THE #1 BESTSELLING GUIDE TO

CORPORATE VALUATION

VALUATION

SIXTH 6 EDITION

UNIVERSITY EDITION

Measuring *and* Managing *the* Value *of* Companies

TIM KOLLER • MARC GOEDHART • DAVID WESSELS

McKINSEY & COMPANY

VALUATION

MEASURING AND MANAGING THE VALUE OF COMPANIES

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Tim Koller
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WILEY

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About the Authors

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McKinsey & Company is a global management-consulting firm that serves leading businesses, governments, nongovernmental organizations, and not-for-profits across a wide range of industries and functions, helping them make distinctive, lasting, and substantial improvements in performance and realize their most important goals. McKinsey consultants serve clients in every region from a network of over 100 offices in more than 60 countries, advising on topics including strategy, finance, operations, organization, technology, marketing and sales, risk, and sustainability and resource productivity.

Preface

The first edition of this book appeared in 1990, and we are encouraged that it continues to attract readers around the world. We believe the book appeals to readers everywhere because the approach it advocates is grounded in universal economic principles. While we continue to improve, update, and expand the text as our experience grows and as business and finance continue to evolve, those universal principles do not change.

The 25 years since that first edition have been a remarkable period in business history, and managers and investors continue to face opportunities and challenges emerging from it. The events of the economic crisis that began in 2007, as well as the Internet boom and its fallout almost a decade earlier, have strengthened our conviction that the core principles of value creation are general economic rules that continue to apply in all market circumstances. Thus, the extraordinarily high anticipated profits represented by stock prices during the Internet bubble never materialized, because there was no "new economy." Similarly, the extraordinarily high profits seen in the financial sector for the two years preceding the start of the 2007–2009 financial crisis were overstated, as subsequent losses demonstrated. The laws of competition should have alerted investors that those extraordinary profits couldn't last and might not be real.

Over time we have also seen confirmed that for some companies, some of the time, the stock market may not be a reliable indicator of value. Knowing that value signals from the stock market may occasionally be unreliable makes us even more certain that managers need at all times to understand the underlying, intrinsic value of their company and how it can create more value. In our view, clear thinking about valuation and skill in using valuation to guide business decisions are prerequisites for company success.

Today, after six years of sluggish recovery in the United States and stagnation in Europe, calls mount for changes in the nature of shareholder capitalism. We find that the blame for a poorly performing economy should not

be placed on the pursuit of shareholder value creation, but on a misguided focus on short-term performance that is inconsistent with the value-creation principles we describe in this book. Creating value for shareholders does not mean pumping up today's share price. It means creating value for the collective of current and future shareholders by applying the techniques explained in this book.

WHY THIS BOOK

Not all CEOs, business managers, and financial managers possess a deep understanding of value, although they need to understand it fully if they are to do their jobs well and fulfill their responsibilities. This book offers them the necessary understanding, and its practical intent reflects its origin as a handbook for McKinsey consultants. We publish it for the benefit of current and future managers who want their companies to create value, and also for their investors. It aims to demystify the field of valuation and to clarify the linkages between strategy and finance. So while it draws on leading-edge academic thinking, it is primarily a how-to book and one we hope you will use again and again. This is no coffee-table tome: if we have done our job well, it will soon be full of underlining, margin notations, and highlighting.

The book's messages are simple: Companies thrive when they create real economic value for their shareholders. Companies create value by investing capital at rates of return that exceed their cost of capital. These two truths apply across time and geography. The book explains why these core principles of value creation are genuine and how companies can increase value by applying them.

The technical chapters of the book aim to explain, step-by-step, how to do valuation well. We spell out valuation frameworks that we use in our consulting work, and we illustrate them with detailed case studies that highlight the practical judgments involved in developing and using valuations. Just as important, the management chapters discuss how to use valuation to make good decisions about courses of action for a company. Specifically, they will help business managers understand how to:

- Decide among alternative business strategies by estimating the value of each strategic choice.
- Develop a corporate portfolio strategy, based on understanding which business units a corporate parent is best positioned to own and which might perform better under someone else's ownership.
- Assess major transactions, including acquisitions, divestitures, and restructurings.
- Improve a company's performance management systems to align the organization's various parts to create value.

- Communicate effectively with investors, including whom to talk with and listen to, and how.
- Design an effective capital structure to support the corporation's strategy and minimize the risk of financial distress.

