

# INVESTMENT ANALYSIS

## FOR REAL ESTATE DECISIONS

SEVENTH EDITION



PHILLIP T. KOLBE AND GAYLON E. GREER

This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional service. If legal advice or other expert assistance is required, the services of a competent professional should be sought.

President: Mehul Patel  
Executive Director of Product Development: Kate DeVivo  
Managing Editor: Anne Huston  
Managing Editor: Tony Peregrin  
Development Editor: Liz Austin  
Director of Production: Daniel Frey  
Senior Managing Editor, Production: Jack Kiburz  
Senior Production Artist: Virginia Byrne  
Creative Director: Lucy Jenkins  
Vice President of Product Management: Dave Dufresne  
Director of Product Management: Melissa Kleeman

© 2009 by Dearborn Financial Publishing, Inc.®

Published by Dearborn™ Real Estate Education

30 South Wacker Drive  
Chicago, IL 60606-7481  
312-836-4400  
[www.dearbornRE.com](http://www.dearbornRE.com)

All rights reserved. The text of this publication, or any part thereof, may not be reproduced in any manner whatsoever without written permission from the publisher.

Printed in the United States of America

09 10 11 10 9 8 7 6 5 4 3 2 1

**Library of Congress Cataloging-in-Publication Data**

Kolbe, Phillip T.

Investment analysis for real estate decisions / Phillip T. Kolbe, Gaylon E. Greer. -- 7th ed.

p. cm.

Includes bibliographical references and index.

ISBN-13: 978-1-4277-8314-1

ISBN-10: 1-4277-8314-4

1. Real estate investment--Decision making. 2. Investment analysis. I. Greer, Gaylon E. II. Title.

HD1382.5.G74 2009

332.63'24--dc22

2008039085

# CONTENTS

PREFACE xvii

## PART ONE

### Fundamental Issues in Real Estate Investment Analysis 1

#### CHAPTER 1

### The Real Estate Investment Decision 2

Investment Analysis: Art and Science 3

Who Are Real Estate Investors? 4

Why Invest In Real Estate? 6

How Have Real Estate Investments Performed? 8

Definitions and Concepts 9

Investment Value: An Overview 12

Summary 20

Notes 22

Recommended Reading 23

Internet References 23

Review Questions 24

Discussion Questions 24

#### CHAPTER 2

### Investment Strategy and Market Efficiency 26

Real Estate Assets: Supply, Demand, and Price 27

Market Efficiency and Profit Opportunities 36

Strategy Implications 42

Summary 44

Notes 45

Recommended Reading 45

Internet References 46

Review Questions 46

Discussion Questions 47

### **CHAPTER 3**

## **Land Utilization and the Rental Value of Real Estate 48**

Economic Factors in Land Utilization 49

Linkages and "Natural" Zoning 53

The Market for Rental Space 57

Why Investors Need Market Research 58

Summary 59

Notes 59

Recommended Reading 60

Review Questions 61

Discussion Questions 61

**Part One: Case Problem 62**

---

## **PART TWO**

## **Market Research and Cash-Flow Forecasting 65**

### **CHAPTER 4**

## **Market Research Tools and Techniques 66**

Why Market Research Is Needed 67

The Extent of Market Research 68

Market Research Design 71

Preparing the Research Report 74

Data Sources 75

Descriptive Research 78

Geographic Information Systems (GIS) 80

Summary 83

Notes 84

Recommended Reading 85

Review Questions	86
Discussion Questions	86

## Appendix 4.A: Data Sources 88

### **CHAPTER 5** Reconstructing the Operating History 92

Introducing the Operating Statement	93
Types of Leases	94
Estimation of the Ability to Command Rent	95
Estimation of Operating Expenses	100
An Apartment Building Example	100
From Reconstruction to Forecast	106
Summary	106
Notes	107
Internet References	107
Review Questions	108
Discussion Questions	108
Problems	108

### **CHAPTER 6** Forecasting Income and Property Value 110

Gross Income Forecasting	111
Forecasting Operating Expenses	115
Forecasting Net Operating Income	116
Estimating Future Market Value	119
Additional Information Needed	122
Summary	122
Recommended Reading	123
Internet References	124
Review Questions	124
Discussion Questions	125
Problems	125

## Part Two: Case Problem 127

---

**PART THREE**

---

**Using Borrowed Money 129****CHAPTER 7****Financial Leverage and Investment Analysis 130**

The Reasons Why Leverage Is So Popular 131

Measuring Financial Leverage 135

What Is the Right Amount of Financial Leverage? 136

Today's Lenders 141

Summary 143

Note 143

Recommended Reading 144

Internet References 144

Review Questions 145

Discussion Questions 145

Problems 145

**CHAPTER 8****Credit Instruments and Borrowing Arrangements 148**

The Instruments for Credit 149

Mortgage Restructuring 152

Alternative Financing Strategies 155

Government-Sponsored Credit 156

Summary 158

Notes 158

Recommended Reading 159

Internet References 159

Review Questions 159

Discussion Questions 160

Problems 161

**CHAPTER 9****The Cost of Borrowed Money 162**

Interest Costs and Rates 163

Comparison of Financing Alternatives 170

Incorporating Leverage into the Operating Projection 176

Summary 180

Recommended Reading 180

Internet References 180

Review Questions 181

Discussion Questions 181

Problems 181

### Part Three: Case Problem 184

---

## PART FOUR

### Income Tax Considerations 185

#### CHAPTER 10

### Fundamental Income Tax Issues 186

The Tax Basis: Its Nature and Significance 187

The Initial Tax Basis 187

Allocation of the Initial Tax Basis 188

Adjustment of the Basis for Cost Recovery 190

Other Adjustments to the Tax Basis 193

Forecasting After-Tax Cash Flows 194

Tax Consequences of Ownership Form 196

Tax Consequences of Financial Leverage 200

Income Tax Credits for Property Rehabilitation 201

Limitations On the Deductibility of Losses 201

An Exception for Small-Scale Operators 203

Foreign Investors' Taxes 204

The Alternative Minimum Tax (AMT) 204

Tax Consequences of Property Sales 205

Summary 205

Recommended Reading 206

Internet References 206

Review Questions 207

Discussion Questions 207

Problems 208

**CHAPTER 11****Tax Consequences of Property Disposal 210**

Computation of Realized Gain or Loss 211

Tax Treatment of Realized Gain or Loss 212

Estimating Cash Flow from Selling Maegen's Magic Manor 215

When Are Realized Gains or Losses Recognized? 216

Use of the Installment Sales Method 216

Like-Kind Exchanges (1031 Exchanges) 221

Section 1033 Rollover: Casualty and Eminent Domain 223

Gifts of Property 224

Summary 226

Note 226

Recommended Reading 226

Internet Reference 227

Review Questions 227

Discussion Questions 227

Problems 227

**Part Four: Case Problem 229****PART FIVE****Measures of Investment Performance 231****CHAPTER 12****Traditional Measures of Investment Worth 232**

