
APPENDIX A^s

Epilogue

Afterthoughts and Opinions. **Preliminary**

YOU have traveled a long distance with me throughout this book. We have now reached the Epilogue, where by tradition, I am allowed to voice my own personal and perhaps unscientific opinions. I want to leave you with some of my thoughts on business and finance education, finance as a discipline, and financial research.

In theory, there is no difference between theory and practice. In practice, there is.

— Yogi Berra

A·1 Thoughts on Business and Finance Education

By nature, most disciplines in business schools, but especially finance, are closely related to practice. It is not an overstatement to claim that the majority of ideas in finance were either invented or developed in Academia, before they crossed over into practice. Unfortunately, over the years, fundamental misunderstandings have developed, which have become the source of much frustration among both faculty and students. Let me try to correct some of them.

A·1.A. Common Student Misconceptions

Some students seem to believe that business schools exist primarily to increase salaries and to enhance job opportunities. As a result, they expect a “vocational education.” It is no wonder that they are especially fond of some practitioner-teachers, who can share plenty of war stories, vouch for the importance of their own teaching in their business environment, and may even help some students to get a job at their own or their friends’ businesses.

This is a sad and limited view of what business schools have to offer. It will necessarily cause their finance education to be a rather unrewarding experience. Vocational training is not what top business schools are good at. The top business schools are without exception *not* vocational training centers, but research centers. Community colleges teach job-specific skills; universities do not!

Business schools provide—or at least should provide—a profoundly intellectual experience. Such an experience allows students to take a fresh look at the world, to explore other business areas for the first time, to learn how to think in economic and business terms, to consider the intellectual foundations of business, and to learn about the most novel ideas—those that have not yet permeated practice. Chances are that the practice in any given company is based on knowledge that the previous generation of managers learned in business schools *ten to twenty years ago*.

The value of an M.B.A. graduate—even to the first employer—is not his/her immediate business knowledge. It makes no sense for M.B.A. students to learn how the fixed-income department at Goldman Sachs works *this year*, which is well known by anyone working there (including the secretaries), and which will surely be best explained by the Goldman Sachs traders to any new hire upon arrival. Instead, the value of M.B.A. students to an employer is the intellectual ability; knowledge of the fundamentals, basic theories and their application; cutting edge ideas; human skills; team skills; sales skills, etc. Some of these skills are native, but most can be taught or at least improved upon by studying. In the end, it is an individual’s versatility and curiosity, an ability to generalize and synthesize, and a talent for bringing an aerial perspective to specific problems that will allow the newly minted M.B.A. to be of value for many years to come.

Naturally, many students feel a great deal of anxiety about job prospects, and therefore they tend to prefer skills that they believe will facilitate immediate placement upon graduation. Trust me: pretending to have been taught business practice in business schools is not what employers want. Employers first and foremost want to hire smart, curious, and enthusiastic individuals, who are solid on the basic concepts and who can apply them to new situations. They can teach their own practices better than business schools can.

Anecdote: The Time Warp

Do you really want to just learn what the CFO knows *today*? In October 2003, City&Guilds (U.K.) released their study of 405 random financial directors. One in seven needs help even switching his or her computer on and off. One in five struggle to save a document. More than one in five need assistance in printing. And a quarter cannot understand spreadsheets. ([Source](#): The Register.)

Student Heterogeneity

There is another factor at play which may make you initially unhappy in your introductory finance class—but it is important that you realize why this is so. Chances are that you will find yourself in a classroom with considerable heterogeneity in student preparation. Some students will be more comfortable with math than other students. If you are taking this course in business school, half the students may have come from a background in which their prime function was finance-related. Usually, such finance work experience will not have left them with solid enough knowledge to skip the finance core course, but it will have left them with the knowledge to help them better integrate the new information. Large and distinct student populations are a fact of life in many introductory finance courses. It is thus inevitable that you find yourself in a classroom in which many students find the tempo of the first course finance too fast and many other students find it too slow. On the plus side, I have found that it can work very well if students with worse backgrounds are tutored by students with better backgrounds. On the minus side, the temptation is high to just let the “finance jocks” take care of the group assignments. Do *not* let this happen, or the preparation problem will accumulate and become unsurmountable.

