communications	1,283,000
CableOne	752,000
RCN Corp	486,900

KEYS TO SUCCESS: THE CABLE TELEVISION INDUSTRY

The U.S. cable television industry is generally viewed as having favorable, low-business-risk characteristics. Positive risk characteristics include a normally dominant market position, limited current and potential competition, high margins, healthy demand for advanced services, and moderate and significantly success-related capital spending characteristics. Incumbent cable companies are generally de facto monopolies as a result of economic and technical considerations that serve as an impediment to there being multiple cable providers in a single franchise.

Satellite television providers, the only competitors, have been taking market share in the last few years as a result of two key factors: Satellite provided earlier digital service as well as some popular sports programming that was not available on many cable systems, and several cable operators had inferior customer service. The rebuilding of most major cable systems, which is currently being completed, will enable cable operators to offer service that is technically superior to that of satellite, and the

cable industry has given a significant amount of attention to its lagging customer services quality levels.

Cable operates pursuant to locally granted franchises, with local powers defined and limited by federal law. While these franchises are legally nonexclusive, there is rarely more than a single cable company in any given area. Factors contributing to the usual monopoly cable environment include physical limitations on the ability of telephone poles to accommodate multiple operators' aerial plant and the need for a second operator to duplicate expensive underground facilities. Given the capital intensity of cable, it is very difficult for a potential competitive cable operator to split a cable market and earn a reasonable return on its investment.

While satellite competitors' aggregate market penetration of about 20 percent trails well behind cable's near 70 percent level, in recent years EchoStar and DirecTV have both demonstrated growth well in excess of cable's relatively stagnant subscriber gains. However, on a technical basis, cable operators maintain a discernable advantage over satellite. By increasing their digital capacity, cable operators can deliver more bandwidth than satellite operators, which are constrained by satellite transponder capacity; this is important given the increasing bandwidth demands of digital programming, high-definition television, and video on demand. Cable operators can also provide voice telephone service and high-speed Internet access on an economic basis, services that are beyond the technical capabilities of satellite. Still, given satellite's success in the past several years, it would be imprudent to discount the ability of satellite to successfully present its service as a real alternative to cable.

In addition to the continuing pressure from satellite, including the nascent partnerships between telephone operators and satellite companies, the cable industry faces significant increases in its programming costs, in particular for sports programming such as ESPN. While cable operators generally do recoup these costs through rate increases, such increases catch the attention of politicians and also make the operator more susceptible to satellite competition. Over the longer term, technology developments could pose new competitive concerns for the cable industry. Improvements in telephone operators' current DSL Internet access product might improve DSL's bandwidth and propagation characteristics sufficiently to enable telephone companies to offer their own competitive multichannel video services.

Also, to the extent that telephone companies accelerate their deployment of fiber-optic capacity, they would have arguably the most robust platform available. However, uncertainty regarding regulatory treatment,

coupled with the large investment needed for ubiquitous fiber deployment, dampens the prospect that widespread fiber deployment by the phone companies will occur near term. And while some power companies are beginning to offer high-speed Internet access to some of their customers using power lines, the spectrum capacity of upgraded cable systems appears to offer the best means of providing large amounts of video, data, and interactivity on an economic basis for the foreseeable future.

Within this environment, most successful companies have several of key factors in common.

Franchise area

Measures of Success:

Size

Clustering

Demographics

The cable franchise area affects both economies of scale and potential for market penetration. An operator's size, in terms of aggregate subscriber base, can meaningfully affect its operating and capital costs. In particular, given their bargaining position, the largest cable operators can realize significant savings in programming costs, which is especially important because these costs have risen significantly in recent years. Similarly, the major cable operators generally pay less for hardware, including customer premises equipment such as cable converters and modems. Besides overall subscriber count, well-clustered systems can increase operational efficiency. Geographically compact subscriber clusters make for more efficient use of facilities such as warehouses and technical personnel such as installers.

Additionally, the ability to service a large number of subscribers from a single head end (signal origination facility) allows the fixed-cost component of the equipment needed for advanced service provision to be amortized over a larger customer base. In fact, it was scale diseconomies that prevented the rebuilding of many rural cable systems, preventing the provision of digital and other services and putting these rural operators at a clear competitive disadvantage to satellite.

Demographic factors historically had a limited impact on the uptake of traditional video services; however, going forward, as cable bills grow, income levels may become a more meaningful factor. A cable customer who subscribes to a digital tier plus high-speed Internet and who buys a

number of video-on-demand movies may have a monthly cable bill exceeding $100. With even more advanced service offerings coming from the cable industry, everything else being equal, better demographics suggest higher average revenue per subscriber.

Operating Efficiency

Measures of Success:

Operating margin

While there are explainable differences in operating margins that may not directly reflect differences in cable operators' efficiency, there is an expected minimum margin, at least in the mid-30 percent area, that any well-run operator should be able to attain. When used as a measure of efficiency, operating margins are a valid evaluative tool. Starting with the expected mid-30 percent figure, the largest operators should be expected to reap some incremental margin benefit (usually in the low single digits) from programming and other scale economies. Again, well-clustered systems should also demonstrate better margins. However, the use of margins as a measure of efficiency cannot be done in a vacuum and thus warrants some analytical caution. Margins may be temporarily dampened by factors that accrue to the longer-term benefit of the cable company.

For instance, a good increase in subscriber growth will entail additional marketing expenses and deployment of new services and will temporarily depress the operating margin. In addition, new services such as cable telephony boost revenues and free cash flow but are likely to incrementally weaken the operating margin percentage. Thus, in such cases, the depression in the operating margin ratio, viewed in its full context, may not reflect operator inefficiency, but rather the successful introduction of new, inherently lower-margin products.

Marketing and Service Quality

Measures of Success:

Market Penetration

Average revenue per unit (ARPU)

Penetration, in terms of not only basic subscribers but also value-added services, is a measure of an operator's marketing and programming

acumen. The only real competition faced by most cable operators is from the two major satellite operators, DirecTV and EchoStar, and the most effective means to counter aggressive satellite competition are a competitive and well-marketed programming offering and good customer service. In particular, cable operators need to offer digital service (most now do), enabling the provision of the large number of channels needed to deliver not only traditional programming but specialized digital tiers, high-definition channels, and video on demand, which allows customers to select from a menu of movies and other specialized programs.

Regarding customer service, the cable industry as a whole has not been known historically for stellar customer service, and this factor was responsible for at least some of the market share lost to the satellite operators in recent years. Marketing and service quality keys to success are reflected in basic penetration; penetration of digital, video on demand, and cable modem services; and churn, or the percentage of the total cable customer base that drops its cable service. Another measurement, ARPU, or average revenue per unit, indicates those cable companies with the most effective programming coupled with sufficiently good service quality to maintain a solid pricing structure.

System Technology

Measures of Success:

Channel capacity

Advanced Service Capability

Cable operators with the most advanced plant benefit in two ways: They can maximize ARPU, and they can minimize the threat from satellite. Channel capacity enables the provision of more programming choices, including video on demand, high-speed Internet connectivity, and telephone service. Technology measurements include spectrum capacity (which translates into analog-channel capacity), digital capacity (which effectively multiplies each analog channel), deployment of fiber optics, and the equipment needed to deploy cable modems and telephony. To the extent that an operator is technically deficient, there is a dual impact: First, the company is competitively disadvantaged, and second, it will need to get the funding needed to finance the required system upgrades.

Financial Risk

Measures of Success:

Debt leverage—Debt to Cash Flow, Debt to Subscriber

Cash Flow Protection—EBITDA to interest expense

Liquidity—Free cash to debt maturities

Financial risk is evaluated using quantitative measures, including classic financial ratios, as well as qualitative measures. The use of ratios alone can be of limited value, and in some cases actually misleading, when the ratios are not viewed with, and in the context of, the required subjective measures.

In the cable industry, debt is traditionally measured by two ratios: total debt to cash flow and debt per subscriber. The cash flow measurement used in the first ratio is EBITDA, or earnings before taxes and depreciation. EBITDA is a somewhat rudimentary but often useful measure, and debt to EBIDTA gives a gross indication of a company's overall debt burden. However, while the debt/EBITDA ratio would seem to reflect a company's debt payback period—that is, the number of years that will be required for the company to repay its debt if it continues to generate its current EBITDA—in reality, of course, a company has cash calls on its EBITDA, including capital spending, interest, and working capital needs, as well as principal repayments. Nevertheless, and despite these analytical limitations, the debt/EBITDA measure is an accepted industry leverage indicator and is traditionally used by cable industry lenders.

The debt per subscriber number also involves overall leverage, plus it also suggests creditor recovery prospects. Since cable assets are readily salable, if debt per subscriber is significantly below a reasonable market valuation for those subscribers, there is an implied equity cushion that should allow all creditors to recover fully in a liquidation scenario. Cash flow protection is measured in a number of ways, but the EBITDA/interest quotient gives an indication of a company's bare-bones debt service capacity, that is, its ability to service only its cash interest expense.

Liquidity is a major analytical key, especially for the financially weaker cable companies that are the most subject to the vicissitudes of the capital markets. In recent years, the shutdown of the high-yield markets left a number of speculative-grade companies without the necessary liquidity to pursue the deployment of arguably viable business plans. Liquidity analysis includes examination of financial covenants, availability of funds from credit agreements, and available cash, among other fac-

tors. Of course, these funding sources need to be evaluated in light of a cable operator's needs, which may involve significant capital spending for system upgrades or deployment of new services. In addition to adequate liquidity, financial flexibility factors may also include an operator's willingness and ability to tap capital markets, its ability to mine cash through working capital management, the sale or other monetization of noncore assets, or the ability to attract lenders or investors, which may be suggested by the aforementioned equity cushion.

APPENDIX B

The MGM/Mirage Merger

Craig Parmalee, Director and Senior Gaming Analyst, Standard & Poor's

You are a credit analyst at a large commercial bank. You receive a phone call from the treasurers of MGM Grand Inc. and Mirage Resorts Inc., informing you of the merger described in this Appendix. The bank is a primary lending institution to both entities. Since you are considered an "insider" and cannot trade securities on this information, the CFOs share their forecasted 2000 summary financials by property.

The bank is considering reducing its exposure to these entities if the rating agencies drop the merged credit to speculative grade. Your lending officer wants your recommendation on whether to swap out of the credit risk now or be prepared to lend even more to the entity. You have to prepare a short assessment and present it to the lending committee. Use the Gaming Industry Keys to Success Factors starting on page 328 and prepare a concise business assessment, highlighting key strengths and concerns for the merged entity. Discuss key financial credit measures and the importance of those measures to the analysis.

The following areas should be addressed in the analysis:

- Is the merged company's business position weaker or stronger than the positions of the individual companies?
- What is the impact on the key financial credit measures?
- What will the rating agencies do? Does the new company merit an investment-grade rating?
- Should the bank reduce its exposure to MGM Mirage?
- What questions do you have for the executive management teams of the two companies? How will their answers affect your analysis?

CURRENT RATINGS (Prior to Announced Transaction)

- Mirage Resorts Inc. has a senior debt rating of BBB with a stable outlook.

- MGM Grand Inc. has a senior debt rating of BBB– with a negative outlook.

GAMING SECTOR OVERVIEW

The U.S. casino gaming industry is composed of land-based casino properties, riverboats and dockside facilities, pari-mutuel wagering (including jai alai and horse and dog racing), lotteries, and, to a lesser extent, Internet gaming. Gross gaming revenue in the United States reached about $28 billion in 1999 (excluding charitable games, lotteries, Native American gaming, Internet gaming, and deep-water cruise ships).

The long-term outlook for Las Vegas and the casino gaming industry in general is favorable. This is due to secular trends, particularly on the demand side. Demand for gaming has been evident in virtually every market in which gaming has been legalized. In addition to very good demand characteristics, gaming has other attractive features. It is a strong cash flow business. It is also a cash business, so there is little in the way of inventory or receivables. Also, the gaming business is unique in that the house has a built-in mathematical advantage. So long as people play and volume is adequate, a casino should make money on an operating basis.

About $22 billion was generated by casinos, with Las Vegas and Atlantic City contributing about $5.7 billion and $4.2 billion, respectively. The best way to evaluate the dynamics of the industry is on a market-by-market basis.

Las Vegas Market

Las Vegas is clearly the industry's bellwether market, as it is unique and is the largest gaming venue in the world. More than 33 million visitors arrived in Las Vegas in 1999.

Major casino operators led the way in broadening the city's customer base and appeal during the past decade by increasing retail, fine dining, and entertainment opportunities. Las Vegas's good climate, desert landscape, and abundance of restaurants, shows, spas, pools, and other amenities have made it an attractive destination for tourists with a variety of interests. In addition, more than 120,000 hotel rooms, a large airport, and ample convention space have helped Las Vegas become a leading trade show and convention city.

The basis of competition on the Las Vegas Strip is the entertainment value delivered. The gaming product (slot machines, table, and so on) is

a commodity. Casino volume is the key driver of cash flow, along with room revenue. The quality of casino customers is a function of marketing as well as product quality. Those casinos that are able to fill rooms with good gaming customers perform the best. Centrally located properties and quality entertainment boost casino volumes, and this leads to a spill-over effect into the rest of the casino. Mirage and MGM benefit in these areas. On the room side, strong occupancy and room rate levels are important elements of a casino's overall profitability.

The Las Vegas Strip is the primary destination for tourists and convention goers. Demand on the Strip has historically been driven by new supply, and capacity additions in 1999 indicate that this continues to hold true. Three new properties (Mandalay Bay, The Venetian, and Paris) opened on the Strip during 1999, leading to a 10 percent increase in room inventory. In response, visitor volume grew 10 percent in 1999. Aladdin, slated to open in 2000, is the last major resort expected for the next few years. Standard & Poor's expects the additional room capacity from Aladdin to be easily absorbed, given the current popularity of the Strip.

Gaming operators that focus on high-end players (in the extreme, the "whales") periodically experience earnings volatility. However, this is a lucrative segment of the market, as long as volumes are good and potential credit losses are managed; also, it tends to be a high-return business. In fact, this segment generates significant amounts of cash flow and has high barriers to entry, as gaming operators need to have the facilities, player development staffs, international office network, and appetite for risk to compete.

The fragmented gaming industry is expected to consolidate while new jurisdictional opportunities remain limited. From an operating perspective, integration of systems, personnel, and cultures always presents challenges, but mergers to date have been relatively successful. The biggest risk during consolidation has been financial, as many acquisitions have been debt financed.

THE MGM–MIRAGE DEAL

On March 7, 2000, MGM Grand Inc., the casino company controlled by billionaire Kirk Kerkorian, agreed to acquire Mirage Resorts Inc. for a sweetened $6.4 billion in cash and debt to create one of the world's largest casino companies.

MGM Grand said that it will pay $21 a share in cash for Mirage (there are approximately 210 million shares outstanding) and assume $2 billion in debt. Mirage, led by Chairman Steve Wynn, last week rejected MGM Grand's initial $17-a-share offer as too low. The price that MGM Grand will now pay is 93 percent more than Mirage's share price before the first offer on February 23. Before MGM Grand's offer, Mirage shares had fallen 47 percent over the past year, as Mirage's newest casinos, the $1.6 billion Bellagio in Las Vegas and the $700 million Beau Rivage in Biloxi, Mississippi, had failed to achieve the returns expected.

The combination will put some of the largest casinos in Las Vegas—the 5,000-plus-room MGM Grand Hotel and Mirage Resorts' Bellagio and Mirage—under the same ownership. That will allow MGM Grand to cut costs and dominate the high-end gambling business with resorts favored by international high rollers. MGM Grand said that it expects to complete the purchase in the fourth quarter, boosting earnings immediately.

Casino Powerhouse

The combined company can reduce operating expenses by eliminating duplicate functions, such as marketing offices around the world, and by offering smaller rebates to high rollers. Casinos typically refund some of the gambling losses of their best customers. MGM Grand Chairman J. Terrence Lanni estimates cost savings of between $80 million and $100 million a year. MGM Grand is also getting real estate on the Las Vegas Strip and in Atlantic City, New Jersey, where it can build new casinos. Mr. Lanni estimates that the combined entity will generate $4 billion in sales and over $1 billion in EBITDA in 2000. MGM Grand is buying Mirage to boost earnings at a time when competition is growing for Las Vegas casinos. More than 10,000 new hotel rooms were built in Las Vegas last year, raising the number of rooms by 10 percent in world's largest hotel market, according to the Las Vegas Convention & Visitors Authority.

High Rollers

Mirage and MGM Grand together have more than half of the high-end gambling market. Each has unique amenities that are used to bring in wealthy gamblers called "whales," who sometimes lose or win millions of dollars on a single gambling trip.

MGM Grand's Debt

The company said it will reduce debt after the purchase, using free cash flow and proceeds from sales of nonstrategic assets. It is estimated that such asset sales could yield proceeds of about $500 million. MGM Grand Inc. is considering a sale of $1.2 billion in new stock to help finance the acquisition. Tracinda Corp., the holding company controlled by billionaire Kirk Kerkorian, said that it will buy at least $600 million of the new stock. Kerkorian already owns a 64 percent stake in MGM Grand. MGM Grand said that a group of banks has agreed to loan it $4.3 billion to help fund the company's $6.4 billion purchase of Mirage Resorts Inc.

Hotel–Casino Resort Properties

Tables B-1 through B-4 provide information on Mirage's and MGM Grand's properties. Table B-5 provides a financial peer comparison.

TABLE B-1: Mirage Resorts Inc.—2000 Forecast

	Sales ($ million)	EBITDA ($ million)	EBITDA Margin	Rooms
Bellagio	997	260	26%	3,000
The Mirage	571	136	24%	3,044
Treasure Island	351	91	26%	2,885
Golden Nugget—Las Vegas	183	35	19%	1,907
Golden Nugget—Laughlin	50	6	12%	300
Beau Rivage	239	33	14%	1,780

TABLE B-2: Mirage Resorts Inc.—Geographic Concentration

Las Vegas Strip EBITDA	$487 million
% of Total EBITDA	87%

TABLE B-3: MGM Grand Inc.—2000 Forecast

	Sales ($ million)	EBITDA ($ million)	EBITDA Margin	Rooms
MGM Grand Las Vegas……	790	194	24%	5,034
New York-New York	213	96	45%	2,024
Primm Nevada Properties….	237	70	30%	2,652
MGM Grand Detroit…….	173	58	33%	N/A
MGM Grand Australia…….	38	14	37%	96
MGM Grand South Africa…	9	8	88%	N/A

TABLE B-4: MGM Grand Inc.—Geographic Concentration

Las Vegas Strip EBITDA	$290 million
% of Total EBITDA	66%

TABLE B-5: Gaming Companies—Average Financial Statistics of Last Three Fiscal Years

	Senior Credit Rating	EBITDA/ Interest (×)	Pretax Return on Capital	Operating Income as a % of Sales	Free Operating Cash Flow/ Total Debt	Total Debt/ Capital	Sales ($ million)	Total Assets ($ million)
Boyd Gaming Corp.	BB+	2.7	12	22	13	76	752	998
Circus Circus Enterprises Inc.	BBB–	4.7	12	24	(20)	54	1252	2745
MGM Grand Inc.	BBB–	5.6	15	28	23	22	767	1334
Mirage Resorts Inc.	BBB	8.7	16	28	(38)	35	1359	2441

KEYS TO SUCCESS: THE U.S. GAMING INDUSTRY

The gaming industry exhibits moderate risk. It benefits from increasing travel and recreation spending in the United States and abroad, favorable demographics, and regulatory limitations on new supply in most markets. Risk factors include the capital-intense nature of the industry and a high degree of competition in the more mature markets

The gaming industry can be divided into two types of markets: (1) "destination markets" (such as Las Vegas), which rely heavily on tourism, and (2) "locals markets" (such as St. Louis, Missouri), which rely on customers that drive to the casino from within 50 miles. Destination markets offer large resorts with substantial nongaming amenities, in addition to casino games. Visitor demand within destination markets tends to be more sensitive to both national and global economic and political conditions. Locals markets are more recession resistant, as they offer smaller casinos with more modest fixed-cost structures. Visitor demand within locals markets tends to be more stable, as the casinos are a key source of regional entertainment, although local economic conditions occasionally affect demand.

Gaming companies must regularly reinvest in their casinos to continue to attract visitors, and thus the industry is considered capital-intensive. Typically, investment beyond normal maintenance spending is required periodically to reinvigorate a property, especially in more competitive markets. The entertainment value delivered is the final measure of a casino's success. The gaming equipment (slot machines, tables, and so on) is a commodity, although pricing (i.e., looser slots) and theoretically improving table game odds (100 × odds, single-deck blackjack, single-zero roulette) can provide a slight differentiating point. Casino volume is the key driver of cash flow, along with room revenue when a hotel is attached to a casino.

Within this environment, most successful companies have several key factors in common.

Location in Favorable Markets

Measures of Success:

Population

Household income level

Number of competitors

Pace of gaming revenue growth

Slot machine and table game win-per-unit-per-day

Regional economic indicators

Successful gaming companies typically have a presence in one or more favorable gaming markets. A favorable market typically has a sizable population, good economic prospects, a high household income level, a fairly stable regulatory environment, and either limited competition or, in the case of Las Vegas, broad customer appeal as a result of its various entertainment offerings. Market quality significantly influences profit margins and earnings growth

Favorable Market Position and Casino Quality

Measures of Success:

Market share

Slot machine and table game win-per-unit-per-day

Revenue per available room (RevPar)

Average daily rate (ADR)

Average occupancy percentage

EBITDA margin

The quality of a casino and its position within a market are significant drivers of operating performance. A casino with a favorable market position typically offers high-quality accommodations and amenities, an exciting atmosphere, easy access, and ample parking, and is located in an appealing part of town or is adjacent to other high-quality properties, creating a "casino cluster." There is often substantial variation between the best- and worst-performing casinos in a particular market, and this factor may substantially affect earnings and profit margins. A very favorable market position may also partially mitigate a lack of diversity, especially in the case of Native American casinos, which sometimes have little or no competition within hundreds of miles.

Cash Flow Diversity

Measures of Success:

- Number of properties
- EBITDA by property
- EBITDA by market or state

Diversity, in terms of the number of segments or properties and/or the geographical location of properties, can mitigate the risks associated with regulatory changes, regional economic conditions, travel-related issues, and adverse weather conditions. Significant exposure to a particular state, for instance, can be a risk factor given the recent propensity of state legislatures to increase gaming taxes, which can meaningfully affect earnings. Also, reliance on one or two core properties or markets may add volatility to a company's cash flow, since various factors, such as a new competitor, may negatively affect the performance of a particular property or market for several quarters.

Scale/Access to Capital

Measures of Success:

- Size of EBITDA base
- Leverage (debt to EBITDA)
- Fixed charge coverage (EBITDA to interest expense)
- Level of discretionary cash flow

Since the gaming industry is capital-intensive, regular access to the capital markets is an important success factor for gaming companies. Good access to capital helps a company to renovate or expand its existing casinos, or to grow through new development or acquisition. A company's scale offers certain benefits in this regard, since a large existing cash flow base can serve as a foundation to support new development. Size also offers certain economies of scale and enables a company to draw from its existing employment base to help staff new project openings.

APPENDIX C

Kellogg's Acquisition of Keebler

Bill Wetreich, Managing Director, Standard & Poor's

OVERVIEW

You are a credit analyst at an insurance company that holds the bonds of Kellogg Company. In October of 2000, Kellogg announced a transformational debt-financed acquisition. Kellogg, the global industry leader in ready-to-eat cereal, bid $4.5 billion in cash for Keebler, the number-two player in cookies and crackers in the United States. As a result, Kellogg's business and financial profile would change dramatically, as would its credit profile. Kellogg hoped that Keebler would bring with it greater product diversity, scale, and cost efficiencies, while bolstering its flagging growth.

However, this debt-financed transaction would also significantly lever up a historically conservative balance sheet (see Tables C-1 and C-2), as total debt/EBITDA would spike to 3.9 times in 2001 from 1.6 times in 2000. Prior to the transaction, Standard & Poor's and Moody's rated Kellogg AA/Aa, reflecting its very high level of credit quality.

The transaction came during a difficult time for the packaged food and beverage sector, as industry players were struggling with low growth, limited pricing flexibility, and an increased focus on cost efficiency. In fact, within a period of several months, three other blockbuster deals were announced in the industry: Altria's Kraft Foods unit would buy Nabisco for $19 billion, General Mills Inc. would acquire Pillsbury for $11 billion, and Unilever PLC would purchase Best Foods for $24 billion.

Kellogg's recent history had mirrored that of the industry. Shareholders weren't pleased with its revenue and EBITDA levels, which were essentially flat during the 1996–2000 period, despite a few small, targeted acquisitions like Worthington Foods, the leading producer of egg substitutes and veggie burgers. As a result, Kellogg's stock price stagnated during the period, despite stepped-up share repurchases.

TABLE C-1: Kellogg Co.—Financial Summary

Year Ended Dec. 31 ($ millions)	2000	1999	1998	1997	1996
Rating History	BBB/ Stable/ A-2	AA/ Negative/ A-1+	AA/ Negative/ A-1+	AA/ Stable/ A-1+	AAA/ Negative/ A-1+
Sales	6,954.7	6,984.2	6,762.1	6,830.1	6,676.6
Net income from continuing operations	87.75	338.3	502.6	564.0	531.0
Funds from operations (FFO)	867.6	952.6	833.7	931.2	801.4
Capital expenditures	230.9	266.2	373.9	312.4	307.3
Total debt	2,149.7	2,175.4	2,282.9	2,044.7	1,918.8
Preferred stock	0.0	0.0	0.0	0.0	0.0
Common equity	897.5	813.2	889.8	997.5	1,282.4
Ratios					
Operating income/sales (%)	19.9	19.7	18.6	21.9	20.4
EBIT interest coverage (×)	7.3	8.2	7.4	9.8	15
EBITDA interest coverage (×)	9.3	10.4	9.4	12.1	18.5
Return on capital (%)	33.1	32.2	29.1	35.8	35.7
FFO/total debt (%)	40.4	43.8	36.5	45.5	41.8
Total debt/EBITDA (×)	1.6	1.6	1.8	1.4	1.4
Total debt/capital (%)	70.5	72.8	72	67.2	59.9

Things were somewhat better for Kellogg's creditors, as the company maintained strong free cash flow, stable profitability, and a strong balance sheet. Profit margins stayed at close to 20 percent, cash flow after dividends averaged almost $150 million, and returns on capital "slipped" a bit but were still exceptional in the low-30 percent range. But even so, weaker execution in the core domestic cereal business and stepped-up share repurchases were becoming credit concerns. Reflecting this, Standard & Poor's had changed the outlook on Kellogg's AA rating to negative from stable in October of 1998.

