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INTERMEDIATE FINANCIAL THEORY

THIRD EDITION



Intermediate Financial Theory

Third Edition

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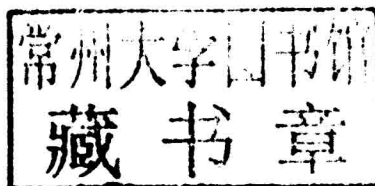
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Preface

For all the suffering that it has caused, the global financial crisis provides a unique opportunity to review what we know or thought we knew about finance. It will challenge and enliven the teaching of finance for years to come. The third edition of *Intermediate Financial Theory* is affected accordingly. While our own goals for the text have not changed, many new topics have been added and many examples have been taken from recent experience. The task of reviewing the entire material in light of the financial crisis is, however, a work in progress and one that cannot be adequately undertaken within the context of periodic revisions of a textbook of reasonable length. Accordingly, it will be pursued on an ongoing basis on the text's website.

The third edition of *Intermediate Financial Theory* features 2 entirely new chapters and very substantial revisions to 11 more. With respect to the latter changes, there is greater emphasis on “behavioral finance” and many of the latest developments in portfolio theory are fully featured. The chapter on the consumption capital asset pricing model has been similarly expanded and brought to the theoretical frontier. Integral to the print version of the text are four Web Chapters. The intent of these chapters is to expand on the basic ideas presented in the text in ways that link them more directly to applied practice. Our review and assessment of the recent “financial crisis” is a particular case in point. Lastly, the third edition attempts to strengthen the link between theory and “the data”; that is, of evaluating a particular theory as regards its ability to replicate the associated data patterns, the so-called financial stylized facts.

While the market for financial textbooks is crowded at both the introductory and doctoral levels, it remains much thinner at the intermediate level. Teaching opportunities at this level, however, have greatly increased with the advent of masters of science programs in finance (master's degree programs in computational finance, in mathematical finance, and the like) and the continuing demand for higher-level courses in MBA programs.

The Master in Banking and Finance Program at the University of Lausanne, which admitted its first class in the fall of 1993 is a program of the aforementioned type. One of the first such programs of its kind in Europe, its objective is to provide advanced training to finance specialists in the context of a 1-year theory-based degree program. In designing the curriculum, it was felt that students should be exposed to an integrated course that would

introduce the full range of topics typically covered in financial economics courses at the doctoral level. Such exposure could, however, ignore the detailed proofs and arguments and concentrate on the larger set of issues and concepts to which any advanced practitioner should be exposed. This latest edition of our text retains this philosophy.

Accordingly, our ambition for this third edition is unchanged from earlier ones: first to review rigorously and concisely the main themes of financial economics (those that students should have encountered in prior courses) and, second, to introduce a number of *frontier* ideas of importance for the evolution of the discipline and of relevance from a practitioner's perspective. We want our readers not only to be at ease with the main concepts of standard finance (MPT, CAPM, etc.) but also to be aware of the principal new ideas that have marked the recent evolution of the discipline. Contrary to introductory texts, we aim at depth and rigor; contrary to higher-level texts, we do not emphasize generality. Whenever an idea can be conveyed through an example, this is the approach we choose. We continue to ignore proofs and detailed technical matters unless a reasonable understanding of the related concept mandates their inclusion.

Intermediate Financial Theory is intended primarily for master level students with a professional orientation, a good quantitative background, and who have completed at least one introductory finance course (or have read the corresponding text). As such, the book is targeted especially for masters students in finance, while remaining accessible and appropriate for an advanced MBA class in financial economics, one with the objective of introducing students to the precise modeling of many of the concepts discussed in their capital markets and corporate finance classes. In addition, we believe the book can be a useful reference for doctoral candidates in finance, particularly those whose lack of prior background might prevent them from drawing the full benefits of the very abstract material typically covered at that level. Finally, we hope it will be a useful refresher for well-trained practitioners. Although the mathematical requirements of the book are not great, some confidence in the use of calculus as well as matrix algebra is helpful.

In preparing this third edition, we maintain our earlier emphasis on the valuation of risky cash flows. This subject—asset pricing—constitutes the main focus of modern finance, and its shortcomings have come powerfully to the fore in the recent financial crisis. We also emphasize the distinction between valuation procedures that rely on general equilibrium principles and those based on arbitrage considerations.

At present there are four Web Chapters that are available to readers. These represent substantial extensions of ideas introduced in the print version of the book. Web Chapter A translates the Consumption CAPM model into a fully dynamic production setting so that the mutual influence of the financial markets on and by the macroeconomy can be made more explicit. Web Chapter B goes beyond using the martingale measure to price options to an exploration of the use of options concepts in the evaluation of complex securities, real

investment projects, and strategies of portfolio management, while Web Chapter C returns to a more general treatment of differential information. Lastly, Web Chapter D explores the origins and evolution of the recent financial crisis and does so in a way that is intended to assess the strengths and weaknesses of the current state of financial theory. By placing these chapters on the Web, we can more easily update and add to the material presented therein. More chapters will be added in future years.

Over the years, we have benefited from numerous discussions with colleagues over issues related to the material included in this book. We are especially grateful to Rajnish Mehra, Arizona State University; Elmar Mertens, IMF; Paolo Siconolfi, Lars Lochstoer, Kent Daniel, Andrew Ang and Tano Santos, all of Columbia Business School; and Erwan Morellec, University of Lausanne, the latter for his contribution to the corporate finance review of Chapter 2. We are also indebted to several generations of teaching assistants including François Christen, Philippe Gilliard, Tomas Hricko, Aydin Akgun, Paul Ehling, Oleksandra Hubal, and Lukas Schmid—and of MBF students at the University of Lausanne—who have participated in the shaping up of this material. Teaching and research assistants from the “other side of the Atlantic” have been hugely helpful as well, most especially, J.K. Auh, Mattia Landoni, and Zhongjin Lu. Their questions, corrections, and comments have led to a continuous questioning of the approach we have adopted and have dramatically increased the usefulness of this text. Finally, we reiterate our thanks to the Fondation du 450ème of the University of Lausanne for providing “seed financing” for this project.

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*N'estime l'argent ni plus ni moins qu'il ne vaut:
c'est un bon serviteur et un mauvais maître
(Value money neither more nor less than it is worth:
It is a good servant and a bad master)*

Alexandre Dumas, fils, *La Dame aux Camélias* (Préface)

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Dedication

J.B. Donaldson wishes to dedicate his involvement in this book enterprise to his parents, Brown and Rachel Donaldson, his wife Charissa Asbury, Mario Gabelli who offered financial support through the provision of his academic chair and, most especially, his physicians, Kareem M. Abu-Elmagd, MD, and Guilherme Costa, MD, of the University of Pittsburgh Medical Center. In various ways, all these persons were vital to the completion of the book.

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