Realize that there are distinct student populations.

Now put yourself into the shoes of your finance instructor. There is plenty of material that can absolutely not be skipped. Interviewers expect students to have a solid grasp of the finance basics (but fortunately not of practical esoterics). It is not uncommon for an interviewer to ask questions that could go right onto the midterm or final. To appreciate the difficult task of the instructor, now add the heterogeneity in student background. The need to grade does not improve student happiness much, either. The well-prepared students start out with a considerable headstart when it comes to test performance relative to students who come from non-quantitative and non-financial backgrounds. The world is not fair—and neither is the grade competition in such a course.

It is impossible to time a finance course in a business school core, so that both the well-prepared finance nerds and novices will be happy all the way.

In the end, there is no way around it: it will be a challenge for previously unprepared and non-technically inclined students to keep up. It is the task of the instructor to make this a surmountable challenge. This is the most important goal of a finance course—*all* motivated students must be able to acquire a solid finance background. But if you are one of those students without quantitative and financial preparation, you will inevitably feel overwhelmed by your class experience. Let me advise patience, practice, and reflection: it will all eventually fall into place, kemosabe, and you can do well *in the end*. Some of my best and brightest students felt frustrated during the course, but they kept at it, studied and learned twice as hard, and ended up at the top of their class. Struggling and anxiety along the way are necessary, maybe even desirable, and in the end unavoidable.

Advice to the “non-quants”: As a less prepared student, you must struggle.

A-1.B. Common Faculty Misconceptions

Some faculty are as mistaken as students. They seem to believe that ideas in Academia are too difficult to communicate to M.B.A. students in an exciting and interesting fashion. They deemphasize current academic research in their classes. They rarely talk about what it is that drew themselves to business schools rather than to practice: the excitement of new knowledge and research, and the opportunity to convey ideas to students and the world at large. If academic research is not universally incorporated into the curriculum and identified as such, then it is not surprising that students find little value in it. In fact, if the research ideas are so obscure that they cannot be explained to and appeal to M.B.A. students, they probably are of little interest to begin with.

Here is my personal appeal to faculty in core courses: in addition to integrating current research throughout the curriculum, please reserve your final teaching session of class to talk about academic research in finance in general terms—and the academic research in *your* own department, specifically. My own experience tells me that students will find this to be the single most popular session of the entire course.

A·1.C. Business School vs. Practice

Table A.1: Advantages and Disadvantages of Business Schools over Business Practice

Some Examples of	
What Business School Teaches Better Than Practice	What Practice Teaches Better Than Business School
General, universal knowledge	Job specific knowledge
Concepts of business	The specific business
General tools (statistics, data, economics, etc.)	Specific tools (e.g., a particular accounting system)
Marketing methods	Our product or service marketing
Method of thinking	Method of company's practice
Concepts of ideas for the next 20 years	Implementation of ideas from the last 10 years
Knowledge for a lifetime	Knowledge for this year
Leadership principles and theories	Learning how to lead a particular Set of people
Source of conflict	Conflict resolution with a specific person
Learning by study	Learning by doing
Reflection	Action
Selling principles	Selling our product or service
Negotiation principles	Negotiating with specific customers
Forests	Trees

Business schools can teach some subjects better than practice, but not all. This is *not* to say that practice is any less interesting than Academia. It *is* to say that practice is best taught by practice (the employer) than by business schools. As an M.B.A. student, be patient: the fixed income department at Goldman Sachs will explain in its own training program the specialized fixed income and institutional knowledge that it will require. The fixed income department does not seek individuals who already know what Goldman Sachs will teach in its first week. Instead, the fixed income department seeks smart, flexible, and open-minded individuals, with a solid understanding of fundamentals—of forests, not of trees. Table A.1 is my perspective on who does what better.