TABLE C-2: Keebler—Financial Summary

Year Ended Dec. 31 ($ millions)	2000	1999	1998	1997	1996
Rating History	BBB–/ Positive	BBB–/ Dev	BBB–/ Dev	BB+/ Positive	BB/ Stable
Sales	2,757.0	2,667.8	2,226.5	2,065.2	1,747.2
Net income from continuing operations	175.6	88.2	96.6	62.4	-7.7
Funds from operations (FFO)	330.2	236.5	194.5	165.7	65.9
Capital expenditures	92.6	100.7	66.8	48.4	32.6
Total debt	693.9	555.6	758.0	398.3	543.8
Preferred stock					
Common equity	562.7	409.3	329.3	222.1	165.1
Ratios					
Operating income/sales (%)	17.5	15.2	13.7	11.5	6.6
EBIT interest coverage (×)	5.6	5.7	5.2	3.4	1.1
EBITDA interest coverage (×)	7.7	8.0	7.1	5.0	2.4
Return on capital (%)	27.0	23.7	21.8	20.8	13.0
FFO/total debt (%)	47.6	42.6	25.7	41.6	12.1
Total debt/EBITDA (×)	1.5	1.4	2.6	1.8	5.1
Total debt/capital (%)	55.2	57.6	69.7	64.2	76.7

INDUSTRY RISKS

Given the following characteristics of the packaged food and beverage industry, participants in this industry have the makings for solid credit quality as a result of steady and predictable customer demands:

- Recession resistance, since people have to eat.
- Product maturity, as overall revenue growth is in line with population increases, although rates vary among food segments.

- Highly competitive sales largely based on brand recognition, active promotions, and advertising, but increasingly based on price as a result of low inflation and growing private-label brands.
- A favorable cost structure, since raw materials and food commodities are a relatively low percentage of total costs. As a result, products are differentiated and margins are relatively high.
- Relatively modest capital expenditure requirements.
- Finally, because of the steady demand and moderate capital outlays, earnings and free cash flow are highly predictable.

Based on this industry landscape, the keys to success (see Table C-3) used to gauge competitive strength for this sector are based on the product portfolio, marketing capability, cost position, and management skills. In packaged goods, the focus would typically be more on marketing and

TABLE C-3: Keys to Success: Packaged Food and Beverages

Product Portfolio

- Brand franchise strength
- Maturity
- Value-added content
- Competitive environment
- Diversification

Marketing Capability

- New product program
- R&D capability
- Marketing and advertising
- Critical mass

Cost Efficiency

- Raw material sourcing
- Modern plant and adequate capacity
- Efficient distribution and sales channels

Strategic Management

- Growth objectives
- Commitments and results

Nonfood and International Involvement

- Foreign risk vs. returns
- Issuer position and industry
- Characteristics of nonfood business

the product portfolio, although in recent years the importance of cost efficiency has increased, on a relative basis. This reflects the reality that price increases have been difficult to put through in a low-inflation environment with many store brand alternatives.

In fact, in the ready-to-eat cereal industry, after years of excellent pricing flexibility, pricing opportunities became limited in the 1990s. The basis of competition had shifted more to coupons and buy-one-get-one-free offers. Store brands had doubled their share, reaching double digits. Certain basic products, like corn flakes, had become somewhat commoditized. Cereal sales for the industry were flat in recent years, in part because of an increase in breakfasts eaten away from home and eating on the go.

Costs needed more attention in an environment in which consumers demanded better value for their cereal purchases. Growth rates for the top line were slowing. Successful new products would have to be innovative and differentiated. While this was still an attractive category, it certainly was a bit riskier than in the recent past.

KELLOGG'S BUSINESS RISKS

Competitive Position

Despite these changing industry conditions, Kellogg still had a very strong business. It played in what was still an attractive market: Ready-to-eat cereal accounted for most of its global volume. Cereal, despite its maturity, was still one of the largest grocery categories in the United States, at about $8 billion—larger than cookies, candy, pet food, or soup.

Also, it had brighter growth opportunities overseas. International sales were about 40 percent of Kellogg's sales and profits in 2000. This geographic diversity was an important offset to a concentrated product base. Kellogg's global dollar share was higher than its tonnage share, indicating good value added for its products on a worldwide basis, although tonnage and dollar share were approximately equal in the United States

In terms of cost efficiency, Kellogg had always invested heavily in its plants for both expansion and upgrades. Beginning in 1995 and into 1996, as the industry dynamics changed, Kellogg began to focus more on its costs. At that time, it took restructuring charges of about $400 million, largely related to head-count reduction and capacity realignments in the United States, Australia, and Europe—its key markets. During 1998–2000, the company took another approximately $400 million of restructuring charges, about half in the United States, to further improve its cost structure.

Market Position

Although Kellogg's market share had been sliding since the mid-1980s, it remained number one both in the United States and in the rest of the world. Its global share was still about 2 1/2 times that of General Mills and its joint venture with Nestlé, and Kellogg still had 12 of the top 15 global cereal brands. It also was the clear market leader in waffles and toaster pastries, and these volumes would account for a larger portion of its volume in five years, given their faster growth rates.

However in the United States, Kellogg's ongoing market share slid to the low 30 percent range, allowing the number-two company, General Mills, to essentially pull even in the United States by 2001. Back in 1986, Kellogg's U.S. share in cereal had been over 40 percent. By 1992, its percentage share was in the high 30s, and by 1996 it had slid further, to the mid 30s, with about a 40 percent share globally. Both General Mills and store brands were gaining share at the time. Thus it was still a very strong market leader, but not quite as strong as in the 1980s.

Marketing Capability

Kellogg's products were manufactured and distributed on a truly global basis. However, returns weren't equally strong, and Kellogg had decided to focus its resources on seven key geographic markets: the United States, the United Kingdom, France, Canada, Germany, Mexico, and Australia. Similarly, although Kellogg was spending more than the competition on advertising and was a top 10 global advertiser, its advertising dollars weren't always effectively spent. Advertising expenditures became more focused and as a result declined to 8.7 percent of sales in 2000 from 11.7 percent in 1996. However, General Mills had the hotter hand in new product development, and in the United States it had a higher dollar market share than its tonnage share, indicating good value-added content for its Big G cereals.

THE MERGED COMPANY

Integration Risk

While integration risk is always an issue with a large transaction, especially for a company like Kellogg that doesn't frequently grow via acquisitions, in this case it was viewed as only a moderate risk. Keebler was

already a well-run firm and had largely separate manufacturing facilities and distribution channels. Cost savings assumptions seemed reasonable.

This acquisition increased Kellogg's faster-growing, noncereal business from about 20 percent to about one-third of sales. Kellogg's portfolio now included number-one and number-two brands across a much larger range of grain-based foods, but Keebler was a distant number two to Nabisco in both cookies and crackers, with market share in the mid 20 percent range. Still, Keebler was a well-managed company—growing faster than the 4 to 5 percent range typical for its categories—with several leading distribution niches in vending, food service, and convenience stores. Kellogg now had many brands with sales of over $100 million, including Kellogg cereals, Keebler cookies, Pop Tarts, Eggo waffles, Cheez-Its, and Nutri-grain bars.

Synergies and Cost Savings

In this deal, growth synergies would be driven by distribution. Most importantly, Keebler's large direct store distribution (DSD) system—its truck routes delivering cookies straight to the store shelves—could add Kellogg's convenience products, granola and snack bars. Keebler had the third largest DSD system in the United States. This would increase sales by getting more effective displays, controlling inventory better, and adding new channels, like convenience stores.

On the cost side, there were sales, general, and administrative expense (SG&A) savings, and supply-chain efficiencies. These cost savings should total about $150 million and would be more clearly defined when Keebler was fully integrated into Kellogg. Kellogg became a $10 billion food company, up from under $7 billion, and was now a top 10 food company in North America.

The New Business Profile

Over the years, Kellogg's business profile had deteriorated modestly (see Figure C-1). The ready-to-eat cereal market had become a bit riskier and more mature; Kellogg's execution had slipped, enabling General Mills to close the market share gap; and Keebler, while diversifying the portfolio, was a distant second in most snack categories. Cost efficiency improved as the company focused its efforts on this area, given the difficult environment.

FIGURE C-1: Kellogg's Business Risk: 1980 and 2000

KELLOGG CO.	1980		2000	
	Very Low Risk	Low Risk	Very Low Risk	Low Risk
Product portfolio	✓			✓
Marketing capability	✓			✓
Cost efficiency		✓	✓	
Strategic management		✓		✓
Overall position	✓			✓

The most limiting factor in the forward view of Kellogg's business profile is its performance in its core business prior to the transaction. Whether the firm would be able to staunch the market share slide and begin to once again roll out well-received new products was a concern. The Keebler transaction would allow Kellogg to refocus its resources and set more realistic targets—EBITDA growth of mid–single digits. This seemed a more achievable goal, given the company's business mix and industry conditions.

In fact, Kellogg did experience a modest share recovery in U.S. cereal over the subsequent three years, as well as improved profitability. In 2003, cereal sales increased by 7 percent in the United States and by 15 percent overseas, helped by currency valuations. However, the Keebler acquisition was clearly a departure from Kellogg's historical strategy of growing its core business overseas, supplemented by much more modest strategic acquisitions. The assumption was that Kellogg's internal focus would return as the company attended to the Keebler integration and balance sheet restoration.

THE NEW FINANCIAL PROFILE

The financial impact of the Keebler deal was fairly dramatic (see Table C-4). Debt increased from $2.1 billion to $6.4 billion between 2000 and 2001, while leverage increased to 3.9 times EBITDA from 1.6 times. This is about

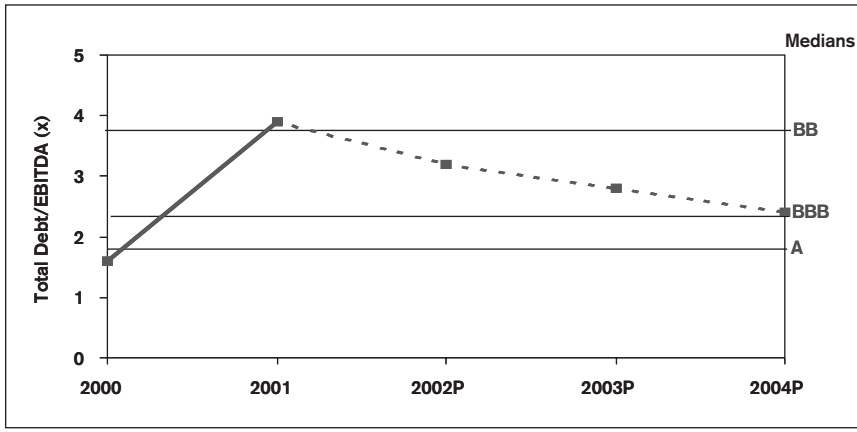
the median leverage level for a BB credit, according to Standard & Poor's. Goodwill now accounted for almost half of assets, and as a result, return on permanent capital was diluted to levels more typical of other solid food companies—in the 20 percent range. Margins weren't affected much, since Keebler was also a very profitable firm.

TABLE C-4: Kellogg Co.—Financial Summary

Year Ended Dec. 31 ($ millions)	2003	2002	2001
Rating History	BBB/ Positive A-2	BBB/ Stable/ A-2	BBB/ Stable/ A-2
Sales	8,811.5	8,304.1	8,853.3
Net income from continuing operations	787.1	720.9	482.0
Funds from operations (FFO)	1,186.2	800.2	920.9
Capital expenditures	247.2	253.5	276.5
Total debt	5,424.9	5,947.2	6,421.8
Preferred stock	0.0	0.0	0.0
Common equity	1,443.2	895.1	871.5
Ratios			
Operating income/sales (%)	23.1	23.5	19.1
EBIT interest coverage (×)	4.0	3.7	3.3
EBITDA interest coverage (×)	5.0	4.6	4.5
Return on capital (%)	20.2	19.2	20.8
FFO/total debt (%)	21.9	13.5	14.3
Total debt/EBITDA (×)	2.7	3.2	3.9
Total debt/capital (%)	79.0	86.9	88.1

With capital expenditures remaining in the $250 million range, little change in dividends, and little share repurchase activity, cash flow of $200 to $400 million per year would be available for debt reduction. Combined with

FIGURE C-2: Kellogg Co.—Debt Leverage



some modest growth in EBITDA, the expectation was that debt leverage could decline over three years to about 2.5 times—a good BBB ratio (see Figure C-2).

This raises two important issues to consider: the willingness versus the ability of a firm to repay debt, and the appropriate time horizon for a credit decision. Historically, Kellogg had maintained a conservative financial profile prior to this transaction. During the 1990–1995 period, debt leverage had ranged between 0.4 and 0.7 times EBITDA, and during 1996–2000 it had ranged between 1.4 and 1.8 times EBITDA. This transaction more than doubled Kellogg's leverage to 3.9 times EBITDA.

Clearly this transformational acquisition reflected a changed financial policy—but how dramatic was the change? Although the company intended to restore its balance sheet strength following this transaction and appeared committed to retaining investment-grade status, what if it instead found other attractive acquisitions or if opportunistic share repurchases became an attractive option? In these scenarios, leverage could remain near its current high levels.

Management Credibility

Having a track record of credibility is a big plus for companies that find themselves in situations like this. A company that has already shown its willingness and commitment to restoring its balance sheet should get more credit than the first time around, even if it says all of the right things. Similarly, companies that consistently espouse the same strategy, that

meet their projections, or that have sold assets as planned should build up credibility points in the credit analysis.

Looking at Kellogg's track record shows that it has a history of restoring its balance sheet strength after significant prior transactions, such as the 1983 share repurchases from the Kellogg Trust. Therefore, its current plans to focus on balance sheet restoration over the intermediate term have some resonance, particularly in light of management's likely internal focus on operations and integration issues over the next few years.

Unless there is already some existing credit stress, there should be some room to allow a company to temporarily absorb either a step up in debt or some temporary operating challenges. This is the approach rating agencies often take. Given Kellogg's stable cash flow and management's commitment to restoring its balance sheet, a similar grace period would seem appropriate to consider when viewing Kellogg's credit profile following the Keebler acquisition.

Peer Comparisons

Comparisons of the other major industry transactions going on about the same time (see Figure C-3) may provide some perspective. Briefly, Altria

FIGURE C-3: Concurrent Industry Acquisitions

	Altria's (Philip Morris) Acquisition of Nabisco	Unilever's Acquisition of Best Foods	General Mills's Acquisition of Pillsbury	Kellogg's Acquisition of Keebler
Transaction Size	$19B	$24B	$11B	$5B
TD/EBITDA				
1999	0.9 ×	0.2 ×		
2000	1.8 ×	4.8 ×		1.6 ×
2001	1.2 ×	3.5 ×	2.4 ×	3.9 ×
2002	1.3 ×	2.6 ×	6.1 ×	3.2 ×
2003	1.5 ×	1.9 ×	3.8 ×	2.8 ×
S&P/Moody's Rating				
Pretransaction	A/A2	AAA/Aaa	AA–/A2	AA/Aa2
Post-transaction	A/A2	A+/A1	A–/A3	BBB/Baa2
Current rating	BBB+/Baa2	A+/A1	BBB+/Baa2	BBB/Baa2

Group Inc.'s deal (back then it was Philip Morris) had the least impact; its rating was affirmed by S&P and lowered one notch by Moody's. Subsequently, tobacco litigation issues resulted in downgrades to the current BBB+/Baa2.

Unilever was AAA back then and had a very low-risk business profile, reflecting highly diversified and preeminent positions in food, household, and personal care products, along with substantial cash holdings and a very conservative financial profile. Because of its business profile and its plans to sell off over $2.5 billion of noncore assets, its rating was lowered only to A+/A1.

General Mills is probably the closest comparison. Its rating was initially lowered to A–/A3, despite its higher leverage than Kellogg. It was seen by S&P as having a somewhat stronger business profile than Kellogg, since it was taking some of Kellogg's market share. It also was less reliant on ready-to-eat cereal than Kellogg—about 25 percent of revenue after Pillsbury versus over 60 percent for Kellogg after Keebler. General Mills also acquired the very profitable Pillsbury refrigerated dough franchise and some growing brands like Progresso and Old El Paso, to complement Yoplait and Betty Crocker. However, it turned out that General Mills unexpectedly had some execution problems after the acquisition that slowed anticipated debt reduction. As a result its ratings were lowered further, to BBB+/Baa2.

FIGURE C-4: Relative Values: Kellogg vs General Mills

	Funds from Operations/ Total Debt	Debt/ EBITDA	EBITDA/ Interest	S&P Rating	Moody's Rating
	LTM	LTM	LTM	4/19/04	4/19/04
Kellogg Co. (LTM as of 12/03)	21.9%	2.7X	5.0X	BBB/Pos/A-2	Baa2/Pos/P-2
General Mills Inc. (LTM as of 2/04)	16.5%	3.8X	4.1X	BBB+/Stable/A-2	Baa2/Stable/P-2

[1] *Source:* Bloomberg.

THE CREDIT DECISION—POSTMERGER

Ratings and Outlooks

Standard & Poor's lowered Kellogg's ratings to BBB, and Moody's lowered the ratings to Baa2. This decision took a lot of things into consideration, including the immediate financial impact of the transaction and Kellogg's recent operational issues. Clearly, the BBB ratings from both S&P and Moody's incorporated a positive view of Kellogg's low-risk business profile, and also allowed management time to execute its debt reduction plans. Figure C-2 tracks Kellogg's debt-reduction progress after the merger, including the 2004 projection based on management's guidance for $200 million in debt reduction in 2004 and high single-digit earnings growth.

What could happen to Kellogg's credit profile and debt rating in the future? It is definitely an improving credit profile, and a modest debt ratings upgrade is quite possible if progress in leverage reduction continues. Based on Kellogg's performance since the acquisition, Standard & Poor's changed the rating outlook on Kellogg to positive from stable in May 2003. Moody's moved to a positive outlook in 2004.

Figure C-4 shows a typical relative value analysis of Kellogg versus General Mills. It presents an interesting credit picture, formed by using market pricing for the bonds and credit default swaps, a comparison of current financial ratios, and existing debt ratings for the two companies.

5 Yr. Sr. Credit Default Swap[1]	Bond Details	Option Adjusted Bond Spread[1]	Bond Price[1]	Avg. Industrial BBB Bond Spread to U.S. Treasury Composite[1]	
4/19/04		4/19/04	4/19/04	bps	Maturity
24.5	K 6% notes due 4/1/06	39	106.8	79	2 yr
	K 2.875% notes due 6/1/08	64	97.0	95	4 yr
	K 6.6% notes due 4/1/11	79	112.3	113	7 yr
43.2	GIS 2.625% notes due 10/24/06	68	99.0	79	2 yr
	GIS 5.5% notes due 1/12/09	78	106.2	95	4 yr
	GIS 6% notes due 2/15/12	100	107.0	113	7 yr

The market data indicate that Kellogg is viewed as a somewhat stronger credit than General Mills, with both lower credit default swap rates and option-adjusted bond spreads on comparable bonds. Another reference point is to compare a company's bond spreads to Average Industrial spreads of the same maturity and rating level. Kellogg's bond spreads are favorable compared to the Average Industrial BBB bond spread, while General Mills's bonds trade somewhat closer to the BBB level. Financial ratios also indicate that Kellogg currently has better debt protection measures, although this is partially offset by General Mills's somewhat stronger and more diversified business profile.

Longer term, given the assessment of Kellogg's business risk as low, an A category rating would theoretically be a consistent outcome. However, much more repair will have to be done on the balance sheet in order to get there. Perhaps most importantly, a commitment to maintaining that level of financial strength will have to be established. There will also need to be an understanding of the company's strategy, its resource requirements, and the growth the company's current asset base is capable of generating.

Your firm decided to hold onto its Kellogg bonds. If it sold, it would take a financial beating because of the precipitous drop in credit quality and the corresponding drop in the price of the bonds. Prepare a report to your investment committee on the outlook for Kellogg for the foreseeable future. In your presentation:

- Assess the company's current credit quality on a scale of 1 to 10 in terms of both its business risk position and its financial risk position, as well as its overall credit risk.
- Will Kellogg's credit quality improve in coming years? What will have to occur for this to happen?
- Discuss how the merger affects the stability of Kellogg's operating and financial performance over the long term.
- Project Kellogg's financial performance for 2004–2006. Assume that cereal sales growth is consistent with 2003's performance. Assume that capital spending is flat at $250 million. Create a best case and a worst case using your own assumptions.
- Did Kellogg achieve its original goals through this merger? Or does it need another acquisition to complete its mission?
- Compare Kellogg with General Mills. Are there any significant differences between the two companies?

APPENDIX D

REPSOL/YPF

Emmanuel Dubois-Pelerin, Managing Director and
Senior Oil and Gas Analyst, Standard & Poor's, Paris, France

Between January 1999 and June 2003, as a fixed-income analyst of a tier-one Spanish investment bank, one of your credits was Repsol S.A. (Repsol), the Spanish integrated oil company, which during that period underwent very significant changes.

BACKGROUND ON REPSOL

In 1987, when the Spanish government deregulated the oil sector, Repsol was formed out of the former domestic monopoly for refining crude oil and marketing oil products (R&M), including liquefied petroleum gas (LPG; with R&M downstream). At year-end 1998, Repsol wholly owned its domestic operations except, notably, 40.1 percent of the fully consolidated key logistics player CLH (Compañía Logística de Hidrocarburos) and 12.2 percent (14.02 percent in early 2003) of a 220,000-bpd (barrels per day) refinery. For the foreseeable future, Repsol's domestic refineries' 740,000-bpd capacity would represent some 60 percent of the country's total, and were favorably located and well protected from competition. Despite slightly below-average capacity utilization and the high fixed costs of refining in general, it was structurally far more profitable than most European refineries, but it would require capital spending in 2004 to conform to EU environmental regulations that would be applicable in 2005. Repsol's vertically integrated operations control some 45 percent of the local retail market (one of Europe's few growing and profitable ones) through an unusually highly company-owned, as opposed to franchised, service stations network. Repsol is also Europe's leading LPG distributor, with an 89 percent share of the low-competition Spanish market. LPG margins are usually negatively correlated with refining margins; high-profit bottled sales constitute most of Repsol's LPG volumes, but for social reasons, prices are heavily, and often temporarily adversely, regulated.

In January 1999, Repsol also owned 45.3 percent of the fast-growing local downstream gas giant Gas Natural Sociedad de Gas, S.A. (Gas Natural, A+/stable through 2001 to 2004), but competition issues were likely to prevent Repsol from taking full control of it. How could Repsol build a growth strategy? Accelerating expansion into Western Europe downstream would be long and costly and would involve entering less profitable and more competitive markets than Spain; Repsol's modest E&P (exploration and production) assets, scattered across the North Sea, North Africa, and the Middle East, were producing some 160,000 boepd (boe = barrels of oil equivalent) out of a proved reserve base of some 600 million boe; there, too, organic growth would be tedious.

Culturally-close Argentina looked most promising, given its large and mostly liberalized oil and gas sector (only tainted by low gas prices of some $7.5/boe), fairly high sovereign credit ratings relative to other emerging markets,[1] an apparently prosperous economy, and a stable currency (pegged 1:1 to the US$ since 1992). During 1996–1998, for $0.7 billion Repsol acquired, as a platform for local expansion, 66 percent of Argentina's Astra C.A.P.S.A. (Astra; 30,000 bpd refining capacity; 1998 proved reserves of 383 million boe and production of 82,000 boepd), which Repsol, which appointed a majority of its board, despite not being the majority owner initially, always fully consolidated (as it had Peru's major, 42.8 percent-owned refiner since 1996). While Repsol published no pro forma accounts, and did not split operating income by country, you expected Astra and the Peruvian company to contribute some €100 million annual EBIT at 100 percent.

At the end of 1998, the company's creditworthiness clearly rested on these domestic market positions and on the expected maintenance of conservative financial policies, with some 60 percent funds from operations (FFO) to net debt. Standard & Poor's and Moody's had been rating Repsol AA-/AA3, both with stable outlooks, since the early 1990s; Standard & Poor's rated Repsol's much larger (notably upstream) and more diversified competitors about the same or higher (TotalFina: AA–, Texaco: A+, Chevron, Mobil, BP, Elf and Eni: AA); the similarly sized but more upstream-skewed Norwegian companies Norsk Hydro and Statoil were A-ish, and you assumed the implicit state support present in the latter's AA to be worth about one rating category. Your predecessor had assigned Repsol a internal score of 2 (equal to Texaco's and one notch below all the other companies' scores of '1,' with scores of '2' and '3' assigned to the Norwegians) and recommended charging Repsol 30 basis points (bp) on its one-year revolving

committed bank line, and investing in Repsol's five-year senior unsecured bonds if their spread to Spanish treasuries exceeded 60 bp.

The Case

Over time, Repsol's evolution has required you to update your analytical approach. In particular, you have had to

1. Understand the changes in the scope of consolidation and consolidation methods
2. Assess emerging market risk and foreign versus local currency ratings
3. Assess acquisition risk
4. Analyze a multitier capital structure, including two types of preferred shares
5. Analyze liquidity and factor its importance into creditworthiness

The various stages and corresponding questions outlined here reflect different periods.