STRUCTURE OF THE BOOK

In this sixth edition, we continue to expand the practical application of finance to real business problems, reflecting the economic events of the past decade, new developments in academic finance, and the authors' own experiences. The edition is organized in six parts, each with a distinct focus.

Part One, "Foundations of Value," provides an overview of value creation. We make the case that managers should focus on long-term value creation for current and future shareholders, not just some of today's shareholders looking for an immediate pop in the share price. We explain the two core principles of value creation: (1) the idea that return on invested capital and growth drive cash flow, which in turn drives value, and (2) the conservation of value principle, which says that anything that doesn't increase cash flow doesn't create value (unless it reduces risk). We devote a chapter each to return on invested capital and to growth, including strategic principles and empirical insights.

Part Two, "Core Valuation Techniques," is a self-contained handbook for using discounted cash flow (DCF) to value a company. The reader will learn how to analyze historical performance, forecast free cash flows, estimate the appropriate opportunity cost of capital, identify sources of value, and interpret results. We also show how to use multiples of comparable companies to supplement DCF valuations.

Part Three, "Advanced Valuation Techniques," explains how to analyze and incorporate in your valuation such complex issues as taxes, pensions, reserves, inflation, and foreign currency. Part Three also includes a comprehensive case valuing Heineken N.V., the Dutch brewer, illustrating how to apply both the core and advanced valuation techniques.

Part Four, "Managing for Value," applies the value-creation principles to practical decisions that managers face. It explains how to design a portfolio of businesses; how to create value through mergers, acquisitions, and divestitures; how to construct an appropriate capital structure; and how companies can improve their communications with the financial markets.

Part Five, "Special Situations," is devoted to valuation in more complex contexts. It explores the challenges of valuing high-growth companies, companies in emerging markets, cyclical companies, and banks. In addition, it shows how uncertainty and flexibility affect value, and how to apply option-pricing theory and decision trees in valuations.

VALUATION SPREADSHEET

An Excel spreadsheet valuation model is available via Web download. This valuation model is similar to the model we use in practice. Practitioners will find the model easy to use in a variety of situations: mergers and acquisitions, valuing business units for restructuring or value-based management, or testing the implications of major strategic decisions on the value of your company. We accept no responsibility for any decisions based on your inputs to the model. If you would like to purchase the model (ISBN 978-1-118-87366-3 or ISBN 978-1-118-87374-8), please call (800) 225-5945, or visit www.wileyvaluation.com.

Acknowledgments

No book is solely the effort of its authors. This book is certainly no exception, especially since it grew out of the collective work of McKinsey's corporate-finance practice and the experiences of its consultants throughout the world.

Most important, we would like to thank Tom Copeland and Jack Murrin, two of the coauthors of the first three editions of this book. We are deeply indebted to them for establishing the book's early success, for mentoring the current authors, and for their hard work in providing the foundations on which this edition builds.

Ennius Bergsma deserves our special thanks. Ennius initiated the development of McKinsey's corporate-finance practice in the mid-1980s. He inspired the original internal McKinsey valuation handbook and mustered the support and sponsorship to turn that handbook into a real book for an external audience.

Tim and Marc are leaders of McKinsey's Corporate Performance Team, a group of dedicated corporate-finance experts that influences our thinking every day. A special thank-you to Bernie Ferrari, who initiated the group and nurtured its development. The team's leaders include Bing Cao, Susan Nolen Foushee, Abhishek Goel, Anuj Gupta, Mimi James, Mauricio Jaramillo, Bin Jiang, Mary Beth Joyce, David Kohn, Jean-Hugues Monier, Siddharth Periwal, Rishi Raj, Werner Rehm, Abhishek Saxena, Ram Sekar, Anurag Srivastava, and Zane Williams.

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Bill Javetski, our lead editor, ensured that our ideas were expressed clearly and concisely. Dennis Swinford edited and oversaw the production of more than 350 exhibits, ensuring that they were carefully aligned with the text. Karen Schenkenfelder provided careful editing and feedback throughout the process. We are indebted to her excellent eye for detail.

Michael Cichello, professor of finance at Georgetown University, expertly prepared many of the teaching materials that accompany this book, including the end of chapter problems and answers for the university edition and exam questions and answers. These teaching materials are an essential supplement for professors and students using this book for finance courses.