Business schools should focus on subjects that they can teach both well and better than practice. One or the other is not enough. For example, there is ample research that has shown that taller people are more successful. But height is not something that business schools can contribute much to, so we should not teach it. Take the second: I wish I knew how to teach you how to “sell” anything—products, services, ideas. In my opinion, the ability to sell to other people—to get them excited—may be the single most important skill and key for success in life. Now, some people are naturally adept at selling, others can learn it, and still others will never be good at it. Unfortunately, although selling ability is undoubtedly enormously important, this does not mean that business schools can and should teach it. It may be better learned by following the company's best salesperson. (I will let you know when I figure this one out!) In sum, do not

expect to learn *everything* you need for success either only in practice or only in school! If you do, you will be disappointed.

A-1.D. The Rankings

In 1988, *Business Week* (BW) began to publish a bi-annual ranking of business schools. This rankings issue has become one of BW's top sellers. Unfortunately, the quality of the rankings is only mediocre. Worse, the influence of the rankings on business education has been both enormous and negative.

The BW rankings are based primarily on “customer satisfaction” surveys of students and recruiters. Consequently, the BW ratings end up mostly as a popularity contest, and are not based on criteria that measure the quality of education. For example, consider another prominent survey: students at California State University at Chico were #1 in *Playboy*'s Party School Rankings. They would probably rate their satisfaction very highly—but this does not make CalState Chico a good school. The same issue applies to recruiters sampled by BW. Most recruiters are themselves alums of *one* of the schools they are asked to rank. Most business school alums have never studied at any school beyond their own—a fact that naturally makes them relatively ill-equipped to make comparisons. (They also see themselves reflected in the students from their alma mater.) Because larger schools have more alums that are sampled, the size of the pool of alums ends up being the primary predictor of “recruiter opinion” in the BW survey. The result is inevitable: the average recruiter ranks his or her own alma mater highest (or at least very highly). Finally, all schools, students, and alums are now catering to and manipulating the BW rankings. Students and alums know that if they do not rank their own school highly, the values of their degrees will go down. And in almost every school, some faculty member will explain this to those students who have not yet understood this basic fact. In sum, popularity ratings are not a great measure of educational quality.

But the most important error of the BW survey is that it treats education as if it were a consumption good sold by vendors. Instead, education is something that is coproduced by the school *and the student*. Almost anyone with an above-average IQ can get a degree in a business school today, but its usefulness is largely determined by the depth of engagement of the student. A student who coasts will gain little, no matter how good the school is.

This is not to say that there are no quality differences between schools. There are quality differences, but the BW rankings do not fairly reflect them. My advice to any student is to consider many rankings only as useful supplementary indicators. For example, Harvard Business School (HBS) should probably be ranked as the #1 (or, say, top-5) business school for a general M.B.A. education today. But HBS is not #1 in every field. Its finance education, though superb, is not the world's best. There are other schools, such as the University of Chicago, that are probably better in this specific field. In contrast, HBS' education in corporate strategy—where its world-renowned case method works well—is undoubtedly #1. Yale, my prior school, may not boast a top 3 M.B.A. program, but it offers the #1 ranked education for management of not-for-profit organizations today. And so on. Finally, quality differences among similarly ranked schools are often modest: most business schools teach similar curricula. The material in this book should appeal to students of any school. My personal guess is that the educational

Anecdote: Success in Business: Grow up!

Timothy Judge, a University of Florida management professor, finds that controlling for gender, weight, and age, each inch in height seems to add about \$789 a year in salary. In his study, greater height boosted subjective ratings of work performance, including supervisors' evaluations of how effective someone was on the job. It also raised objective measures of performance, such as sales volume. The relationship between height and earnings was particularly strong in sales and management, but was also present in less social occupations such as engineering, accounting and computer programming.

Source: Yahoo.

quality difference between the #1 school and the #10 school is very small (as it would be between #10 and #30, or between #30 and #100). *The variation in what an individual gets out of an M.B.A. program within one individual school just swamps the average quality variations across schools.* It is up to you to make your education top-ranked.

Fortunately, although deciding on the right school is a tough problem, there are many good choices to pick from. It is especially encouraging to me that many schools that never show up in any of the rankings are offering excellent business educations. Again, by selection of classes and instructors, a student can easily get a worse business education at, say, Harvard Business School, than at, say, Notre Dame, even though Harvard clearly outranks Notre Dame in any ratings.