Stage 1—December 1998: Spain's Conservatively Financed Flagship Refiner and Marketer

Questions

(using data in Tables D-1 to D-4)

1. With your fresh eyes, would you hold different views from the rating agencies or your predecessors, including their respective ratings and scores?
2. What are the key risks to Repsol's creditworthiness at this stage? Are the company's public disclosures and strategy positive or negative factors?
3. Are your views skewed by the consolidation method for the stakes in Gas Natural, Astra, and the Peruvian assets? How do you factor these stakes in?
4. What is Repsol's most likely next move? What financial flexibility (extra debt it can incur, based, for example, on an enterprise

value/acquired EBITDA of 6 times) do you assign it as your current internal rating level?

Stage 2—January to June 1999: The Transformational Argentine Acquisition

You were fortunate to join the bank in early January 1999: On January 20, Repsol bought 14.99 percent of YPF, the largest integrated energy company in Argentina, for $2,011 million in cash. YPF's by-laws required any party acquiring 15 percent or more of YPF's shares to launch an offer for all outstanding shares, but the government agreed, for three years, to ask any third-party bidder to offer at least 25 percent more per share than the price Repsol had paid. Repsol issued a €1.4 billion five-year bond the following month at 45 bp above Bund, the largest bond ever issued by a Spanish corporation and at the time the second-largest-European corporate bond issue in Euros.

Without waiting for the transformation of YPF's bylaws that would allow share swaps, on April 29 Repsol launched a cash offer for all outstanding YPF shares, valid until June 23 and conditional on minimum 50 percent success, at 18 percent and 25.4 percent above the price paid in January and the April 28 market price, respectively. Prefinancing included a $15.5 billion syndicated bridge loan; a €3.25 billion 18-month floating-rate note issue; a €1 billion three-year bond; and the launch, a few days before June 23, of an approximately $5 billion common share issue, the largest ever for a Spanish corporation.

By June, Repsol had acquired a further 83.2 percent of YPF for $13,158 billion. You expected that the debt refinancing the bridge loan would be a mix of three-, five- and seven-year maturities; would be US$-denominated (or swapped) debt, since Repsol saw YPF's key upstream assets as mostly US$-linked; and might include cross-default clauses with YPF's debt. Repsol's share issues and the acquisition of YPF shares were not conditional one upon the other. During 1999–2000, Repsol expected to reduce gearing [debt/(debt + equity)] from 70 percent to about 50 percent. The company planned to sell $2.5 billion of assets by December 2000, including most European assets outside the Iberian Peninsula, assets in Egypt and Indonesia, and modest antitrust-motivated sales in Argentina.

The company was renamed Repsol-YPF S.A. Repsol did not guarantee nor refinance YPF's debt, but it would itself refinance maturities exceeding free cash flow. You expected Repsol to support YPF in normal

circumstances, but not if the need to do so arose from significantly adverse government actions, for example, expropriation.

Key financials for Repsol and YPF for the period 1994–1998 are given in Tables D-1 and D-2; on January 20, YPF was worth $10,922 million and Repsol $16,275 million. At BBB+/BBB-[2], YPF was the most

TABLE D-1: Repsol Financial Statistics (at the end of 1998)

(Million Euro)	1994	1995	1996	1997	1998
Revenues	14,255	15,294	16,659	19,287	18,989
EBIT	1,063	1,277	1,194	1,404	1,658
of which E&P		114	190	273	93
of which R&M		457	489	666	933
of which LPG		160	149	73	184
ofwhich Gas distribution		186	227	229	284
Net interest charges	88	64	49	150	170
FFO	1,332	1,474	1,558	1,969	2,150
Investments	1,147	1,221	1,903	3,052	2,217
Dividends	265	326	373	447	517
Net cash flow before working capital	–80	–73	–718	–1,530	–584
Total assets	9,656	10,028	12,973	16,052	17,351
Net debt	1,445	1,054	2,293	3,296	3,534
Equity*	3,538	3,955	5,096	5,557	6,043
Market capitalization	6,437	7,167	8,979	11,720	13,649
EBIT/interest (×)	12.1	20.0	24.4	9.4	9.8
FFO/net debt (%)	92.2	139.8	67.9	59.7	60.8
Net debt/equity (%)	40.8	26.6	45.0	59.3	58.5

* Including $750 million in preferred stock.

TABLE D-2: YPF Financial Statistics (at the end of 1998)

(Million pesos)	1994	1995	1996	1997	1998
Revenues	4,403	4,970	5,937	6,144	5,500
Exploration expenses	182	233	207	174	161
Depreciation and amortization of fixed assets	732	950	1,065	1,093	1,061
EBIT	752	978	1,539	1,632	1,146
Interest expense	106	255	318	274	247
Net income	553	746	762	800	512
FFO*	1,285	1,696	1,827	1,893	1,573
Investments	1,434	2,327	1,817	1,593	1,351
Dividends	308	269	264	284	343
Net cash flow before working capital	–457	–900	–254	16	–121
Total assets	9,656	10,028	12,973	16,052	17,351
Net debt	1,245	3,657	3,318	3,498	3,760
Equity	5,414	5,895	6,148	6,660	6,855
EBIT/interest (×)	7.1	3.8	4.8	6.0	4.6
FFO/net debt (%)	103.2	46.4	55.1	54.1	41.8
Net debt/equity (%)	23.0	62.0	54.0	52.5	54.9

* Net income + fixed-asset depreciation and amortization.

highly rated Argentine corporate issuer; its operations included the following (1998 data):

- Domestically, the company had 2,681 million boe of proved hydrocarbon reserves (57 percent gas), representing 44 percent and 38 percent of Argentina's total crude and gas reserves, respectively, and production of 651,000 boepd, of which 433,000 was crude and 218,000 was gas (51 percent and 58 percent of the respective Argentine totals).

- YPF's upstream diversification internationally had resulted in international reserves and production of 567 million boe and 121,000 boepd, respectively, broadly as profitable as domestic operations. Global upstream operations were contributing 50 to 90 percent to YPF's total EBIT, depending on international crude prices.
- Postacquisition, Repsol's proved reserves and production would be 4,224 million boe and 1.08 million boepd, respectively, for an adequate 12-year reserve life. Production was to grow 5 percent annually to 2002.
- YPF had 364,000 bpd of domestic refining capacity (lifting Repsol's to 1.2 million boepd including mandated divestitures), about half of the country's, at three relatively sophisticated and well-located, but moderately cost-efficient plants. YPF would remain the largest exporter of oil products and chemicals (around $2.5 billion annually). YPF owned its 2,600-kilometer pipeline primary distribution network and supplied 2,253 retail sites (few of them company-owned), with a clear market leadership position and high domestic LPG market shares.
- Since its formation, YPF had been aggressively reducing costs and head count, and was unusually competitive for a previously state-owned company.

By acquiring YPF, Repsol at a stroke boosted its international presence, its upstream operations, and its integration through the gas chain.

Questions

(using data in Tables D-1–D-4)

Repsol has asked your bank to participate in the fund raising: $2 billion of the $15.5 billion bridge loan and $1 billion postrefinancing in bonds and bank lines, despite the bank's having never lent to Argentine corporates; your analytical work will be anxiously followed.

1. Prepare pro forma 1998 business and financial indicators, ignoring disposals; then prepare pro forma statements including them, assuming a 6 times EBITDA multiple and that all proceeds will go to debt reduction. How significant is YPF for Repsol, and what are the credit implications?

2. What do you see as the key risks and upside (a) in January and (b) in June for the merged entity, including integration? Does the degree of clarity in the company's financials and strategy deserve a premium or a discount? Determine how relevant cross-default clauses are. What are your views on Repsol's management?
3. What internal score and spread levels do you recommend?

TABLE D-3: Gas Natural Financial Statistics, 1999–2003

(Million Euro)	1999	2000	2001	2002	2003
Revenues	3,271	5,005	5,648	5,356	5,713
Depreciation and amortization of fixed assets	358	404	451	425	380
EBIT	738	922	1,019	907	799
Interest expense	118	194	287	208	58
Net income	452	533	561	798	612
FFO	833	929	1,004	909	857
Investments	1,023	1,715	988	1,061	1,353
Dividends	111	133	167	158	206
Net cash flow before working capital	–301	–919	–151	–310	–702
Total assets	7,831	9,735	10,060	8,810	10,009
Net debt	2,769	3,654	3,846	1,698	1,961
Equity	5,414	5,895	6,148	6,660	6,855
Market capitalization	10,241	8,687	8,373	8,091	8,306
EBIT/interest (×)	6.3	4.8	3.6	4.4	13.8
FFO/net debt (%)	30.1	25.4	26.1	53.5	43.7
Net debt/equity (%)	51.1	62.0	62.6	25.5	28.6

TABLE D-4: CLH Financial Statistics, 2000–2002

(Million Euros)	2000	2001	2002
Revenues	517	541	469
Depreciation and amortization of fixed assets	66	62	68
EBIT	155	153	111
Interest expense	–16	–12	–1.6
Net income	124	163	74
FFO	207	152	154
Investments in fixed assets	82	86	32
Dividends	141	507	78
Net cash flow before working capital	–16	–441	44
Total assets	1,640	1,582	1,493
Net debt	–1.028	163	159
Equity	596	252	248
EBIT/interest (×)	–9.7	–12.8	–69.4
FFO/net debt (%)	N.M.	93.3	96.9
Net debt/equity (%)	–0.2	64.7	64.1

May 27, 2004; no more information was available. N.M.: not meaningful.
Source: Company data

Stage 3—Fall of 2001: Increasing Stress on the Argentine Government

Between June 1999 and late 2001, the following events occurred:

- In the summer of 1999, Standard & Poor's, Moody's, and Fitch downgraded their Repsol ratings to A–/A2/A+, respectively. Standard & Poor's was the only one with a negative, rather than

stable, outlook; however, it raised its outlook to stable in March 2000, expecting 30 percent, 40 percent, and 50 percent FFO to net debt for 2000, 2001, and 2002.

- In June 2000, the Spanish Energy Market Liberalization Act capped Repsol's fuel retail market share until 2005 and gave it and Gas Natural two years to reduce their stakes in CLH and Enagas to 25 percent from 60 percent and 100 percent, respectively (reducing Repsol's debt by an expected € 2.5 billion combined). Both stakes would then been consolidated under the equity method by their respective owners; starting January 1, 2000, a slight change in Gas Natural's board arrangements enabled Repsol to fully consolidate it.

TABLE D-5: Repsol's Concentration on Latin America/ Argentina*

	Total	Spain	Latin America	Argentina	% Latin America	% Argentina
Consolidated EBIT January–September 2001	4,154	1,299	2,264		54.5%	
Upstream						
Proved oil and gas reserves (mmboe)	4,778	8	3,347			70.1%
Proved crude reserves (mil. bbls)	2,378	7	1,572			66.1%
Proved gas reserves (bcf)	14,395	3	10,654			74.0%
Oil and gas production (mmboe)	368	4	296	268	80.4%	72.8%
Crude production	232	1	177	158	76.4%	67.9%
Gas production	135	3	118	110	87.5%	81.5%
Revenues	9,084	455	6,652	6,156	73.2%	67.8%
EBIT 2000	3,864		2,948	2,532	76.3%	65.5%

(continued)

(continued)

	Total	Spain	Latin America	Argentina	% Latin America	% Argentina
EBIT 1H 2001	1,536		1,230	1,143	80.1%	74.4%
Refining						
Primary distillation capacity (000 bpd)	1,206	740	466	364	38.6%	30.2%
Refining runs (mmt)	52.6	32.9		16		30.4%
Distribution						
Number of service stations, total	7,224	3,705	3,332	2,770	46.1%	38.3%
Number of service stations, owned	3,401	2,892	438	236	12.9%	6.9%
Sales of petroleum products (mmt)	51.35	25.178		11.092		21.6%
LPG sales (000 t)	3,230	2,247		391		12.1%
Natural gas sales (mm thermies)	238,600	172,589		52,730		22.1%
R + M						
Revenues 2000	34,874	23,362	9,434	7,606	27.1%	21.8%
EBIT 2000	1,323	1,144	160	99	12.1%	7.5%
EBIT 1H 2001	827	584	233	173	28.2%	20.9%
Same last 18 months	2,150	1,728	393	272	18.3%	12.7%
EBIT January–September 2001	1,173	826	333		28.4%	
Same last 21 mos	2,496	1,970	493		19.8%	
Chemicals						
Revenues 2000	2,445	1,830	594	532	24.3%	21.8%
EBIT 2000	152	147	2	1	1.3%	0.7%
EBIT 1H 2001	8	9	–1	–1	–12.5%	–12.5%
Natural Gas and Power						
Revenues	5,430	3,940	1,297	957	23.9%	17.6%
EBIT 2000	1,006	686	223	198	22.2%	19.7%
EBIT 1H 2001	576	435	100	74	17.4%	12.8%

*All figures refer to 2000, unless otherwise stated

- During 2000 and until September 2001, the Argentine recession continued, producing increasing social difficulties but no trade deficit. The peso remained pegged. Government bond spreads over U.S. Treasuries exceeded first 5, then 10 percentage points by late spring 2001. Standard & Poor's sovereign foreign-currency rating stayed at BB until November 2000 (the outlook, which had been negative since July 1999, had returned to stable in February 2000), then lost one notch each in November 2000 (BB–), March 2001 (B+), June 2001 (B) and July 2001 (B–).
- YPF's foreign-currency rating was downgraded to BB+ in March 2001, BB in May 2001, and BB– in July, and its local-currency rating was reduced to BBB in March.
- In November 2000, Standard & Poor's revised its outlook on Repsol to negative when downgrading Argentina's sovereign foreign-currency rating, quoting lax investments and reaffirming its FFO/debt ratio requirements. Between January and September 2001, Repsol made €1.05 billion disposals versus €168 million acquisitions; operating cash flow (FFO minus a €1.3 billion working capital increase) just covered capital expenditures, and like EBIT decreased 10 percent year-over-year as the upstream division's EBIT fell 23 percent on lower

TABLE D-6: YPF S.A.'s Operating Income by Main Business Units, 1998–2002

	2002		2001		2000		1999		1998	
Business Unit	US$ (millions)	%	US$ (millions)	%	US$ (millions)	%	US$ (millions)	%	US$ (millions)	%
Exploration and production	1.959	99	2.078	91	2.827	97	1.381	85	622	49
Refining and marketing	–39	–2	190	8	69	2	244	15	639	50
Petrochemicals	53	3	—	0	3	0	–7	0	11	1
Natural gas and power	6	0	28	1	11	0	—	—	—	—
Total	1.978		2.296		2.91		1.618		1.272	

TABLE D-7: Statoil and Norsk Hydro Operating Statistics

Physical Indicators	Proved Oil and Gas Reserves (billion boe)	% Oil Reserves	Production (000 boepd)	Reserve Life (years)	Internal Reserve Replacement Rate (%)	Finding and Development Costs ($/boe) 3-year average	Refining Capacity (million bblspd)
Statoil							
1998–2000 average		51	627	13.1	119.5		284
2000	2.983	51	647	12.6	118	7.68	315
1999	2.993	52	630	13	121	6.74	268
1998	3.019	50	604	13.7	N.M.	4.73	268
Norsk Hydro							
1998–2000 average		47	342	14.8			48
2000	2.04	48	415	13.5	114	7.89	50
1999	2.085	47	340	16.8	183	13.39	49
1998	1.408	45	270	14	N.A.	N.M	46

international crude prices. YPF's buyout of minority interests in Astra only slightly diluted Repsol's stake in YPF. Consolidated cash, short-term debt, and net debt were €1.86, €8.87 billion, and €19.7 billion at September 30, 2001, respectively; previous 12-month FFO/net debt was 31.5 percent. Repsol expected to issue €1.5 to €2.0 billion of preferred stock in December.

- Between January and September 2001, the three other agencies left their ratings on Repsol unchanged. On October 9, when lowering Argentina's sovereign foreign-currency rating to CCC+/negative, Standard & Poor's put Repsol's A– and YPF's BBB/BB- ratings on CreditWatch with negative implications. On November 6, Standard & Poor's lowered its Argentine sovereign foreign-currency rating to D (and its local-currency rating to SD) on the government's announcement of an unfavorable debt swap offer.

Questions

(using data in Tables D-5–D-7)

1. What is your view of Repsol's execution of the commitments that it took on upon acquiring YPF? What do you think of agencies' ratings on Repsol in the five quarters to September 2001? Does the degree of clarity in the company's financials and strategy deserve a premium or a discount?
2. On November 15, 2001, Standard & Poor's downgraded its long-term rating on Repsol to BBB+/Stable. What do you think of both the one-notch downgrade and the stable outlook? What are your internal score and spread recommendations (possibly differentiated by maturity)?
3. Which type of worsening of the Argentine situation, if any, could trigger a fall of Repsol's creditworthiness from investment-grade to high-yield? How would you factor the different scenarios into your internal score or spread recommendations?

Stage 4—May 16, 2002: Repsol's First-Quarter Results

- During December 2001, Argentina's recession became so deep that repeated antigovernment demonstrations and hunger-driven riots spread and left several people dead. The president elected in 2000 resigned; two others in succession took his place and immediately resigned; a fourth one, elected by parliament until the May legislative elections, in January let the peso float and prohibited savings withdrawals from banks and fund transfers abroad except upon specific central bank authorization. All contracts (sales and purchases of goods and services, debts and mortgages) involving Argentine entities were "pesified," i.e., forcibly converted to the peso at 1.6:1, compared to the approximately 3:1 market rate—which might go to 4 or 5:1 in the face of an 8 to 10 percent GDP contraction in 2002 and unpredictable inflation.
- The 1989 decree that allowed the whole extractive sector to keep 70 percent of export proceeds outside the country remained in place, as did the 12 percent moderate royalties, but natural gas and power prices were frozen, crippling energy utilities' and

(mostly foreign-owned) gas producers' profits; new export duties were imposed on crude exports, and you thought they could cost Repsol some $1.1 billion.

- Repsol itself eventually issued €2.0 billion of preferred stocks in December, with net debt excluding preferred stocks down to some €16.9 billion. You expected very low refining margins globally but healthy international crude prices until the end of 2002. YPF's full-year 2001 EBIT was still healthy upstream ($2.08 billion compared to $2.83 billion in 2000) and was picking up downstream (to $190 million from $69 million).
- As of May 16, 2002, Repsol and YPF had just published their first-quarter results. While earnings were affected by special noncash charges related to Argentina and EBIT was down 41 percent year-over-year, Repsol's FFO decreased 4 percent sequentially and 28 percent year-over-year to €1,154 million, reflecting a €329 million negative change in working capital and total investments of €733 million (down 31 percent year-over-year) before divestments of €417 million. Net debt excluding preferred stocks of €17.2 billion included €7.82 billion short-term debt and €3.54 billion consolidated cash and equivalents [Ps (pesos) 212 million at YPF]. YPF disclosed debt maturing within 12 months of Ps 3.8 billion (of which Ps 1.8 billion was with non-Argentine group companies), debt maturing within 12 to 24 months of Ps 1.1 billion, and debt maturing later of Ps 1.5 billion (none of which was with related companies).
- On May 16, Repsol sold a 23 percent stake in Gas Natural on the market (keeping only 24.0 percent) for some €2 billion and reverted to the proportional consolidation method, with no pro forma accounts given later; the partial sales of Enagas and CLH would be completed by July. By January 1, 2003, the company might exercise its cash call on some valuable BP upstream assets in Trinidad (notably gas to be liquefied and sent to the growing and profitable U.S. and Spanish markets) for an amount you estimated at between $0.7 and $1.2 billion.

Around New Year's, the agencies and you had all put your respective internal scores and ratings on CreditWatch or surveillance with negative implications, anxiously following how the Argentine developments would unfold and how Repsol would react. You now need to take a final credit view.

Questions

1. Prepare projections for the full years 2002 and 2003 in the new landscape. Reassess, if necessary, your previous business profile. How is visibility affected by changes in foreign-exchange rates and consolidation methods?
2. In January 2002, what are your immediate concerns for the next few weeks? Which scenario could lead you to downgrade Repsol to high-yield, and how likely do you see this as being? What is the key action that Repsol can take to avoid this?
3. Provide a probability that Repsol can refinance on the bond market. What approach would you recommend to gauge the company's liquidity over the next few quarters?
4. What do you see as the key risks and upside in the medium term?
5. In February 2002, the spreads on Repsol's bonds boomed to over 300 bp; what do you think such levels indicate? In early 2002, Standard & Poor's and Moody's downgraded their ratings to BBB/Baa2 and left them on CreditWatch with negative implications.
6. How are your views affected by the changes in consolidation methods? Are Gas Natural's key credit metrics skewing Repsol's?

Stage 5—Early June 2003: Repsol's Comeback on the International Bond Market

- Argentina's economy contracted 10 percent in 2002 but had been picking up since early 2003; GDP growth of 4 to 6 percent was expected. A large trade surplus enabled the central bank to relax its transfer and convertibility regulations, and the peso firmed around US$ 0.35. Inflation, which had been 60 percent in 2002, was cooling down to 10 to 15 percent. The new president and government that had been in place since the tumultuous May election, however, continued to stubbornly refuse to compensate foreign government debt holders for more than a fraction of their losses. The sovereign foreign-currency rating was likely to remain D for a long time, probably keeping Argentine corporations out of international capital markets.

TABLE D-8: Statoil and Norsk Hydro Financial Statistics

Financial Indicators	EBIT Net Interest Coverage (x)	EBITDA Net Interest Coverage (x)	ROPC	Free Operating Cash Flow/ Net Debt (%)	FFO/ Net Debt (%)	Net Debt/ Capital (%)
Statoil (A/stable)						
1998–2000 average	7.4	12.1	16.9	21.9	60.0	46.8
2000	15.6	21.0	33.1	107.5	113.3	37.7
1999	4.2	8.7	11.3	–13.4	46.1	46.9
1998	2.4	6.6	6.3	–28.3	20.7	55.8
Norsk Hydro (A/stable)						
1998–2000 average	5.5	9.8	11.3	7.4	44.9	38.7
2000	10.4	15.2	20.5	37.1	72.8	33.2
1999	3.0	7.0	6.8	–0.6	27.2	44.0
1998	3.3	7.3	6.6	–14.3	34.6	39.0

- Natural gas and power prices were expected to remain frozen (except for exporting industries benefiting from the 2002 devaluation, with Repsol now fetching an average of approximately $5 per boe of gas produced). Export duties and royalties were unchanged since your spring 2002 review. The 1989 decree remained in place, with the 70 percent possibly to be lowered to 40 to 50 percent.
- Despite local challenges, since the fourth quarter of 2002, Repsol's downstream EBIT in Argentina had been healthy, and you estimated that it might exceed €300 million in 2003. The approximately 40 percent fall in Repsol's consolidated downstream operating earnings during 2002 reflected exceptionally low refining margins globally and Argentine challenges, but EBITDA covered capex 2.5 times; with healthy refining

TABLE D-9: Repsol-YPF Consolidated Operating Statistics

	1999	2000	2001	2002	2003
Total Proved Reserves (million boe)	4,698	4,942	5,606	5,261	5,433
% Argentine gas	28.5%	31.8%	26.5%	26.6%	23.5%
% Argentine crude	41.6%	38.4%	32.2%	31.9%	27.0%
% Bolivia	NA	NA	NA	24.6%	23.2%
% oil reserves	46%	48%	41%	38%	35%
% developed	76%	72%	68%	68%	59%
Total production (million boe)	NM	377	370	365	392
Total production (000 boe per day)	NM	1,033	1,014	1,000	1,074
% Argentine crude in total production	NM	41.8%	43.8%	43.8%	40.2%
% Argentine natural gas in total production	NM	31.2%	27.1%	27.8%	30.6%
% Oil production	NM	62%	64%	58%	55%
Reserve life (years)	NM	13.1	15.1	14.4	13.9
For oil only	NM	10.2	9.7	9.5	8.7
For gas only	NM	17.8	24.5	21.3	20.3
Proved developed only	NM	9.4	10.3	9.8	8.2
3-year internal reserve replacement rate (%)	161%	157%	140%	97%	58%
1-year internal reserve replacement rate (%)	227%	140%	81%	70%	26%
3-year organic finding and development cost ($/boe)	NM	NM	NM	$3.83	$5.95
All upstream capex ($ millions)	NM	2,106	1,695	1,216	1,151
Exploration capex ($ millions)	223	281	309	193	266
Development capex ($ millions)	678	988	1,254	1,012	788

Boe: barrels of oil equivalent; NA: not available; NM: not meaningful.

