

Bin Zhao.

Behavioral Finance: The market, investors, and corporations.

1. Investments – Psychological aspects.
2. Investments – Decision making.
3. Finance – Psychological aspects.

HG4515.15

ISBN 978-616-602-177-6

Copyright by **Bin Zhao**

All Rights Reserved

First edition, March 2025, 100 copies

Published and Distributed by **Thammasat University Press**
Thammasat Printing House Bldg
99 Moo 18 Phahonyothin Road, Klong Nueng, Klong Luang,
Pathumthani 12121, Thailand
Tel. 085-112-6081, 085-112-6968
<http://thammasatpress.tu.ac.th>, email: unipress@tu.ac.th

Printed by **Thammasat Printing House**

Price 280.-Baht

ประเภท
วิธีการใช้งาน
คำแนะนำในการใช้หรือการเก็บรักษา
คำเตือน/ข้อห้ามใช้/ข้อควรระวัง
วันเดือนปีที่หมดอายุ

หนังสือ
ใช้เพื่อการอ่าน
ควรเก็บในที่พ้นแสงแดด ควรเก็บในที่แห้ง
ห้ามวางไว้ใกล้ไฟ/ห้ามเปียกน้ำ
พ.ศ. 2574

Table of Contents

| | |
|--|----------|
| Chapter 1: Introduction to Behavioral Finance: Understanding the Intersection of Psychology and Finance | 1 |
| Learning Objective | 1 |
| 1.1 Introduction | 2 |
| 1.1.1 Definition of behavioral finance | 2 |
| 1.1.2 Significance and rationale for studying behavioral finance | 2 |
| 1.2 Traditional Finance and Its Limitations | 3 |
| 1.2.1 Assumptions of rational decision-making in traditional finance | 3 |
| 1.2.2 Criticisms and shortcomings of traditional finance theories | 3 |
| 1.2.3 Need for behavioral finance to provide a more realistic framework | 3 |
| 1.3 Key Concepts in Behavioral Finance | 4 |
| 1.3.1 Cognitive biases and their impact on decision-making | 4 |
| 1.3.2 Emotional factors and their influence on financial choices | 4 |
| 1.3.3 Social influences and herd behavior in financial markets | 4 |
| 1.3.4 Prospect theory and its implications for risk perception | 5 |
| 1.4 Interdisciplinary Nature of Behavioral Finance | 5 |
| 1.4.1 Relationship between behavioral finance and psychology | 5 |
| 1.4.2 Contributions from related fields such as neuroscience and sociology | 6 |
| 1.4.3 Importance of integrating insights to develop a holistic understanding | 6 |
| 1.5 Historical Development of Behavioral Finance | 7 |
| 1.5.1 Origins and early proponents of behavioral finance | 7 |
| 1.5.2 Milestones and influential studies in the field | 7 |
| 1.5.3 Evolution and growth of behavioral finance as a discipline | 7 |
| 1.6 Factors Influencing Financial Decision-Making | 8 |
| 1.6.1 Cognitive biases: Anchoring, framing, confirmation bias, etc. | 8 |
| 1.6.2 Emotional factors: Fear, greed, loss aversion, etc. | 8 |
| 1.6.3 Social influences: Herding, peer pressure, social proof, etc. | 9 |