One trend that has been worrying me is that, in their quest to improve on their Business Week rankings, many schools have begun to make curriculum changes that I consider to be counterproductive. To my own surprise, I am hearing this complaint from more and more top recruiters from Wall Street these days. They are discovering that smart undergraduates or masters of finance students are becoming better at the basics than MBA students. Again, it is exactly the academic basics and ways to approach and solve problems that these recruiters want. They are just fine teaching their own specific applications in their training programs. They do not want courses that are “all application and no theory,” where theory does not mean an abstruse collection of symbols, but the proper way of approaching the problems of financial economics—exactly what this book has been trying to teach.

SIDE NOTE



In my opinion, there are no good distance-learning universities in existence today. (This may change in the future.) The most prominent, the so-called University of Phoenix, is a great business for its owners, but not for its students. Its degrees are not recognized by others and it is not accredited by the AACSB. (This is not an absolute necessity for an established top-10 school, but it is necessary for an upstart school.)

A·2 Finance As A Discipline

A·2.A. Art or Science?

I have stated several times throughout the book that finance is as much an art as it is a science. All three parts of finance—valuation, investments, and financing—have simple conceptual underpinnings, but their applications in real life are difficult. And for all three of them, there is no alternative: finding the proper value, the proper portfolio, the proper capital structure may be tough, but this is what it is all about. The difficulty of these questions is good news for practitioners and academics alike: it means that computers will not replace them for a long time to come.

What to do for now? Given that all methods have their errors, the best advice is to use common sense, to employ a number of different techniques to come up with a whole range of possible answers, and then to make a judgment at the end of the day as to what appears most reasonable in light of different models and estimates.

A·2.B. Will We Ever Fully Understand Finance?

No! It is the nature of the beast. Most of finance is a social science. When there are no arbitrage conditions to constrain permissible behavior and prices, behavior and prices can and will deviate from the theory. On occasion, this leads some to conclude that finance is less worthy of study or even a lesser science than, say, mathematics or physics. This is a mistake. The questions are different. Finance is not interested in the big bang, and physics is not interested in the behavior of C.F.O.'s. The study of one is not more or less worthy than the study of the other.

Finance and physics even share many similar philosophical issues: Some questions permit more precise answers than others. Some systems (like the weather and stock prices) are chaotic and

difficult to predict, while others (like Newtonian mechanics and option prices) are more exact. It may even surprise you that I am comfortable stating that economics and finance ask many questions to which the answers are more difficult and complex than those often pondered in mathematics and physics. For example, economic agents can react to economic forecasts, which makes predicting the stock market even harder than predicting the weather. Imagine how much more difficult it would be for atmospheric physicists to predict the weather if the weather read the weather forecast, and changed its behavior after reading the weather forecast!

Unfortunately, we are now encountering a new hindrance to progress in finance. Financial institutions have come to consider their data to be their proprietary competitive advantage. Fear of legal liability is further limiting the data that becomes available for public study—and given the litigiousness of U.S. society, justly so. Sadly, many of the most interesting questions in finance therefore may no longer be researchable or answerable.

The fact that we do not have all the answers is good news and bad news. The bad news is that we will never fully understand financial markets and individuals. The good news is that our knowledge will continue to improve, and that there is plenty of space for new and exciting research in finance. For me, this means finance is still intellectually challenging enough to remain “fun.”

A·3 Finance Research

Finance research is not just for aspiring academics: consulting firms are basically research firms. Academics and consultants may have different audiences, production speeds, team systems, and evaluation processes, but they both research issues of interest to business and do so using similar methodologies. There is also much cross-fertilization: many professors work regularly with major consulting firms—and some have even quit Academia altogether and departed for higher paying jobs in consulting.

A·3.A. Accomplishments of Finance

Rather than taking up space here, let me just refer you to my paper called *The Top Achievements, Challenges, and Failures of Finance*, available for free download at the book’s website or the Social Science Research Network (www.ssrn.com).

