

# Preface

For the purpose of providing new and broader directions for the future development of behavioral economics and finance, this book collects important contributions in behavioral economics/finance and related topics among journal publications of Japanese researchers to date. By applying new insights from behavioral economics/finance, we are interested in extending the reach of the standard theories in our own fields. A project to edit readings and/or handbooks on behavioral economics/finance for the promotion of economic research came about naturally as a result of our frequent interactions when running academic meetings on behavioral economics, especially those of the Association of Behavioral Economics and Finance (ABEF), the Japanese Economic Association (JEA), and the Nippon Finance Association (NFA). In addition, these meetings gave us access to important works that were motivated by behavioral economics. We therefore have compiled and edited a couple of independent volumes in an attempt to capture the many worthy articles that lie within this topic. The first, titled *Behavioral Economics of Preferences, Choices, and Happiness*, focuses on works on behavioral economics; and the second, *Behavioral Interactions, Markets, and Economic Dynamics: Topics in Behavioral Economics*, on economics-oriented studies on topics in behavioral economics. This book is the latter.

Three features characterize the present book. First, it focuses on economic studies examining the interactions of multiple agents or market phenomena using behavioral economics models. As current behavioral economics models are not necessarily good at analyzing phenomena from the viewpoints of market equilibrium and agent interactions, this feature of the book will help readers consider new possibilities for behavioral economics models as well as for general economic models. In contrast, the other book focuses on more behavioral, single-agent issues, such as decision making, preference formation, and subjective well-being. The two books thus are complementary.

Second, the chapter authors have added newly written addenda to the original articles, in which they discuss their own subsequent works, and provide supplementary analyses, detailed information on the underlying data, and/or recent literature

surveys. The addendum of each chapter is based on discussion at the Development of Behavioral Economics and Finance Conference held in February 2014. During this conference, participants, including the authors of the book chapters, discussed the original studies to be included in these volumes in light of contributions, limitations, and implications for future research developments. We accordingly believe that this work creates a bridge between the original studies and future research development.

Third, reflecting the diverse fields of the editors, this book as well as the companion volume, captures broad influences of behavioral economics on various topics in economics. The topics of this book cover parental altruism, economic growth and development, the relative and permanent income hypotheses, wealth distribution, asset price bubbles, auctions, search, contracts, personnel management, and market efficiency and anomalies in financial markets. The remainder of this preface provides a brief introduction to the parts of the book.

Part I is composed of two chapters that address intergenerational interactions under parents' altruism. In Chap. 1, Professor Hideo Akabayashi develops a unique dynamic principal-agent model to endogenously describe a child's development, his time preference formation, and the parents' interventions under asymmetric information. Akabayashi successfully explains child maltreatment by parents as an equilibrium outcome under their divergent misbeliefs about the child's ability. He also characterizes families that are at risk of child maltreatment. In Chap. 2, Professors Vipul Bhatt and Masao Ogaki propose another model of parents' strict intervention behavior toward their children. Unlike Akabayashi, they assume perfect information and thereby focus on a positive aspect of parental intervention in the form of "tough love," where the parent in their model allows the child to suffer in the short run via lower childhood transfers (e.g., allowances) so that she grows up to be more patient in the long run. The authors also extend the model to account for the child's leisure choice to emphasize the distinction between exogenous and endogenous changes in income when examining the redistributive neutrality property of altruism models.

Part II begins with important research by Professors Hiroaki Hayakawa and Yiannis Venieris in Chap. 3, which was originally published in the *Journal of Political Economy*. In 1977, when the field of behavioral economics had not yet appeared, they made contributions that are behavioral-economics oriented. First, they address heuristic cognition-saving decision making under bounded rationality. Second, they focus on the critical role of social interdependence in endogenous preference formation. The authors describe the consumer behavior that identifies with and emulates a chosen reference group for heuristic decision making. In doing so, they derive indifference curves under social interdependence based on two axioms and four basic assumptions. The implications for consumer theory too are discussed. In Chap. 4, Professor Hayakawa further extends the ideas in the previous chapter by presenting an axiomatic theory for the analysis of boundedly rational consumer choice. To describe heuristic decision making, the author focuses on the important roles of social norms and reference groups as sources of low-cost heuristics and proposes a model of a sequential two-step choice making