Ratio Analysis 233

Traditional Profitability Measures 236

Adjustments for More Rational Analysis 240

Summary 242

Recommended Reading 242

Internet References 242

Review Questions 242

Discussion Questions 242

Problems 243



**CHAPTER 13**  
Discounted Cash-Flow Analysis 244

Present Value 245

Net Present Value (NPV) 247

Internal Rate of Return (IRR) 247

Comparing Net Present Value and Internal Rate of Return 255

Approaches to Shore Up Internal Rate of Return 256

Summary 259

Notes 260

Recommended Reading 260

Internet Reference 260

Review Questions 261

Discussion Questions 261

Problems 261

**CHAPTER 14**  
Investment Goals and Decision Criteria 262

The Choice of a Discount Rate 263

Investment Decisions and Decision Rules 266

Investment Value and Investment Strategy 268

Application of the Discounted Cash-Flow Technique 269

Summary 276

Notes 277

Recommended Reading 277

Internet Reference 277

Review Questions 277

Discussion Questions 278

Problems 278

## Part Five: Case Problem 279

---

**PART SIX**

---

**The Risk Element 283****CHAPTER 15****Risk in Real Estate Investment 284**

Key Risk Elements 285

Controlling Risk 291

Risk Preferences and Profit Expectations 295

Measuring Risk 297

Summary 298

Recommended Reading 298

Internet References 298

Review Questions 298

Discussion Questions 299

**CHAPTER 16****Traditional Risk-Adjustment Methods 300**

The Payback-Period Approach 301

The Risk-Adjusted Discount Rate 302

The Certainty-Equivalent Technique 304

Partitioning Present Values 305

Sensitivity Analysis 309

Summary 313

Notes 314

Recommended Reading 314

Review Questions 314

Discussion Questions 315

**CHAPTER 17****Contemporary Risk Measures 316**

Probability as a Risk Measure 318

Interpreting Risk Measures 323

Standard Deviation and the Discounted Cash-Flow Model 329

Dealing with More Complex Cash-Flow Patterns 334

Summary 340

Notes	340
Recommended Reading	340
Review Questions	341
Discussion Questions	341

**CHAPTER 18****Risk Management in a Portfolio Context 342**

Modern Portfolio Theory and Risk Management	343
The Role of Real Estate in the Efficient Portfolio	347
Diversification Strategies for Real Estate	348
Summary	349
Notes	350
Recommended Reading	350
Internet References	351
Review Questions	351
Discussion Questions	352

**Part Six: Case Problem 353**

---

**PART SEVEN**

---

**The Real Estate Investment Analysis Process Illustrated 355****CHAPTER 19****Investment Feasibility Analysis 356**

The Nature of the Feasibility Question	357
Steps in the Feasibility Analysis Process	360
Preliminary Financial Feasibility	361
Format for a Feasibility Report	368
Summary	370
Notes	371
Recommended Reading	371
Internet Reference	372
Review Questions	372
Discussion Questions	372
Problems	373

**CHAPTER 20**  
Subdivision Proposal Analysis 374

The Subdivision Process 375

Industrial Subdivision: A Case Study 377

Summary 386

Recommended Reading 386

Internet References 386

Review Questions 387

Discussion Questions 387

**CHAPTER 21**  
Development and Rehabilitation 388

Overview of Real Estate Development 389

A Development Case Study 392

Rehabilitation 397

Commercial Rehabilitation: A Case Study 400

Summary 405

Recommended Reading 405

Internet References 406

Review Questions 406

Discussion Questions 407

**CHAPTER 22**  
Industrial Property, Office Building, and Shopping Center Analysis 408

Industrial Building Investments 409

An Industrial Building Case Study 412

Office Building Investments 416

An Office Building Case Study 417

Shopping Center Investments 423

A Shopping Center Case Study 425

Summary 433

Note 433

Recommended Reading 433

Internet References	434
Review Questions	434
Discussion Questions	434

**Part Seven: Case Problem 436**

**PART EIGHT**

**Real Estate as a Security 439**

**CHAPTER 23**

**Real Estate Investment Trusts 440**

REIT Regulation	441
REIT Management	442
REIT Assets	443
REITs as Investment Vehicles	444
REIT Mutual Funds	448
How REITs Are Evaluated	449
Sources of REIT Information	449
Summary	450
Notes	450
Recommended Reading	451
Internet References	451
Review Questions	452
Discussion Questions	452

**Part Eight: Case Problem 453**

**APPENDIX A**

**Mathematics of Compounding and Discounting 455**

Conceptual Basis for Compounding and Discounting	455
How Money Placed on Deposit Will Grow	456
Present Value of a Future Amount	459
How a Series of Deposits Will Grow	462

Present Value of an Annuity	463
Present Value of a Perpetual Annuity	466
Payments to Amortize a Loan	467
Extending the Usefulness of Financial Tables	470

**APPENDIX B****Compounding and Discounting with Financial Calculators 477**

Future Value of a Dollar	477
Compound Value of an Annuity	479
Present Value of a Dollar	480
Present Value of a Level Annuity	481
Amount to Amortize \$1 (Mortgage Constant)	482
Recommended Reading	483

**APPENDIX C****Normal Distribution Table 484****APPENDIX D****A Closer Look at Like-Kind Exchanges 485**

Tax Consequences	485
Tax Basis of Acquired Property	488
Effect of Losses in Section 1031 Exchanges	492
Allocating the Substitute Basis	494
Nonsimultaneous Exchanges	495
Exchanges between Related Parties	495
Note	496
Recommended Reading	496
Review Questions	496
Problems	496

GLOSSARY 498

INDEX 525

CHAPTER

# 1

## The Real Estate Investment Decision



An attorney purchases a \$250,000 interest in a condominium on the beach; a doctor puts \$10,000 into a real estate investment trust; a real estate broker buys a \$500,000 apartment building; a manufacturing firm invests millions in a new plant; the U.S. government spends billions to create a dam and reservoir system. All have made real estate investment decisions. As diverse as they appear, all these decisions have a common element: each requires giving up something now in anticipation of future benefits. The sacrifice is immediate and certain; rewards will be received in the future, if at all.

The problem is compounded because investors generally have more opportunities than they have resources. They have to choose, and they always have incomplete information. The only way to avoid getting lost in a maddening maze of alternatives is to rank them by their likely contribution to investment objectives, subject to constraints imposed by liquidity needs and ability to tolerate risk.

## ■ INVESTMENT ANALYSIS: ART AND SCIENCE

Real estate investment analysis has consistently lagged behind mainstream finance and investment thought. It wasn't until the late 1960s and early 1970s, for example, that analytical tools and techniques pioneered by economists and corporate financial analysts in the 1950s began to appear in real estate literature. Writing for the *Appraisal Journal* in 1970, Richard Ratcliff and Bernhard Schwab decried the virtual absence from real estate appraisal and investment literature of terms such as probability, utility function, and time value of money, which were used routinely by investment decision theorists.<sup>1</sup>

More recently, modern decision theory has been grafted onto traditional real estate analysis, and the equity valuation technique explained in later chapters has been widely adopted. Computerized modeling to forecast after-tax cash flows and



explore the impact of variance from expected operating results or changes in the operating environment (such as altered tax law, new government regulations, or shifts in the economic climate) are now commonplace.

State-of-the-art investment analysis treats real estate as a capital asset desired for the stream of benefits it generates. In this context, real estate becomes a special case of modern capital budgeting. Its analysis can utilize discounted cash flow techniques and incorporates risk adjustments.

## WHO ARE REAL ESTATE INVESTORS?

---

How-to books and personal success stories have conditioned us to think of real estate investment as the province of individual investors. Yet real estate has become a major asset in the portfolios of many institutions, and foreign investors have found U.S. real estate equities to be increasingly attractive.

### **Institutional Investors**

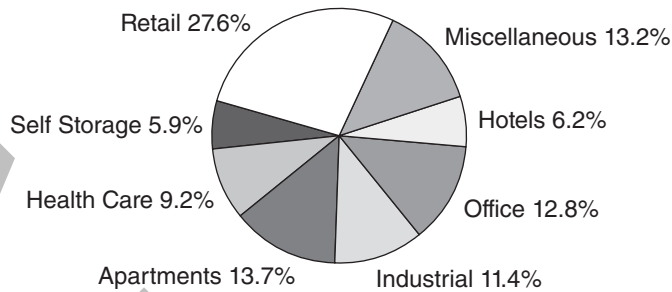
With some false starts, real estate investment trusts and pension funds have become major investors in real estate equities. This is due in large part to changes in federal law: a 1961 Internal Revenue Code revision exempts distributed real estate investment trust (REIT) earnings from taxation at the corporate level. Subsequent tax law changes liberalized REIT operating rules: the Employee Retirement Income Security Act of 1974 (ERISA) directed pension fund managers to diversify their portfolios, and thus encouraged them to move more aggressively into real estate equities.