A·3.B. Interesting Current Academic Research

Fortunately, finance is by nature a very applied discipline. If you have read this book, you already understand the main questions and problems in finance and financial research today. You do not need a higher finance degree. Unfortunately, academic finance journals (and many academics) love obscure jargon and algebra. It may or may not require some extra training in “language” for you to follow the writeups of academic papers in academic journals. But, in the end, with just a little bit of extra jargon, you should be able to pick up the important journals and understand the most cutting-edge and interesting research ideas in finance today.

A·3.C. Getting Involved in Academic Research

My own recommendation to an aspiring student of finance is first to learn what the top professors (and especially the younger professors) in your own school are working on. Then, browse SSRN for current working papers. Finally, you should work for a professor in your finance or economics department, even if it is unpaid—though you should pick a professor who does not have too many assistants already. You will learn more in this one-on-one contact than you will learn from taking many classes.

A·3.D. Finance Degrees

The most common finance degree in many of the top schools is the M.B.A. with a specialization in finance. But increasingly, many universities, such as UC/Berkeley, Princeton, and Wharton, are offering undergraduate degrees in finance. The Harvard economics department may well feature the best finance department in the world right now, and it teaches only undergraduates and Ph.D. students. Similarly, universities like Brown and the University of Chicago are just beginning to expand financial economics curricula into undergraduate education. Finance definitely qualifies as a subject with no less intellectual rigor than economics, and no more of a specialization/vocational education component than, say, pre-med or biochemistry.

There are also some other programs that offer masters programs in finance, e.g., the N.Y.U. program in mathematical finance, offered by the Courant Institute. Typically, these programs have a bent towards financial engineering. Their graduates tend to come from specific backgrounds (usually some other engineering discipline), and their graduates tend to work in specific types of jobs (typically in derivatives and fixed income modeling). Finally, there is the Ph.D. track, discussed next.

A·3.E. Academic Careers in Finance and Economics: A Ph.D.?

Finance is a subfield of economics. About one-third of its professors have an economics Ph.D. instead of a finance Ph.D. Either degree is sufficient—although it is imperative for the future academic to have solid grounding in both disciplines.

The typical Ph.D. program in finance takes between 4 and 8 years. Unlike most degree programs, success is not guaranteed. About one-third of accepted students drop out, typically after 2 to 4 years—not a cheap outcome. Although qualifying exams, usually taken in the first two years of the program, are very challenging, the biggest hurdle for almost every Ph.D. student to overcome is the transition from classroom work to academic research. This is a Gordian knot, and success is difficult to predict. Although intelligence and smarts are necessary, it is not mathematical sophistication that determines success. Very little of finance uses more than plain algebra—although it does use lots of it. Instead, the successful Ph.D. student must develop a problem-relevant intuition and creativity. If I only knew how to translate this skill into a recipe!

Although the first 4 years in Ph.D. programs are usually paid for by full stipends by the university, the opportunity costs and the uncertainty of ultimate success mean that only the most intellectually interested students will find a Ph.D. program to be a rewarding endeavor. For the successful graduate, job opportunities tend to be plenty and lucrative. Even academic careers are not exactly a vow of poverty. In 2003, the typical first year Assistant Professor in a top business school earned somewhere between \$130,000 and \$180,000 per year. Industry jobs in financial or consulting institutions sometimes pay more even in the first year, but their big advantage is that salaries tend to escalate far more rapidly than those in Academia in subsequent years. Finally, many economics and finance Ph.D.s pursue governmental careers, e.g., at the *International Monetary Fund* or the *World Bank*.