procedure to satisfy physical and social wants. Classical theories of consumption externalities developed by Leibenstein, Veblen, and Duesenberry are re-interpreted using the proposed framework. In Chap. 5, Professors Koichi Futagami and Akihisa Shibata address the effect of consumers' status/wealth preferences on endogenously determined steady-growth rate. When consumer preferences are personally interdependent due to status preferences, effective time preferences are shown to depend on relative wealth holdings producing rich, and sometimes paradoxical, implications for growth and wealth distribution. In Chap. 6, Professor Katsunori Yamada provides further macroeconomic implications of status preferences. He develops a capital-accumulation model with two consumption goods for normal and conspicuous purposes in order to characterize the properties of equilibrium dynamics in the bandwagon-type and snob-type economies. The Sombartian oscillating dynamics are duplicated as an equilibrium outcome of the growth-impeding effect of conspicuous consumption. This characteristic is seen particularly in the bandwagon-type economy. Chapter 7, written by Professors Yoshiyasu Ono and Junishiro Ishida, develops a new dynamic behavioral model to describe unemployment due to demand shortage. In this process, two behavioral assumptions are incorporated: workers' concern for fairness, which provides a microfoundation for a behavioral version of the Phillips curve, and the insatiable desire for money, which plays a critical role in producing persistent demand shortage. Monetary and fiscal policies are then evaluated in light of their effectiveness in reducing unemployment in the short and long run.

The four studies in Part III contribute to the literature of time preference in macroeconomics. Chapter 8 is based on the *Review of Economics and Statistics* article written by Professors Masao Ogaki and Andrew Atkeson. The authors examine the empirical validity of the models of wealth-dependent intertemporal elasticity of substitution (IES) and the wealth-dependent rate of time preference (RTP) using panel data from India in which there were large fluctuations in consumption data. By incorporating the subsistence consumption level, the estimation result shows that IES depends positively on wealth, whereas RTP is wealth-independent. In contrast, in Chap. 9 Professor Kazuo Ogawa uses aggregate time-series data of Japan, Taiwan, and Korea to show that the RTP of each country's representative consumer depends on the income level. In particular, he compares the empirical validity of the three alternative RTP schedules—flat, upward, and U-shaped—to show that the RTPs of Japan and Taiwan are characterized by a U-shaped schedule. The estimated turning points in the two countries are found to be consistent with their historical loci of economic growth. Chapters 10 and 11 comprise theoretical contributions to the RTP issue. In Chap. 10, Professor Shinsuke Ikeda extends an endogenous RTP model to characterize luxury and necessity good consumption in terms of good specific RTP and IES. Preferences for luxury are shown to affect capital accumulation and wealth distribution. In Chap. 11, Professors Ken-ichi Hirose and Ikeda examine the implications of decreasing marginal impatience. As is often empirically observed, RTP is decreasing in wealth. The authors show its dynamic implications for stability property, multiple equilibria, and the possibilities of consumption-satiated equilibria.

Part IV analyses bubbles and the ensuing crashes. Chapter 12, authored by Professors Robert J. Shiller, Fumiko Kon-Ya and Yoshiro Tsutsui and published in the *Review of Economics and Statistics*, investigates why the Japanese stock market crashed between 1989 and 1992. To answer this question, they collect parallel time series data on expectations, attitudes, and theories from market participants in both Japan and the United States for the period 1989–1994. Such a survey is unique, especially in the early 1990s. They find a relationship between the crash and changes in both Japanese price expectations and speculative strategies. In Chap. 13, Professors Shinichi Hirota and Shyam Sunder conduct an economic experiment to explore how investor decision horizons influence the formation of stock price bubbles. The experiment consists of long- and short-horizon sessions. These sessions differ by receiving either the determined dividend (the long-session) or the expected future price when the subjects exit (the short-session). They find that price bubbles emerge more frequently in the short-horizon session, suggesting that the difficulty of performing backward induction from future dividends is important to the emergence of price bubbles.

Part V contains three chapters concerning experimental markets. It begins with Chap. 14, which is authored by Professors Soo Hong Chew and Naoko Nishimura. It is well-known that the English and second-price auctions generate the same revenue when bidders have independent private valuations of an auctioned object. That is, both auctions exhibit the *revenue equivalence theorem*. However, if the auctioned object involves risk, the theorem breaks down when bidders are non-expected utility maximizers, since submitting one's valuation is no longer a dominant strategy for them under second-price sealed-bid auctions. In this chapter, the authors experimentally examine whether their subjects have expected utility preferences and, if not, whether they exhibit choices consistent with the Allais paradox. The authors show that the two experimental auction markets do not support the revenue equivalence theorem when they introduce a risky auctioned object. Additionally, the English auction yields higher seller revenue than the second-price auction for the subject pool where the Allais type is predominant, as predicted by the theoretical examination under non-expected utility preferences. In Chap. 15, Professors Yoichi Hizen, Keisuke Kawata, and Masaru Sasaki examine the properties of a committee search, in which a decision is made by a group of multiple agents rather than by a single agent. Recently, Albrecht, Anderson, and Vroman (AAV) theoretically analyzed the properties of decision-making in the case of committee search. However, there exist no empirical studies on committee search, mainly because of the difficulty in collecting suitable data. A unique feature of this chapter is the use of laboratory experiments to collect original data in order to test the AAV's propositions. Specifically, the authors examine the propositions that the average search duration is increasing in the number of votes required to stop committee search and that it is also increasing in the number of group members. Overall, the experimental outcomes are consistent with the implications suggested by the AAV model. Chapter 16 is authored by Professors Toshiji Kawagoe and Hirokazu Takizawa. The authors investigate cheap-talk games with private information using an experiment. They find that when the interests of

the sender and receiver are aligned, informative communication frequently arises. While babbling equilibrium play is observed more frequently in conflicting interest cases, a substantial number of players tend to choose truth-telling. In other words, they found over-communication, truth bias, and truth-detection bias, which are not predicted by equilibrium refinement theories. They explain these results using a level- $k$  model, which is a non-equilibrium theory of players' initial responses to games that reflect the strategic thinking of players.