Concurrent with the fifth edition, McKinsey published a shorter book, entitled *Value: The Four Cornerstones of Corporate Finance*, which explains the principles of value and their implications for managers and investors without going into the technical detail of this how-to guide. We've greatly benefited from the ideas of that book's coauthors, Richard Dobbs and Bill Huyett, as well as the lead editor, Neil DeCarlo.

The intellectual origins of this book lie in the present-value method of capital budgeting and in the valuation approach developed by Professors Merton Miller and Franco Modigliani (both Nobel laureates) in their 1961 *Journal of Business* article entitled "Dividend Policy, Growth and the Valuation of Shares." Others have gone far to popularize their approach. In particular, Professor Alfred Rappaport (Northwestern University) and Joel Stern (Stern Stewart & Co.) were among the first to extend the Miller-Modigliani enterprise valuation formula to real-world applications. In addition to these founders of the discipline, we would also like to acknowledge those who have personally shaped our knowledge of valuation, corporate finance, and strategy. For their support and teachings, we thank Tony Bernardo, Dick Foster, Bob Holthausen, Rob Kazanjian, Ofer Nemirovsky, Eduardo Schwartz, Chandan Sengupta, Jaap Spronk, Joel Stern, Bennett Stewart, Sunil Wahal, and Ivo Welch.

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VALUATION

MEASURING AND MANAGING THE VALUE OF COMPANIES

Part One

Foundations of Value

1

Why Value Value?

The guiding principle of business value creation is a refreshingly simple construct: companies that grow and earn a return on capital that exceeds their cost of capital create value. Articulated as early as 1890 by Alfred Marshall,[1] the concept has stood the test of time. Indeed, when managers, boards of directors, and investors have forgotten it, the consequences have been disastrous. The financial crisis of 2007–2008 and the Great Recession that followed provide the most recent evidence of the point. But a host of other calamities, from the rise and fall of business conglomerates in the 1970s to the collapse of Japan's economy in the 1990s to the Internet bubble, can all to some extent be traced to a misunderstanding or misapplication of this guiding principle.

Today these accumulated crises have led many to call into question the foundations of shareholder-oriented capitalism. Confidence in business has tumbled.[2] Politicians and commentators push for more regulation and fundamental changes in corporate governance. Academics and even some business leaders have called for companies to change their focus from increasing shareholder value to a broader focus on all stakeholders, including customers, employees, suppliers, and local communities. At the extremes, some have gone so far as to argue that companies should bear the responsibility of promoting healthier eating and other social issues.

Many of these impulses are naive. There is no question that the complexity of managing the coalescing and colliding interests of myriad owners and stakeholders in a modern corporation demands that any reform discussion begin with a large dose of humility and tolerance for ambiguity in defining the purpose of business. But we believe the current debate has muddied a fundamental truth: creating shareholder value is not the same as maximizing short-term

[1] Alfred Marshall, *Principles of Economics* (New York: Macmillan, 1890), 1:142.

[2] An annual Gallup poll in the United States showed that the percentage of respondents with little or no confidence in big business increased from 27 percent in the 1983–1986 period to 38 percent in the 2011–2014 period. For more, see Gallup, "Confidence in Institutions," www.gallup.com.

profits. Companies that confuse the two often put both shareholder value and stakeholder interests at risk. Indeed, a system focused on creating shareholder value isn't the problem; short-termism is. Banks that confused the two at the end of the last decade precipitated a financial crisis that ultimately destroyed billions of dollars of shareholder value, as did Enron and WorldCom at the turn of this century. Companies whose short-term focus leads to environmental disasters also destroy shareholder value, not just directly through cleanup costs and fines, but via lingering reputational damage. The best managers don't skimp on safety, don't make value-destroying decisions just because their peers are doing so, and don't use accounting or financial gimmicks to boost short-term profits, because ultimately such moves undermine intrinsic value that is important to shareholders and stakeholders alike.

WHAT DOES IT MEAN TO CREATE SHAREHOLDER VALUE?