### **Pension Funds**

With their steady and predictable streams of cash flow, pension funds are ideal real estate investors. Yet their investment in real estate was slight until the 1970s. They moved in aggressively, however, when ERISA mandated more portfolio diversification. After retreating somewhat following market reverses of the late 1980s, they were back in force by the mid-1990s. In 2008, aggregate pension fund capital in real estate equities exceeded \$245 billion.<sup>2</sup> Because real estate represents 5.2 percent of top 50 pension funds' assets, there is considerable room for growth.<sup>3</sup>

### **Real Estate Investment Trusts**

In 2008, the National Association of Real Estate Investment Trusts reported that 118 member REITs that invest primarily in real estate equities had a market capitalization (aggregate market value of all shares) of approximately \$302 billion.<sup>4</sup> Many specialize in certain types of real estate, such as apartments, shopping centers, or office or industrial buildings. Others prefer to hold diversified portfolios. Figure 1.1 shows the capitalization of real estate equity investments by REITs in 2007, by type of property held.

**FIGURE 1.1** REIT Property Capitalization in 2007 by Property Type

Source: Based on data from National Association of Real Estate Investment Trusts

### Foreign Participation in U.S. Real Estate Markets

Foreigners directly own a very small percentage of U.S. real estate—about 8 percent of its dollar value in 2003, according to one estimate.<sup>5</sup> Their impact is distorted by disproportionate representation in certain parts of the country and in specific types of property. For example, Coldwell Banker reports that in 1987 foreigners owned 46 percent of downtown office space in Los Angeles, 39 percent in Houston, and 32 percent in Minneapolis.<sup>6</sup> If you count all forms of investing, foreign investments account for 24 percent of institutional equity in the United States.<sup>7</sup>

Government studies, though inconclusive, indicate that foreign direct investment surged during the early 1980s, then stabilized by the middle of that decade but—at least through 1987—remained high by historical standards.<sup>8</sup> Real estate equities fell into widespread disfavor among foreign investors in the late 1980s, but the market heated up again in the early 1990s and at the beginning of this century. The percentage of real estate investments held by foreign interests more than doubled from 4 percent in 2001 to 8.3 percent in 2003.<sup>9</sup>

Foreign interest in U.S. real estate seems heavily affected by two key factors: foreign exchange rates and relative interest rates between countries. These factors sometimes push demand in the same direction; at other times they work at cross-purposes.

#### **The Influence of Exchange Rates**

When shifts in foreign exchange rates make dollars relatively less expensive to holders of a foreign currency as they have recently, U.S. real estate also becomes less costly to acquire. Suppose, for example, the Euro sells for \$1.50 on the foreign exchange market; a \$9 million office building in Chicago will cost 6 million Euros. If this and a comparable building in Paris generate the same operating income and have the same appreciation potential, investors might be indifferent between them.

But suppose the Euro climbs in value so that it trades at \$1.80. Now the \$9 million Chicago property costs only 5 million Euros, while the comparable building in Paris still costs 6 million Euros; holders of Euros will be inclined to invest in the United States.

A country's currency tends to appreciate on foreign exchange markets when that country's economic and political prospects appear particularly sound. Thus prosperity and political stability create a lure for foreign investors.

### ***The Relevance of Relative Interest Rates***

When interest rates in a country are higher than they are in those with whom the country trades, the higher rates tend to depress real estate prices, while lower rates elsewhere tend to inflate property prices there. The disparity makes real estate in the high-interest-rate country relatively more attractive.

Factors other than relative cost can influence the decision to invest in foreign real estate. Due to relative economic conditions, foreign real estate may offer the prospect of greater returns relative to risk, or it might reduce overall portfolio risk. Furthermore, investors might consider foreign real estate as a way to hedge against political risk.

## **WHY INVEST IN REAL ESTATE?**

Real estate investors, either directly or indirectly, purchase rights to a stream of future cash flows that are expected to be generated by the real estate. The cash flows might come from rental income, from using the property as loan collateral, from cash savings through offsetting otherwise taxable income with tax-deductible losses from the real property interest, or from net profits upon resale of the property interest.

The price an investor is prepared to pay for a defined property interest depends in part on the amount and the timing of these anticipated cash flows; how much will be received, and when? It depends also on the degree of confidence with which expectations are held and the investor's tolerance for bearing risk. The final variable is the attractiveness of alternative investment opportunities.

Virtually any investment goal can be accommodated with a position in real estate. Speculators can deal in real estate futures (by buying and selling purchase options); developers can reduce risk exposure by using standby loan commitments or taking a position in interest rate futures; investors can buy fixed-income assets such as mortgage loans or net leased properties. Real estate may be even more attractive when approached not as a simple investment, but rather as a business opportunity.

In short, the possibilities are constrained primarily by limits on investors' ability to conceive of alternatives. In Figure 1.2, investors are categorized in four ways: by the nature of their claims (*debt* or *equity*), and according to their degree of involvement in operations (*passive* or *active*).

**FIGURE 1.2** Variety in Real Estate Investments

	Debt	Equity
Active	Loan origination Construction lending Permanent loans Loan purchases on secondary mortgage market	Direct ownership of rental property; purchase or development
Passive	Pass-through certificates Mortgage real estate investment trust Mortgage-backed securities Residential Commercial	Shares in real estate corporation Limited partnership shares Equity real estate investment trust

### Passive and Active Investors

Many investors acquire direct title to real estate in which they invest, and either oversee its operation themselves or hire professional property management firms to handle day-to-day supervisory chores. In Figure 1.2, they are characterized as *active investors*. Their key distinguishing characteristic is that they make decisions—selecting on-site management personnel, negotiating maintenance contracts, making rental rate decisions, approving leases, and so forth—that directly affect operating results.

In contrast, *passive investors* make no operating decisions. They turn their wealth over to professional asset managers, who in turn acquire interests in real estate, or they acquire shares in corporations, partnerships, or trusts that hold extensive real property interests. In any event, their decisions have little direct impact on the outcome of real estate operations.

### Investment in Equity and Debt

Also in Figure 1.2, distinctions are made between investment in real assets such as land and buildings, and in real estate–related financial assets such as mortgage-backed promissory notes. Both involve exchanges of certain and immediate assets for uncertain expectations of future gain, but expectations regarding yield and risk may differ radically.

Consider a development such as an office building or an apartment complex. The institution or individual that buys the real property interest is an *equity investor*. Usually, though, most of the purchase money comes from a mortgage lender: a *debt investor*. Lenders often sell their mortgage-secured promissory notes to still other investors who prefer debt to equity positions.

Benefits to equity investors are less predictable than those to holders of debt, because an equity investor gets no cash until the debt holder's periodic claims to payment on the promissory note are satisfied. Equity investors also reap the consequences of increases or decreases in property value.

## HOW HAVE REAL ESTATE INVESTMENTS PERFORMED?

Returns on real estate investments and those on stocks, bonds, or other assets cannot be reliably compared because real estate yield data are sparse and contradictory. Unlike stock and bond markets, where minute-by-minute trading data generate enough information to crash a computer, real estate yield indices typically are computed using quarterly appraisal estimates. This causes a smoothing of trend indicators and makes real estate yields seem less volatile than they might with more frequent and more reliable information about value fluctuations. Yet comparisons, flawed as they are, are essential for rational portfolio decisions.

Surging interest in real estate ownership by institutional investors and the phenomenal growth in public offerings by REITs, described earlier, have contributed immensely to our knowledge about comparative yields. Research results, however, are heavily influenced by the period from which data are drawn.

Real estate became a darling of pension funds during the 1970s. An offspring of this relationship, the commingled real estate fund (CREF) acquires real estate and monitors its operation on behalf of institutional investors. CREFs have become treasure troves of information about real estate investment performance.