Part VI contains three attempts to extend contract theory by applying the insights of behavioral economics. Chapter 17 is Professor Hideshi Itoh's initial attempt to develop a behavioral contract theory. By incorporating players' other-regarding preferences, such as inequity aversion and status preferences, into the standard moral hazard models of principal-agent relationships, he shows that other-regarding preferences interact with moral hazard in some important ways. For example, a principal is worse off when his agent cares about the principal's income. In the presence of symmetric self-regarding agents, the principal is shown to be able to optimally exploit his agents' other-regarding behaviors by designing contracts appropriately. Further development of behavioral contract theory is surveyed in the addendum of the chapter and found in the two subsequent Chaps. 18 and 19, both of which are written by Professor Junichiro Ishida. In Chap. 18, Ishida incorporates self-esteem concerns as a behavioral motive into a simple principal-agent framework. By specifying the agent as benefiting from having a positive self-image (expected self-attributes), he provides a unique model that describes "self-handicapping" behaviors to withhold effort with the intention of obscuring his own attributes. An important implication is that uncertainty reduces agency costs and thereby increases the effort incentive because uncertainty reduces the need for self-handicapping. In Chap. 19, Ishida again considers a principal-agent model in which the agent does not have perfect knowledge about his innate ability (attributes). When the principal has superior knowledge about the agent's ability and decides whether to promote the agent based on the private information, promotion decisions act as credible signals of the principal's evaluation and have the "looking-glass" effect on the agent's self-confidence. The principal's strategic promotion policy that incorporates the "looking-glass" effect potentially explains why demotions are rare in practice, even when employees' incompetence level increases, a phenomenon otherwise known as the Peter Principle.

Part VII contains four chapters on anomalous stock return behavior against market efficiency. In Chap. 20, Professor Takahiro Azuma, Katsuhiko Okada, and Yukinobu Hamuro examine the media's influence on stock returns, focusing on investor behavior surrounding revisions of sell-side analysts' ratings. Azuma et al. find that media-covered stocks show significantly lower post-announcement returns than non-media-covered stocks. A more careful examination of media-covered stocks finds that while downgraded stocks show little difference in post-event returns regardless of the degree of sentiment, upgraded stocks do show a difference. These results are consistent with the view that heavy-media-coverage stocks are overpriced due to individual investors' noise trading. In Chap. 21, Professors Yoshio Iihara, Hideaki Kiyoshi Kato, and Toshifumi Tokunaga document the winner-loser

effect in the Japanese stock market. Surprisingly, the well-known stock return regularity that is a characteristic of American and other nations' stock markets, momentum, is not observed in Japan. Instead, a significant short-term return reversal exists for the portfolio of the formation period of 1 month. Iihara et al. argue that investor overreaction may be a possible cause for the 1-month return reversal. Although a number of studies have examined Japanese stock markets since this paper was first written, no momentum effect has been reported except the conditional momentum effect in our addendum. Either the Japanese market is more efficient or our theoretical model is still immature or both. In Chap. 22, Professors Katsuhiko Okada, Nobuyuki Isagawa, and Kenya Fujiwara examine the Japanese stock market response to additions to the composition of the Nikkei Stock Average. This study is an extension of several U.S. studies that focus on stock price effects associated with a change in the composition of the S&P 500 index. All these studies find stock price increases for the added firms. Since the price increase is temporary, a large demand shock such as the excess demand of index arbitragers for shares of the newly added firms moves the price. This finding implies that the demand curve is downward sloping, which is inconsistent with the market efficiency assumption of a horizontal demand curve. In Chap. 23, one of the long-lived anomalies, the Sell-in-May effect, is carefully re-examined using Japanese stock return data. Although Professors Shigeki Sakakibara, Takashi Yamasaki, and Katsuhiko Okada document a similar stock return seasonality, the pattern is not exactly the same. Sakakibara et al. find stock returns are higher for the first 6 months of the year even though the Sell-in-May effect implies that stock returns are higher from November to April. For some reason, Japanese markets do not respond to this global market trend in a timely fashion. The authors call this anomaly the "Dekanshobushi effect." Interestingly, this anomaly still exists.

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