| | | |
|---|--|-----------|
| 1.7 | Self-Awareness and Behavioral Biases | 10 |
| 1.7.1 | Importance of self-reflection and introspection in recognizing biases | 10 |
| 1.7.2 | Tools and techniques for improving self-awareness | 10 |
| 1.7.3 | Implications of self-awareness for better decision-making | 11 |
| 1.8 | Conclusion | 11 |
| 1.8.1 | Recap of key concepts covered in the chapter | 12 |
| 1.8.2 | Implications of understanding the intersection of psychology and finance | 12 |
| 1.8.3 | Preview of subsequent chapters and topics in the textbook | 13 |
| 1.9 | Exercise | 14 |
| Chapter 2: From Efficient Market Hypothesis to Bubbles and Anomaly | | 15 |
| | Learning objective | 15 |
| 2.1 | The path to efficient market hypothesis | 16 |
| 2.2 | Validity and applicability of efficient market hypothesis | 17 |
| 2.2.1 | Framework and earlier studies for efficient market hypothesis | 17 |
| 2.2.2 | Challenges to the EMH | 19 |
| 2.2.3 | Is Finance a Science yet? | 20 |
| 2.2.4 | A motivating graph | 22 |
| 2.3 | Bubbles | 23 |
| 2.3.1 | Famous historical bubbles | 24 |
| 2.3.2 | What do we learn from all these bubbles | 30 |
| 2.4 | The cross-sectional anomalies | 31 |
| 2.4.1 | The size effect | 32 |
| 2.4.2 | The value effect | 38 |
| 2.4.3 | Price contrarian and momentum effect | 40 |
| 2.4.4 | Post earnings announcement drift (PEAD or earnings momentum) | 43 |
| 2.5 | Fama-Frech three factors model and the anomaly | 49 |
| 2.6 | Implications for Investment Strategies and Portfolio Management | 54 |
| 2.7 | Conclusion | 55 |
| 2.7.1 | Recap of key concepts covered in the chapter | 55 |

| | | |
|---|--|-----------|
| 2.7.2 | Importance of understanding bubbles and anomalies in behavioral finance | 55 |
| 2.7.3 | Preview of subsequent chapters and topics in the textbook | 55 |
| 2.8 | Exercise | 56 |
| | References | 58 |
| Chapter 3: Bounded Rationality: The Average Individual Investors | | 60 |
| | Learning Objective | 60 |
| 3.1 | Introduction | 61 |
| 3.1.1 | Importance of understanding bounded rationality in behavioral finance | 61 |
| 3.1.2 | Overview of chapter contents | 61 |
| 3.2 | Definition and Explanation of Bounded Rationality | 62 |
| 3.2.1 | Introduction to bounded rationality and its significance in decision-making | 62 |
| 3.2.2 | Cognitive constraints and information processing limitations | 63 |
| 3.2.3 | Contrast with the assumptions of traditional rational models | 64 |
| 3.3 | Cognitive Biases and Heuristics, Consequences of Bounded Rationality for Financial Well-Being | 64 |
| 3.3.1 | ease of processing/attention | 64 |
| 3.3.2 | Avoidance of regret | 69 |
| 3.3.3 | Representative bias and its implications for portfolio construction | 70 |
| 3.3.4 | Conservatism/Anchoring effect | 71 |
| 3.3.5 | Self-perception/Overconfidence | 73 |
| 3.3.6 | Illusion of control | 82 |
| 3.4 | Emotional Factors in Decision-Making, Consequences of Bounded Rationality for Financial Well-Being | 83 |
| 3.4.1 | Mood and emotion | 84 |
| 3.4.2 | Reference point, framing, and risk-preference | 86 |
| 3.4.3 | Loss aversion and its consequences for investment decisions | 91 |
| 3.4.4 | Ambiguity aversion/familiarity | 94 |

| | | |
|-------|--|------------|
| 3.5 | Social and Cultural Influences, Consequences of Bounded Rationality for Financial Well-Being | 102 |
| 3.5.1 | Peer pressure and herd behavior in investment choices | 102 |
| 3.5.2 | Social norms and their impact on investment behavior | 104 |
| 3.6 | Conclusion | 106 |
| 3.6.1 | Recap of key concepts covered in the chapter | 107 |
| 3.6.2 | Reconciliations between behavioral biases and efficient markets | 109 |
| 3.7 | Exercise | 112 |
| | Reference | 113 |
| | Chapter 4: Limits to Arbitrage: The Institutional Investors | 116 |
| | Learning objective | 116 |
| 4.1 | Introduction | 117 |
| 4.1.1 | Importance of understanding limits to arbitrage in behavioral finance | 117 |
| 4.1.2 | Overview of chapter contents | 117 |
| 4.2 | Definition and Explanation of Limits to Arbitrage | 117 |
| 4.2.1 | Understanding the concept of arbitrage and its role in efficient markets | 118 |
| 4.2.2 | Introduction to limits to arbitrage and its significance for institutional investors | 118 |
| 4.2.3 | Contrast with the assumptions of perfect arbitrage in traditional finance models | 119 |
| 4.3 | Arbitrage Pricing Theory | 120 |
| 4.3.1 | explanation of arbitrage price theory (APT) | 120 |
| 4.3.2 | empirical execution of arbitrage pricing theory | 121 |
| 4.3.3 | Practical matters | 122 |
| 4.4 | Short selling: History, Regulation and Constraints | 122 |
| 4.4.1 | Short selling definition and practice | 122 |
| 4.4.2 | History and controversy of short selling | 125 |
| | The Crash of The South Sea Company, 1720 | 126 |
| | 1736: Sir John Barnard's Act | 127 |
| | Outlawed Futures and Short-Sales Until 1860 | 127 |