TABLE D-10: Repsol-YPF EBIT and Investment Geographic Breakdown

	EBIT			Investments		
(€ millions)	2001	2002	2003	2001	2002	2003
Exploration and production (E&P)	2,557	1,785	2,352	1,951	1,081	2,168
Of which Argentina	1,844	1,315	1,615	1,000	627	604
% Argentina	72.1%	73.7%	68.7%	51.3%	58.0%	27.9%
Refining and marketing (R&M)	1,406	854	1,196	877	584	663
Of which Argentina	115	134	466	146	85	55
% Argentina	8.2%	15.7%	39.0%	16.6%	14.6%	8.3%
Chemicals	–55	97	155	218	89	81
Of which Argentina	–14	56	112	1	28	11
E&P, R&M, and chemicals combined	3,908	2,736	3,703	3,046	1,754	2,912
Of which Argentina	1,945	1,505	2,193	1,147	740	670
% Argentina	49.8%	55.0%	59.2%	37.6%	42.2%	23.0%
Gas and power	1,062	633	212	1,265	694	511
Of which Argentina	159	34	9	39	14	8
Consolidated	4,920	3,323	3,860	4,456	2,673	3,837
of which Argentina	2,104	1,573	2,198	1,342	791	692
% Argentina	42.8%	47.3%	56.9%	30.1%	29.6%	18.0%
% global E&P	52.0%	53.7%	60.9%	43.8%	40.4%	56.5%
% global R&M	28.6%	25.7%	31.0%	19.7%	21.8%	17.3%

NS: not significant. Investments include acquisitions.

margins globally expected, downstream operating earnings could improve by €250 million in 2003, although capex would increase by some €150 million, and a further €100 million was expected in 2004 given the tighter European environmental rules in 2005. You expected healthy international crude prices, as in 2002: Repsol's upstream EBIT would stabilize after 2002's

TABLE D-11: Repsol-YPF S.A. Consolidated Financial Figures (2000–2003)

Year Ended December 31 (€ million)	2000	2001	2002	2003
Revenues	38,873	36,803	30,958	31,580
Earnings before interest, taxes, and depreciation	9,106	7,891	5,893	6,178
Earnings before interest and taxes (EBIT)	6,242	4,920	3,323	3,860
Net financial fixed charges*	1,300	1,591	758	436
Net income	2,429	1,025	1,952	2,020
Funds from operations (FFO)	6,244	5,639	4,591	4,320
Capital expenditures†	4,284	4,346	2,365	2,345
Cash flow after capital expenditures	1,960	1,293	2,226	1,975
Disposals (net of acquisitions)	–1,569	766	2,170	1,288
Common dividend payments	725	1,031	475	634
Free cash flow‡	–334	1,028	3,921	2,629
Equity	18,665	18,129	14,234	13,995
Preferred shares	0	3,000	3,000	3,000
Total financial debt	22,462	24,793	15,757	14,132
Cash and cash equivalents	1,700	3,580	4,448	5,278
Net financial debt (ND)#	20,762	21,213	11,309	8,854
Provisions for employee retirement	N.A.	116	81	147
Total assets	52,419	51,439	38,305	38,416
ND/permanent capital (%)	52.7%	53.9%	44.3%	38.8%
(ND + step-up preferred shares)/ permanent capital (%)	52.7%	61.5%	56.0%	51.9%
FFO/ND (%)$	30.1	26.6	40.6	48.8
FFO/(ND + step-up preferred shares)	30.1	23.3	32.1	36.4
EBITDA/fixed charge coverage (×)	6.7	4.7	6.2	9.9
EBIT/fixed charge coverage (×)	4.6	2.9	3.5	6.2
EBIT/permanent capital (%)	15.8	11.6	11.6	14.9
€/$ exchange rate	**2000**	**2001**	**2002**	**2003**
Average rate	1.09	1.12	1.07	0.87
Period end rate	1.07	1.12	0.95	0.79

*net of interest received, including capitalized interest and preferred interests. †Including exploration expenses. ‡FFO minus capital expenditures, net acquisitions, and dividends. #Debt figures include forward sales financing outstanding at year-end (2003: €309 million; 2002: €485 million; 2001: €742 million; 2000: €389 million). $Including minority interests and preferrred shares that don't include a step-up clause.

30 percent fall. The 32 percent fall in full-year 2002 consolidated EBIT reflected, notably, the second-quarter 2002 changes in the consolidation methods of CLH and Gas Natural; FFO had exceeded capex by € 2.22 billion; net divestments were €2.17 billion; net debt almost halved. All this exceeded your expectations, and YPF had declared over $1 billion in dividends.

- First-quarter 2003 FFO and operating cash flow were up 8 percent and down 9 percent, respectively, and capex fell 20 percent, from €0.56 billion to €0.45 billion. Net debt was flat, but mostly because of €958 million in acquisitions, notably BP's Trinidad interest, versus only €117 million in divestments.

Questions

(using data in Tables D-8–D-14)

1. Analyze the 2002 performance and debt reduction in detail; prepare projections for the full years 2003 and 2004, and consider reassessing your previous business profile.
2. Repsol plans to issue a large, long-dated bond, taking advantage of spreads that now are around 100 bp, in line with a low-A rating. You need to take a credit view. What are your remaining concerns or views on the mid-term upside, compared to current spreads?

Stage 6: Looking More Closely at the Balance Sheet

The year-end 1997 and 1998 debt figures quoted earlier and in the financial tables do not include a $750 million preferred stock issue made in October 1997, with the following features:

- A 7.45 percent annual dividend, payable quarterly.
- Perpetual, with an issuer call from the fifth year at face value.
- Dividend payment is subordinated to the existence of a positive net consolidated income or of a common dividend.
- The dividend is noncumulative; any portion not paid in a given quarter it is lost to the holder.

In May and December 2001, Repsol issued €1 billion and €2 billion, respectively, of preferred shares with the following features:

- Annual dividend set at 3-month Euribor for the first 10 years (capped at 7 percent and not lower than 4 percent), and at 3-month Euribor plus 3.5 percent thereafter, payable quarterly
- Perpetual, with an issuer call from the tenth year at face value
- The same dividend payment subordination and noncumulativity as the 1997 issue

If called, both issues must be replaced by an instrument that is "at least as equity." All three issues were classified as minority interests in Repsol's accounts. IFRS in 2005 would be unlikely to classify them as debt. The 1997 issue was mostly sold to institutional investors, and the 2001 issues to domestic retail investors.

Repsol's postretirement employee obligations (including pensions) and asset-retirement obligations were very modest compared to its peers, who posted potentially €1 to €4 billion of each.

Questions

1. How close to equity as opposed to debt do you see these instruments as being? Would you distinguish between the 1997 issue and the 2001 issues? Does the difference in investor bases affect your judgment as to Repsol's willingness not to pay the preferred dividend?
2. Assuming that issuing any unsecured Eurobonds or Yankee bonds between late 2001 and early 2003 was fairly challenging for Repsol, how do you rate the impact of the 2001 issues on Repsol's creditworthiness?
3. Would you have changed your June 1999 recommendation if the company had issued, say, $5 billion worth of common shares and $1 billion of preferred stocks, instead of the actual $5,665 million worth of common shares issued?

KEYS TO SUCCESS: THE OIL AND GAS INDUSTRY

Bruce Schwartz, Director and Senior Oil & Gas Analyst, Standard & Poor's

Since 1859, when "Colonel" Edwin L. Drake drilled the first oil well in Pennsylvania, the exploration and production (E&P) segment of the oil

and gas industry has been searching for new hydrocarbon deposits and investing capital in facilities that bring these reserves to production. Given the vital role of oil and natural gas in the global economy and the profits that have accrued to skilled operators, the industry has expanded greatly (from literally no production to about 80 million barrels of oil per day) and now is composed of various types of competitors. These include the upstream affiliates of giant national oil companies and "supermajors," which (in addition to massive refining and marketing operations) control the majority of the world's production capacity. At the other extreme are small, sometimes privately owned oil companies that produce fewer barrels of oil in a year than many major integrated companies produce in several days. Fierce competition (intensified by the need to find new fields to replace produced resource) usually results in relatively meager profitability ratios over the course of an economic cycle for all but the strongest incumbents.

At first glance, the E&P industry would seem unfriendly to creditors: it's notoriously volatile, deeply cyclical, brutally competitive, and tremendously capital-intensive (with projects potentially running into the billions of dollars and requiring years to bring to first production). As a result of resource depletion, companies without successful reinvestment literally are going out of business each day. Estimates of a company's future production (i.e., reserves) can be complicated by reliance on the geosciences, which can have a fairly high margin of error. (SEC regulations also do not require reported estimates to be audited by external engineers.)

Furthermore, the largest and most competitive deposits are increasingly being found in emerging markets with high political risk. Despite these shortcomings, the industry has been remarkably favorable for creditors during the past decade: Default rates and recoveries on defaulted securities (particularly loans with borrowing bases) have strongly outperformed the average for all industrials. The reasons for good credit outcomes include the industry's large cash margins before capital expenditures (as the vast majority of costs are fixed), the ability of lenders to quantify risks (and mitigate them through transaction structures should they choose to do so), the asset protection provided by reserves, liquid property markets, and access to futures markets for attenuating price risk. Good credit outcomes and a buoyant near-term outlook now are helping the bonds of E&P companies to trade at significantly tighter spreads than comparably rated industrials.

The next several years are likely to resemble the history of the industry, with prices being determined by how supply balances with demand.

Demand is likely to continue to rise in concert with global economic expansions, and supply will continue to be highly influenced by the cohesion of OPEC and the spending plans of non-OPEC producers. Periods of pricing euphoria or depression are likely to result from shocks to supply (e.g., production disruptions in Venezuela or Nigeria as a result of political conflict) or demand (e.g., the Asian financial crisis of 1998). Perhaps the most significant change in the industry will be the erosion of regional natural gas pricing variation by the linking of intercontinental natural gas markets through large investments in liquefied natural gas (LNG) infrastructure. Within this environment, the most successful companies have several key factors in common.

Low Cost Structure

Measures of Success:

Breakeven price/total unit costs

Unit finding and development costs

Unit operating costs

Unit overhead and financing costs

Recycle ratio

Oil and gas exploration and production is a textbook commodity business; the most efficient producer wins over the long haul. The keys to being a low-cost producer are economies of scale, adroit and disciplined management that can anticipate technological trends, being naturally-endowed with excellent geologic resources (particularly for national oil companies and supermajors that have legacy land positions dating back a century), and, frequently, just plain good luck in the drilling program. The cost position of a company is usually captured by the total cost per barrel of oil equivalent (boe) produced (which is effectively a breakeven price). Efficient producers have total cost structures of less than $12 per boe, which compares favorably to the lowest annual price for the past decade for the benchmark West Texas Intermediate crude oil price (about $14 per barrel).

To diagnose the strengths and weaknesses of various companies, analysts may break down a company's cost structure into the operating costs and financing costs per boe and the capital spent per boe of new reserves found and brought to production (i.e., finding and development costs). A metric that unites many concepts is the recycle ratio, which is defined as the cash flow generated over a cycle divided by the cost of

finding the reserves that produced the cash. Recycle ratios greater than 1.0 indicate that the company is generating more cash than it has invested.

Long Reserve Life

Measures of Success:

Total reserve life

Proved developed reserve life

Companies that are not rapidly depleting (i.e., that have a long reserve life) generally have fewer pressures to find new reserves than companies that have short reserve lives. (Given the high fixed costs of the business, falling production rates—a disease resulting from insufficient investment—can lead to a death spiral of rising unit costs and reduced cash flow available for investment.) Therefore, companies with long reserve lives (10+ years calculated by dividing reserves by annual production) may have greater operational and financial flexibility than short-lived companies. During periods of overheated property markets, long-lived companies may have the luxury of passing on the acquisition of overpriced raw acreage or companies for acquisition because they do not feel acute pressure to invest in order to sustain production.

During periods of severely depressed prices, long-lived companies benefit by being able to cut capital expenditures to conserve capital without a disastrous effect on production rates. The equity markets value these trends and usually confer valuation premiums on longer-lived companies.

Reserve Replacement Prospects

Measures of Success:

Reserve replacement rate

Exploration acreage

Probable and possible reserves

Complementing a long reserve life as a key to long-term success is a healthy portfolio of high-quality (i.e., low costs and high impact) exploration opportunities. The most successful companies in the industry have a large portfolio of undrilled prospects of various risk grades diversified across prolific hydrocarbon-producing regions. While often hard to quan-

tify, such a portfolio—in addition to the competencies of the technical staff and proprietary technologies and processes—can be a company's key asset. In recent years, large companies have been willing to pay large premiums for smaller companies that offer prospects for future production growth through the drillbit.

Management

Measures of Success:

Return on capital versus growth rate

Ultimately, a company's success rests on the quality of the investing and financing decisions made by management. To some extent, investors in E&P companies are essentially betting on management because of the mismatch between reserves (finite life) and a corporate life (perpetuity). Given the wealth of quantitative data available to risk managers in the oil and gas industry, outcomes are frequently a result of management's risk tolerance and ability to execute. Companies that optimize returns and growth, and that have cultural and strategic continuity, tested project management skills, and strong centralized controls, tend to be the better performers. The weaker performers (and those that default) often are companies that take on undue financial or operating risks.

A Strong Financial Profile

Measures of Success:

Free cash flow versus total debt

Cash balances & access to capital

Debt per boe of proved reserves

Debt maturities

A strong financial profile (characterized by low debt leverage and ample liquidity) provides an E&P company with the ability to thrive regardless of industry conditions. With low leverage and strong liquidity, companies can shoulder the financial risks of project development despite price volatility. (Financial strength is of great importance to host countries when selecting potential partners or developers of their reserves.) A strong financial profile also provides a company with the capital to make

countercyclical acquisitions and can enhance shareholder value by enabling companies to return free cash to shareholders over an industry cycle. In addition to conventional credit measures, leverage can be evaluated by comparing debt per proved boe of reserves to comparable sales. (Over the last decade, the price paid for reserves in the United States has averaged about $4.50 per boe, with prices in certain regions reaching as high as $12.00 per boe at a cyclical peak and $2.00 or lower at a cyclical nadir.)

Ample cash balances or committed bank credit—multiple years of debt service and capital expenditures—help to sustain operations, since extended periods of negative cash flows after capital expenditures are possible during a downturn. In depressed markets, companies must continue their exploration and development investments or else risk entering a tailspin of falling production and rising unit costs. Financial ratios can vary widely over the course of the business cycle, but the most strongly positioned companies will generate free cash flow after sustaining capital expenditures in all but the most severe pricing downturns.

NOTES

1. In Argentina's strongly dollarized economy (a high proportion of contracts between banks, corporates and individuals were denominated in U.S. dollars as opposed to the local peso), Standard & Poor's saw transfer and convertibility risks (T&C) as equivalent to the government's local-currency rating, as opposed to its foreign- currency rating; accordingly, corporates' foreign-currency ratings were not capped at BB, but rather at the higher local-currency rating.

2. When two ratings in a row are listed for the same issuer, the first refers to the local-currency rating and the second to the foreign-currency rating.

APPENDIX E

Air New Zealand

Jeanette Ward, Director and Senior Airline Analyst, Standard & Poor's, Melbourne, Australia

It is May 2000, and you are a bank credit analyst who has been asked to prepare a credit submission on Air New Zealand Ltd. (Air NZ), the flagship carrier of New Zealand, for the bank's credit committee. The committee is assessing whether it will increase its exposure to Air NZ to help fund the airline's acquisition of the remaining 50 percent stake in Ansett Holdings Ltd., Australia's second domestic airline (behind Qantas Airways Ltd.), held by News Corp Ltd. The transaction, which is due to close in late June 2000, would take Air NZ's ownership in Ansett to 100 percent, virtually doubling the size of Air NZ and giving the combined group the scale of a world top-20 airline.

At the time of the submission, the companies involved in the transaction had the following ratings from Standard & Poor's: Air NZ: BBB–/Watch Neg/A-3; Ansett: not rated; Qantas: BBB+/A-3, and Baa1/P-2; and News Corp.: BBB–/—.

The transaction, which was announced in February 2000, was precipitated by Air NZ's exercising its preemptive right to bid for the 50 percent of Ansett that it did not own after Singapore Airlines Ltd. (not rated) offered News Corp. A$500 million (about US$298 million) for its half of Ansett in early 1999 (see the short history of Air NZ). Following Air NZ's bid, Singapore Airlines changed tack; it acquired an 8.3 percent holding in Air NZ and obtained permission from the New Zealand government to lift its stake to the maximum 25 percent (April 2000).

Air NZ's bid for the Ansett stake is A$580 million (about NZ$740 million) on closing plus a further payment equivalent to 10.5 percent of Air NZ's market capitalization in either cash or equity in the next two to four years. To execute the initial A$580 million payment, the airline has approached its banks and is beginning the preparation for an announced underwritten rights issue to raise NZ$250 million–NZ$290 million. The remaining NZ$450 million–NZ$490 million will be funded with cash,

debt, and debtlike capital notes (a hybrid security to be issued after the equity raising).

At the same time, the Australian aviation market is about to face an onslaught from low-cost airlines after years of being a rational duopoly with a relatively stable yield structure. Although two new airlines tried and failed in Australia in the early 1990s, low-cost airlines more recently have been successful in penetrating Europe's aviation market, and Southwest Airlines has operated very successfully in the United States for many years. The two new low-cost airlines in Australia are home grown: Impluse Airlines (backed by several large investors), which started in May 2000, and Virgin Blue (backed by Richard Branson), which is due to start up in July 2000, two months before the Sydney Olympics.

Although the bank has a long-standing relationship with Air NZ, it has had no direct lending relationship with Ansett. The credit committee is anxious as to whether the bank should increase its exposure to Air NZ given Ansett's reputation for poor financial performance, the need to upgrade its Boeing 767 fleet (see Table E-2), and the competitive threats emerging in the Australian domestic aviation market.

In your presentation you are required to:

- Prepare a concise pro forma business risk assessment/management evaluation of the combined Air NZ and Ansett group, highlighting key strengths and concerns for the merged entity.
- Assess the combined group's overall credit risk, taking into account both business and financial risk, and the integration risk associated with such a large, primarily debt-funded acquisition.
- Rank the airline on the bank's credit scale (1 = best to 10 = worst, with 6 calibrated to be investment grade or BBB– on Standard & Poor's rating scale), taking into account what, if any, rating action Standard & Poor's might take after Air NZ completes the equity raising (associated with the transaction) in late 2000, after Singapore Airlines lifts its stake in Air NZ to 25 percent from 8.3 percent, and following the potential structural change forced by the success of one or both of the new low-cost airlines. In February 2000, when Air NZ announced the transaction, Standard & Poor's downgraded its ratings on Air NZ to BBB–/Watch Neg/A-3 from BBB/Watch Neg/A-3. A key factor you need to consider is whether the combined group would merit an investment-grade rating. Also, what, if any, uplift would you factor in from Singapore Airlines, given that

airline's intention to lift its holding in Air NZ to 25 percent, its previous interest in acquiring a stake in Ansett to gain access to the Australian domestic market, and its strong financial profile (see Appendix 1 for more details on Singapore Airlines). Provide qualitative and quantitative support for your conclusion.

- Recommend a pricing spread to compensate for that risk.

Air NZ's CFO has provided some historic and estimated fiscal (June 30) 2000 data for Air NZ and Ansett, along with some forecast credit metrics for the combined entity (based on the revenue synergies and cost savings expected to be achieved).

The exchange rates used for this case are those that prevailed at June 30, 2000. They were:

- US$1 = A$1.6760
- US$1 = NZ$2.1315
- NZ$1 = A$0.7822
- US$1 = S$1.723

AIR NEW ZEALAND LTD.

Air NZ, the flagship carrier of New Zealand, is a modest-sized airline servicing the New Zealand economy (4 million people) and the nation's international airline routes. Although about 90 percent of Air NZ's capacity or available seat kilometers (ASK) operate on international routes, a substantial proportion of the airline's earnings are derived from the domestic operation, where its market share is about 75 percent. Despite its size, Air NZ has retained a low investment-grade rating since October 1991 based on its solid market position and financial performance and its moderate leverage. Tourism is a significant contributor to the New Zealand economy, yet even during the Asian crisis, Air NZ's performance remained relatively robust.

The acquisition and full consolidation of Ansett is expected to virtually double Air NZ's size, with revenues rising to NZ$7.96 billion in fiscal 2001 (from NZ$3.66 billion in 2000), passengers carried rising to 21.8 million (from 7.8 million), revenue passenger kilometers (RPK) rising to 39.8 billion (from 20.98 billion), and ASK rising to 55.34 billion (from 30.11 billion). This would give the combined group the scale of a world top-20 airline. Australia is an important market for Air NZ, given the close economic and cultural ties and strong tourism flows between New Zealand

and Australia. As well as dominating the New Zealand aviation market, Air NZ has a significant amount of capacity dedicated to the trans-Tasman market (between the two nations) where its major competitor is Qantas. Being governed by an open-skies agreement, however, the trans-Tasman route is plagued by overcapacity and poor profitability. Air NZ believes that Ansett is a logical growth step and, importantly, will consolidate Air NZ's position in the broader Australia and New Zealand aviation market as well as in the Star Alliance, and further strengthen its relationship with Singapore Airlines.

In May 2000, Air NZ's majority shareholder was Brierley Investments Ltd., followed by Singapore Airlines, with 8.3 percent (with an intention to go to 25 percent after completion of the Ansett transaction). In addition, the NZ government retained one special rights convertible share, or "kiwi share," in the airline. Although the kiwi share does not carry any general voting rights, the consent of the Crown, as holder, is required for certain prescribed actions of the company as specified in the constitution.

A summary of Air NZ's key operating and financial measures, including Standard & Poor's key ratios is provided in Table E-1. Details of Air NZ's and Ansett's combined jet fleet are provided in Table E-2.

TABLE E-1: Air NZ—Key Operating Statistics and Financial Performance, 1997–2000

(NZ$ millions)	Year-End June 30 1997	1998	1999	2000#
Revenue	2,930.7	3,088.8	3,359.0	3,656.4
Passengers carried (million)	6.6	6.4	6.5	7.8
RPK (billion)	20.28	19.61	19.67	20.98
ASK (billion)	26.62	29.0	28.95	30.11
Passenger load factor (%)	68.5	67.6	67.9	69.7
Passenger yield (NZ cents)	10.9	11.4	12.2	13.1
Revenue/ASK (NZ cents)	9.9	10.7	11.5	12.1
Operating costs/ASK (NZ cents)	9.3	10.1	10.9	11.4
Operating income (before D&A)	305.6	340.2	397.3	401.3

(continued)

(continued)

(NZ$ millions)	Year-End June 30 1997	1998	1999	2000#
EBITDA (including interest income)	354.6	378.8	434.2	436.8
Gross interest expense	63.5	79.4	87.1	107.7
Rentals	188.0	193.7	262.6	295.8
Pretax earnings	146.7	129.7	150.3	143.3
Capitalized interest	6.3	6.8	5.5	2.0
Funds from operations (FFO)	260.7	244.8	302.2	365.3
Capital expenditures	311.8	238.5	612.8	882.5*
Free operating cash flow (FOC)	–69.2	–209	–356.3	18.9
Debt	978.9	1,380.7	1,488.4	3,913.3*
Cash	249.0	217.2	346.1	743.4
Total assets	3,355.6	4,104.0	4,390.7	8,964.6
Shareholders equity (SE)	1,675.2	1,988.9	2,126.2	1,590.1†
Future operating lease commitments	509.6	591.5	582.9	2,406.1*
S&P Operating leases adjustments				
PV of operating leases—additional debt	398.2	470.2	451.9	1,484.7*
Additional interest expense	40.0	43.4	46.1	96.8*
Additional depreciation	130.9	150.5	179.8	214.5*
S&P financial ratios				
Operating lease adjusted				
Pretax interest coverage (×)	2.3	1.9	2.0	1.7
EBITDA interest coverage (×)	4.8	4.4	4.8	3.6
Return on permanent capital (%)	8.5	7.3	7.2	4.8
Operating income/sales (%)	16.3	17.3	18.6	19.5
FOC/total debt (%)	–5.0	–11.3	–18.4	0.4
FFO/total debt (%)	28.4	21.4	24.8	10.7
Total debt/(SE + total debt) %	45.1	48.2	47.7	77.3

#Estimate. *Includes Ansett acquisition, to be acquired on June 30, 2000. †Includes anticipated NZ$786.3 million writedown for change in accounting policy. This loss has not been included in the earnings estimates. RPK, revenue passenger kilometers; ASK, available seat kilometers; passenger load factor, RPK/ASK; passenger yield, passenger revenue/RPK; PV, present value. *Source:* Air NZ management and Standard & Poor's

TABLE E-2: Air NZ and Ansett Combined Jet Fleet at September 2000

Aircraft	Air NZ	Ansett	Average Age (years)	Average Daily Utilization (hours)
Boeing 747-400	8	2	6.5	15.7
Boeing 767-300	9	1	5.0	14.9
Boeing 767-200	4	9	15.1	10.7
Airbus A320-200		20	8.5	9.7
Boeing 737-300	13	21	8.6	9.5
Boeing 737-200	7		16.3	7.5
BAe 146-300		3	9.3	7.3
BAe 146-200		7	12.9	7.3
Bombardier CRJ-200		7	0.7	N.A.
Total	**41**	**70**	**9.1**	**9.8**

Source: Air NZ

AIR NZ—SHORT HISTORY

- Air NZ was privatized and listed on the New Zealand stock exchange in 1989. During the 1980s and 1990s, Air NZ largely focused on expanding its international operations and strategic alliances (given its dominance of the domestic market).
- In October 1991, Standard & Poor's assigned its BBB/Stable/A-3 ratings to Air NZ.
- In October 1996, Air NZ acquired 50 percent of Australia's second domestic carrier, Ansett Holdings Ltd., from TNT Ltd. for a total investment of A$475 million. As part of the sale agreement, Air NZ injected A$150 million of new capital into Ansett, while News Corp., the holder of the other 50 percent of Ansett, injected A$50 million in new capital. The funds were earmarked to rebuild Ansett's balance sheet, reduce costs, improve asset utilization, and begin a fleet upgrade program. Air NZ's ratings were affirmed at BBB/Stable/A-3.

- In July 1998, Air NZ's commercial alliances with Ansett and Singapore Airlines received regulatory approval, allowing for increased commercial development between the airlines and expansion of code shares between New Zealand, Australia, and Singapore.
- In March 1999, Air NZ became a full member of the Star Alliance Group. Major airlines in this marketing alliance are United Airlines, Singapore Airlines, and Lufthansa.
- On March 30, 1999, Air NZ's BBB rating was placed on CreditWatch with negative implications, reflecting the possibility that the airline might exercise its preemptive right to bid for the remaining 50 percent of Ansett. Singapore Airlines was reported to have offered A$500 million to acquire News Corp.'s 50 percent share in Ansett.
- In May 1999, Singapore Airlines and News Corp. confirmed that they were in discussions regarding the sale of News Corp.'s 50 percent stake in Ansett. The offer price was A$500m. Air NZ's rating remained on CreditWatch with negative implications.
- In February 2000, Air NZ exercised its preemptive right and announced the conditional purchase of the remaining 50 percent of Ansett from News for A$580 million on closing plus a further payment equivalent to 10.5 percent of Air NZ's market capitalization in either cash or equity in the next two to four years. To complete the funding of the initial A$580 million, the airline approached its banks and announced an underwritten rights issue to raise NZ$250 million to NZ$290 million. The remaining NZ$450 million to NZ$490 million was to be funded with cash, debt, and debtlike capital notes (after the equity raising).
- Following this announcement, Air NZ's ratings were lowered to BBB–/A-3 from BBB/A-3 and remained on CreditWatch with negative implications.
- In April 2000, Air NZ received shareholder approval to proceed with the Ansett transaction. Singapore Airlines acquired 8.3 percent of Air NZ and obtained New Zealand government approval to acquire up to 25 percent of the airline's issued capital. At the same time, Brierley Investments Ltd. announced an agreement to sell its B-class shares (those that can be held by foreign nationals) to Singapore Airlines. The agreement was conditional on the completion of the Ansett transaction. Brierley

retained its A-class shares (those that can be held only by New Zealand nationals), maintaining a 30 percent interest in Air NZ.