Brueggeman, Chen, and Thibodeau analyzed asset performance data from two CREFs from 1972 through 1983. They broke the data, which at the time accounted for about 25 percent of all CREF assets, into various subperiods to see whether comparative results varied significantly through time. They found that on a risk-adjusted basis, real estate outperformed the Standard & Poor's index of 500 stocks and the Ibbotson Associates bond index for the entire period and for each subperiod. The real estate portfolio's superior performance differed considerably, however, among subperiods.<sup>10</sup>

For the entire period, and for the subperiod from 1972 through 1977, the researchers concluded that the CREF portfolio had higher yields than the Standard & Poor's 500 stock index, before and after adjusting for risk. For 1978 through 1983, average yields on the Standard & Poor's index exceeded the CREF yields by a narrow margin before adjusting for risk. The real estate portfolios were less risky, however, and after adjusting for relative risk the advantage shifted back to the CREF portfolio.

Other studies show conflicting results. Michael Giliberto compared total returns for an index of more than 1,200 large REITs with Standard & Poor's 500 stock index for 1978 through 1989 and found that the advantage had shifted decisively to common stocks.<sup>11</sup> In a 1984 analysis of 17 previous comparative yield studies, Zerbst and Cambon concluded that real estate assets have shown returns roughly similar to common stocks since 1950, but that real estate tends to outperform stocks during periods of inflation.<sup>12</sup> A study of data from 16 countries suggests real estate is a good long-term hedge against inflation and that real estate values and rents are significantly

related to stock returns.<sup>13</sup> Myer and Webb looked at returns to REITs and concluded that returns are more closely related to those on common stocks and closed-end mutual funds than they are to returns on unsecuritized real estate.<sup>14</sup> A more recent study, by Clayton and MacKinnon, drew similar conclusions but indicated that the relationship has changed over time. REIT returns are less related to returns on large capitalization stocks than they were in earlier years and more closely correspond to returns on small capitalization stocks.<sup>15</sup>

## DEFINITIONS AND CONCEPTS

The investment perspective requires a slightly different view of real estate from that to which many are accustomed. An investor must develop a perception of the property's worth as a portfolio asset and compare this with an estimate of the probable price at which the real estate can be acquired. Neither of these values can be determined with certainty. Investors must work with ranges within which they expect the values to lie. This brings us to three key definitions: most probable selling price, investment value, and transaction range.

### Investment Value

A property's *investment value* is its worth to a present or specific prospective owner. Investment value is unique to the individual and need not be closely related to most probable selling price. It is the value today, to the specific investor, of anticipated future benefits of ownership. It reflects the investor's assumptions about the asset's future ability to produce revenue, about the likely holding period, selling price, tax consequences, available financing, and all other factors that affect net benefits of ownership. Because there will not be precise agreement on all these factors or on the appropriate adjustment for waiting and for uncertainty, each individual's investment value is necessarily unique.

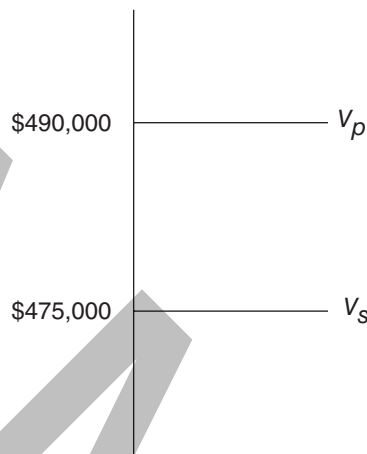
### Most Probable Selling Price

The most likely price at which a property will sell, given the market conditions then prevailing and the financing arrangements available, is commonly called *most probable selling price*. This is not to be confused with *market value*, which is defined by appraisers as the most probable price when a property is exposed to the market under specific, rigidly prescribed conditions that often do not prevail in the marketplace.

### Transaction Range

The price range within which a transaction can occur and leave both the buyer and the seller better off than before is the *transaction range*. The present owner's investment value sets the lower end of the range; the prospective buyer's sets the upper end. The actual transaction price will fall somewhere between these extremes.

FIGURE 1.3 Value Relationships—Seller's Perspective



The current owner (prospective seller) establishes a minimum acceptable price based on assumptions about future benefits of continued ownership. This is shown as  $V_s$  in Figure 1.3. To be motivated to sell, the owner must conclude that the most probable selling price (shown as  $V_p$  in Figure 1.3) is greater than investment value.

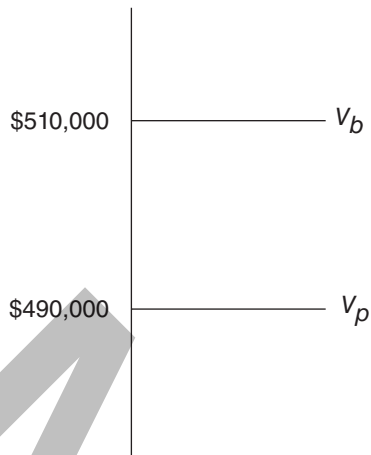
As we have observed, the property also has an investment value from the prospective buyer's point of view. That value, too, is based on assumptions about future benefits of ownership. It is the maximum amount the prospective buyer is justified in paying for the property. This relationship is illustrated in Figure 1.4. To be motivated to buy, the prospective buyer must conclude that investment value ( $V_b$  in Figure 1.4) is greater than the most probable selling price,  $V_p$ .

Within the range of possible prices set by the owner's and the prospective buyer's investment values (net of transaction costs), both will gain by getting together. Owners will not take less than a property's investment value to them, and buyers will not pay more than their investment value. This creates a transaction range, as shown in Figure 1.5. The exact price within this range will depend upon the parties' relative bargaining skills.

In Figures 1.3–1.5, it is assumed that buyer and seller agree on most probable price, but that need not be the case. For a transaction to be possible, all that is needed is a transaction range—a difference between buyer's and seller's investment values—sufficient to absorb transaction costs.

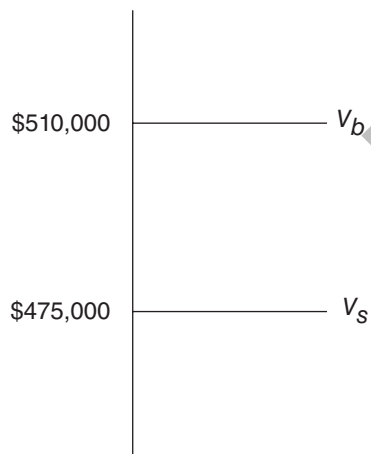
## Market Value

An early step in lender analysis is an appraisal of a property to determine current market value: the most probable price at which the property would sell for in

**FIGURE 1.4** Value Relationships—Buyer's Perspective

a competitive market as of the date of the appraisal, if it had been exposed to the market for a reasonable time prior to that date. The estimate assumes reasonably informed parties, each acting in his or her own best interest and with neither subject to undue influence.

The analyst usually starts by analyzing the economic environment of the property being appraised. A typical first step is observations about the relationship between the national or regional economy and that of the city or community in which the

**FIGURE 1.5** Value Relationships—Transaction Range



property is located. The analysis proceeds from the wider or more general to the narrow and more specific—from the general economy to the neighborhood. Although this part of an appraisal report is often skipped by the mortgage loan analysis, it should, in fact, be studied intensely. Because the property is immovable, its value is acutely influenced by favorable or unfavorable neighborhood trends.

The use of a site will be concerned with convenience and accessibility. They may also be concerned about neighborhood issues such as the view from the property and unfavorable exposure that can detract from market value. Locations near objectionable or incompatible uses often have a depressing impact on desirability and thus, on value. Examples include noise from traffic or activity at other sites, smoke, odors, or congestion.

The focus of the physical basis of market value should be on the functional efficiency of the layout, the durability of the construction, and the structure's aesthetic appeal.

## INVESTMENT VALUE: AN OVERVIEW

---

Investment value, the most a would-be seller is justified in taking for a property or the maximum a prospective buyer is justified in paying, is at best difficult to estimate, requiring analysis of a wide range of disparate yet interwoven elements. The chore is greatly simplified when reduced to a system. This book presents such a system, sometimes called a *decision process*, which is widely used for evaluating real estate investment proposals.