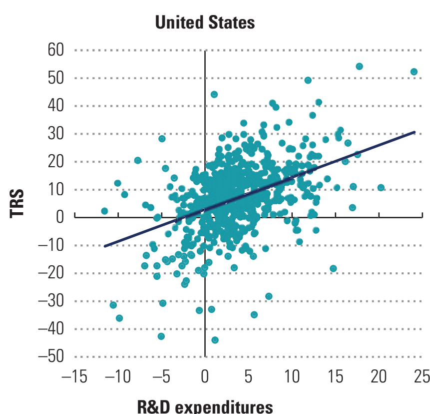
At this time of reflection on the virtues and vices of capitalism, we believe that it's critical that managers and boards of directors have a new, precise definition of shareholder value creation to guide them, rather than having their focus blurred by a vague stakeholder agenda. For today's value-minded executives, creating shareholder value cannot be limited to simply maximizing today's share price for today's shareholders. Rather, the evidence points to a better objective: maximizing a company's collective value to *current and future* shareholders, not just today's.

If investors knew as much about a company as its managers do, maximizing its current share price might be equivalent to maximizing value over time. But in the real world, investors have only a company's published financial results and their own assessment of the quality and integrity of its management team. For large companies, it's difficult even for insiders to know how financial results are generated. Investors in most companies don't know what's really going on inside a company or what decisions managers are making. They can't know, for example, whether the company is improving its margins by finding more efficient ways to work or by simply skimping on product development, maintenance, or marketing.

Since investors don't have complete information, it's easy for companies to pump up their share price in the short term. For example, from 1997 to 2003, a global consumer products company consistently generated annual growth in earnings per share (EPS) between 11 percent and 16 percent. Managers attributed the company's success to improved efficiency. Impressed, investors pushed the company's share price above those of its peers—unaware that the company was shortchanging its investment in product development and brand building to inflate short-term profits, even as revenue growth declined. In 2003, managers had to admit what they'd done. Not surprisingly, the company went through a painful period of rebuilding. Its stock price took years to recover.

EXHIBIT 1.1 **Correlation between TRS and R&D Expenditures**

Compound annual growth rate,[1] 2003–2013, %



[1] Sample includes companies with real revenues greater than $200 million.

This does not mean that the stock market is not "efficient" in the academic sense that it incorporates all public information. Markets do a great job with public information, but markets are not omniscient. Markets cannot price information they don't have. Think about the analogy of selling a house. The seller may know that the boiler makes a weird sound every once in a while or that some of the windows are a bit drafty. Unless the seller discloses those facts, it may be very difficult for a potential buyer to detect them, even with the help of a professional house inspector.

Despite such challenges, the evidence makes it clear that companies with a long strategic horizon create more value. The banks that had the insight and courage to forgo short-term profits during the last decade's real-estate bubble earned much better returns for shareholders over the longer term. Over the long term, oil and gas companies known for investing in safety outperform those that skimp on such investment. We've found, empirically, that long-term revenue growth—particularly organic revenue growth—is the most important driver of shareholder returns for companies with high returns on capital.[3] We've also found that investments in research and development (R&D) correlate powerfully with positive long-term total returns to shareholders (TRS), as graphed in Exhibit 1.1.[4]

[3] B. Jiang and T. Koller, "How to Choose between Growth and ROIC," *McKinsey on Finance*, no. 25 (Autumn 2007), 19–22, www.mckinsey.com. However, we didn't find the same relationship for companies with low returns on capital.

[4] We've performed the same analyses for 15 and 20 years and with different start and end dates and always found similar results.

Creating value for both current and future shareholders means managers should not take actions to increase today's share price if those actions will damage it down the road. Some obvious examples include shortchanging product development, reducing product quality, or skimping on safety. Less obvious examples are making investments that don't take into account likely future changes in regulation or consumer behavior (especially with regard to environmental and health issues). Faced with volatile markets, rapid executive turnover, and intense performance pressures, making long-term value-creating decisions can take courage. But it's management's and the board's task to demonstrate that courage, despite the short-term consequences, in the name of value creation for the collective benefit of all present and future shareholders.

CAN STAKEHOLDER INTERESTS BE RECONCILED?

Much recent criticism of shareholder-oriented capitalism has called on companies to focus on a broader set of stakeholders beyond just its shareholders. It's a view that has long been influential in continental Europe, where it is frequently embedded in corporate governance structures. And we agree that for most companies anywhere in the world, pursuing the creation of long-term shareholder value requires satisfying other stakeholders as well. You can't create long-term value without happy customers, suppliers, and employees.

