

Asset Pricing: Introduction

John Y. Campbell

Ec2723

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Position in the Curriculum

- This course is a natural entry point to financial economics at the PhD level.
- Xavier Gabaix's course Ec2410, Macro-Finance: Behavioral and Rational, is an excellent companion course in asset pricing, taught in the spring.
 - ▶ It covers topics missing from Ec2723, including continuous time, derivative securities, and foreign exchange, and it goes more deeply into heterogeneous-agent asset pricing.
- Other grad courses in finance can also benefit from the asset pricing foundation, including
 - ▶ Ec2725, Corporate Finance and Banking (fall).
 - ▶ Ec2727, Empirical Methods in Financial Economics (spring).
- Ideally you should take all four of these courses to reach the research frontier in finance.

Pedagogical Approach

- Finance theory is quantitative, so the course emphasizes the interplay of theory and empirical work.
- To understand financial markets, one must take the perspective of individual investors (portfolio choice theory) as well as the macro GE perspective.
- Resource allocation matters as well as prices.
- Financial theory has normative implications and can be used to deliver investment advice.
- We can't do everything in one semester, so we don't develop continuous-time methods or finance theory.
 - ▶ Hence the course does not cover derivative securities (options).
- There is plenty of technique in this course, but the emphasis is on tricks to make models analytically solvable, and on the economic intuition that can be gained from analytical solutions of simple models.

Who Should and Should Not Take This Course?

- This course is intended for PhD students 1) in economics, 2) at Harvard and MIT (which have a cross-registration treaty). I assume knowledge of first-year PhD micro, macro, and econometrics.
- It is not intended for PhD students in other fields or from other universities, or for students in professional schools such as HKS. If you are such, please talk to me individually.
- It is not intended for Harvard undergraduates, although I make exceptions for particularly well motivated and prepared students. Please talk to me individually.
- Notwithstanding the above, anyone is welcome to sit in the room and audit the lectures, provided that seats are available.
- Please be aware that 2023 is the last year I plan to offer this course.

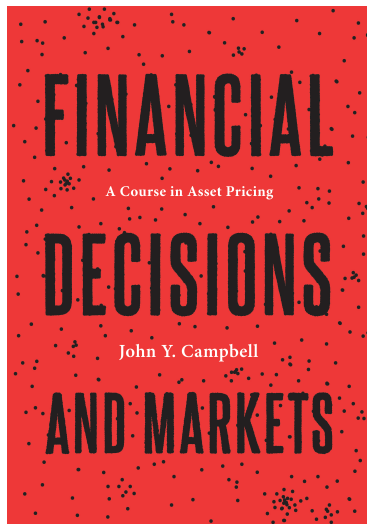
Course Requirements

- Study the textbook!
- Do the readings with an eye to understanding how each one fits into the framework of the course.
- Three problem sets, including two empirical exercises and one “referee report” on a current paper.
- Final exam, scheduled by the Registrar during the exam period.

Textbook, Readings, and Teaching Fellow

- The textbook is my *Financial Decisions and Markets: A Course in Asset Pricing*, Princeton University Press, 2018.
 - ▶ For any student taking the course for credit, I will refund my royalty ($20\% \times \$75 = \15) and sign a copy of the book.
 - ▶ I will hand out an errata sheet listing all known errors in the book. If you find others, please report them to me!
 - ▶ I wrote the book on the basis of the course, so you will perceive the course as following the book.
- The reading list has been updated to emphasize recent papers that are not covered in detail in the book.
- The teaching fellow this year is Jennifer Walsh, jenniferwalsh@fas.harvard.edu.
 - ▶ Jennifer is available to answer questions and provide support as you work on the problem sets.

Rorschach Test



The Separate Identity of Finance

- Most financial economists teach MBAs in business schools.
- Strong loyalty to the AFA, EFA, and other finance professional associations.
- Unusually strong academic field journals (*JF*, *JFE*, *RFS*) which are the outlets of choice even above the top general economics journals.
- Practitioner journals (*FAJ*, *JPM*, *JOIM*) which academics also publish in.
- Important field awards, e.g. Fischer Black Prize.
- Is this just a sociological phenomenon, or is there some intellectual difference that justifies it?
 - ▶ Subject matter (time and uncertainty).
 - ▶ Methodology.

Larry Summers on Finance

Consider “a field of economics which could but does not exist: ketchup economics. There are two groups of researchers concerned with ketchup economics. Some general economists study the market for ketchup as part of the broader economic system. The other group is composed of ketchup economists located in the Department of Ketchup where they receive much higher salaries than do general economists.... Ketchup economists have an impressive research program, focusing on the scope for excess opportunities in the ketchup market. They have shown that two quart bottles of ketchup invariably sell for twice as much as one quart bottles of ketchup except for deviations traceable to transactions costs.... Financial economists like ketchupal economists... are concerned with the interrelationships between the prices of different financial assets. They ignore what seems to many to be the more important question of what determines the overall level of asset prices.” (Summers, “On Economics and Finance”, JF 1985).

The Late Steve Ross on Finance

“Finance uses the modeling framework constructed in economics but, within this scaffolding, finance has taken a different methodological perspective. It is wrong to characterize finance... as simply another of the specialty areas of economics—not unlike, for example, labor economics or development economics or public finance. While finance is specialized in its focus on the financial markets, the differences between economics and finance only begin there. The principal difference is one of methodology rather than focus. If labor markets behaved like financial markets, the theories of finance would be used to study them.... Paul Samuelson’s textbook on economics has the following anonymous quote, ‘You can make even a parrot into a learned political economist—all he must learn are the two words supply and demand.’ By contrast, the intuition of neoclassical finance is quite different. The focus of finance is micro theoretic and the intuition of finance is the absence of arbitrage. To make the parrot into a learned financial economist, he only needs to learn the single word arbitrage.” (Ross, “The Interrelations of Finance and Economics: Theoretical Perspectives”, AER P&P 1987.)

Asset Pricing: The Golden Age and After

- The 1970s-1980s were the “golden age” of no-arbitrage thinking in finance:
 - ▶ No-arbitrage arguments in continuous time (option pricing, arbitrage pricing theory)
 - ▶ Stochastic discount factor: standard language for asset pricing.
- Since the 1990s, asset pricing has reintegrated with the rest of economics:
 - ▶ Macro-finance
 - ▶ International finance
 - ▶ Financial econometrics
 - ▶ Financial engineering
 - ▶ Behavioral asset pricing
 - ▶ Household finance
 - ▶ Market microstructure
 - ▶ IO-finance.

For an Empiricist, This is the Golden Age

- Asset pricing has never had so much empirical content.
- We have both big data and strong theories to take to the data.
 - ▶ Particularly if we look beyond asset prices to fundamental data on firms' business operations, and data on trading volume and the trades, asset holdings, and consumption of heterogeneous investors.
- For an empiricist, this feels like the true golden age.
- Let's start!