The process is not unique to real estate. In spite of its complexity, real estate investment analysis is not fundamentally different from other investment decision making. Whatever the exact nature of the investment vehicle, for those schooled in modern financial analysis the decision process does not vary.

### Steps in the Investment Decision Process

1. *Estimate the stream of expected benefits.* Investment assets are desired only for the benefits that ownership is expected to bestow. Investors in effect purchase a set of assumptions about the property's ability to produce income over the proposed ownership period.
2. *Adjust for timing differences among expected streams of benefits flowing from investment alternatives.* As a general rule, the sooner benefits are expected to be received, the more highly prized they are by investors.
3. *Adjust for differences in perceived risk associated with the alternatives.* Just as investors are not indifferent to the timing of expected benefits, neither are they indifferent to the degree of certainty with which expectations are held.
4. *Rank alternatives according to the relative desirability of perceived risk-return combinations they embody.* Attitudes toward risk differ, but rational investors seek financial return as a reward for bearing the

risk. Investors demand greater expected returns for higher risk. Most investors set a limit at which they will not shoulder additional risk, no matter what the potential return.

The investment analysis system explained in this book represents an application of this four-step process. It is an adaptation of capital-budgeting techniques long employed among corporate financial analysts. Three concerns—amount of benefit, and the timing and certainty of their receipt—determine the relative value of all investment alternatives.

### The Value of the Benefit Stream

Benefits expected to be received in the far distant future add less to a property's investment value than do those whose anticipated receipt is more imminent. In general, the further in the future expected receipts lie, the less is their value today. The exact nature of the trade-off will differ among investors, depending on each individual's time preference for money.

Financial analysts have long recognized that the value of a business enterprise is the sum of the value of the outstanding debt plus the value of the equity. Real estate valuation theory also recognizes value of an investment property as the sum of the debt and equity positions. This is evidenced in appraisal techniques in which market value is estimated by capitalizing the property's expected net operating income by the weighted average cost of debt and equity capital.

Investment value can, therefore, be expressed as the present value of the equity position plus the present value of the debt position. This is illustrated in Figure 1.6, which starts with the property's net operating income: operating revenue minus operating expenses (these terms are defined and illustrated in Part Two). Holders of mortgage-secured debt have a senior claim on the property's net operating income; their portion—annual debt service—flows down the left-hand side of Figure 1.6. The remainder accrues to equity investors, but part of this will be siphoned off as income taxes. The residual is the after-tax cash flow to the equity investors, as shown on the right-hand side of Figure 1.6. The bottom of the diagram illustrates the transformation of these expected cash flows into lump-sum equivalents: the investment value of each position.

Present value of the debt position is the amount of available mortgage financing or (in the case of present owners' investment values) the outstanding mortgage loan balance. Present value of the equity position is the value today of the anticipated after-tax cash flow during a prospective ownership period and of the anticipated proceeds from disposal. Investment value can be expressed algebraically as follows:

$$PV_e = CF_1 / (1 + r) + CF_2 / (1 + r)^2 + \dots + CF_n / (1 + r)^n + CF_d / (1 + r)^n$$

$$PV_i = PV_d + PV_e$$

where:

$PV_i$  = Present value of total investment position

$PV_e$  = Present value of the equity position

$PV_d$  = Present value of the debt position

$CF$  = After-tax cash flows to the equity investor occurring in year  $t$  ( $t = 1, 2, 3 \dots n$ )

$CF_d$  = After-tax cash flow to the equity investor from property disposal at the end of year  $n$ .

$r$  = Discount rate

Estimating present value of the equity position requires assumptions about income, operating expenses, amount and terms of financing, sales price, and income tax. It also depends on the investor's opportunity cost of capital (the yield available on equally risky alternative opportunities).

To illustrate, consider an investment proposal for an apartment complex. A prospective investor notes that the property is expected to generate \$1,265,700 of net operating income the first year (don't worry about how the information is gathered, we will address that in later chapters) and is subject to a mortgage loan that requires annual payments (debt service) of \$803,000. The remaining \$462,700 of net

FIGURE 1.6 Cash-Flow Distribution and Value Relationships

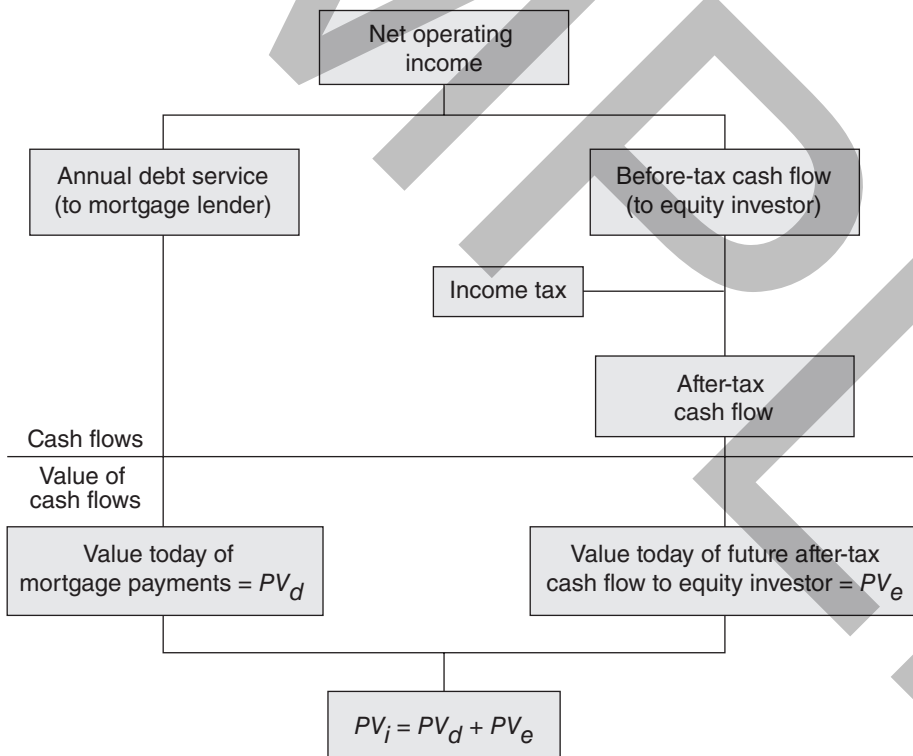
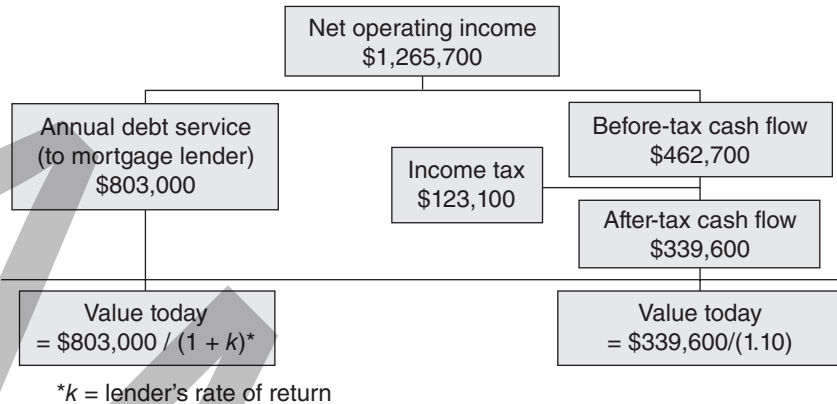


FIGURE 1.7 First-Year Cash Flows and Value Relationships



operating income will accrue to the equity investor, but part of it will be diverted to pay income taxes, which are estimated to be \$123,100 for the first year. This leaves an estimated \$339,600 of after-tax cash flow for the equity investor. Figure 1.7 replicates a portion of Figure 1.6, but it applies only to the first year, and cash flow estimates have been entered in the boxes.

