



Advanced Financial Planning

Course Information

Instructor: Guozhong Zhu

Office: 748

Email: guozhong@phbs.pku.edu.cn

Office Hour: Monday 2:00-3:30pm

Classes:

Lectures: Mon & Thur 15:30-17:20

Venue: TBD

1. Course Description

1.1 Context

Course overview:

This course has three components. First, it provides a theoretical foundation of household financial planning. Second, it introduces the application of quantitative methods to household financial planning based on the theoretical foundation. Third, it offers an overview of empirical approaches and major empirical findings in household financial planning.

The theoretical foundation of household financial planning is the lifecycle model pioneered by Robert Merton and Paul Samuelsson. The model has been progressing steadily since 1990s as a workhorse in academic research, spanning important financial decisions such as the consumption-saving decision, portfolio choices, housing decisions, insurance allocation, retirement planning and estate planning.

The application of quantitative methods involves solving the lifecycle model numerically, estimating/calibrating model parameters and Monte Carlo simulation. Various moments matching methods have been widely used in determining key model parameters. In recent years, researchers started to apply machine learning and reinforced learning to solving high-dimensional variants of the lifecycle model.

The empirical approach to financial planning includes instrumental variables, regression discontinuity and others. We will cover important empirical findings such as the effects of income risks on portfolio choice, as well as various behavioural biases identified by empirical researchers.

Prerequisites: Advanced microeconomics and advanced macroeconomics

Fair Knowledge of dynamic programming and econometrics

1.2 Textbooks and Reading Materials

- No official textbooks. We'll provide a list of important academic papers.

2. Learning Outcomes

2.1 Intended Learning Outcomes

Learning Goals	Objectives	Assessment (YES with details or NO)
1. Our graduates will be effective communicators.	1.1. Our students will produce quality business and research-oriented documents.	YES
	1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.	YES
2. Our graduates will be skilled in team work and leadership.	2.1. Students will be able to lead and participate in group for projects, discussion, and presentation.	YES
	2.2. Students will be able to apply leadership theories and related skills.	
3. Our graduates will be trained in ethics.	3.1. In a case setting, students will use appropriate techniques to analyze business problems and identify the ethical aspects, provide a solution and defend it.	YES
	3.2. Our students will practice ethics in the duration of the program.	
4. Our graduates will have a global perspective.	4.1. Students will have an international exposure.	YES
5. Our graduates will be skilled in problem-solving and critical thinking.	5.1. Our students will have a good understanding of fundamental theories in their fields.	YES
	5.2. Our students will be prepared to face problems in various business settings and find solutions.	YES
	5.3. Our students will demonstrate competency in critical thinking.	YES

2.2 Course specific objectives

See section 1.1 Context.

2.3 Assessment/Grading Details

Attendance 10%, Assignments 40%, Final Exams 50%

The level of background knowledge may vary among students, but it will be ignored in grading. Grading will be strictly based on outcome, not on effort or progress.

2.4 Academic Honesty and Plagiarism

It is important for a student's effort and credit to be recognized through class assessment. Credits earned for a student work due to efforts done by others are clearly unfair. Deliberate dishonesty is considered academic misconducts, which include plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis.

All assessments are subject to academic misconduct check. Misconduct check may include reproducing the assessment, providing a copy to another member of faculty, and/or

communicate a copy of this assignment to the PHBS Discipline Committee. A suspected plagiarized document/assignment submitted to a plagiarism checking service may be kept in its database for future reference purpose.

Where violation is suspected, penalties will be implemented. The penalties for academic misconduct may include: deduction of honour points, a mark of zero on the assessment, a fail grade for the whole course, and reference of the matter to the Peking University Registrar.

For more information of plagiarism, please refer to *PHBS Student Handbook*.

3. Topics, Teaching and Assessment Schedule (Tentative)

Week	Dates	Topics
1		Household financial planning overview: principles, evolution of theories, industrial practices
2		Lifecycle model: pioneers, follow-ups and the state-of-the-art research
3		Inside the lifecycle model: consumption-saving decision, portfolio choice, housing decisions, insurance allocation, retirement planning and estate planning
4		Quantitative method I: Standard numerical methods to compute the lifecycle model
5		Quantitative method II: calibration and moments-matching estimation
6		Quantitative method III: application of machine/reinforced learning in solving high-dimensional lifecycle models
7		Empirical approaches: an overview of empirical approaches in household financial planning
8		Major empirical findings in household financial planning
9		Review and discussion

4. Miscellaneous

Students are asked to solve dynamic models numerically in the homework, using software such as Matlab or Python.