We would go even further. We believe that companies dedicated to value creation are healthier and more robust—and that investing for sustainable growth also builds stronger economies, higher living standards, and more opportunities for individuals. Our research shows, for example, that many corporate social-responsibility initiatives also create shareholder value, and that managers should seek out such opportunities.[5] For example, IBM's free Web-based resources on business management not only help to build small and mid-size enterprises; they also improve IBM's reputation and relationships in new markets and develop relationships with potential customers.

Similarly, Novo Nordisk's "triple bottom line" philosophy of social responsibility, environmental soundness, and economic viability has led to programs to improve diabetes care in China. Novo Nordisk says such programs have burnished its brand, added to its market share, and increased sales while improving physician education and patient outcomes. Or take Best Buy's efforts to reduce attrition among female employees. Best Buy says the program has not only lowered turnover among women by more than 5 percent, but has also helped female employees create their own support networks and build leadership skills.

[5] S. Bonini, T. Koller, and P. H. Mirvis, "Valuing Social Responsibility Programs," *McKinsey Quarterly* (July 2009), www.mckinsey.com.

But what should be done when a company's interests and those of its stakeholders aren't complementary—for example, in areas such as employee compensation and benefits, supplier management, and local community relationships? Most advocates of a stakeholder-centric approach seem to argue that companies can maximize value for all stakeholders and shareholders simultaneously, without making trade-offs among them. For example, Cornell Law School professor Lynn Stout's book *The Shareholder Value Myth* argues persuasively that nothing in U.S. corporate law requires companies to focus on shareholder value creation.[6] But her argument that putting shareholders first harms nearly everyone is really an argument against short-termism, not a prescription for how to make trade-offs. Similarly, R. Edward Freeman, a professor at the University of Virginia's Darden School of Business, has written at length proposing a stakeholder value orientation. In the recent book *Managing for Stakeholders*, he and his coauthors assert that "there really is no inherent conflict between the interests of financiers and other stakeholders."[7] John Mackey, founder and co-CEO of Whole Foods Market, recently co-wrote *Conscious Capitalism*,[8] in which he too asserts there are no trade-offs to be made.

Such criticism is naive. Strategic decisions often require myriad trade-offs among the interests of different groups that are often at odds with each other. And in the absence of other principled guidelines for such decisions, when there are trade-offs to be made, prioritizing long-term value creation is best for the allocation of resources and the health of the economy.

Consider employee stakeholders. A company that tries to boost profits by providing a shabby work environment, underpaying employees, or skimping on benefits will have trouble attracting and retaining high-quality employees. Lower-quality employees can mean lower-quality products, reduced demand, and damage to the brand reputation. More injury and illness can invite regulatory scrutiny and more union pressure. More turnover will inevitably increase training costs. With today's more mobile and more educated workforce, such a company would struggle in the long term against competitors offering more attractive environments. If the company earns more than its cost of capital, it might afford to pay above-market wages and still prosper, and treating employees well can be good business. But how well is well enough? The stakeholder approach, defined as running the company in a way that treats all stakeholder interests equally, doesn't provide an answer. A shareholder focus does: pay wages that are just enough to attract quality employees and keep them

[6] L. Stout, *The Shareholder Value Myth: How Putting Shareholders First Harms Investors, Corporations, and the Public* (Oakland, CA: Berrett-Koehler, 2012).

[7] R. E. Freeman, J. S. Harrison, and A. C. Wicks, *Managing for Stakeholders: Survival, Reputation, and Success* (New Haven, CT: Yale University Press, 2007), 5.

[8] J. Mackey and R. Sisodia, *Conscious Capitalism: Liberating the Heroic Spirit of Business* (Boston: Harvard Business School Publishing, 2013).

happy and productive, pairing those wages with a range of nonmonetary benefits and rewards. Even companies that have shifted production of products like clothing and textiles to low-cost countries with weak labor protection have found that they need to monitor the working conditions of their suppliers or face a consumer backlash.

Or consider how high a price a company should charge for its products. A shareholder focus would weigh price, volume, and customer satisfaction to determine a price that creates the most shareholder value. However, that price would also have to entice consumers to buy the products—not just once, but multiple times, for different generations of products. A company might still thrive if it charged lower prices, but there's no way to determine whether the value of a lower price is greater for consumers than the value of a higher price to its shareholders.