Numbers below the line on Figure 1.7, the value of the cash flows, will depend on the appropriate discount rate and the amount of time the investor must wait to receive the cash. (Chapter 13 explains discounted cash flow analysis in greater detail.) If the appropriate discount rate for this investor is 10 percent, the value of the first year's cash flow to the equity investor will be  $\$339,600/1.10$ , as shown in the bottom-right box of Figure 1.7, or \$308,727. The cash flows to the lender are discounted at the lender's expected rate of return, and would be placed in the bottom-left box of Figure 1.7.

Of course, cash is expected to continue flowing beyond the first year. To properly analyze an investment proposal, cash flow must be estimated for every year of the expected holding period and for the anticipated year of property disposal. Table 1.1 illustrates a multiple-year forecast of cash flows to an equity investor who expects to hold the apartment complex for six years. Derivation of these numbers is explained in later chapters, and the numbers are used to further illustrate how investment decisions are made. For the moment, simply note the relationship between the numbers in the first column of the table and those in Figure 1.7. Also note that borrowing more money would increase the debt service component and thereby reduce the expected after-tax cash flow to the equity investor. However, it would also reduce the amount of equity capital that must be invested.

Let us revisit our equation for determining the present value of the equity position, using the bottom line of Table 1.1 for annual after-tax cash flow from operations. Assume further that the investor expects to sell near the end of the sixth year and to

TABLE 1.1 | Projected After-Tax Cash Flow Operations: Maegan's Magic Manor Apartments\*

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
1. Potential Gross Rent	\$2,346,100	\$2,463,400	\$2,586,600	\$2,677,100	\$2,770,800	\$2,867,800
2. <i>Less:</i> Vacancy Allowance	<u>176,000</u>	<u>98,500</u>	<u>103,500</u>	<u>160,600</u>	<u>166,200</u>	<u>172,100</u>
3.	\$2,170,100	\$2,364,900	\$2,483,100	\$2,516,500	\$2,604,600	\$2,695,700
4. <i>Add:</i> Other Income	<u>102,000</u>	<u>111,200</u>	<u>116,700</u>	<u>118,300</u>	<u>122,400</u>	<u>126,700</u>
5. Effective Gross Income	<u>\$2,272,100</u>	<u>\$2,476,100</u>	<u>\$2,599,800</u>	<u>\$2,634,800</u>	<u>\$2,727,000</u>	<u>\$2,822,400</u>
6. <i>Less:</i> Operating Expenses						
7. Management Fee	\$ 113,600	\$ 123,800	\$ 130,000	\$ 131,700	\$ 136,400	\$ 141,100
8. Salary Expense	204,000	211,100	218,500	226,200	234,100	242,300
9. Utilities	109,000	112,800	116,800	120,900	125,100	129,500
10. Insurance	36,700	38,000	39,300	40,700	42,100	43,600
11. Supplies	21,700	22,500	23,300	24,100	24,900	25,800
12. Advertising, Legal, Misc.	33,100	34,300	35,500	36,700	38,000	39,300
13. Maintenance, Repairs, and Replacement	188,300	194,900	201,700	208,800	216,100	223,700
14. Property Taxes	<u>300,000</u>	<u>300,000</u>	<u>300,000</u>	<u>375,000</u>	<u>375,000</u>	<u>375,000</u>
15. Total Expenses	<u>\$1,006,400</u>	<u>\$1,037,400</u>	<u>\$1,065,100</u>	<u>\$1,164,100</u>	<u>\$1,191,200</u>	<u>\$1,220,300</u>
16. Net Operating Income	\$1,265,700	\$1,438,700	\$1,534,700	\$1,470,700	\$1,535,300	\$1,602,100
17. <i>Less:</i> Interest Expense	752,700	736,100	718,000	698,500	677,300	654,400
18. Depreciation	<u>383,300</u>	<u>400,000</u>	<u>400,000</u>	<u>400,000</u>	<u>400,000</u>	<u>383,300</u>
19. Taxable Income (Loss)	\$ 129,700	\$ 302,600	\$ 416,700	\$ 372,200	\$ 458,000	\$ 564,400
20. <i>Times:</i> Marginal Tax Rate	<u>.40</u>	<u>.40</u>	<u>.40</u>	<u>.40</u>	<u>.40</u>	<u>.40</u>
21. Income Tax (Tax Savings)	<u>\$ 51,900</u>	<u>\$ 121,000</u>	<u>\$ 166,700</u>	<u>\$ 148,900</u>	<u>\$ 183,200</u>	<u>\$ 225,800</u>
22. Net Operating Income	\$1,265,700	\$1,438,700	\$1,534,700	\$1,470,700	\$1,535,300	\$1,602,100
23. <i>Less:</i> Debt Service	<u>953,500</u>	<u>953,500</u>	<u>953,500</u>	<u>953,500</u>	<u>953,500</u>	<u>953,500</u>
24. Before-Tax Cash Flow	\$ 312,200	\$ 485,200	\$ 581,200	\$ 517,200	\$ 581,800	\$ 648,600
25. <i>Less:</i> Income Taxes	<u>51,900</u>	<u>121,000</u>	<u>166,700</u>	<u>148,900</u>	<u>183,200</u>	<u>225,800</u>
26. After-Tax Cash Flow	<u>\$ 260,300</u>	<u>\$ 364,200</u>	<u>\$ 414,500</u>	<u>\$ 368,300</u>	<u>\$ 398,600</u>	<u>\$ 422,800</u>

\*All numbers have been rounded to the nearest \$100.

receive \$7,828,100 of after-tax cash flow from the sale. (Chapter 11 explains how to estimate the tax consequences of selling.) With these numbers, and continuing our assumption that 10 percent is the appropriate discount rate for the equity investor, our equation for determining the present value of the equity position becomes:

$$\begin{aligned}
 PV_e &= CF_1/(1+r) + CF_2/(1+r)^2 + CF_3/(1+r)^3 + CF_4/(1+r)^4 \\
 &\quad + CF_5/(1+r)^5 + CF_6/(1+r)^6 + CF_d/(1+r)^6 \\
 &= \$260,300/(1.10) + \$364,200/(1.10)^2 + \$414,500/(1.10)^3 + \$368,300/(1.10)^4 \\
 &\quad + \$398,600/(1.10)^5 + \$422,800/(1.10)^6 + \$7,828,100/(1.10)^6 \\
 &= \$236,636 + \$300,992 + \$311,420 + \$251,554 \\
 &\quad + \$247,499 + \$238,660 + \$4,418,758 \\
 &= \$6,005,519
 \end{aligned}$$

**CALCULATOR APPLICATION**

$FV = 260,300$

$n = 1$

$i = 10$

**Solve for present value:**

$PV = 236,636$

Continue for each year

Change  $n$  and  $FV$  for each year

If a prospective purchaser places a higher investment value on a property than the acquisition cost, buying it will increase the buyer's net worth. In like manner, selling a property that has a higher market value than its investment value enhances the seller's total wealth position.

Alternative investment strategies regarding a specific property can also be evaluated using the investment value model. Holding financing constant, the investor varies other investment criteria (such as alternative income tax treatments, as discussed in Part Four, or proposed remodeling or rehabilitation) and notes the impact on investment value. Financing or refinancing alternatives can be evaluated by holding all other factors constant and determining the effect of each financing plan on the value of the equity position. The investor accepts the alternative that produces the highest value of equity per dollar of required equity investment, provided each alternative is perceived as entailing equal risk.

We all interpret information according to our own frames of reference, which result from our unique sets of past experiences. For this reason, individuals reviewing the same information will usually draw different conclusions. There will likely be disagreement about the future stream of rental revenue and operating expenses associated with a property. Individuals will also differ in the degree of certainty

with which they hold their expectations; they will perceive differing levels of risk associated with expected outcomes. For these reasons, there will seldom be general agreement about investment value.