- In June 2000, Air NZ completed its purchase of Ansett, using cash and bank debt.

ANSETT HOLDINGS LTD.

Ansett is Australia's second domestic airline, with a market share just below 50 percent (Qantas has just over 50 percent). Ansett has been the weaker performer in the past few years, steadily losing market share to Qantas. In mid-2000 (before the entry of the new low-cost carriers), Ansett's market shares were 49.9 percent of RPK and 52 percent of ASK, giving it a load factor of 73.9 percent compared with Qantas's shares of 50.1 percent of RPK and 48 percent of ASK, giving it a load factor of 80.4 percent. Ansett also has a 49 percent interest in Ansett International, which has a small operation flying mostly to Asian destinations. Ansett International represents about 22 percent of Ansett's ASK and only 5 percent of its total passengers.

Very little financial information is available on Ansett, given it is not publicly listed, but management has provided some financial information on the airline, which shows an improvement in earnings in the past two years (under a new CEO) and a heavy debt burden when operating leases are taken into account (see Table E-3). Details of Ansett's jet fleet are given in Table E-2.

MANAGEMENT FORECASTS AND SENSITIVITIES

Air NZ management has provided only summary forecasts for the consolidated group's performance in fiscal 2001. These are based on expected revenue synergies and cost savings and the negative effects of increased competition from the two new low-cost airlines and from Qantas as it responds to the new airlines. Management is confident of its ability to extract the synergies and cost savings available and effectively compete against the new airlines. Indeed, the forecasts show that despite a much higher debt burden, management expects Air NZ's financial performance in fiscal 2001 to be down only slightly from its performance between 1997 and 1999 (see Table E-4). Air NZ also believes that having Singapore Airlines as a key shareholder provides additional strength and

TABLE E-3: Ansett—Summary Operating Statistics and Financial Performance, 1997–2000

(A$ millions)	Year-End June 30 2000#	1999	1998	1997
Revenue	3,197.0	3,275.4	3,287.0	3,243.1
Passengers carried (millions)	14.0	13.4	13.4	13.5
RPK (billions)	17.81	16.97	17.23	17.02
ASK (billions)	24.29	23.64	25.37	24.99
Passenger load factor (%)	73.3	71.8	67.9	68.1
Overall yield (Aus cents)	18.8	21.0	20.3	19.6
Revenue/ASK (Aus cents)	13.8	15.1	13.8	13.3
Operating costs/ASK (Aus cents)	12.9	14.1	13.2	12.9
EBITDA	407.4	432.7	377.4	321.7
Net interest expense	102.3	83.4	106.9	95.0
Rentals	197.8	145.0	154.6	135.0
Pretax earnings	120.9	147.6	59.8	7.7
Net income	144.4	159.1	32.3	–32.4
Capital expenditures	369.3	194.9	202.2	291.1
Debt*	1,568.3	2,095.6	2,263.2	1,730.0
Cash	159.2	497.4	513.9	283.0
Operating lease commitments (@8× rentals)	1582.5	1159.9	1236.9	1080.0
Financial ratios				
EBITDA/interest	4.0	5.2	3.5	3.4
EBITDAR/interest + rent	2.0	2.5	2.0	2.0
EBITDA/sales	12.7	13.2	11.5	9.9
Total debt/EBITDA	3.8	4.8	6.0	5.4
Total debt + operating leases (@8× rentals)/EBITDAR	5.2	5.6	6.6	6.2

#Estimate. *Estimate based on cash interest paid and a 6 percent interest rate. RPK, revenue passenger kilometers; ASK, available seat kilometers; passenger load factor, PK/ASK, overall yield, revenue/RPK. *Source:* Air NZ management

will greatly facilitate closer ties between the two airlines. Based on these factors, Air NZ believes that it should be able to retain a low investment-grade rating from Standard & Poor's.

You are, however, skeptical of management's ability to achieve the forecasts presented, given the integration and management risks involved in bringing the two airlines together, the competitive pressures that are likely to ensue from the start-up of the low-cost carriers, pressure from rising fuel prices (a key issue for the industry in 2000 and 2001), and the high debt burden Air NZ will have as a result of the transaction. Also, you are mindful that Ansett's Boeing 767-200 fleet, which flies on key trunk routes, is old and needs upgrading—meaning heavy capital expenditure and debt commitments. On the other hand, Air NZ has had a 50 percent ownership interest in Ansett since October 1996, which gives you comfort that its management is very familiar with Ansett's operations and has a good understanding of the integration task.

Forming part of your credit submission is:

- A historical summary of Air NZ's key credit ratios that supported the ratings of BBB/A-3 (Table E-4). Management's base-case forecasts for 2001 are only slightly weaker than these three-year average ratios.

TABLE E-4: Key Credit Ratios: Air NZ Three-Year Average, 1997–1999, and Internal Sensitivity Analysis for Fiscal 2001

Operating Lease Adjusted Ratios	Air NZ 1997–1999	Conservative Case 2001*
Pretax interest coverage (×)	2.1	<1
EBITDA interest coverage (×)	4.7	2.0–2.5
EBIT/capital (%)	7.7	4–5
Operating income/sales (%)	17.4	<10
FFO/total debt (%)	24.9	10–15
Total debt/(SE + total debt)%†	47.0	75–80

*Assume modest pretax loss. †Conservative case estimated to fall to 74–75% after the rights issue (about 77% on close of transaction).

- A conservative case estimate of key ratios for 2001 based on "haircutting" management's base-case scenario (Table E-4). The "haircut" that you apply causes pretax profit to fall to a modest loss, given your assumption that competitive pressures and higher fuel prices could more than offset any synergy gains and cost savings.
- The latest available airline peer table from Standard & Poor's, giving the last three years' performance of rated airlines (Table E-5).

PEER COMPARISONS

The source of the peer table in Table E-5 was Standard and Poor's. It represented the latest information that was available in May/June 2000.

TABLE E-5: Airline Peer Table

Corporate Credit Rating	EBIT Interest Coverage (×)	EBITDA Interest Coverage (×)	Return on Capital (%)	Operating Income as % of Sales[a]	Operating Income as % of Sales[b]	Funds Flow as % of Total Debt	Total Debt as % of Capital
Air New Zealand Ltd.[c]	BBB–/Watch Neg/A-3						
1999	2.0	4.8	7.2	6.0	18.6	24.8	47.7
1998	2.0	4.4	7.3	5.5	17.3	21.4	48.2
1997	2.3	4.8	8.5	5.5	16.3	28.4	45.1
Median	**2.1**	**4.7**	**7.7**	**5.7**	**17.4**	**24.9**	**47.0**
AMR Corp.	BBB–/Negative/—						
1999	2.0	3.7	8.0	6.5	15.5	17.2	66.9
1998	3.3	5.2	14.3	12.2	21.3	28.0	64.3
1997	2.7	4.4	12.4	10.4	19.4	24.3	66.0
Median	**2.7**	**4.4**	**11.6**	**9.7**	**18.7**	**23.2**	**65.7**
British Airways PLC[d]	BBB+/Stable/—						
1999	0.3	1.9	2.4	4.6	11.1	7.2	65.0
1998	1.4	2.8	5.9	6.6	18.0	11.1	64.0
1997	1.5	3.2	9.4	5.8	14.6	12.3	61.1
Median	**1.1**	**2.6**	**5.9**	**5.7**	**14.6**	**10.2**	**63.4**

(continued)

(continued)

Corporate Credit Rating	EBIT Interest Coverage (×)	EBITDA Interest Coverage (×)	Return on Capital (%)	Operating Income as % of Sales[a]	Operating Income as % of Sales[b]	Funds Flow as % of Total Debt	Total Debt as % of Capital
Delta Air Lines Inc.	BBB–/Stable/—						
2000	3.6	5.0	17.8	8.1	19.1	29.0	71.5
1999	3.7	5.1	16.3	12.7	22.7	28.6	67.9
1998	3.6	4.9	16.4	12.0	21.3	28.3	67.9
Median	**3.6**	**5.0**	**16.8**	**10.9**	**21.0**	**28.6**	**69.1**
Japan Airlines Co. Ltd.[e]	BB/Stable/—						
1999	1.4	4.3	4.0	2.8	12.2	13.3	81.8
1998	1.6	4.1	4.8	2.1	12.2	12.2	84.1
1997	1.1	3.7	3.3	3.1	12.1	9.8	86.9
Median	**1.4**	**4.0**	**4.0**	**2.7**	**12.2**	**11.8**	**84.3**
Northwest Airlines Corp.	BB/Stable/—						
1999	1.7	2.9	11.7	6.9	14.4	15.4	100.6
1998	0.2	1.4	1.7	-2.1	5.1	3.4	106.3
1997	3.0	4.3	18.5	11.3	17.4	18.8	104.5
Median	**1.6**	**2.9**	**10.6**	**5.4**	**12.3**	**12.5**	**103.8**
Qantas Airways Ltd.[c]	BBB+/Stable/A-2						
1999	3.0	5.3	12.6	9.0	19.7	22.8	59.6
1998	2.3	4.3	10.8	7.2	18.6	25.2	59.7
1997	2.0	3.9	9.9	6.4	18.1	23.4	65.2
Median	**2.4**	**4.5**	**11.1**	**7.5**	**18.8**	**23.8**	**61.5**
UAL Corp.	BB+/Watch Neg/—						
1999	3.5	4.9	12.5	11.9	20.0	20.6	70.9
1998	2.8	4.1	10.5	13.1	20.9	21.0	77.6
1997	3.3	4.5	13.1	12.9	20.2	19.8	81.5
Median	**3.2**	**4.5**	**12.0**	**12.6**	**20.4**	**20.5**	**76.7**

[a]As reported. Operating income after depreciation, not lease-adjusted, as a percentage of sales.
[b]Operating income before depreciation, lease-adjusted, as a percentage of sales.
[c]Fiscal year ended June 30.
[d]Fiscal year ended March 31. Operating income % sales (as reported) not lease-adjusted.
[e] Fiscal year ended March 31. Funds flow % net debt. Net debt % capital.
N.A. Not available.

APPENDIX 1
Singapore International Airlines Ltd.

Singapore Airlines is the flagship carrier of Singapore, a small, open economy that is dependent on tourism, service, and trade and is a major commercial/financial hub in the Southeast Asia region. The company derives the bulk of its revenues from air services, through its primary airline, Singapore Airlines; its smaller-scale regional airline, SilkAir; and its cargo

TABLE E-6: Singapore Airlines—Summary Financials

Year-end March 31 (S$ millions)	2000
Revenues	8,834.1
EBITDA	2,189.4
Net income	1,163.8
Funds from operations (FFO)	2,201.4
Capital expenditures	13,087.3
Cash and equivalents	1,142.1
Total debt	631.3
Total assets	16,417.9
Common equity	10,957.5
S&P key financial ratios*	
EBITDA/sales (%)	27.6
EBIT interest coverage (×)	10.0
Return on average permanent capital (%)	19.1
EBITDA interest coverage (×)	16.0
FFO/total debt (%)	119.9
Total debt/EBITDA (×)	0.8
Total debt/total capitalization	4.9
*Adjusted for operating leases (using the numbers below):	
PV of operating leases	1,314.6
Additional interest expense	115.2
Additional depreciation	132.3

PV—Present value. *Source:* Singapore International Airlines Ltd.

subsidiary, Singapore Airlines Cargo (Pte) Ltd. At the time of the Air NZ transaction, Singapore Airlines carried about 12.8 million passengers and was 56.8 percent owned by Temasek, which is an investment holding company wholly owned by the Singapore government.

In May 2000, Singapore Airlines also had an equity stake in Virgin Atlantic (49 percent) and Air NZ (8.3 percent, with the intention of taking this to 25 percent after the Ansett transaction is complete), and was a member of the Star Alliance, the leading global airline alliance.

Key Questions

- Based on Singapore Airlines' strategic importance to the nation, its level of government ownership, and its strong financials (Table E-6), where on the bank's credit scale would you rank Singapore Airlines?
- How do you view Singapore Airlines' strategy of acquiring stakes in other airlines, such as Virgin Atlantic and Air NZ, and its failed attempt to acquire a direct stake in Ansett? Does this add or detract from its credit quality?
- What assumptions would you make about Singapore Airlines' capacity and willingness to support its investments in these other airlines, either operationally or financially?
- What, if any, uplift to Air NZ would you factor in from Singapore Airlines, given that airline's intention to lift its holding in Air NZ to 25 percent and its previous interest in acquiring a stake in Ansett to gain access to the Australian domestic market?

APPENDIX 2

CreditStats Operating Lease Analytical Model

Publication date: 08-Sep-2003

Credit Analyst: David Lugg, New York

To improve financial ratio analysis, Standard & Poor's Ratings Services uses a financial model that capitalizes operating lease commitments and allocates minimum lease payments to interest and depreciation expenses. Not only are debt-to-capital ratios affected, but so are interest coverage, funds from operations to debt, total debt to EBITDA, operating margins, and return on capital. This technique is superior to the more commonly

used "factor method," which multiplies annual lease expense or rent by a factor reflecting the average life of leased assets.

The operating lease model is intended to make companies' financial ratios more accurate and comparable by taking into consideration all assets and liabilities, whether they are on or off the balance sheet. In other words, all rated firms are put on a level playing field, no matter how many assets are leased. The model also helps improve analysis of how profitably a firm employs both its leased and owned assets. By adjusting the capital base for the present value of lease commitments, the return on capital better reflects actual asset profitability.

Using the Methodology

The lease analysis model is fairly straightforward. As shown in the example (see Table E-7 and E-8), lease commitment data for a firm are gathered from the notes to its financial statements. Annual data for the first five years, or 2003 through 2007 in the example, are set forth in the notes. For the remaining lease years, the model assumes that the lease payments approximate the minimum payment due in year five, or 2007 in the example. The number of years remaining under the leases is simply the amount "thereafter" divided by the minimum fifth-year payment. The result is rounded to the nearest whole number. The present value of this payment stream is then determined using a discount rate. Standard & Poor's uses a 10 percent discount rate because the implicit lease rates are rarely disclosed.

TABLE E-7: Lease Model Calculation

Reported Figures: Future Minimum Lease Commitments (US$ millions)		
	Reporting Year	
Payment Period	2002	2001
Year 1	135.8	133.9
Year 2	127.8	126.6
Year 3	114.5	108.2
Year 4	103.7	90.5
Year 5	98.3	84.8
Thereafter	1,347.2	1,003.1
Total payments	1,927.3	1,547.1

TABLE E-8: Calculation of Net Present Value for 2002

Future Minimum Lease Commitments (US$ millions)	
2003	135.8
2004	127.8
2005	114.5
2006	103.7
2007	98.3
2008–2021	98.3
Interest-rate assumption	10%
2002 net present value (NPV)	896.6
2001 NPV	780.9
2002 implicit interest	Avg. NPV ($838.6) × interest rate (10%) = $83.9
Lease depreciation expense	Adjustment to SG&A (see below) – implicit interest = $134.9 – $83.9 = $51.0
Adjustment to SG&A—rent	Average first-year minimum payments ($133.9 + $135.8)/2 = $134.9

SG&A, selling, general, and administrative expenses.

Financial Ratio Effect

The resulting present value figure is added to reported debt to calculate the total-debt-to-capital ratio. The figure is also added to assets to account for the right to use leased property over the lease term. Although less than the cost of the property, this adjustment recognizes that control of the property creates an economic asset.

The implicit interest is calculated by multiplying the average net present value of the current and previous years by 10 percent. This figure is then added to the firm's total interest expense. The SG&A adjustment is calculated by taking the average of the first-year minimum lease payments in the current and previous years. SG&A is then reduced by this amount. Depreciation expense is calculated by subtracting the implicit interest from the SG&A adjustment. The lease depreciation is then added to reported depreciation expense. The interest and depreciation adjustments attempt to allocate the annual rental cost of the operating leases.

There is ultimately no change to reported net income as a result of applying the lease analytical methodology.

TABLE E-9: Sample Calculation Results

	Without Capitalization	With Capitalization
Operating income/sales (%)	21.7	24.5
EBIT interest coverage (×)	41.8	9.6
EBITDA interest coverage (×)	60.0	10.5
Return on capital (%)	31.2	26.6
Funds from operations/total debt (%)	177.0	72.8
Total debt/EBITDA (×)	0.4	1.3
Total debt/capital (%)	21.1	40.5

EBIT

The implicit lease depreciation and amortization (D&A) adjustment is added to D&A expense; the adjustment to SG&A expense reduces SG&A expense. The result is to increase EBIT by the difference between the implicit lease D&A and the SG&A adjustment, $83.9 million, which is also the amount of the implicit interest.

EBITDA

In this case, only the implicit interest is added to EBITDA. The result is that EBITDA is increased $83.9 million.

Interest Expense

The implicit interest figure, $83.9 million, is added to the total interest expense incurred.

Total Debt

The net present value of lease payments, $896.6 million, is added to total debt.

Operating Income before D&A

Standard & Poor's typical calculation for the operating margin adds D&A back to operating income. When the operating lease adjustment is made,

operating income is increased by the adjustment to SG&A expense, in this case $134.9 million.

Funds Flow

Funds from operations are increased by the implicit lease depreciation expense, $51.0 million.

KEYS TO SUCCESS: THE AIRLINE INDUSTRY

Phil Baggaley, Managing Director and Senior Airline Analyst, Standard & Poor's

The airline industry is considered to be a high-risk sector because of its cyclicality, vulnerability to external event risk (war, terrorism), capital intensity, high operating leverage, barriers to exit (causing structural overcapacity), power of organized labor, and often-intense price competition. These negative fundamentals are offset to some extent by the industry's good long-term growth prospects, the lack of competing modes of transportation in most markets, and an ability to attract asset-backed financing, although the last of these has diminished in recent years. The negative industry factors generally account for the airline industry's record of losses, while the positive ones help to explain why, despite these challenges, airlines often survive longer than their dismal operating performance would seem to justify.

Airlines underwent their most severe test ever following the terrorist attacks in the United States on September 11, 2001. U.S. airlines' earnings had already begun to suffer in early 2001 as the domestic economy weakened, signaling the start of a normal industry downturn. The September 11 attacks worsened the incipient downturn dramatically, with North American air carriers being hardest hit, and those in Europe being affected to a significant, though lesser, degree. Asia, outside of Japan, held up better and remains a promising long-term growth market. The Iraq war in 2003 set back the airlines' recovery, and measures to contain SARS hurt Asian airlines significantly in the second and third quarters of that year.

Even setting aside these external shocks, the recovery of revenues for North American and European airlines has been less than would be predicted by historic correlations with economic data. The accelerated growth of low-cost airlines in those markets and the increasing ease of comparing airfares using the Internet have caused pricing pressure, par-

ticularly on fares used by business travelers. This appears to be an irreversible long-term structural change that large airlines will have to adapt to by lowering their cost structure. Several large North American airlines have sought or are seeking to cut labor costs significantly through the bankruptcy process or in negotiations with their unions. Even where successful, these efforts have not yet restored profitability, in part because of currently elevated fuel prices. Standard & Poor's expects that the large North American airlines will continue to have weak financial profiles for the foreseeable future. The rated European and Asian airlines have mostly stronger credit profiles, but they are also facing increasing pricing pressure that is affecting their financial position.

Within this environment, most successful companies have several key factors in common.

Extensive Route Network with Access to Key Markets

Measures of Success:

Percent share of global revenue passenger miles

Percent share of nation's revenue passenger miles

An extensive route network with access to major markets makes an airline more attractive to passengers, particularly corporate customers and individual business travelers. Such a network can serve more of a passenger's travel needs, and both corporate purchasing practices and frequent flyer mileage loyalty incline customers to concentrate their flying, where possible, with a limited number of airlines. Such a route network can, to a limited extent, be replicated through participation in one of the leading global airline alliances, but these have not developed to the point where they are truly a substitute for a direct network presence.

Aside from simple breadth of coverage, a route network should be judged on the geographic position of the airline's major hubs and their consequent ability to handle connecting passengers in major traffic lanes. Major cities in the central part of the United States, such as Chicago and Dallas, are natural hubs, as are Tokyo and Hong Kong within their broader regions. Also important is access to major markets that generate significant business traffic (New York, London, Tokyo, and so on). A broad route network that serves various domestic and international markets also provides some diversity of revenues for an airline. An airline's share

of traffic (*revenue passenger miles*, where the measure is one paying passenger flown one mile; there are parallel forms of this and other operating measures using kilometers) in the overall world market and in a nation's market give some indication of the extent of its route network, but qualitative judgments about the desirability of its routes and hubs are also important.

Barriers to Entry and Share in the Airlines Major Markets

Measures of Success:

Percent share of passengers at hub airports

Percent share of local passengers

Although barriers to entry in the airline industry are eroding, there are still significant regulatory, infrastructure, and economic constraints on free entry. International routes are granted under treaties between countries and are still limited in many cases. National governments have tended to protect the interests of those of their country's major airlines that provide international service ("flag carriers") by limiting the route rights granted to other countries' airlines, a practice that is only gradually and unevenly fading. Airport runways, gates, and takeoff "slots" are also limited at some key airports, such as London's Heathrow International Airport, and an airline that has long-term leases on a large portion of the gates can exclude others from setting up significant operations at the airport.

Lastly, an airline's hub operation (its flight activities at a major airport where it connects many passengers) can form an economic barrier to entry. This is because a large hub operation with many local passengers (those who are starting or ending their trip at that airport rather than passing through on a connecting flight) and connecting passengers allows an airline to operate many daily flights to numerous destinations. That, in turn, makes the airline attractive to local business travelers, who value frequent flights and extensive flight coverage from their home airport. An analyst should examine the airline's share of total passengers at its hubs and other major airports, and also its share (where this can be determined) of local passengers (also called "origination and destination" passengers). Historically, an airline with a dominant position at its hub was rarely challenged by other airlines, and even low-cost carriers preferred to serve mostly nearby, smaller airports. However, low-cost carriers in the

United States and Europe are beginning to attack even the hub airports of large airlines in some cases, indicating an erosion of these economic barriers to entry.

Low Operating Costs

Measures of Success:

Operating cost per available seat mile

Labor cost per available seat mile

An airline's operating cost structure has become increasingly important to its financial performance and long-term survival, as price competition is undermining previously sustainable revenue advantages. The standard measure of airline operating costs is operating expense (after depreciation) per available seat mile (i.e., the operating cost incurred to fly an airline seat one mile, whether it is occupied or not, also called "unit cost"). This measure tends to be higher for airlines flying short average trip lengths, even if their costs are otherwise equivalent. This is because many costs are fixed and can be spread out over more seat miles on longer trips. Accordingly, this factor should be borne in mind when comparing unit costs among airlines.

The major operating cost differential among airlines is labor cost, which accounts for 25 to 40 percent of total operating expenses. Labor contracts with unions (most airlines, even some of the low-cost ones, are heavily unionized) should be judged on the basis of their pay scales, generosity of benefits, and flexibility of work rules relative to those of competitors. The last of these is a very important consideration for airlines, because work rules affect asset productivity as well as labor productivity. Some successful airlines have fairly high pay scales, but also have flexible work rules and a productive work force. The best measure of labor cost is labor cost per available seat mile, although this, like operating cost per available seat mile (of which it is a component), must be judged within the context of trip length.

The second largest expense category is ownership costs (depreciation, rentals). Most airlines lease a significant portion of their fleet (the global average is about half), and how they finance their planes will affect what form these ownership costs take. There are differences in ownership costs among airlines, but they are not as great as one would expect. Because of manufacturers' eagerness to sell planes and leasing compa-

nies' eagerness to lease planes, attractive prices or lease rates are offered to even smaller or less creditworthy airlines. Fuel is the other large expense category, with the proportion of total operating costs it accounts for varying with the level of fuel prices. These do not vary greatly among airlines, although those companies that have newer (and more fuel-efficient) aircraft fleets and those that have had the ability and the foresight to hedge their fuel price exposure will have some advantage. Airlines with newer fleets will also have lower maintenance expense, and those that have simplified their fleet to fewer individual aircraft models incur less costs training their pilots.

Strong Revenue Generating Performance

Measures of Success:

Passenger revenue per available seat mile

Operating revenue per available seat mile

Operating margin

Revenue generation is the other side of operating performance, but an airline has less control over this than it has over its cost performance. Airline revenues are cyclical, seasonal (the second and third calendar quarters are usually strongest for airlines in the northern hemisphere), and affected by external events, such as war and terrorism. The industry's overall balance of supply and demand for seats and the degree of competition in markets served are further significant factors that determine the adequacy of revenue. Utilization of capacity is measured by *load factor* (revenue passenger miles divided by available seat miles); put another way, this ratio represents the proportion of seats filled, on a distance-weighted basis. The standard measure of pricing is *yield*, or revenue per revenue passenger mile. The mathematical product of load factor and yield is passenger revenue per available seat mile. This is a more complete measure of revenue generation than either of its component parts, although it (like cost per available seat mile) is affected by an airline's average trip length. Operating revenue per available seat mile adds nonpassenger revenues, such as cargo.

Revenue generation depends on effective management of the trade-off between pricing and utilization. The goal of yield management is to sell high-priced tickets to those who are less price-sensitive, such as business travelers, or to those who have few options, such as users of air-

ports dominated by a single airline, while at the same time attracting discretionary travelers with discount prices. With the increasing spread of low-cost airlines offering simple and inexpensive fares, established airlines are less able to use yield management to maximize revenues than previously, although these tools still work well on many international routes. Airlines report their operating margins, but, as with other transportation companies, these are on an after-depreciation basis.

Standard & Poor's focuses more on lease-adjusted margins before depreciation expense. These are overall operating efficiency measures that incorporate both revenue and cost performance.