It is very encouraging that many universities and institutions today conduct terrific academic research in finance and economics. Thirty years ago, only a handful of schools were able to produce great papers, but this time of exclusivity has passed. This does not mean that there are no differences in average academic quality. I will volunteer here my personal impression of the rank order of academic finance departments today, which is based on the tendency of departments to successfully attract faculty from other departments. In my opinion, the top academic department today is the University of Chicago. It is followed closely by “Cambridge,” which is really the combination of Harvard (economics and finance) and M.I.T. (economics and finance). A large number of schools vie for the ranking spots right after. Among them, but not exclusively, are (in alphabetical order) Columbia, Duke, N.Y.U., Northwestern, Stanford, U.C./Berkeley, U.C.L.A., Wharton, and Yale. These schools each have their unique advantages and disadvantages, and regularly succeed in stealing faculty from one another.¹ There are also

¹I almost surely have omitted some schools by mistake.

a large number of excellent schools, many of which have individual faculty who are every bit as good as some faculty at, say, Chicago, but which typically do not have the same overall average academic quality or resources.

The average quality of a finance or economics department can make an important difference for Ph.D. students, however. They benefit greatly from the variety of interaction. Therefore, a Ph.D. from any top academic institution would make an excellent springboard into a top-notch academic economics or finance department, or into a very high-quality investment or consulting career.

A·3.F. Being a Professor — A Dream Job for the Lazy?

What does a professor do? Multiply the number of classes per year by the hours per class, and you arrive at a number of 120–180 hours per year. Is being a finance professor the ultimate dream job for the lazy?

Sorry to disappoint you—the opposite is the case. The classroom hours during which you see your instructor are just a small part of the job—most comparable perhaps to the small number of hours in which a litigation lawyer is in the courtroom. The rule of thumb is that every hour of teaching of a new course requires about ten hours of preparation. This includes topic selection, comparative evaluations of various textbooks, reading of the relevant literature, preparation of slides and homeworks, and so on. Many finance professors do not teach exactly what is in any one textbook, but inform *themselves* about what *they* should teach, how *their* material fits together in one coherent set, what relevant papers have recently appeared in the literature, what relevance their courses and subjects have to current events and their own locale and audience, where they think the textbooks are wrong, how their finance courses relate to other academic areas, and so on. (Fortunately, once prepared, a course would take only about two hours of preparation for each hour of teaching.) Add this all up, and the 150 hours have already increased to about 600–800 hours. In addition to course preparation and lecturing, there are class handling tasks, office hours, teaching assistance coordination, and grading. This easily adds another 100 hours per year. Finally, many finance professors get roped into holding speeches at school events, and giving lectures not within the context of their regular classes. A typical finance professor may spend about 800 to 1,000 hours per year on teaching related issues.

Is this it? Of course not! Tenure-track finance professors are promoted based on their research. Where do you believe the insights in this book have originally come from? Yes, most financial concepts are now heavily used in practice, so even practitioners know them—especially if they were taught concepts in their own academic training decades ago—but it is the academic published research that is responsible for 99% of what you have read in this book. After all, if smart practitioners invent something useful, they do not teach it—they keep it secret and try to sell it. How much time do professors spend on creating knowledge? Writing an academic paper can take anywhere from 100 hours to 1,000 hours. I know this from painful experience, having written papers that fall into both extremes of this spectrum. Moreover, a good amount of research flops and thus never ends up in a published paper. After all, this is why it is called research and not development! In total, a research-active professor will publish one or two papers per year spending about 500 to 1,500 hours per year on research. Attending conferences and seminars that are necessary to keep up with the profession and publicize one's work may require another 100 hours.

Is this it? Sorry, still no. There is service. Students need advising—undergraduate students, masters students, and Ph.D. students. Universities are governed by the faculty and run by committees that need to be staffed. Alumni and potential donors need to be charmed. Depending on the particular university and one's particular role, this can be anything from 2 hours per week to 10 hours per week. In-school service therefore sums to another 100–500 hours per year.

Is this it? Still, no. For all of the aforementioned tasks, you may be able to catch your professor in the act—that is, you are the direct beneficiary or may be present when he or she is spending time working thereon. However, professors also have tasks that are not local. An important

part of a professor's job is service to the profession overall. Academia lives by peer evaluation. This applies both to papers and careers. Journals need referees to judge papers. Schools need outsiders to write academic letters for promotion. Refereeing a paper or writing a reference for another professor at another university (should) take at least a day (10 hours). Different professors get different number of external evaluation requests—my own number sits at about 30 per year, consuming about 300 hours per year of my time. There is very little direct reward for doing a good, conscientious job on refereeing and referencing, but it is necessary to make Academia work. As an external referee or evaluator, you are also literally making or breaking someone else's career. It is every professor's duty to take these tasks very seriously.