Income tax situations are seldom exactly comparable. Consequently, most investors will anticipate different after-tax cash-flow streams even when they are in general agreement about the before-tax cash flows.

People also differ in their willingness to defer immediate consumption in the interests of even greater benefits in future years. Those with a high preference for present consumption will require a greater incentive to defer after-tax cash flows. Investment value for such investors will be relatively high for investments with a short-term payoff and relatively low for those requiring greater patience. This subject is pursued at length in Part Three.

We do not all have the same tolerance for risk. Those who are less bothered by the possibility of variance between expected and actual investment outcomes will be inclined to place a greater investment value on risky ventures than will those who prefer to face a more precisely determinable future. Other things being equal, almost all investors will prefer less risk to more risk; they differ greatly regarding the risk premium they attach to proposed investment ventures (that is, the reduction in investment value due to possible variations between expected and actual after-tax cash flows).

### **Investor Objectives and Risk**

Any attempt to discuss investor objectives quickly runs afoul of the nebulous term *investor*. Like Humpty-Dumpty, we choose to let the expression mean just what we choose it to mean, and we mean it to include any person or entity that takes a debt or an equity position in real estate. This definition could mean something entirely different—it frequently does when used elsewhere.

Given the diverse entities—corporations, partnerships, trusts, pension funds, and so forth—that fit our definition of the term, there can be no doubt that investors will have varied objectives. Some (for example, real estate investment trusts, pension funds, and commercial banks) are constrained by law and regulatory agencies. Others, because of their relatively high income tax obligations, seek tax-shelter situations. Some view real estate as an opportunity to diversify their portfolios. Others seek fixed incomes. Some take speculative positions in search of spectacular capital appreciation. Others consider real estate as their inventory in a basic merchandising sense.

There are, however, certain basic traits most investors hold in common, regardless of their motivations or personal objectives. All rational investors seek financial return as a reward for committing resources and as compensation for bearing risk. The amount of expected compensation and the acceptable degree of risk depend on specific investor objectives and individual attitudes toward risk.

Emotional temperament plays a large role in an investor's attitude toward risk. Some people are risk takers by nature; they not only accept it but go out of their way to incur it. This risk-seeking behavior is typified by gambling. These people gamble even when they know the game favors the house. They seem to revel in defying the odds. For them, the long shot is worth courting failure. Although there are people who are addicted to gambling, most risk-seekers are mentally healthy people who wager only modest amounts relative to their total wealth.

Other people avoid risk at almost any price. They sacrifice expected returns to hedge their bets, even where the cost of hedging is disproportionate to the relatively small associated risk. As investors, these people favor fixed-income securities that carry a high degree of safety of principal, such as government bonds or insured certificates of deposit at commercial banks.

Most investors probably fall somewhere in between these extremes. They tend to minimize risk exposure, preferring the relatively low-return certainty to the higher-return long shot. Moreover, they tend to become progressively more risk-averse as their total wealth increases. These propositions about investor behavior have been explored at length in the economic and financial literature and are not generally a matter of serious dispute.

Authorities generally agree that, to the extent they are motivated by rational financial considerations, most investors have the attitude toward risk and expected return depicted in Figure 1.8. They prefer a higher return for a given perceived risk, they prefer less risk for a given expected return, and they accept additional perceived risk only if accompanied by additional expected return.

An additional investor characteristic demonstrated in Figure 1.8 is the tendency to become increasingly averse to additional risk as total perceived risk increases. Thus the investor whose attitude is depicted can be induced to accept the additional

**FIGURE 1.8** Relationship between Perceived Risk and Expected Return for a Risk-Averse Investor

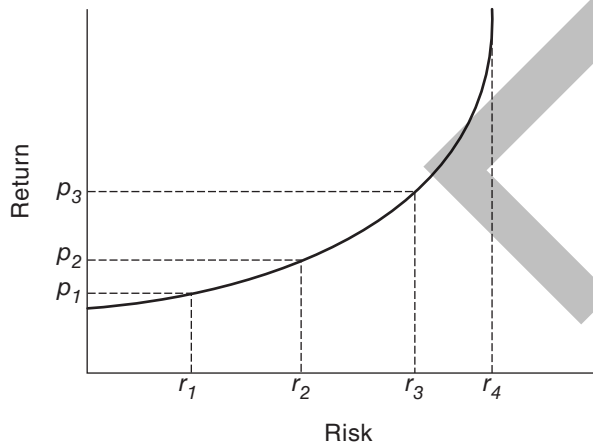
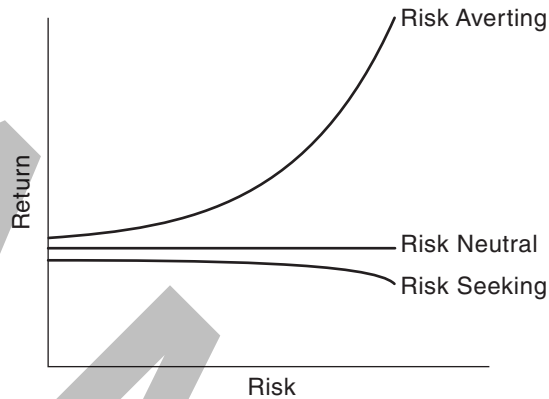




FIGURE 1.9 Diverse Attitudes toward Risk



risk indicated by the distance  $r_1$  to  $r_2$  by the promise of an increase in total reward indicated by the distance  $p_1$  to  $p_2$ . But to be induced to accept an identical additional risk increment (from  $r_2$  to  $r_3$ ), the investor must be able to anticipate a substantially greater reward increment (from  $p_2$  to  $p_3$ ). In addition, as indicated in the illustration, there is some level of perceived risk ( $r_4$ ) beyond which the investor cannot be induced to venture, regardless of the possible benefits.

Of course, the exact shape and location of the curve depicted in Figure 1.8 depend on an investor's personal attitude toward risk. A more risk-averse attitude would be depicted by a much more steeply inclined curve, while a less risk-averse attitude would be depicted by a shallower curve. Someone who loves risk would actually trade expected return for additional risk. These various attitudes are shown in Figure 1.9. Moreover, investors will react differently to various types of risks. These issues are addressed in later chapters.

## SUMMARY

Real estate investors make an immediate and certain sacrifice of current purchasing power in expectation of future economic benefit. Investment proposals are evaluated by comparing the magnitude of the sacrifice with the quantity and timing of expected benefits and by considering the level of certainty with which expectations are held. Adjusting for time and uncertainty permits comparison among competing alternatives.

Attempts to measure and compare real estate investment returns with those on other investments have been inconclusive. Outcomes are heavily influenced by the dates over which performance is measured. The preponderance of evidence seems to suggest that real estate and common stocks offer roughly equal long-term yield prospects, but that real estate performs better during periods of high inflation. Research suggests that real estate prices are less volatile, but this may be an illusion due to real estate market inefficiencies.

Institutions as well as individuals find real estate an attractive investment medium. Changes in federal laws and regulatory attitudes have in recent years enhanced its appeal to pension funds. Equity REITs have multiplied in the more benign income tax environment.

Foreign direct investment in U.S. realty became a major public issue when its volume grew dramatically during the early 1980s; concern abated when the net flow of foreign equity capital ebbed at the end of the decade. The market heated up again in the early 1990s and in the beginning of the 21st century. Foreign investors' interest in U.S. realty is heavily influenced by foreign exchange rates and by comparative interest rates.

Investment analysis follows a consistent pattern regardless of the investment vehicle or investor entity: The streams of benefits from alternative proposals are forecast and are adjusted for timing and risk differences. Alternatives are then ranked according to their desirability, in terms of the trade-off between perceived risk and anticipated return. Rankings will differ according to the discount rate used for timing adjustments and with varying investor attitudes toward risk.