| | |
|--|-----|
| Napoleon's Edict of 1802 | 127 |
| Discussion: Balancing Innovation and Regulation | 128 |
| The Pujo Commission (1913): Probing Market Manipulations | 128 |
| Fear of Bear Raids: The 1932 Perspective | 129 |
| The 1938 Uptick Rule | 129 |
| Modern Experiments with the Uptick Rule | 130 |
| The Suspension of the Uptick Rule in 2008 | 130 |
| Discussion: The Balance of Risk and Regulation | 130 |
| 4.4.3 Contemporary events and study of short selling | 131 |
| 4.4.4 Risk and concerns for short seller | 135 |
| 4.4.5 Alternative to short selling | 136 |
| 4.5 Cases for Limits to Arbitrage | 139 |
| 4.5.1 Index inclusion/exclusion | 139 |
| 4.5.2 Internet carve out | 140 |
| 4.5.3 Royal dutch/Shell puzzle | 141 |
| 4.5.4 The closed-end fund discount puzzle | 143 |
| Explanations for the Discount Puzzle | 144 |
| 4.6 Consequences of Limits to Arbitrage | 145 |
| 4.6.1 Market inefficiencies and mispricing resulting from constraints | 145 |
| 4.6.2 Impact on asset pricing and market distortions | 146 |
| 4.7 Conclusion | 147 |
| 4.7.1 Recap of key concepts covered in the chapter | 147 |
| The Importance of Limits to Arbitrage | 147 |
| Definition and Explanation of Limits to Arbitrage | 148 |
| Arbitrage Pricing Theory (APT): Theory and Challenges | 148 |
| Short Selling: Evolution, Regulation, and Constraints | 148 |
| Real-World Cases Illustrating Limits to Arbitrage | 148 |
| Consequences of Limits to Arbitrage | 148 |
| Key Takeaways | 149 |
| 4.7.2 Implications of limits to arbitrage for institutional investors | 149 |
| 4.8 Exercise | 151 |
| Reference | 152 |

| | |
|--|------------|
| Chapter 5: Behavioral Corporate Finance | 154 |
| Learning objective | 155 |
| 5.1 Introduction | 155 |
| 5.1.1 Importance of understanding behavioral finance in the context of corporate finance | 155 |
| 5.1.2 Overview of chapter contents | 156 |
| 5.2 Behavioral Biases and Heuristics in Corporate Financial Decision-Making | 157 |
| 5.2.1 Managerial behavior and its implications for corporate governance practices | 157 |
| 5.2.2 Overconfidence bias and its impact on strategic decisions, investment choices, and forecasting | 157 |
| 5.2.3 Role of behavioral biases in executive compensation and incentive structures | 159 |
| 5.3 Financing Decisions and Behavioral Factors | 160 |
| 5.3.1 Behavioral aspects of initial public offerings (IPOs), seasoned equity offerings (SEOs) | 161 |
| 5.3.2 Behavioral biases in capital structure decisions, including debt-equity choice and financing patterns | 163 |
| 5.3.3 Behavioral factors in dividend policy and payout decisions | 166 |
| 5.3.4 Stability of Share Prices: Historical and Behavioral Perspectives | 173 |
| 5.4 Name Changes and Market Impact | 176 |
| 5.5 Conclusion | 178 |
| 5.5.1 Recap of key concepts covered in the chapter | 178 |
| 5.5.2 Implications of behavioral corporate finance for financial practitioners and decision-makers | 179 |
| 5.6 Exercise | 180 |
| Reference | 181 |
| Chapter 6: Future Directions in Behavioral Finance: Emerging Research Areas and Challenges in the Field | 183 |
| Learning objective | 183 |
| 6.1 Introduction | 184 |