Satisfactory Financial Flexibility

Measures of Success:

- Operating cash flow
- Debt maturities, minimum pension funding
- Capital spending commitments
- Cash balances and access to capital
- Unencumbered aircraft

As with other industrial companies, consideration of an airline's financial flexibility starts with the airline's operating cash flow relative to upcoming cash commitments, particularly debt maturities. For large, unionized U.S. carriers and some airlines elsewhere, significant pension funding commitments are an added material claim on cash in the near term.

Airlines also tend to have substantial capital spending commitments, although aircraft deliveries can usually be financed or, in some cases, be deferred through negotiation with manufacturers. Aircraft are suitable for asset-backed financing because they can be repossessed and transferred from one user to another in a global market, which has allowed airlines to attract secured and lease financing more readily than their often weak credit quality would otherwise justify. Accordingly, airlines, particularly large airlines, can usually weather normal downturns through secured borrowing and seek to restore their balance sheet during industry upturns. The most recent downturn has been by far the worst ever, and aircraft financing terms are likely to be less generous, when available, in the future.

In contrast to most industrial companies, airlines do not have significant working capital needs. Indeed, a growing airline will generate, not consume, operating cash flow from its current accounts because passengers pay for their tickets, and cash is usually remitted from credit card processors, in advance of the flight. Airlines tend to rely on large cash balances as a liquidity reserve, in part because most do not have general bank credit lines. These have proven crucial in avoiding insolvency for the most hard-pressed airlines over the past several years.

APPENDIX F

Peer Comparison: The Three Largest U.S. Forest Products Companies

Cindy Werneth, Director and Senior Forest Products Analyst, Standard & Poor's, New York

As a fixed-income research analyst at a major investment bank, you provide frequent credit comparisons of different companies to the firm's bond traders and institutional clients. Typically, these are comparisons of companies with similar credit qualities. Your research assists each party to make pricing distinctions between and among the compared credits. Peer comparisons are also critical when analyzing an industry and its competitors.

This report will evaluate the business and financial risks of the three largest U.S. forest products companies: International Paper Co. (IP; rated BBB with a negative outlook by Standard & Poor's), Georgia-Pacific Corp. (GP; BB+/Stable), and Weyerhaeuser Co. (BBB/Negative). These three companies have a total of nearly $40 billion of debt outstanding.

The three companies' business risk profiles as very similar: All of them are large, diversified paper and wood products manufacturers with leading market shares in most of the product categories in which they compete. There are some differences with respect to their cost positions, however, with IP's being viewed as somewhat weaker than those of the other two companies. In comparing the financial profiles, GP has a higher degree of financial risk. In addition to being slightly more levered than the other two companies, GP does not benefit from the fiber integration and financial flexibility that significant timberland ownership provides to IP and Weyerhaeuser. It also faces uncertainties and risks associated with asbestos-related liabilities and has larger near-term pension funding requirements.

Historically, the companies' financial policies have differed, with GP managing to low investment-grade credit ratios while IP and Weyerhaeuser were more conservative. However, after significant debt-financed acquisitions beginning in 1999, followed by a prolonged period of poor market conditions that are just beginning to gradually improve,

all three companies have seen their ratings lowered. All three aspire to solid investment-grade ratings.

Although it is likely that the credit quality of these three companies will converge during the next several years, at the present time, Weyerhaeuser is the strongest among the three, followed by IP and GP (see Table F-1)[1]. Weyerhaeuser and IP are rated the same by Standard & Poor's, but Weyerhaeuser is slightly stronger as a result of its better cost position and its prospects for higher near-term operating cash generation because of the high proportion of its wood products that are currently enjoying strong demand and pricing, as well as more focused business and financial strategies. Weyerhaeuser has specific debt-reduction targets and recently reinforced its commitment to lowering debt through a public offering of about $1 billion of common stock. However, Weyerhaeuser also has the largest exposure of the three companies to volatile wood product pricing, the tariffs on Canadian lumber imported into the United States, and fluctuations in the U.S. dollar/Canadian dollar exchange rate. Although IP has divested more than $4 billion of assets during the last several years (mostly in 2000 and 2001) and has taken significant steps to improve its cost position, it has produced the weakest return on capital among the three companies.

Despite hundreds of millions of dollars of restructuring charges in each of the past several years, management acknowledges that some of IP's businesses may not be able to meet return targets, and as a result, more pruning of the product portfolio is likely. Although debt reduction remains a priority for IP, its financial policies and targeted financial profile are less clear than those of the other two companies.

TABLE F-1: Relative Ranking

	Business Profile	Financial Profile	Overall Credit Quality
Weyerhaeuser Co. BBB/Negative/A-3	1	1	1
International Paper Co. BBB/Negative/A-3	3	2	2
Georgia-Pacific Corp. BB+/Stable/—	2	3	3

During the past few years, GP has reduced costs, sold assets, and reduced debt. In addition, it has ambitious plans to improve the profitability of its tissue business. GP's debt leverage is now close to that of IP and Weyerhaeuser, but because it has less financial flexibility, it must maintain stronger financial ratios than the other two companies at any given rating.

INDUSTRY CHARACTERISTICS

The forest products industry is cyclical and capital-intensive. Most of its products are commodities that have been in chronic oversupply, so that, despite significant industry consolidation, capacity closures, and production downtime during the past several years, even the largest manufacturers lack pricing power. These characteristics help account for the industry's extremely volatile earnings and cash flow. Between 2001 and 2003, many grades of paper experienced declining demand as a result of poor U.S. economic conditions. This was exacerbated by a strong U.S. dollar, which hurt the international competitiveness of U.S. producers.

Although the strengthening of the U.S. economy in 2004 began to lift pulp and paper demand, producers implemented price increases, and the U.S. dollar weakened, one may want to remain cautious concerning the extent and sustainability of economic and market improvement. Because the industry remains oversupplied, pricing will remain under pressure, and the majority of producers will continue to be challenged to generate healthy earnings and cash flow in most years. In addition, U.S. paper and paperboard manufacturers are facing the growth of low-cost overseas capacity, an increasing proportion of goods manufactured and packaged abroad, threats from substitutes such as plastic packaging, and competition from electronic media.

In wood products markets, which are more fragmented than pulp and paper, extremely strong U.S. housing starts and remodeling activity kept prices elevated during the 2003–2004 period. In addition, the weakening of the U.S. dollar against the Canadian dollar and duties on lumber imported into the United States from Canada restricted supply. However, during the few preceding years, healthy residential construction and remodeling markets were insufficient to offset oversupply and poor pricing for many building products. Prospectively, rising interest rates are likely to cool housing markets beginning in 2005, causing downward pressure on prices for commodity building products.

TABLE F-2: Segment Table—Georgia-Pacific Corp.

Business Segment Data	Fiscal Year End Dec. 31, 2003					
(Million $)	Net Sales	Operating Income	Depreciation & Amortization	Operating Income (bef.D&A)	Capital Expenditures	Assets
North America Consumer Products	5430	601	378	979	364	11,246
International Consumer Products	1941	160	106	266	65	3224
Packaging	2671	345	163	508	100	2284
Bleached Pulp & Paper	2120	–133	192	59	73	2152
Building Products Manufacturing	3790	379	163	542	57	2315
Building Products Distribution	4299	98	19	117	5	772
All Other	4	–282	24	–258	46	2412
Total	20255	1168	1045	2213	710	24405
(%)	of Net Sales	Percent Sales Growth	Operating Income Growth (bef.D&A)	Operating Margin (bef.D&A)	Return on Assets	Assets Growth
North America Consumer Products	26.8	1.6	–18.9	18.0	5.3	–1.5
International Consumer Products	9.6	16.7	16.2	13.7	5.0	20.6
Packaging	13.2	2.8	4.7	19.0	15.1	–1.9
Bleached Pulp & Paper	10.5	13.4	–76.5	2.7	–6.2	–10.2
Building Products Manufacturing	18.7	15.5	85.0	14.3	16.4	1.6
Building Products Distribution	21.2	13.9	62.5	2.7	12.7	2.3
All Other	0.0	200.0	NM	NM	–11.7	–13.4
Total	100.0	–13.0	62.4	10.9	4.8	–0.9

NM = Not meaningful

Also, although the U.S. Department of Commerce may significantly reduce the lumber duties, they are currently a meaningful cost factor for producers with Canadian capacity, including Weyerhaeuser and, to a lesser extent, IP. Overall, because of the forest products industry's extreme cyclicality and the many challenges it faces, even if the U.S. industry leaders successfully reduce debt, participants in the fixed-income market should not expect credit ratings to rise above the BBB category.

KEYS TO SUCCESS

The earnings and cash flow of most forest products companies are quite volatile as a result of the cyclicality of the industry, but the magnitude of the fluctuations varies considerably from firm to firm depending on product mix and competitive position. Reducing earnings and cash flow volatility and/or having sufficient financial flexibility to compensate for it are the hallmarks of success in this industry. In addition to moderate leverage (which is not the case for GP, IP, or Weyerhaeuser currently), successful competitors tend to exhibit a combination of most of the following characteristics:

- Diversity
- Attractive products/favorable market position
- Low-cost position
- Vertical integration

Assuming that a company has reasonable business prospects, cost position is in most cases the business risk factor that weighs most heavily in the credit analysis because of the commodity nature of most forest products.

Diversity

Ranking:

IP	1
Weyerhaeuser	2
GP	3

Product diversity is beneficial to forest products companies because the demand and pricing cycles for different products do not always move in unison. In particular, paper and wood products have different demand drivers

and price cycles. Geographic diversity of sales can serve the same purpose. Finally, having numerous production sites mitigates operating risks.

GP, IP, and Weyerhaeuser each have a high degree of product and manufacturing site diversity, but only moderate international manufacturing and sales diversity. Of the three companies, IP is the most diverse, followed by Weyerhaeuser and GP.

IP has the broadest product line. It is a large timberland owner and manager, and it manufactures coated and uncoated paper, pulp, containerboard, bleached paperboard, wood products, and various specialty products, in addition to running a large office products distribution business. While most of its operations are in the United States (as is true for the other two companies), IP has meaningful-sized manufacturing operations in Europe, Canada, Brazil, and, through its majority interest in Carter Holt Harvey Ltd., Australia and New Zealand. In 2003, 28 percent of IP's sales were outside the United States.

Weyerhaeuser also is a large timberland owner and manager, and it is a major manufacturer and distributor of wood products, and a large producer of pulp, paper, and containerboard. Weyerhaeuser also has a wholly owned homebuilding subsidiary, Weyerhaeuser Real Estate Co. Outside the United States, Weyerhaeuser has significant operations in Canada and is a large seller of logs to Japan. The company also has some timberland investments in countries outside the United States, including Uruguay and New Zealand. In 2003, 18 percent of Weyerhaeuser's sales were outside the United States.

Georgia-Pacific's broad array of products includes tissue, disposable tableware, containerboard, pulp, paper, and building products, which in addition to wood products include gypsum wallboard. It has significant tissue operations in Europe, particularly France and the United Kingdom. In 2003, 14 percent of GP's sales were outside the United States.

Attractive Products/Favorable Market Position

Ranking:

Weyerhaeuser	1
GP	1
IP	1

In assessing a forest products company's product and market attractiveness, Standard & Poor's considers market size, product price volatility,

value-added content, the supply/demand balance, the degree of market fragmentation, customer consolidation and pricing power, barriers to entry and magnitude of ongoing investment required, and product substitution. To gauge a company's relative market position, Standard & Poor's

TABLE F-3: Segment Table—Weyerhaeuser Company

Business Segment Data	Fiscal Year End Dec. 31, 2003					
(Million $)	Net Sales	Operating Income	Depreciation & Amortization	Operating Income (bef.D&A)	Capital Expenditures	Assets*
Timberlands	924	777	123	900	58	4994
Wood Products	8244	59	344	403	145	4863
Pulp & Paper	3862	–82	449	367	290	7604
Containerboard, Packaging, and Recycling	4322	262	326	588	86	5834
Real Estate & Other Related Assets	2029	392	11	403	16	2004
Corporate & Other	492	–176	65	–111	47	3513
Total	19873	1232	1318	2550	642	28109
(%)	of Net Sales	Percent Sales Growth	Operating Income Growth (bef.D&A)	Operating Margin (bef.D&A)	Return on Assets	Assets Growth
Timberlands	4.6	6.2	10.9	97.4	15.6	–1.5
Wood Products	41.5	8.6	NM	4.9	1.2	–2.7
Pulp & Paper	19.4	4.4	–200.0	9.5	–1.1	1.0
Containerboard, Packaging, and Recycling	21.7	2.6	–21.8	13.6	4.5	–5.1
Real Estate & Other Related Assets	10.2	15.9	16.7	19.9	19.6	1.7
Corporate & Other	2.5	23.3	NM	–22.6	–5.0	12.0
Total	100	7.3	7.9	12.8	4.4	–0.4

NM = Not meaningful
*Total assets exclude intersegment eliminations

gives primary consideration to the company's current and prospective market share, the attractiveness of its customer base and distribution channels, and the strengths and weaknesses of its competitors.

The product mixes and market positions of GP, IP, and Weyerhaeuser are equally attractive.

GP is the world's largest tissue producer, and at the same time, tissue is GP's largest product category (its consumer products segment, which includes disposable tableware in addition to tissue, accounted for 36 percent of 2003 sales and 60 percent of total assets at year-end 2003). Although demand and pricing for tissue have historically been less volatile than those of other, more commodity products, moderate capacity additions and heavy promotional activity during the past two years have significantly depressed pricing. GP is the world's largest tissue manufacturer, with leading shares in several countries.

In tissue and tableware, GP competes in retail and institutional markets with branded and private-label products. GP's competitors in this segment include the large, well-financed consumer products giants Kimberly-Clark Corp. and Procter & Gamble Co. GP has the advantage of being more pulp-integrated than these two companies, and it also has the largest number of big, state-of-the-art tissue machines, but it currently has a lower-value product mix.

In containerboard, a fairly attractive segment because of industry consolidation, production discipline, and little overseas competition in North American markets, GP is a solid competitor (number four in containerboard, with an 11 percent market share, and number three in boxes, with 12 percent). GP is also a leading manufacturer of structural panels (particularly plywood), lumber, and gypsum wallboard. Plywood is vulnerable to substitution from oriented strandboard, but to minimize direct competition, GP is pursuing a more specialty, value-added strategy, as it is in gypsum wallboard, where it produces a moisture-resistant product line. Although it is still a sizable manufacturer of uncoated free sheet (number five in North America, with a 7 percent market share), through an asset sale a few years ago, GP halved its presence in this segment, which is subject to competition from offshore manufacturers and electronic media.

GP has also sold nonintegrated pulp assets, building products distribution, and a majority interest in its office products distribution unit in order to focus on more value-added, higher-returning businesses. In tissue, tableware, and copy paper, GP has chosen to align itself with the warehouse club stores and mass merchants, a strategy that should result

in healthy sales growth but could subject it to price pressure from powerful customers.

As already mentioned, IP has the broadest product line and the largest international presence, including paper manufacturing in Brazil and Eastern Europe, where demand is expected to grow faster than in North America. However, it also has some underperformers in its portfolio (it has voiced dissatisfaction with Carter Holt Harvey's returns), and businesses such as coated paper and paperboard packaging face tough market conditions and keen international competition.

IP is the largest North American uncoated free sheet producer (with a 25 percent market share), the third-largest containerboard manufacturer (with a 12 percent share), the fifth-largest box maker (with an 11 percent share) pro forma after its planned acquisition of Box USA Holdings Inc., and the world's largest producer of bleached paperboard, about 40 percent of which it converts into packaging products. IP is a major North American distributor of printing papers and other office products through xpedx, and it has smaller distribution businesses in Europe. Although IP has improved the profitability of this business, distribution remains a low-margin, low-return, highly working capital–intensive business, although it provides an outlet for paper produced by IP.

Wood products are a smaller component of IP's sales than of Weyerhaeuser's or GP's.

Weyerhaeuser's product mix is more heavily skewed toward wood products than those of the other two companies (42 percent of 2003 sales and 14 percent of total assets, excluding timberlands, as of year-end 2003). Although markets are currently strong, risks associated with this business include oversupply, tremendous price volatility, the lumber duties, and U.S. dollar/Canadian dollar exchange-rate fluctuations. Weyerhaeuser has a good niche in log exports to Japan, for which pricing is at a premium to domestic log sales. Weyerhaeuser solidified its leadership in engineered wood products with the acquisition of Macmillan Bloedel Ltd. and TJ International Inc. (Trus Joist) in the late 1990s. However, this segment is very competitive and is vulnerable to fluctuating raw material costs. Weyerhaeuser is the second-largest North American manufacturer of containerboard (with an 18 percent market share), the biggest box maker (with a 19 percent share), and the second-largest uncoated free sheet producer (with a 19 percent share).

Weyerhaeuser is a large seller of pulp. Although paper-grade pulp is a highly cyclical commodity, and capacity expansions, particularly by low-cost Latin American manufacturers, are occurring, Weyerhaeuser

benefits from a value-added product mix, with nearly 70 percent of its production being devoted to premium fluff (used in diapers and other absorbent products) and other non-paper-grade pulps. Weyerhaeuser's WRECO subsidiary is a sizable homebuilder, with good positions in tar-

TABLE F-4: Segment Table—International Paper Company

Business Segment Data	Fiscal Year End Dec. 31, 2003					
(Million $)	Net Sales*	Operating Income	Depreciation & Amortization	Operating Income (bef.D&A)	Capital Expenditures	Assets
Printing Papers	7555	451	703	1154	524	9236
Industrial & Consumer Packaging	6200	417	387	804	269	6273
Distribution	6230	82	17	99	12	1521
Forest Products	3025	741	181	922	164	4181
Carter Holt Harvey	2250	58	213	271	101	4155
Specialty Businesse & Other	1305	52	31	83	35	788
Corporate & Intersegment Sales	–1386	NM	112	NM	61	9371
Total	25179	1801	1644	3445	1166	35525
(%)	of Net Sales	Percent Sales Growth	Operating Income Growth (bef.D&A)	Operating Margin (bef.D&A)	Return on Assets	Assets Growth
Printing Papers	30.0	0.6	–13.4	15.3	4.9	–0.3
Industrial & Consumer Packaging	24.6	1.7	–19.7	13.0	6.6	0.5
Distribution	24.7	–1.8	–10.9	1.6	5.4	–10.1
Forest Products	12.0	–2.1	5.9	30.5	17.7	–2.9
Carter Holt Harvey	8.9	17.8	3.6	12.0	1.4	20.7
Specialty Businesse & Other	5.2	–15.0	2.0	6.4	6.6	–5.5
Corporate & Intersegment Sales	–5.5	NM	NM	NM	NM	15.9
Total	100.0	7.3	–6.9	13.7	5.1	5.1

NM = Not meaningful
*Intercompany sales are included in individual segment sales

geted segments and selected geographic markets across the United States. WRECO's return on assets rivals that of the industry leaders, and this business has been a steady generator of earnings and dividends for Weyerhaeuser.

Low-Cost Position

Ranking:

Weyerhaeuser	1
GP	1
IP	3

Forest products companies' cost positions are influenced to a great extent by their scale of operations; mill and machine size and age; costs for key inputs, including wood fiber and energy; and degree of capacity utilization. In addition, their cost positions relative to international competitors are also highly dependent on foreign exchange rates. In comparing the cost positions of GP, IP, and Weyerhaeuser, some conclusions can be drawn by evaluating their operating margins and return on assets by business segment. However, differences in segment breakdowns, level of detail available, and, in the case of IP and Weyerhaeuser, wood transfer pricing and the effects of timberland sales complicate this analysis.

In addition, restructuring charges and expenses associated with cost-reduction initiatives obscure comparisons. Layer on top of that the effect of acquisition timing, production downtime in soft markets, and volume and price fluctuations, and comparisons are muddier still. Nevertheless, a few broad generalizations can be made by looking at segment data, with companywide operating margins and return on capital over long periods of time providing additional insights (see Table F-5).

Average companywide operating margins (before depreciation and amortization and excluding nonrecurring items) for the three firms for the five-year period from 1999 to 2003 were very similar, with GP averaging 12.8 percent and IP and Weyerhaeuser each averaging 13.8 percent. Although each company has a unique product mix, demand and pricing for most products were stronger in 1999 and 2000 than in the three subsequent years, which were also negatively affected by high fiber, energy, and employee benefit costs.

The companies differ somewhat more with respect to return on capital, with GP turning in the best five-year average performance with 10.0

percent, followed by Weyerhaeuser with 8.4 percent and IP with 6.3 percent. Note that the use of beginning- and end-of-year average permanent capital in the return on capital calculation produces favorable results in the year an acquisition occurs.

For example, in 1999, when GP acquired Fort James, its return on capital was 18.9 percent, but it would have been only 11.8 percent if it had

TABLE F-5: Selected Financial Statistics

	1999	2000	2001	2002	2003	5-Year Average
Sales (in billions of US$)						
Georgia-Pacific Corp.	18.0	22.2	25.0	23.3	22.3	22.2
International Paper Co.	24.6	28.2	26.4	25.0	25.2	25.9
Weyerhaeuser Co.	12.8	16.0	14.5	18.5	19.9	16.3
Operating margins bef. depr. and amort. (%)						
Georgia-Pacific Corp.	16.9	13.0	11.7	10.9	11.4	12.8
International Paper Co.	13.0	16.3	13.2	14.1	12.4	13.8
Weyerhaeuser Co.	15.0	15.9	12.5	12.9	12.6	13.8
Return on capital (%)						
Georgia-Pacific Corp.	19.8	9.0	6.3	6.9	8.0	10.0
International Paper Co.	6.5	8.3	4.9	6.4	5.4	6.3
Weyerhaeuser Co.	10.6	12.2	6.6	6.0	6.6	8.4
Total debt to EBITDA (x)						
Georgia-Pacific Corp.	2.5	5.9	4.8	5.3	4.8	4.7
International Paper Co.	3.0	3.6	4.3	4.1	5.2	4.0
Weyerhaeuser Co.	3.1	2.3	3.6	5.9	5.2	4.0
Free operating cash flow/total debt (%)						
Georgia-Pacific Corp.	6.4	4.0	5.6	2.5	9.9	5.7
International Paper Co.	5.8	9.3	8.2	10.1	4.1	7.5
Weyerhaeuser Co.	16.0	8.2	5.3	3.3	9.0	8.4

been calculated solely on end-of-year permanent capital. However, for the three-year period from 2001 to 2003, the ranking is the same, although the differences are less pronounced: GP 7.1 percent, Weyerhaeuser 6.4 percent, and IP 5.6 percent. Looking forward, all three companies have cost-reduction initiatives underway and therefore have good prospects for strengthening their operating profitability and return on capital. In the near term, Weyerhaeuser is likely to achieve the greatest improvement in these measures because a portion of the synergies achieved from the Willamette Industries Inc. acquisition (which management says total $300 million) have yet to flow through the company's financial statements. GP, the only company among the three that owns no timberlands, is expected to experience greater fiber cost volatility. However, most of its manufacturing facilities are located in the southern United States, where fiber should remain abundant.

Some observations with regard to segment comparisons:

- GP has exhibited consistently strong performance in its containerboard and box business; operating margins were 19.0 percent and return on assets 15.1 percent in 2003, a year in which markets were weak. This compares to 13.6 percent and 4.5 percent for Weyerhaeuser and 13.0 percent and 6.6 percent for IP's packaging segment (which includes both containerboard and bleached board). Apparently, GP's superiority is primarily attributable to its large-scale mills and box plants.

- GP also compares favorably in building products manufacturing. In 2003, a year in which prices were weak during the first half of the year and strong in the second half, GP had operating margins of 14.3 percent and return on assets of 16.4 percent. Weyerhaeuser, whose product mix did not experience as much price improvement, and which was negatively affected by restructuring and legal charges, the lumber duties, high raw material costs for engineered wood products, and the stronger Canadian dollar, had wood products operating margins of 4.9 percent and return on assets of 1.2 percent in 2003. (Elimination of the charges improves operating margins to 7.1 percent and return on assets to 4.8 percent.)

- Benefiting from the acquisitions of Champion International Corp. and Union Camp Corp., capacity rationalization, and significant cost reductions during the past few years, IP had the best performance by far of the three in the printing paper segment in 2003

(even though this segment includes loss-making coated paper, and demand and pricing were very weak). Its operating margins were 15.3 percent and return on assets 4.9 percent, compared with 9.5 percent and (1.1 percent), respectively, for Weyerhaeuser's and 2.7 percent and (6.2 percent) for GP's pulp and paper segments. Weyerhaeuser's uncoated free sheet machines are the largest and newest in the industry, which should provide some operating leverage as demand and pricing improve.

Vertical Integration

Ranking:

Weyerhaeuser	1
IP	2
GP	3

In general, backward integration into timberlands is viewed as beneficial because it gives a company control over its costs. It is of particular importance in wood products manufacturing because that business requires higher-value wood than pulp and paper manufacturing. Forward integration is advantageous because it generally involves value-added products that exhibit less price volatility than pure commodities and provides greater access to the products' end users.

However, there is a cost associated with owning the necessary assets. As already mentioned, GP owns no timberlands, whereas IP and Weyerhaeuser own millions of acres. All three companies produce all or nearly all the pulp they use internally. In general, all three have a good deal of forward integration into converting operations (from containerboard into boxes and from uncoated free sheet into cut-size copy paper, for example) and have varying approaches to distribution, as already discussed.

In the next sections, reference is made to Tables F-2, F-3, and F-4.

Financial Policy

Ranking:

Weyerhaeuser	1
IP	2
GP	3

The goal of all three companies is to have solid investment-grade debt ratings. Weyerhaeuser and GP have specific debt-reduction targets. Weyerhaeuser aims to return by 2007 to the financial profile it had prior to its $8 billion debt-financed acquisition of Willamette Industries Inc. in 2002. It plans to reduce debt by between $2.6 and $4.6 billion over and above the $1 billion that it recently generated from the issuance of common stock and plans to use for debt reduction. It expects to average 35 percent debt (excluding about $1 billion of debt at its real estate subsidiary) to capital (including deferred taxes) over an industry cycle.