Consider whether companies in mature, competitive industries should keep open high-cost plants that lose money, just to keep employees working and prevent suppliers from going bankrupt. To do so in a globalizing industry would distort the allocation of resources in the economy, notwithstanding the significant short-term local costs associated with plant closures.[9]

Energy companies have particularly difficult decisions to make. Government energy policy typically toggles between the goals of cost, energy security, and environmental impact. These do not easily line up in a way that makes for smooth integration into energy companies' investment decisions. In practice, the companies need to make careful, balanced judgments around the trade-offs embedded in government policy actions in order to factor them into long-term value-creation strategies. And the greater the policy uncertainty, the harder it is for companies to create long-term value in a way that is good for efficient resource allocation and the health of the economy.

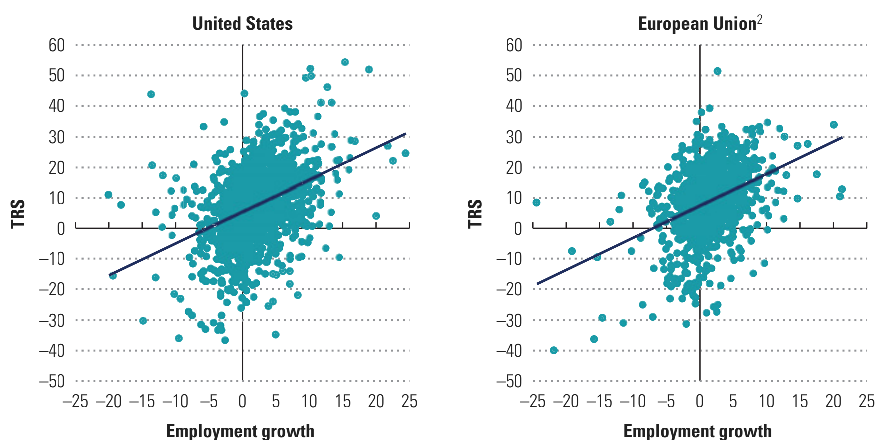
Managers may agonize over decisions that have such a pronounced impact on workers' lives. But consumers benefit when goods are produced at the lowest possible cost, and the economy benefits when unproductive plants are closed and employees move to new jobs with more competitive companies. And while it's true that employees often can't just pick up and relocate, it's also true that value-creating companies create more jobs. When examining employment, we found that the U.S. and European companies that created the most shareholder value in the past 10 years have shown stronger employment growth (see Exhibit 1.2).[10]

[9] Some argue that well-functioning markets also need well-functioning governments to provide the safety nets and retraining support to make essential restructuring processes more equitable.

[10] We've performed the same analyses for 15 and 20 years and with different start and end dates and always found similar results.

EXHIBIT 1.2 **Correlation between TRS and Employment Growth**

Compound annual growth rate,[1] 2003–2013, %



[1] Sample includes companies with real revenues greater than $200 million and excludes outliers with more than 20% employment growth.
[2] Sample includes companies in the core 15 EU member states.

SHAREHOLDER CAPITALISM CANNOT SOLVE ALL SOCIAL ISSUES

There are some trade-offs that company managers can't make and that neither a shareholder nor a stakeholder approach to governance can help. This is especially true when it comes to issues affecting people who aren't immediately involved with the company, as may be the case with investors, customers, and suppliers. These so-called externalities—for example, a company's carbon emissions affecting parties that have no direct contact with the company—are often beyond the ken of corporate decision making because there is no objective basis for making trade-offs among parties.

Consider how this applies to climate change, potentially one of the largest social issues facing the world. One natural place to look for a solution is to reduce coal production used to make electricity, among the largest human-made sources of carbon emissions.[11] But how are the managers of a coal-mining company to make all the trade-offs needed to begin solving our environmental problems? If a long-term shareholder focus led them to anticipate potential regulatory changes, they would modify their investment strategies accordingly—they might not want to open new mines, for example. But if the company abruptly stopped operating existing ones, not only would the company's shareholders lose their entire investment, but so would its bondholders, which are often pension funds. All of the company's employees would

[11] In 2011, coal accounted for 44 percent of the global CO_2 emissions from energy production. International Energy Agency, *CO_2 Emissions from Fuel Combustion*, 2013 ed., www.iea.org.