| | | |
|-------|--|-----|
| 6.1.1 | Importance of exploring future directions in behavioral finance | 184 |
| 6.1.2 | Overview of the chapter contents | 184 |
| 6.2 | Emerging Research Areas in Behavioral Finance | 184 |
| 6.2.1 | Exploration of new topics and research directions in the field | 184 |
| 6.2.2 | Understanding the impact of technological advancements on behavioral finance research | 189 |
| 6.2.3 | Examining the influence of cultural, social, and demographic factors on financial decision-making | 189 |
| 6.3 | Technological Advancements and Behavioral Finance | 191 |
| 6.4 | Integration of Behavioral Insights into Traditional Finance Theories and Models | 192 |
| 6.4.1 | Challenges to traditional finance assumptions of rationality and efficiency | 192 |
| 6.4.2 | Developing comprehensive frameworks that incorporate behavioral biases and heuristics | 193 |
| 6.4.3 | Exploring the implications of behavioral insights for asset pricing, market efficiency, and portfolio management | 193 |
| 6.5 | Interdisciplinary Collaborations and Future Research Directions | 195 |
| 6.5.1 | Leveraging insights from psychology, neuroscience, sociology, and other fields | 195 |
| 6.5.2 | Understanding the impact of social media and digital platforms on financial behaviors | 196 |
| 6.5.3 | ESG and Behavioral Finance | 198 |
| 6.6 | Conclusion | 199 |
| 6.6.1 | Recap of key concepts covered in the chapter | 199 |
| 6.6.2 | Reflection on the future trajectory of behavioral finance | 199 |
| 6.6.3 | Encouragement for further research and exploration of emerging topics | 200 |
| 6.7 | Exercise | 201 |
| | Reference | 202 |
| | INDEX | 205 |

List of Tables

| | | |
|------------|---|-----|
| Table 2-1 | Summary of size premiums from different academic work using different sample period | 33 |
| Table 2-2 | Summary of size premiums across different countries in earlier academic work | 33 |
| Table 2-3 | Coefficient on Market Risk Premium: (β) Estimates Regression Results – July 1963 to Dec 1991 | 51 |
| Table 2-4 | Coefficient on SMB: (s) Estimates Regression Results – July 1963 to Dec 1991 | 51 |
| Table 2-5 | Coefficient on HML: (h) Estimates Regression Results – July 1963 to Dec 1991 | 52 |
| Table 2-6 | Three-Factor Alphas: (α) Estimates Regression Results – July 1963 to Dec 1991 | 52 |
| Table 2-7 | Coefficients from Fama-French three factors regression of contrarian strategy | 53 |
| Table 2-8 | Coefficients from Fama-French three factors regression of momentum strategy | 53 |
| Table 3-1 | Average returns following purchases and sales | 77 |
| Table 3-2 | Average returns following purchases and sales | 78 |
| Table 3-3 | Market return following daylight saving adjustment | 85 |
| Table 3-4 | Summary of typical response | 87 |
| Table 3-5 | Decomposition of payment for different options | 88 |
| Table 3-6 | Decomposition of different options | 89 |
| Table 3-7 | Summary of typical response | 89 |
| Table 3-8 | Summary of choice options and distribution of survey results | 90 |
| Table 3-9 | Percentage of invested in own company stock for company employee's defined benefit plan | 99 |
| Table 3-10 | Fund composition and allocation to equities by University of California versus TWA | 99 |
| Table 3-11 | Sample market capitalization and equity holding domestic and internationally across different markets | 100 |