Using Standard & Poor's methodology of consolidating WRECO and excluding deferred taxes from capital, this equates to a debt-to-capital ratio of roughly 50 percent. GP plans to reduce debt to below $9 billion by the end of 2004, with further reductions thereafter to between $7 billion and $8 billion. These targets are consistent with the current credit ratings, given each company's respective business profile. IP has not articulated a specific debt level or desired capitalization level, but has said that debt reduction remains a key objective. Once debt leverage has been lowered to more comfortable levels, all three companies are expected to continue to be industry consolidators. They have had mixed success with their debt-financed growth strategies to date, with IP and GP having incurred significant writedowns during the past few years.

Profitability and Cash Flow

Ranking:

Weyerhaeuser	1
IP	2
GP	3

In addition to operating margins and returns on permanent capital, free operating cash flow to total debt should also be considered. This ratio was fairly weak for all three companies during the five-year period from 1999 to 2003, with Weyerhaeuser averaging 8.4 percent, IP 7.5 percent, and GP 5.7 percent. As a result, any debt reduction that has occurred has been possible because of asset sales and lower capital spending. All three companies scaled back capital spending considerably during the recent downturn, with Weyerhaeuser spending just 48.7 percent of depreciation in 2003 (although its assets arguably are currently the best invested), GP 67.9

percent, and IP 70.9 percent. Although manufacturing assets in this industry are generally long-lived, this low level of spending is not likely to be sustainable, especially if these companies are to remain competitive with their international peers. In addition, all three companies have generous dividend policies, each having paid out well in excess of its cumulative net income during the past three years. Even in the current low-interest-rate environment, EBIT interest coverage has been weak for all three companies with IP at 1.8 times, Weyerhaeuser at 1.7 times, and GP at 1.6 times in 2003.

Capital Structure and Financial Flexibility

Ranking:

IP	1
Weyerhaeuser	2
GP	3

Although all three companies have been reducing their debt to varying degrees, they remain highly leveraged, with total debt to last-12-months EBITDA in the 4 to 5 times range. All three must reduce their debt further to maintain their current ratings. Some consideration should be given to the fact that the current market values of the majority of Weyerhaeuser's and IP's timberlands (those not acquired recently) are well above their book values, which are based on historical cost. In addition, intangibles make up a smaller proportion of Weyerhaeuser's and IP's total assets (13.5 percent and 15.0 percent, respectively, compared to 34.3 percent for GP at the end of 2003). GP also has the most onerous pension funding requirements—contributions are expected to total about $200 million per year in the near term (including some voluntary payments), compared with Weyerhaeuser's expected $43 million contribution in 2004 and no required contributions for IP before 2006. Each company has some unfunded postretirement obligations, but in no case are these obligations large in relation to the company's total debt (see Table F-6). GP's asbestos-related liabilities present significant uncertainty. It currently has an estimated liability of $980 million and an estimated insurance receivable of $565 million, both through 2013. This amount seems manageable, but it could rise if the number of claims filed or settlement amounts rise, or if insurance coverage is lower than expected.

TABLE F-6: Unfunded Pension and Other Postretirement Obligations

As of Dec. 31, 2003 (in billions of US$)

	Pension	Other Postretirement	Total
Georgia-Pacific Corp.	0.8	0.8	1.6
International Paper Co.	1.6	1.0	2.6
Weyerhaeuser Co.	0.0	0.8	0.8

In addition, the liability is expected to extend beyond the 10-year period covered by the current estimate. If federal legislation to establish an asbestos trust fund is enacted and GP's liability is set at a reasonable level, the elimination of this uncertainty would be positive for credit quality. The other two companies are expected to continue to have meaningful outlays for legal settlements associated with defective exterior building products, and Weyerhaeuser faces possibly significant patent infringement and antitrust lawsuits. Like most industry participants, all three face potential environmental liabilities that are difficult to quantify, as well as spending for compliance with environmental regulations.

All three companies currently enjoy good access to capital markets on terms typical for investment-grade companies. However, GP's liquidity was tight in 2002 when it made a strategic U-turn—first wanting to split the company into consumer products and building materials components, then jettisoning that strategy when it did not garner sufficient investor interest. That, along with concerns about the company's asbestos-related liabilities, forced it to raise debt on terms typical for speculative-grade companies.

All three companies maintain sufficient liquidity, with IP typically carrying the largest cash balances and unused bank lines.

NOTES

1. Table F-1 uses a relative ranking that is independent from the scoring system proposed in Chapter 10.

APPENDIX G

Yell Group Ltd. Leveraged Buyout (LBO)

Paul Watters, Senior Director of Leverage Loans, Standard & Poor's, London, England

You are an institutional investor who manages a collateralized debt obligation (CDO) vehicle that principally invests in leveraged loans. Specifically, you are seeking approval from your credit committee to invest £25 million in the nine-year term loan C. From a fundamental credit perspective, you are in agreement with Standard & Poor's assessment of the corporate credit risk, but to complete your credit proposal you need to consider the value of the security and ranking provided to the senior lenders in the event that the group were to experience a payment default.

BACKGROUND

Yell Group Ltd (Yell) is the leading provider of classified advertising directories and associated products and services to small and medium-sized enterprises and consumers in the United Kingdom and the United Sates. On May 25, 2001, two private equity sponsors, APAX Partners (APAX) and Hicks, Muse, Tate & Furst (HMTF), acquired Yell from British Telecommunications plc (BT) as part of BT's program to focus on its core businesses in order to reduce its leverage. The total consideration amounted to about £2.1 billion.

Table G-1 sets forth the sources and uses of funds in connection with the transaction.

APAX and HMTF mandated Merrill Lynch, Deutsche Bank, and CIBC to arrange the financing package to support the leveraged buyout (LBO) and requested a corporate credit rating from Standard & Poor's. The corporate credit rating assigned was BB–, fairly typical for a well-structured LBO that combines an average underlying business risk profile with a very aggressive financial risk profile. Standard & Poor's research report is provided to explain the rationale behind Yell's corporate credit rating.

Questions

Specifically, your manager has asked you to estimate the expected loss for this transaction, taking into account both the probability of default and your estimate of the likely loss if default occurs. This is crucial from an overall risk-return perspective and will be an important element in the decision as to whether credit approval to make this investment is forth-

TABLE G-1: Sources and Uses of Funds

	Amount (£ millions) at Close
Sources of Funds	
Senior debt:	
Term loan A	600.0
Term loan B	175.0
Term loan C	175.0
	950.0
High-yield notes	375.0
Discount notes	125.0
	1,450.0
Vendor loan notes*	100.0
Sponsor deep-discount bonds*	549.0
Cash equity	1.0
Total sources of funds	**2,100.0**
Uses of Funds	
Consideration to BT:	
Cash†	1,900.0
Vendor loan notes	100.0
Transaction costs	100.0
Total uses of funds	**2,100.0**

* Funds from the vendor loan notes and sponsor deep-discount bonds were provided to the parent company and advanced to the issuer in the form of a subordinated parent company loan.
†Includes the repayment of intercompany amounts owed by the Yell Group to BT.

coming. For the purpose of this exercise, assume that English and New York law applies to the English and U.S. businesses, respectively.

You have decided to approach this analysis in three stages:

1. Qualitative considerations:
   - What are the types of risks that could conceivably cause this type of business distress?
   - What is the security package provided to the senior lenders, and how comprehensive is it?
   - What are the senior lenders' options if the company appears to be moving toward default?
   - If the senior lenders appoint an administrative receiver in the United Kingdom, what courses of action are available to the receiver to maximize recoveries for the benefit of the senior lenders?
   - What is your best estimate of the likely timing of any recoveries?
   - What is the benefit to the senior lenders of having subordinated debt and unsecured trade creditors in the capital structure?
   - How important is the legal jurisdiction in protecting the interests of the senior lenders in the event of formal insolvency?
2. Quantitative aspects:
   - Prepare financial projections assuming distress and identify the point of default.
   - Estimate the percentage of outstanding principal that senior lenders might recover in a hypothetical default scenario.
   - Estimate the expected loss for the proposed £25 million investment. Take the cumulative probability of default for a BB- credit from Standard & Poor's 2003 global default study, given in Table G-2, and assume for this exercise that there are no costs involved in achieving any recoveries.

TABLE G-2: Cumulative Probability of Default

Corporate Rating	2 Years	3 Years	4 Years	5 Years
BB–	5.7%	9.6%	13.2%	16.3%

Enclosed Tables

(Tables can be found at the end of the Appendix)

1. Yell cash flow projections, 2001–2006 (Table G-4)
2. Cash Interest and Amortization Calculation (Table G-5)
3. Debt and payment schedule (Table G-6)
4. Covenant projections (Table G-7)
5. Yell Group combined balance sheets at March 31, 2001 (Table G-8)

STANDARD & POOR'S RESEARCH (Abridged)

Yell Group Ltd.

Publication date: 18-Jul-2001

ISSUER CREDIT RATING

Yell Group Ltd.

Corporate Credit Rating BB–/Stable/—

Business Profile:

Average

Financial Policy:

Very aggressive

Business Description

Yell is a publisher of classified directories in the U.K. (Yellow Pages) and the U.S. (Yellow Book). In the U.K. it has an established position, with a leading share of the classified telephone directories market, due to its former function as a subsidiary of BT, publishing about 80 regional books. Yell's U.K. business also runs a freephone telephone directory enquiry service called Talking Pages. Yell's U.S. operation was established in 1999 as a result of the acquisition of the Yellow Book independent classified directory publishing business. The Yellow Book business publishes 306 local directories in 20 contiguous states on the East Coast and in the Midwest. Both supplement their print directories with classified listings on the Internet.

Yell Group Ltd. Divisional Breakdown (TABLE G-3)

TABLE G-3: Key Financial and Operating Statistics*

	Sales (£ millions)	EBITDA (£ millions)	Share/ Sales (%)	Share/ EBITD (%)	Margin (%)	Copies (millions)	Employees (000s)
U.K. print directories	518	229	67	89	44	28	3.1
U.S. print directories	220	28	28	11	13	24	2.2
Talking Pages, Internet	36	(23)	5	0	0	0	N.A.
Total	774	234					

*Figures are for the year to March 31, 2001. N.A., not available.

Rationale

The ratings on Yell Group Ltd. reflect the group's average business profile, driven by its leading position in U.K. printed classified telephone directories. The ratings are supported by modest growth prospects in the U.S., where Yell is the largest independent publisher of classified telephone directories. These business strengths are offset by a very aggressive financial profile, stemming from the group's highly leveraged capital structure.

Yell was formed as a result of an LBO of the classified directories business formerly owned by British Telecommunications PLC (BT; A–/Negative/A-2). The group's leading domestic market share has allowed it to achieve operating margins of more than 40 percent in the U.K., through a combination of economies of scale and low editorial costs that is characteristic of classified directories publishing. The group also benefits from this market's better-than-average resilience to economic cycles, and has consistently secured customer retention rates of more than 80 percent in the U.K.

In the year to March 31, 2001, Yell reported consolidated sales of £774 million ($1.1 billion) and EBITDA of £234 million. The group's U.K. business accounted for 67 percent of its sales and 89

percent of EBITDA in fiscal 2001. Going forward, EBITDA volume generated by Yell in the U.K. is expected to remain virtually flat over the next five years. This is because of a recent decision by the U.K. Department of Trade and Industry to impose a deflationary price cap on classified directory advertisements, restricting annual price growth for Yell to the increase in the retail price index (RPI) minus six percentage points. The group is expected to compensate for the resultant fall in U.K. prices of about 4 percent per year in real terms by incremental growth in customer numbers and marginal increases in the share of higher value-added advertisements in the total product mix.

In the U.S., Yell's Yellow Book business is expected to provide a source of nominal EBITDA growth in the medium term, as existing directories mature, with a resulting improvement in operating margins to more than 20 percent by 2005 from the mid-teens at present. Nevertheless, Standard & Poor's believes that the business risk of the group's U.S. operations is below average. This is because of uncertainty surrounding the profitability of existing and new books, which face intense competition from incumbent players that are integrated with dominant telephony providers.

Financial Policy: Very Aggressive

Yell's highly leveraged capital structure makes it reliant on the stability of its U.K. operations for maintaining timely debt servicing. The group is also strongly reliant on the nominal EBITDA growth of the U.S. operations for the progressive financial deleveraging of the company. The group's low capital expenditure requirement is also a key factor enabling the group to generate positive free cash flows for deleveraging.

Profitability

Yellow Book EBITDA is expected to increase by more than 20 percent per year in the next five years, compared with a virtually flat U.K. EBITDA of £210 million–£220 million. As a result, U.S. operations

should raise their share of the consolidated group's EBITDA to about one-third of the total in 2006. The consolidated EBITDA margin is expected to stay flat, however, at about 30 percent as U.S. margins improve. Although a higher share of the U.S. contribution to group EBITDA is a positive development from a nominal EBITDA growth perspective, it should push the overall business risk of the group lower. The quality of earnings generated by number-two publishers of classified directories is generally lower than that of market leaders, because number-two players need to maintain a significant price differential between themselves and the number-one player in order to grow their customer base.

Outlook

Yell's business strength is based on its well-established U.K. franchise, and on its record of achieving profitable growth both in the domestic market and in the U.S., where it challenges the dominance of publishers integrated with telephony providers. These factors should support the group's steady cash flow generation, allowing it to meet its considerable debt service requirements.

CORPORATE STRUCTURE AND SENIOR CREDIT FACILITIES

Corporate Structure

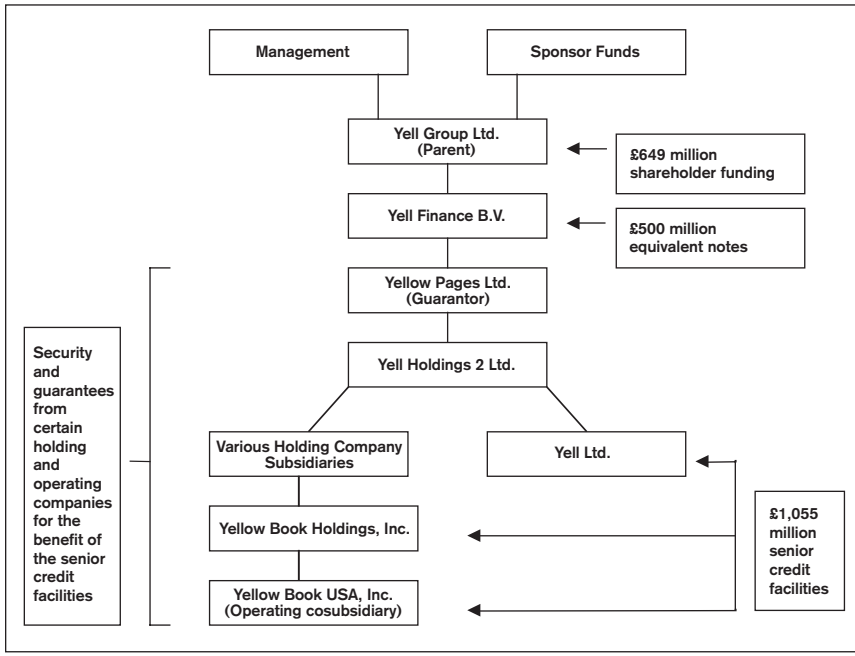
Figure G-1 outlines Yell Group's corporate structure after giving effect to the Transaction and the notes offering.

Description of Certain Indebtedness

Senior Credit Facilities

In connection with the Transaction, Yell Group Limited and certain of its affiliates entered into a Senior Facilities Agreement dated May 25, 2001, with Merrill Lynch International as mandated lead arranger, CIBC World Markets plc and Deutsche Bank AG London as joint lead arrangers.

FIGURE G-1: Yell Organizational Chart



1. Funding was provided by way of vendor loan notes (£100 million) from BT and deep-discount bonds provided by the equity sponsors (£549 million). These funds were then advanced to Yell Finance B.V. in the form of subordinated shareholder loans.
2. Yell Group Ltd is also a party to the senior credit facilities.
3. The notes are guaranteed on a senior unsecured basis by the guarantor, Yellow Pages Ltd. The guarantor has also guaranteed amounts outstanding under the senior credit facilities on a senior basis. The guarantor's obligations under its guarantee of the senior credit facilities are secured by its capital stock in the guarantor's wholly owned subsidiary Yell Holdings 2 Ltd and by certain other assets. The guarantor's guarantees of the notes are therefore effectively subordinated to its guarantee of the senior credit facilities as to the assets securing such obligations.

GUARANTEES AND SECURITY

Yell Group Limited's obligations under the senior credit facilities are guaranteed by, among others, Yellow Pages Limited, Yell Holdings 2 Limited, Yell Limited, and Yellow Book USA, Inc., and each of Yell Limited's and Yellow Book USA, Inc.'s material nondormant subsidiaries.

Yellow Pages Limited, Yell Holdings 2 Limited, Yell Limited, and each subsidiary guarantor incorporated in the United Kingdom has granted a security interest over substantially all of its assets, including a fixed charge over certain of its properties, debts, bank accounts, insurances, intellectual property, and specified agreements and a floating charge over

all of its other undertakings and assets. In addition, the shares of the subsidiary guarantors incorporated in the United Kingdom have been charged in favor of Deutsche Bank AG London, as security agent for the banks under the senior credit facilities.

Yellow Book Holdings, Inc., and each subsidiary guarantor incorporated in the United States has granted a security interest over substantially all of its assets, including a first-priority perfected lien over certain of its properties, debts, bank accounts, insurances, intellectual property, and specified agreements. In addition, the shares of the subsidiary guarantors incorporated in the United States have been pledged to Deutsche Bank AG London, as security agent for the banks under the senior credit facilities.

COVENANTS

The senior credit facilities contain certain customary negative covenants, restricting the borrowers and their subsidiaries (subject to certain agreed exceptions) from, among other things,

(i) incurring additional debt;
(ii) giving guarantees and indemnities;
(iii) making loans to others;
(iv) creating security interests on their assets;
(v) making acquisitions and investments or entering into joint ventures;
(vi) disposing of assets other than in the ordinary course of business;
(vii) issuing shares;
(viii) preparing or amending or entering into subordinated debt or equity documents; or
(ix) paying dividends or making payments to shareholders.

In addition, the senior credit facilities require Yell Group Limited and its consolidated subsidiaries to maintain specified consolidated financial ratios for senior debt to EBITDA (as defined in the senior credit facilities), cash flow to total debt service, EBITDA to net cash interest payable, and total net debt to EBITDA, and to observe capital expenditure limits for each financial year.

The senior credit facilities also require the borrower to observe certain customary covenants, including, but not limited to, covenants relating to legal status, notification of default, making of claims, banking arrange-

ments, guarantees and security, financial assistance, financial condition, and hedging arrangements.

MATURITY AND AMORTIZATION

Term loan A is to be repaid in semiannual installments beginning September 30, 2002, and continuing through March 31, 2008. Term loan B is to be repaid in two installments, with 50 percent repayable September 30, 2008 and the balance repayable on March 31, 2009. Term loan C is to be repaid in semiannual installments beginning September 30, 2002 and continuing through March 31, 2010. No amounts repaid by the borrowers on the term loan facilities may be reborrowed. The revolving credit facility will cease to be available for drawing on June 22, 2008. Each advance made under the revolving credit facility must be repaid on the last day of each interest period relating to it, although amounts thus repaid are available for reborrowing.

PREPAYMENTS

All loans under the senior credit facilities must be prepaid (either in full or in part) upon the occurrence of certain events, including:

(i) a change of control of Yell Group Limited,

(ii) a change of control as defined under the indentures relating to the notes,

(iii) the sale of substantially all of the business and/or assets of Yell Group Limited and its subsidiaries, and a listing of share capital of Yell Group Limited or, in certain circumstances, any other member of the Yell group on any recognized stock exchange (…).

EVENTS OF DEFAULT

The senior credit facilities contain certain customary events of default for senior leveraged acquisition financings, the occurrence of which would allow the lenders to accelerate all outstanding loans and terminate their commitments. (Refer to Chapter 7 for further information on events of default.)

Subordinated Shareholder Loans

The sponsor deep-discount bonds mature in 2021, were issued at a discount to par yielding 10 percent per annum, and have no requirement to

pay cash interest. The vendor loan notes mature in 2013 and bear interest at a floating rate equal to six-month sterling LIBOR, which will accrue and be paid only upon redemption of the vendor loan notes.

Holders of the sponsor deep-discount bonds and the vendor loan notes have no right to receive payments prior to maturity or to commence legal proceedings against the parent in respect of the sponsor deep-discount bonds or the vendor loan notes, as the case may be, except upon certain insolvency events and unless permitted under the indentures and the intercreditor deed.

Intercompany Loans

The funds advanced to Yell Finance B.V. under the subordinated shareholder loans along with amounts received from the notes issue were subsequently lent to its subsidiaries in the form of intercompany loans. These intercompany loans are subordinated pursuant to the intercreditor deed. The intercreditor deed prohibits, among other things, the payment of principal and any other amounts on the intercompany loans prior to the date upon which the senior credit facilities are discharged or paid in full (the "senior discharge date"), except on dates and in amounts not exceeding the scheduled interest due on the notes, plus certain fees and expenses incurred by Yell Finance B.V. in connection with the administration of the notes.

Intercreditor Deed

Yell Group Ltd, Yell Finance B.V., and the guarantor entered into an intercreditor deed dated June 22, 2001 with certain other group companies.

The intercreditor deed provides for, among other things, the conditions upon which certain payments can and cannot be made in respect of intercompany loans made to our subsidiaries and the subordinated shareholder loans made by Yell Group Ltd to Yell Finance B.V. The intercreditor deed includes provisions that:

- prohibit subsidiaries from making any payments to Yell Finance B.V. in respect of any intercompany loans until the senior discharge date without the consent of the creditors under the senior credit facilities, except on dates and in amounts not exceeding scheduled interest due on the notes plus certain fees; and
- prohibit Yell Finance B.V. from making any payments in respect of the subordinated shareholder loans until the notes are repaid or discharged in full except as permitted under the Indentures;

- prohibit Yell Finance B.V., its parent and subsidiaries from making any payments in respect of the vendor loan notes and the sponsor deep-discount bonds until the senior discharge date without the consent of the creditors under the senior credit facilities;
- give the creditors under the senior credit facilities priority of payment over subordinated debt, including debt owed to Yell Finance B.V. in the form of intercompany loans, debt owed by Yell Finance B.V. to its parent in the form of subordinated shareholder loans, and debt owed by its parent in respect of the vendor loan notes and sponsor deep-discount bonds;
- prohibit Yell Finance B.V. and its subsidiaries from making any payments, other than those payments described above, payments by Yell Finance B.V. and the guarantor in respect of the notes, payments permitted under and in respect of the senior credit facilities, and certain other payments to fund certain corporate overhead expenses, taxes, and fees payable by its parent;
- provide for the suspension of payments to Yell Finance B.V. or the guarantor under the intercompany loans in the event of a payment default under the senior credit facilities or if a payment blockage notice has been issued following any other type of default under the senior credit facilities;
- prohibit any enforcement action by Yell Finance B.V. on debt owed to Yell Finance B.V. by its subsidiaries in the form of intercompany loans until the senior discharge date;
- prohibit any enforcement action by the parent on debt owed to it by Yell Finance B.V. in the form of subordinated shareholder loans until the senior discharge date; and
- prohibit any enforcement action by the holders of the sponsor deep-discount bonds and the vendor loan notes on debt owed to them until the senior discharge date.

THE INSOLVENCY AND ENFORCEMENT PROCESS IN THE UNITED KINGDOM: ADMINISTRATIVE RECEIVERSHIP

Several insolvency processes exist in the United Kingdom. The most widely used, in which secured creditors are well protected, is called administrative receivership. The following is a very brief description of this particular process.

When a creditor has security in the form of floating charges (and possibly also fixed charges) over all or nearly all of the assets of a company, the creditor may appoint a licensed insolvency practitioner to act as an administrative receiver in the event that the company defaults on its obligations to the creditor. The charge must be a qualifying floating charge under the Enterprise Act, however, and the transaction must fall within one of the exceptions to the general prohibition in the act of the appointment of an administrative receiver. Unlike a receiver, who takes control of the secured asset(s), an administrative receiver takes control of the company. He may close the business down or continue to operate it as a going concern, depending on his assessment of what course of action will maximize recoveries for the creditor who has appointed him.

Details of the timing issues involved in realizing collateral in various key jurisdictions can be found in Chapter 9.