Investment value is the highest price a prospective buyer is justified in paying for a property or the lowest price a prospective seller is justified in accepting. It is a function of available financing, the investor's income tax position, the yield available on alternative investments, and the timing and amount of anticipated benefits flowing from the investment under consideration. The investment decision is subjective, and investment value will be different for each investor.

Investment value can be estimated by summing the present values of the equity position and the debt position associated with a proposed venture. Present value of the equity position is the discounted value of all anticipated future cash flows to the equity position. Present value of the debt position is the available loan or the remaining balance on an existing loan.

Investors differ in both their perceptions of and their attitudes toward risk. The difference among attitudes is sometimes expressed as degrees of risk aversion. The more risk-averse the investor, the greater the expected reward will have to be to induce investment in a given project.

## NOTES

1. Richard U. Ratcliff and Bernhard Schwab, "Contemporary Decision Theory and Real Estate Investment," *Appraisal Journal* (April 1970). Reprinted in *Readings in Real Estate Investment Analysis*, vol. 1 (Cambridge, Mass.: Ballinger Pub. Co., 1977).
2. [www.irei.com/web/do/pub/publication](http://www.irei.com/web/do/pub/publication)
3. [www.realert.com/public/MarketPlace/ranking/index.cfm](http://www.realert.com/public/MarketPlace/ranking/index.cfm)
4. National Association of Real Estate Investment Trusts, *REIT Watch* (May 2008).
5. U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the United States: Operations of U.S. Affiliates of Foreign Companies* (Washington, D.C.: U.S. Department of Commerce, Bureau of Economic Analysis, 2004).
6. National Realty Committee, *America's Real Estate* (Washington, D.C.: National Realty Committee, Inc., 1989): 54.
7. National Real Estate Investor, May 2008; [www.enews.penton.com/enews/nrei/globalrealestate](http://www.enews.penton.com/enews/nrei/globalrealestate).
8. U.S. Department of Commerce, *op. cit.*, various issues.
9. Real Capital Analytics.
10. William Brueggeman, A. H. Chen, and T. G. Thibodeau, "Real Estate Funds: Performance and Portfolio Considerations," *AREUEA Journal* 12, no. 3 (Fall 1994): 333–54.
11. S. Michael Giliberto, "Equity Real Estate Investment Trusts and Real Estate Returns," *The Journal of Real Estate Research* 5, no. 2 (Summer 1990): 259–63.
12. Robert H. Zerbst and Barbara Cambon, "Real Estate: Historical Returns and Risk," *The Journal of Portfolio Management* (Spring 1984): 4–20.
13. Daniel C. Quan and Sheridan Titman, "Do Real Estate Prices and Stock Prices Move Together? An International Analysis," *Real Estate Economics* 27, no. 2 (1999): 183–207.
14. F. C. Neil Myer and James R. Webb, "Return Properties of Equity REITs, Common Stock, and Commercial Real Estate: A Comparison," *Journal of Real Estate Research* 8, no. 1 (1993): 87–106.
15. Jim Clayton and Greg MacKinnon, "The Time-Varying Nature of the Link Between REIT, Real Estate, and Financial Asset Returns," *Journal of Real Estate Portfolio Management* 7, no. 1 (2001): 43–54.

## RECOMMENDED READING

---

- Bacow, Lawrence S. "Foreign Investment, Vertical Integration, and the Structure of the U.S. Real Estate Industry." *Real Estate Issues* 15, no. 2 (Fall-Winter 1990): 1–9.
- Barrett, G. Vincent, and John P. Blair. *How to Conduct and Analyze Real Estate Market and Feasibility Studies*, 2nd ed. New York: Van Nostrand Reinhold Company, 1988, 71–82.
- Conover, C. Mitchell, H. Swint Friday, and G. Stacy Sirmans. "Diversification Benefits From Foreign Real Estate Investments." *Journal of Real Estate Portfolio Management* 8, no. 1 (January–April 2002): 17–26.
- Crumley, Ryan, and Donna K. Fisher. "Analysis of International Joint Ventures Within Real Estate Investment Trusts." *Briefings in Real Estate Finance* 4, no. 3 (January 2005): 217–28.
- Eichholtz, Piet M. A. "Does International Diversification Work Better for Real Estate Than for Stocks and Bonds?" *Financial Analysis Journal* (January-February 1996): 56–62.
- Hudson-Wilson, Susan. "Why Real Estate?" *The Journal of Portfolio Management* (Fall 2001): 20–32.
- Kolbe, Phillip T., and Gaylon Greer. "Recent Changes in Individual Investors' Attitudes Toward Real Estate." *Real Estate Issues* 16, no. 1 (Spring-Summer 1991): 6–10.
- Maurer, Raimond, and Frank Reiner. "International Asset Allocation With Real Estate Securities in a Shortfall Risk Framework: The Viewpoint of German and U.S. Investors." *Journal of Real Estate Portfolio Management* 8, no. 1 (January–April 2002): 27–44.
- McMahan, John. "Foreign Investment in U.S. Real Estate." *Real Estate Issues* 15, no. 2 (Fall-Winter 1990): 48–50.
- Swanson, Peggy E. "An Economic Rationale/Empirical Tests of Foreign Investment in United States Real Estate." *Real Estate Issues* 13, no. 1 (Spring-Summer 1988): 40–46.
- Worzala, Elaine, and Vickie L. Bajtelsmit. "Real Estate Asset Allocation and the Decision Making Framework Used by Pension Fund Managers." *The Journal of Real Estate Portfolio Management* 3, no. 1 (1997): 47–56.

## INTERNET REFERENCES

---

For numerous links and articles on real estate investment:  
[www.real-estate-online.com](http://www.real-estate-online.com)

For a real estate directory on many real estate topics:  
[www.reals.com](http://www.reals.com)

For a real estate dictionary:  
[www.homeglossary.com](http://www.homeglossary.com)

For links to over 20,000 investment sites and definitions of investment terms:  
[www.investorwords.com](http://www.investorwords.com)

## REVIEW QUESTIONS

---

1. What are investors really looking for when they invest in real estate?
2. Who are the major participants in real estate investments?
3. What are some major determinants of foreign investment in U.S. real estate?
4. Describe the differences between passive and active investors.
5. What are the major steps in modern investment decision analysis?
6. Distinguish between the most probable selling price and market value.
7. Explain how the transaction range for a given property is set. What is the role of investment value in arriving at the transaction range?
8. When estimating investment value, what factors are of concern to the investor?
9. What effect does the timing of cash flows have on investment value?
10. What is the relationship between the amount of risk to which an investor feels exposed and the investor's attitude toward additional risk?

## DISCUSSION QUESTIONS

---

1. What difficulties might a researcher face when trying to compare the long-term investment performance of real estate and securities portfolios? Discuss problems in measuring yield and in comparing risk.
2. Real estate equity and debt markets are closely intertwined: Most new properties are financed in part with mortgage-secured notes, and there is an active secondary market for both mortgage notes and real estate equity interests. Under what circumstances would prices in these markets most likely move in opposite directions?
3. Under what circumstances would the most probable selling price of a property and its market value be essentially the same? Under what circumstances might they differ significantly?
4. To better determine just what a property is worth in the marketplace, would it make sense to ask an exorbitant price and wait for a series of offers, then accept the first subsequent offer that is higher than any received during the trial, or information-gathering, period? What problems do you see with such a procedure?

5. Gambling is risk-seeking behavior and buying insurance is a risk-avoidance measure. Yet many people who gamble also buy insurance. How can these contradictory actions be reconciled?
6. If the U.S. dollar continues to weaken, how will that affect the U.S. real estate market?

SAMSB

**Dearborn**<sup>TM</sup>  
Real Estate Education

30 S. Wacker Drive, Ste. 2500, Chicago, IL 60606  
[www.dearbornRE.com](http://www.dearbornRE.com), (312) 836-4400

ISBN-13: 978-1-4277-8314-1  
ISBN-10: 1-4277-8314-4



9 781427 783141 90000

Reorder No.: 4106-0707