List of Figures

| | | |
|-------------|---|----|
| Figure 2-1 | Actual market price versus theoretical price of S&P index using dividend discount model | 23 |
| Figure 2-2 | Japanese land price index | 28 |
| Figure 2-3 | Size premiums from year 1926 to year 2022 | 35 |
| Figure 2-4 | Size premiums from year 1960 to year 1969 | 35 |
| Figure 2-5 | Size premiums from year 1970 to year 1979 | 36 |
| Figure 2-6 | Size premiums from year 1980 to year 1989 | 36 |
| Figure 2-7 | Size premiums from year 1990 to year 1999 | 37 |
| Figure 2-8 | Size premiums from year 2000 to year 2009 | 37 |
| Figure 2-9 | Size premiums from year 2010 to year 2023 | 38 |
| Figure 2-10 | Value effect from year 1926 to year 202 | 39 |
| Figure 2-11 | Value effect from year 1926 to year 2020 by using monthly data | 40 |
| Figure 2-12 | Contrarian strategy performance | 42 |
| Figure 2-13 | Typical return pattern following a momentum strategy | 43 |
| Figure 2-14 | Consensus EPS versus Realized EPS | 44 |
| Figure 2-15 | PEAD pattern for all fir | 46 |
| Figure 2-16 | PEAD pattern for large firms only | 47 |
| Figure 2-17 | PEAD pattern for small firms only | 48 |
| Figure 3-1 | Trading volume of MCI and MCIC | 65 |
| Figure 3-2 | Return pattern of MCIC and MCI | 66 |
| Figure 3-3 | Stock price reaction of Meta Corporation listed on SET Figure: Screenshot from SET website | 67 |
| Figure 3-4 | Distribution of typical response from survey | 74 |
| Figure 3-5 | Behavioral problems of adhering to a decision policy | 75 |
| Figure 3-6 | Predicted versus actual correction | 76 |
| Figure 3-7 | Monthly turnover and annual performance of individual investors | 79 |
| Figure 3-8 | Performance of different types of investors | 79 |
| Figure 3-9 | Own benchmark return of different types of investors | 80 |
| Figure 3-10 | A sample advertisement from Fidelity | 81 |

| | | |
|-------------|--|-----|
| Figure 3-11 | Annualized turnover for early online trade adopters versus size-matched peers | 81 |
| Figure 3-12 | Cumulative market adjusted return for early online trade adopters | 82 |
| Figure 3-13 | Sample reference based utility function | 92 |
| Figure 3-14 | Sample reference-based utility function with illustration for risk-seeking in the loss region | 92 |
| Figure 3-15 | Results showing disposition effect | 94 |
| Figure 3-16 | Sample response from John Hancock survey about investors' familiarity with different assets | 96 |
| Figure 3-17 | Sample response from John Hancock survey about investors' risk perception towards different assets | 97 |
| Figure 3-18 | Results showing underdiversification of company employee investors | 98 |
| Figure 3-19 | Figure illustrating forecast accuracy for weather forecasters | 110 |
| Figure 3-20 | Figure showing accuracy rate of physicians prediction of pneumonia | 110 |
| Figure 4-1 | Figure illustrating short-selling | 123 |
| Figure 4-2 | Figure illustrating the relationship between borrower and lender in short selling | 123 |
| Figure 4-3 | Figure illustrating short interest across years | 124 |
| Figure 4-4 | Figure illustrating short interest across different year | 124 |
| Figure 4-5 | Value of 3-Com's non-Palm business | 141 |
| Figure 4-6 | Figure showing 3com and palm share prices versus implied value of 3com | 141 |
| Figure 4-7 | Figure showing Royal Dutch relative to Shell price | 142 |
| Figure 5-1 | Figure showing probability of completing a merger for longholder CEOs versus remaining CEOs | 158 |
| Figure 5-2 | Figure showing merger frequency for longholder CEOs versus remaining CEOs | 158 |
| Figure 5-3 | Post IPO/SEO returns for the next 5 years | 162 |
| Figure 5-4 | Mean buy-and-hold abnormal return for dividend omissions versus dividend initiations | 166 |
| Figure 5-5 | A simple trading strategy performance based on dividend policy | 167 |

| | | |
|-------------|--|-----|
| Figure 5-6 | Figure showing dividend premium versus the rate of dividend initiation | 168 |
| Figure 5-7 | Figure showing dividend premium and propensity to initiate dividend | 169 |
| Figure 5-8 | Summary of share repurchase across different years and different type of stocks | 170 |
| Figure 5-9 | Figure showing cumulative abnormal return following open market share repurchase | 171 |
| Figure 5-10 | Summary of returns following share repurchase for different type of firms | 172 |