TABLE G-4: Yell Cash Flow Projections, 2001–2006

	Historical Projections for the Fiscal Years Ending March 31					
(£ Millions)	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Product Revenue	774	853	915	989	1,035	1,087
Growth rate	29%	10.2%	7.3%	8.1%	4.7%	5.0%
Cost of goods sold	341	375	403	435	455	478
Gross profit	433	478	512	554	580	609
Operating expenses:						
SG&A	201	240	258	269	274	282
Depreciation	12	16	18	19	19	25
Total operating expenses	213	256	276	288	293	307
Operating income (EBITA)	220	222	236	266	287	302
Plus: Depreciation	12	16	18	19	19	25
EBITDA	232	238	254	285	306	327

(continued)

(continued)

(£ Millions)	Historical Projections for the Fiscal Years Ending March 31					
	2001	2002	2003	2004	2005	2006
Cash flow						
Less: Tax payable	0	15	19	28	35	40
Less: Capital expenditures	23	22	23	28	24	25
Less: Working capital investment	43	51	30	33	23	22
Total	66	88	72	89	82	87
Free Cash Flow	N/A*	150	182	196	224	240

*N/A = not available

TABLE G-5: Cash Interest and Amortization Calculation

		2002	2003	2004	2005	2006
Term loan A	LIBOR + 237.5 bp	48	46	41	34	24
Term loan B	LIBOR + 300 bp	15	15	15	15	15
Term loan C	LIBOR + 350 bp	16	16	16	16	16
Revolver	LIBOR + 237.5 bp	4	0	0	0	0
High-yield notes	10.5% coupon	39	39	39	39	39
Discount note	12.9% PIK	0	0	0	0	0
Total		**122**	**116**	**111**	**104**	**94**
Scheduled Amortization						
Term loan A		0	51	75	108	132
Term loan B		0	0	0	0	0
Term loan C		0	2	2	2	2
Retained cash flow after debt service		28	13	8	10	12
Beginning-of-period cash balance		0	28	40	48	58
End-of-period cash balance	0	28	40	48	58	70

TABLE G-6: Debt and Payment Schedule

Debt Structure (Year-End Balance)	2001	2002	2003	2004	2005	2006
Term loan A	600	600	549	474	366	234
Term loan B	175	175	175	175	175	175
Term loan C	175	175	175	175	175	175
Revolver	100.0	—	—	—	—	—
Total senior debt	**1,050**	**950**	**899**	**824**	**716**	**584**
Subordinated debt (End-of-Year Balance)						
High-yield notes	375	375	375	375	375	375
Discount note	125	141	159	179	202	228
Total subordinated debt	**500**	**516**	**534**	**554**	**577**	**603**
Total debt excluding revolver	**1,450**	**1,466**	**1,433**	**1,378**	**1,293**	**1,187**
Total debt including revolver	**1,550**	**1,466**	**1,433**	**1,378**	**1,293**	**1,187**

TABLE G-7: Covenant Schedule

	2002	2003	2004	2005	2006
EBITDA/net cash interest payable					
Bank case	1.95	2.18	2.56	2.94	3.47
Covenant from term sheet	1.65	1.80	2.10	2.30	2.45
Bank case headroom	18%	21%	22%	28%	41%
Total senior debt/EBITDA					
Bank case	3.99	3.54	2.89	2.34	1.79
Covenant from term sheet	4.95	4.40	3.60	3.00	2.50

(continued)

(continued)

	2002	2003	2004	2005	2006
Bank case headroom	24%	24%	25%	28%	40%
Total net debt/EBITDA					
Bank case	6.04	5.48	4.67	4.03	3.42
Covenant from term sheet	6.50	6.20	5.25	4.50	3.90
Bank case headroom	8%	13%	13%	12%	14%

TABLE G-8: Yell Group Combined Balance Sheets*

	At 31 March	
(£ Millions)	**2000**	**2001**
Stocks—principally directories in progress	75.1	87.5
Debtors—principally trade debtors after allowing for doubtful debts	209.4	278.1
Cash at bank and in hand	4.7	24.8
Total Current Assets	**289.2**	**390.4**
Intangible assets—arising on the acquisition of Yellow Book and other subsidiaries	370.5	429.3
Tangible assets	22.0	42.7
Investment in joint venture	1.5	1.9
Total Assets	**683.2**	**864.3**
Loans and other borrowings	21.8	97.2
Other creditors	89.8	133.0
Total Current Liabilities	**111.6**	**230.2**
Loans and other borrowings	201.3	221.8
Other creditors	5.3	18.0
Total Liabilities	**318.2**	**470.0**
Shareholders' Equity	**365.0**	**394.3**
Total Liabilities and Equity	**683.2**	**864.3**

*See Exchange Offer Prospectus, August 31, 2001, available publicly on Yell.com.

INDEX

A
Acceleration, 196-197
Access to customers, 34-35
Accounting practices, 75
Accounting risk factors, 67-69, 276
Accounting system, as sovereign risk, 13-14
Acquisition strategy, 69-70
Acquisitions, 132
Adequate protection, 205
AFORs (alternative forms of regulation), 44
Air New Zealand case study, 372-395
Airline, 50, 51
Airline industry, keys to success in, 389-395
Alternative forms of regulation (AFORs), 44
Altria Group, Inc., 331, 341
Ansett Holdings Ltd., 379
Arthur Andersen, 243
Asset flexibility, 58-59
Asset sale, 202
Asset sale assumption, 262
Asset-based transactions, 230-237
  debt term/priority ranking/intercreditor agreements, 234-236
  identification of cash flow drivers and modeling, 233-234
  liquidity facility, 235-237
  servicers/trustees, 233
  true sale/bankruptcy remoteness, 231-233
Assets values, 90-91
AT&T Broadband, 313, 314
AT&T Comcast case study, 310-321
  and AT&T Broadband transaction, 313-315
  current company ratings, 311
  financial forecast, 312
  industry overview, 311-312
  and keys to success in cable television industry, 315-321

B
BA (bankers' acceptances), 171
Back-of-the-envelope approach, 111
Balance sheet, 81, 87-91
Banking credit models, 301
Banking systems, 13
Bankruptcy, predictors of, 300-301
Bankruptcy remoteness, 231-232
Barriers to entry, 32-36
Basel capital accords, 292-295
Benchmarks, 80
Best Foods, 331
Bilateral loans, 160
Bloomberg, 262
Boilerplate format, 174
Boise Cascade Corporation case study, 179-190
  credit information identification, 185-190
  factual information identification, 1 83-185
  offering, 180-183
Bonds, 163-166
  loans vs., 171-172
  yields of Treasury vs. corporate, 291
Borrowing rate, 136-137
Breach of covenant, 195-196
Bullet maturity, 162
Burlington Industries Inc., 51, 52
Business cycles, 30-31
Business stability, 55-56

C
Cable television industry, 311
  competition in, 312
  financial ratio guidelines for, 314
  keys to success in, 315-321
  regulatory environment of, 312
  top operators in, 315
  (*See also* AT&T Comcast case study)
Call options, 164

Cancellation, 176
Capacity to pay, 81
Capital investment coverage ratios, 100
Capital spending, 130-132
Capital-intensive industries, 38-39
Cash, valuation of, 263
Cash flow, 94-100
  defining, 96-99
  statement of, 95
  time horizon for, 260-261
Cash flow adequacy, 94-100
Cash flow forecasting and modeling, 108-154
  available for debt service, 111-112
  "bugs in," 142
  Coca-Cola Company case study (*see* Coca-Cola Company case study)
  complexity, 111
  drivers, 109-110
  Honda case study (*see* Honda Motor Co. Ltd. case study)
  LBOs, 240
  limitations of, 113-114
  past performance, 112
  scenarios, 110
  sectors, 113
  time horizon, 110
Cash flow ratios, 97, 100
Cash generation, 82
Cash taxes, 125-126
CEOs (*See* Chief executive officers)
CGS (*see* Costs of goods sold)
Chapter 11 restructuring, 204
Chief executive officers (CEOs):
  compensation for, 71
  dominance of, 71-72
Civil Rehabilitation *(minji saisei),* 204
Club deals, 160
Coca-Cola Company case study, 114-145
  acquisitions/investments, 132-133
  business risk characteristics strategy, 115-120
  capital spending/ depreciation, 130-132
  cash change, 137-139
  cash flow drivers worksheet, 140
  cash plugs, 127-130
  cash taxes, 125
  dividends, 133-134
  equity income, 122-125
  financial debt/interest expense/interest income, 134-137
  financial forecast for, 138-139
  gains on issuances of stock by equity investees, 125
  operating costs, 120-122
  other income/loss, 125
  projected credit measures, 141
  revenues, 116-120
  stress analysis, 141-145
Coincident indicators, 15
Collateral, 224-227
  granting, 227-228
  perfection of, 229-230
  types of, 225-226
Collateral agreement, 175
Comcast Corporation, 313-314 (*See also* AT&T Comcast case study)
Commercial paper (CP), 162, 170-171
Committed credit facilities, 159
Company-specific business risks, 47-63
  asset flexibility, 58-59
  business consistency/stability, 55-59
  competitive position/competitor analysis, 48-51
  financial diversity, 58
  market position/sales growth/pricing are interrelated, 51-55
  operational diversity, 56-57
  regulations, 59-61
Compensation, 71
Competitive factors, 49-51, 312
Competitive strategy, 48-49
Consistency, 55
Consumer spending, 14-16
Contractual subordination, 210-212
Convertible debt instruments, 168-169
Corporate credit analysis:
  defined, xiv
  scope of, xiv-xv
Corporate culture, 72
Corporate governance, 66-75
  accounting practices, 75
  acquisition strategy, 69-70
  CEO compensation, 71
  CEO dominance, 71-72
  corporate culture, 72
  derivatives/off-balance-sheet structures, 74
  evaluating, 276
  financial stability, 74
  income recognition, 75
  leverage structure, 74

litigation, 73
ownership structure, 73-74
regulatory actions, 73
restructurings, 70
stock positioning, 70
strategy shifts, 70
turnover, 72
unproven products, 69-70
Corporate Reorganization *(kaisha kousei),* 204
Cost of capital, 262
Cost of debt, 262
Cost of equity, 262
Costs of goods sold (CGS), 120-123
Country risks (*see* Sovereign and country risks)
Coupon, 174
Covenants, 188-190, 236
Cover page, 174
CP (*see* Commercial paper)
CP backup lines, 171
Credit agreement, 173-178
Credit cliffs, 187-188
Credit information identification, 185-190
Credit quality, 36-40, 42-46, 272
Credit ranking, 272-287
and accounting quality, 276
and business risk vs. financial risk scores, 276-278
business/financial risk scoring, 273-274
and corporate governance, 276
and country risk, 276
and credit ratios, 275
high credit risk, 282-283
industry/business risk scoring, 274-275
low credit risk, 280
and management strategy, 276
moderate credit risk, 281
quality, credit, 272
and recovery expectations, 284-287
scale, credit, 273
very high credit risk, 283-284
very low credit risk, 279
(*See also* Credit scoring)
Credit ratings, 177
categories of, 82
and structural subordination, 217
Credit ratios, 275
Credit risk, types of, xvi
Credit risk of debt instruments, 157-269
debt instruments/documentation, 158-198
estimating recovery prospects, 243-269
insolvency regimes/debt structures, 200-241
Credit scoring, 289-306
banking/rating agency credit models, 301
and Basel capital accords, 292-295
business risk vs. financial risk scores, 276-278
business/financial risk scoring, 273-274
and debt security pricing, 290-291
industry/business risk scoring, 274-275
KMV credit monitor, 301
Merton model, 301
and rating agencies, 295-299
rating migration analysis, 299-300
recovery scores, 301-305
Z-score, 300-301
Credit triggers, 187-188
Creditor-friendly regimes, 202-206
Creditors, 177-178
Creditor-unfriendly regimes, 202-206
Cross-default provisions, 196
Cyclical sectors, 27-28, 113
Cyclicality, 28-30

D
DCF (*see* Discounted cash flow approach)
Debentures, 163-166
Debt classes, 234
Debt cushion, 217
Debt instruments, 158-173
bond vs. loan, 171-172
bonds/notes/debentures, 163-166
convertible, 168-169
factoring, 173
hybrid, 169-170
lease financing, 173
loans, 159-163
medium-term notes, 166, 167
private placements, 167-168
securitizations, 173
short-term, 170-171
using corporate and recovery scores to price, 290-291
Debt payback ratios, 98
Debt service coverage ratio (DSCR), 233-234, 236
Debt term, 234
Debtor-in-possession (DIP) financing, 205, 257

Debt-service capacity, 257-259
Default, 195
  as risk, xvi
  types of, 244-246, 261
Default rates, cumulative, 297-300
Demographic factors:
  in cable television industry, 317-318
  in gaming industry, 329
Depreciation, 131-132
Derivatives, 74
Deterministic approach, 111
DIP financing (*see* Debtor-in-possession financing)
Direction, credit, 273
Discounted cash flow (DCF) approach, 249-253
Discretionary capital spending, 130
Discretionary cash flow, 97
Distressed enterprise valuation (*see* Enterprise valuation)
Diversity:
  financial, 58
  operational, 56-57
  portfolio, 221, 222
  product/sales, 53-54
Dividends (Coca-Cola Company case study), 133-134
Documentation, 158, 173-179, 237
  Boise Cascade case study (*see* Boise Cascade Corporation case study)
  credit agreement/indenture, 175-178
  credit information identification, 185-190
  definitions section, 190-197
  factual information identification, 183-185
  representations/undertakings/events of default, 178-179
Drawdown, 163
DSCR (*see* Debt service coverage ratio)

E
EAD (exposure at default), 289
Earnings before interest, taxes, and depreciation (EBITDA), 92, 99, 100
  in cable television industry, 319
  in gaming industry, 330
Earnings before interest and taxes (EBIT), 92
EBITDA (*see* Earnings before interest, taxes, and depreciation)
ECAIs (*see* External credit assessment institutions)
Economic indicators, 15
Economy, sales consistency vs., 55
EL (expected loss), 289
Electric utilities, analytical factors for, 41
Electronic Data Systems Corp., 58
Enron, 243
Enterprise valuation, 246-259
  of cash, 263
  debt-service capacity in, 257-259
  discounted cash flow approach to, 249-253
  of discrete assets, 263-268
  of equipment, 266
  of immovable property, 265-266
  of intangible assets, 266-267
  of inventories, 264-265
  market value approach to, 254-255
  of marketable securities, 263-264
  modeling, 260-261
  of receivables, 264
  relative value approach to, 259-260
  replacement cost approach to, 260
  and time horizon for recovery, 255-256
Equipment trust certificates (ETCs), 165
Equity income, 122-125
Estimating recovery prospects, 243-269
  enterprise valuation, 246-259
  external or internal shocks, 246
  poor business, average finances, 245-246
  poor business and poor finances, 246
  ranking procedure, 284-287
  too much debt, but OK business, 244-245
ETCs (equipment trust certificates), 165
Events of default section, 178
Exit strategy, 237
Expected loss (EL), 289
Expected time to recovery, 255-256
Exposure at default (EAD), 289
External credit assessment institutions (ECAIs), 293-294
External shocks, 246

F
Facilities section, 176
Factoring, 173
Factual information identification, 183-185
Failure to pay, 195
Fast-growing sectors, 113
FFO (funds from operations), 111
Financial covenants, 188-190

Financial debt, 134-135
Financial diversity, 58
Financial flexibility, 82, 100
Financial markets (as sovereign risk), 12-14
Financial policy, 76-78
Financial ratios, 82, 83, 96
Financial risk analysis, 80-107
  accounting checklist for, 83-87
  balance sheet, 87-91
  liquidity/financial flexibility, 100-105
  management and, 105
  profitability, 91-94
  scoring financial risk, 273-275
Financial stability, 74
Fitch, 296-297
5 Cs of credit, xv-xvi
Flexibility, asset, 58-59
Flexible regulation, 44
Floating-rate bonds, 164
Foreign exchange risk, 17-18
Forest products industry, 396-412
  characteristics of, 398-400
  keys to success in, 400-412
France, 229
Free operating cash flow, 97
French insolvency system, 203-204
Funds from operations (FFO), 111

G
GAAP (Generally Accepted Accounting Principles), 176
Gaming industry, 323
  keys to success in, 328-330
  Las Vegas market, 323-324
General Mills Inc., 331, 342, 343
General Motors, 58
Generally Accepted Accounting Principles (GAAP), 176
Georgia-Pacific Corp., 396-401, 403-404, 406-412
German system, 204
Global firms, 26-27
Going-concern subordination, 212
Governance (*see* Corporate governance)
Governing law and enforcement section, 179
Guarantee, 178

H
High credit risk, 283
Highly competitive sectors, 113
Holding companies, 223-224
Honda Motor Co. Ltd. case study, 145-153
  business risk characteristics/strategy, 146
  cash flow drivers in cyclical sector, 152, 153
  operating costs, 151
  revenues, 146-150
  stress-level determination, 146, 147
Houmu kyoku, 229
Hughes Aircraft Corp., 58
Human infrastructure, 12
Hurdle cost, 33-34
Hybrid debt instruments, 169-170

I
Immovable property, 265-266
Income recognition, 75
Indenture, 173-178
Industrial holding companies, 223-224
Industry regulations, 39-40
Industry risks, 20-46
  barriers to entry as, 32-36
  and credit quality ceiling, 36-40
  and cyclicality/seasonality, 28-32
  defined, 20
  economy effects on, 23, 29
  ranking by industry, 37-38
  sales/revenues prospects, 22-28
  scoring, 274-275
Inflation, 16
Initial public offering (IPO), 237
Insolvency regimes, 200-206
  creditor-friendly vs. creditor-unfriendly, 202-206
  and distress/insolvency procedures, 201-202
Intangible assets, 266-267
Integration risk, 336-337
Intercompany loans, 220-221
Intercreditor agreements, 235
Interest expense, 136-137
Interest income, 136-137
Interest rates, 17
Internal ratings-based approach (IRB), 294-295
Internal shocks, 246
International Paper Co., 396, 397, 400, 401, 403-412
Inventories, 264-265
Investment, 132-133
Investment holding companies, 223-224

IPO (initial public offering), 237
IRB (*see* Internal ratings-based approach)
Issuer, 175-176

J
Japan, 229
Japanese insolvency system, 204

K
Kaisha kousei (Corporate Reorganization), 204
Keebler Company, 333 (*See also* Kellogg—Keebler case study)
Kellogg Company, 331
  competitive position of, 335
  debt leverage of, 340
  financial summary of, 332, 339
  management credibility of, 340-341
  market position of, 336
  marketing capability of, 336
Kellogg—Keebler case study, 331-344
  benefits of merger in, 337
  financial impact of merger in, 338-342
  industry risks, 333-335
  integration risk in, 336-337
  and Kellogg's business risks, 335-336
  management credibility in, 340-341
  ratings, effect of merger on, 342-344
Kerkorian, Kirk, 324
Kimberly-Clark Corp., 403
KMV credit monitor, 301
Kraft Foods, 331

L
Labor (as sovereign risk), 12
Labor costs, 123
Lagging indicators, 15
Lanni, J. Terrence, 325
Las Vegas gaming industry market, 323-324
LATAs (*see* Local access and transport areas)
LBOs (*see* Leveraged buyouts)
Le Méridien, 243
Leading indicators, 15
Lease financing, 173
Legal system, 179
Lender—agent relationships, 179
Leverage ratios, 89-90
Leverage structure, 74
Leveraged buyouts (LBOs), 234, 237-240
LGD (*see* Loss given default)
Liabilities, concentration of, 221, 223-224
LIBOR base, 162
Liquidation, 201-202
Liquidity, 100-105, 235-237
Litigation, 73
Loans, 159-163
  bilateral, 160
  bonds vs., 171-172
  intercompany, 220-221
  syndicated, 160-163
  transfer of, 178
Local acess and transport areas (LATAs), 43-44
Loss given default (LGD), 289, 290
Low credit risk, 281

M
MAC (material adverse change), 102
MAC (material adverse change) clause, 195
Management, 64-79
  and corporate governance, 66-75
  evaluating, 64-66, 276
  as factor, 104-105
  financial policy of, 76-78
  influence of, 93-94
Market share, 52-53
Market value approach, 254-255
Marketable securities, 263-264
MarketScope, 262
Material adverse change (MAC), 102
Material adverse change (MAC) clause, 195
Mature industries, 25-26
Mature sectors, 113
Measuring credit risk:
  credit ranking (*see* Credit ranking)
  credit scoring (*see* Credit scoring)
Medium-term notes (MTNs), 166, 167
Merton model, 301
Mezzanine loans, 162
MGM Grand Inc., 322
  debt rating of, 323
  debt reduction by, 326-327
MGM/Mirage merger case study, 322-330
  current company ratings, 322-323
  elements of the deal, 324-327
  gaming industry overview, 323-324

and keys to success in gaming industry, 327-329
Michelin Group, 213-218
Microsoft, 57
Minji saisei (Civil Rehabilitation), 204
Mirage Resorts Inc., 322
Moderate credit risk, 282
Moody's, 96, 164, 177, 296-297
Mortgage bonds, 164
Mousetrap Corp. case study, 247-259
MTNs (*see* Medium-term notes)

N
Nabisco, 331
National Association of Insurance Commissioners (NAIC), 167
Nationally recognized statistical rating organizations (NRSROs), 164
Natural resources, 10-11
Net basis, 134
Niche sectors, 26, 113
Nokia, 108-109
Nondiscretionary capital spending, 130
Nonfinancial covenants, 193-194
Notes, 163-166
  medium-term, 166, 167
NRSROs (nationally recognized statistical rating organizations), 164

O
Off-balance-sheet obligations, 88-89
Off-balance-sheet structures, 74-75
Offering circular, 174, 180-183
Offering memorandum, 174
Oil and gas industry, keys to success in, 366-371
Ollila, Jorma, 108
144A securities, 167
Operating cash flow, 97
Operating costs, 120-122
Operating efficiency, 318
Operating margin, 318
Operational diversity, 56-57
Ownership structure, 73-74

P
Packaged food and beverage industry:
  keys to success in, 334
  risks in, 333-335
Paid in kind (PIK), 235
Payment obligation, 177-178
Payment ratios, 98
PD (*see* Probability of default)
Peer comparisons, 93
Pension liabilities, 135
Perfection of collateral, 229-230
Physical infrastructure, 11
PIK (paid in kind), 235
Pillowtex Corporation, 51, 52
Point of default, 248, 261
Poor business, average finances default, 245-246
Poor business and poor finances default, 246
Portfolio diversity, 221, 222
Portfolio effect in credit risk, 305
Preference period, 206
Pre-insolvency measures, 201
Prepayment, 176
Prices driver, 117, 149-150
Pricing power, 24-25
Priority ranking, 207-230, 235
  asset-based transactions, 230-237
  illustration of, 208-209
  secured creditors in, 207, 224-230
  subordinated creditors in, 209-224
  (*See also* Credit ranking)
Private placements, 167-168
Privileged creditors, 207
Probability of default (PD), 289, 290
Procter & Gamble Co., 54, 403
Production costs, 123
Profitability, 81-82
Profitability ratios, 91-92
Profits on limits, 36-38
Property, immovable, 265-266
Prospectus, 174

Q
Qantas Airlines, 379

R
Ranking, credit (*see* Credit ranking)
Rate of return ratios, 136-137
Rating agencies, 295-299
RBOCs (*see* Regional Bell operating companies)
Real estate, 265-266
Receivables, valuation of, 264
Recovery prospects, xvi (*See also* Estimating recovery prospects)

Regional Bell operating companies (RBOCs), 43
Regulation 144A securities, 167
Regulatory environment, 59-61, 73, 312
Remedies, default, 196-197
Reorganization, 202
Repayment, 176
Replacement cost approach, 259-260
Representations section, 178
Repsol/YPF case study, 345-371
Resources, natural, 10-11
Restrictions on activities, 186-187
Restructuring assumption, 262
Restructurings, corporate, 70
Returns on investment, 92
Revenue and income growth, 92
Revolving credit facilities, 162-163
"Rolled up," 235
"Rollover," 170

S
Sales, 22-28
  cyclical, 27-28
  the economy vs. consistent, 55
  global, 26-27
  mature industries, 25-26
  niche, 26
  pricing power and growth of, 24-25
Satellite TV, 315-316
Scale, credit, 273
Seasonality, 31-32
Secured creditors, 207, 224-230
  collateral types, 224-226
  granting collateral, 227-228
  perfection of collateral, 229-230
Securities:
  144A, 167
  valuation of marketable, 263-264
Securitizations, 173
Security documents, 175
Security enforcement, 205
Security package, 237
Selling, general, and administrative (SG&A) costs, 120-123
Senior management, 71, 72
Servicers, 233
SG&A (*see* Selling, general, and administrative)
Shareholders, 208
Singapore International Airlines Ltd., 384-385
Sovereign and country risks, 3-19
  accounting system as, 13-14
  banking systems as, 13
  consumer spending, 14-16
  evaluating, 276
  financial markets as, 12-14
  foreign exchange risk for, 17-18
  human infrastructure, 12
  inflation/interest rates, 16-17
  labor, 12
  macroeconomic factors of, 14-17
  natural resources, 10-11
  physical infrastructure, 11
Sovereign governments:
  fiscal policy of, 7-8
  foreign currency control by, 9
  monetary policy of, 8
  political/legal risks with, 9-10
  regulatory framework of, 6-7
  tariffs set by, 7
Special-purpose entity (SPE), 231-233
Special-purpose vehicles (SPVs), 74-75
SPVs (*see* Special-purpose vehicles)
Stability, 55-56
Standard & Poor's, 80, 82, 164, 177, 217, 296-297
Standby credit facilities, 163
Stay on claims, 206
Stochastic approach, 111
Stock issues, 125
Stock positioning, 70
Strategy shifts, 70
Stress analysis, 141-145
Structural subordination, 212-218
Subordinated creditors, 208-224
  contractual, 210-212
  structural, 212-218
Suppliers, 35-36
Sustainable debt levels, 257-259
Syndicated loans, 160-163

T
Taxes, 125-126
Technology:
  as barriers to entry, 34
  in cable television industry, 319
Telecommunications industry, 42-46
Term loans, 162
Term sheet, 174

Time horizon, 260-261
Time Warner Entertainment, 314
Too much debt, but OK business default, 244-245
Tranches, 234
Triggers, 187-188, 236-237
True sale, 231
Trump, Donald, 94
Trustees, 233
Twilight period, 206

U
Uncommitted credit facilities, 159
Undertakings section, 178
Unilever PLC, 331, 342
United Kingdom, 304-305
Unproven products, 69-70
Unsecured creditors, 208
Upstream guarantees, 206, 218-220
Utilization section, 176

V
Very high credit risk, 283-284
Very low credit risk, 279-280
Volumes driver, 116-119, 147-149

W
Waiver, 197
Waterfall process, 235
Weyerhaeuser Co., 396-398, 400-412
Working capital, 136-137
Working capital requirements, 127-130
World-CPI inflation, 16

Y
Yell Group Ltd. leveraged buyout case study, 413-428

Z
Zero coupon bonds, 165
Z-score, 300-301

This page intentionally left blank.

ABOUT THE AUTHORS

BLAISE GANGUIN is a managing director in Standard & Poor's Corporate & Government Ratings. Ganguin supervises teams of corporate credit analysts.

JOHN BILARDELLO is a managing director in Standard & Poor's Corporate & Government Ratings. Bilardello manages S&P's global corporate ratings business.

STANDARD & POOR'S is the world's foremost provider of independent credit ratings, indices, risk evaluation, investment research, data and valuations. An essential part of the world's financial infrastructure, Standard & Poor's has played a leading role for more than 140 years in providing investors with the independent benchmarks they need to feel more confident about their investment and financial decisions.