

Preface

Finance as an independent science has been existing for 60 years (Since Harry Markowitz published his Portfolio theory paper in 1952). However, many of the fundamental problems in finance remain unsolved, such as how to value a stock, how to determine the optimal capital structure of a firm, how to determine an appropriate discount rate accounting for total risk of an investment rather than only systematic risk as in Sharpe's capital asset pricing model (1964), etc.

Financial practice has been calling for the solutions to these fundamental problems. In absence of the basic solutions to these problems, more and more practical problems have been cumulated, such as what is the fair P/E (price-earnings ratio) of a stock or a market, what is the appropriate method to measure the bubble of a stock or a market, what is the right approach to calculate a firm's bankruptcy cost arising from debt financing, what is the efficient way to determine the optimal capital structure of a firm, why does "financial conservatism" spread so extensively and persistently, what is the quantitative relationship between total risk and return, how can we determine a (total) risk-adjusted discount rate for valuing an asset or evaluating a project, etc. In shortage of efficient and reliable theoretical solutions, financial practitioners have to make their investment and financing decisions relying only on their intuitions or industrial conventions.

This book records my efforts and solutions to these fundamental problems. [Chapter 1](#) explores the fundamental features of finance, which is necessary for efficiently understanding and solving financial problems. [Chapter 2](#) discusses a financial paradox (growth paradox), which is helpful for examining our financial reasoning and identifying the current phrase of financial theory. [Chapter 3](#) develops a brand new valuation method—valuation based on required payback period, which can overcome most of the limitations of discounted cash flow method (DCF, such as Gordon growth model) and hence is more powerful in stock valuation. [Chapter 4](#) develops a series of brand new models for incorporating total risk into valuation, which include a risk equivalent (coefficient) model, a certainty equivalent (coefficient) model, a risk premium model, and a new CAPM. [Chapter 5](#) develops a series of brand new models for valuing tax shield and bankruptcy cost as well as for determining the optimal capital structure, hence solves the problem of

optimal capital structure and gets more convincing explanations for various capital structure puzzles.

The above fundamental problems as well as the relevant financial concepts and models, such as P/E ratio, Gordon model, CAPM, certainty equivalent, tax shield, bankruptcy cost, optimal leverage, etc., absorb me day and night. My solutions may not be perfect, but they are surely simple and innovative method with theoretical soundness. Since there are no reliable solutions to these fundamental problems in prevailing finance books and journals, the solutions in this book can surely benefit students, researchers, analysts, and practitioners as irreplaceable solutions and supplement theories to prevailing financial theories before the better solutions and theories are emerged.

The solutions in this book have vast application potential mainly in valuation, investment, capital budgeting, risk management, financing, and capital structure decision, etc. Specially speaking, investment banks can use the brand new valuation method and stock valuation model in their operations of IPO, P&A; hedge fund and other investment institutions can use the new stock valuation model and the new theoretical ratio models in their investment selections and decisions. Most business firms can use the new CAPM to improve their capital budgeting and project investment decisions; and use the optimal capital structure model to improve their financing decisions. Commercial banks, rating agencies, and insurance companies can use the certainty equivalent model and optimal capital structure model to evaluate the risk of their customers and make better judgments and decisions.

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I have been extremely busy year after year for seeking all the solutions in this book and have spared little time to perform my duties in my family. Thanks to my father, my mother, thanks for their consistent support from beginning to end; thanks to my wife and my son, they has to deal with all troubles I left to them, and endure various hardships because my research cannot obtain any financial support in current research environment.

Finally, thanks to all people who are kind-hearted to the development of financial theory, since there has been seldom breakthrough discovery in financial theory for recent 30 years though the financial research has been booming strongly.

All the faults and errors in the book are my own. Your criticisms and comments on my reasoning and models as well as writing are warmly welcomed.

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