Putting this all together, my typical year has about 2,500-3,000 hours of work per year. On an hourly basis, my compensation would probably be five times higher if I worked for a top consulting firm or investment bank. (If you read my chapter on ethics, in which I more or less describe economics as the science of "profit maximization" with little concern for others, I hope you will see the irony.) So, why do I work for a university? Simple—I love my work. I love teaching students, I love writing research papers, and I love having the relative independence to do what I want to do that only an academic job can provide. Yes, not every single task is enjoyable, but overall, it is the best job for me.

Now I must admit that telling you all about what I do in a typical year had a second hidden agenda. I want you to understand the difference between a full-time professor and a part-time professor. Understanding the full scope of professorial obligations will hopefully make you appreciate why you need "the real deal." Yes, both faculty and students can benefit from some lecturers who know practice well, who are only teaching what they themselves learned in their programs (often decades ago, though supplemented with their practical experience), and who do not participate in academic research and in the running of the university and of the academic profession. In fact, many lecturers are very valuable, both to the research faculty and to the students. They can complement our academic knowledge with some practical experience. And a small number start out as lecturers and over time turn into full faculty and excellent researchers. But it is the regular faculty that remains the backbone of financial economics—who provide you with new knowledge to navigate the broad continent of finance over the next few years.

A·3.G. The Best Finance Journals

The top academic journals in finance today are *The Journal of Finance*, the *Journal of Financial Economics*, the *Journal of Financial and Quantitative Analysis*, the *Review of Financial Studies*, and the *Journal of Business*. However, there are also many other good outlets for academic research. For example, economics journals have published some of the most influential work in finance. Other journals are written with more of a practitioner audience in mind, such as *Financial Analysts Journal*.

Although numbers do not tell the whole story (it is impact that counts!), the tenure standards for professors range from about 8-10 papers in the top journals for a Chicago professor, to 5-7 papers for a school ranking at around #10, to 3-5 for a school ranking at around #30. The top journals have rejection rates of about 90%. A successful academic will write about 2-3 papers per year, but publish only one of them in a top journal.

A·4 Bon Voyage

Our book has covered the principles of finance in some depth and breadth. You can trust me when I say that if you have read and understood these chapters, you are very well prepared for the next steps in your finance/business education. (You can choose your next courses *à la carte*: investments, derivatives, corporate finance, fixed income, financial institutions, international finance, or something else. If you are still curious to learn more, visit the book's web site at <http://welch.econ.brown.edu/book>.)

But even more important to me than teaching you finance has been teaching you how to approach problems: when you need to solve a new problem, think in terms of the easiest numerical example that you can come up with, and only then translate whatever you have learned from your simple example into something more complex—be it a formula or a more complex scenario. If you are facing a new problem, even if you do not know or remember any of the formulas in this book, given time, you should now be able to “reinvent” them. When you encounter a complex new problem in your company, do not despair, but gradually work your way up from the simplest versions.

I have enjoyed writing this book in the same way that I enjoy writing my academic research papers, and pretty much for the same reason: it has been like solving an intriguing puzzle that no one else has figured out in quite the same way—a particular way to see and explain finance. Of course, writing it has taken me far longer than I had anticipated—four years and still counting just for the first edition.

But it will all have been worth it if you have learned from my presentation. If you have studied the book, you should now know about 90% of what I know about finance. Interestingly, there were a number of topics that I thought I had understood, but had not—and it was only my having to explain it that made this clear to myself. And this brings me to a key point that I want to leave you with—never be afraid to ask questions, even about first principles. To do so is not a sign of stupidity—on the contrary, it is often a sign of deepening awareness and understanding.

I have no illusions that you will remember all the fine details in this book as time passes—nor will I. But more than the details, I hope that I will have left you with an appreciation for the big ideas, an arsenal of tools, a method to approach novel problems, and a new perspective. You can now think like a financier.

Ivo Welch

