EE431/438 Economics of Financial Markets and Institutions

Topic 2: Intertemporal Choice

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- Readings:

  No single textbook contains all the materials covered in the course. Reading materials are drawn from several textbooks. It is recommended that students should review the corresponding sections of the textbook on their own. All the textbooks are available in the library. If you cannot find any book, please contact the library staffs for assistance. Other reading materials, for example, lecture note, presentation slides, problem sets, are also available in the library and the website: http://be-moodle.econ.tu.ac.th/. Please contact the circulation desk. If you miss a lecture, you should catch up as soon as possible by reading the corresponding sections of the textbooks.

  1. Pindyck, Robert S. and Daniel L. Rubinfeld. Microeconomics, (6th ed.), New Jersey: Prentice -Hall, 2005 : Ch.15 Investment, Time and Capital Market
  2. Copeland, Thomas E. and J. Fred Weston, Financial Theory and Corporate Policy (4th ed), Addison-Wesley, 2005: Ch1. Section B Capital, Consumption and Investment, pp 4 -11

- Note that this is an advance undergraduate course. Students should have basic mathematical backgrounds, i.e. basic algebra and basic calculus. If you have any problem with mathematics, it is important to review basic mathematics on your own. The mathematical techniques applied in this course will not go further than basic mathematics, which are covered in any fundamental mathematic course for undergraduate students. See Chiang A. , Fundamental Methods of Mathematical Economics, as a reference.

Introduction

- First part of the course : economics of financial market
- Economic theories explain the behavior of savers and investors in the financial market → Demand and Supply of financial assets in the financial market
- The operation and the role of financial intermediation is left for the second part of the course.
- Outline: first part of the course
  - Intertemporal consumption (Capital market, consumption and investment)
  - Decision making under uncertainty (provide important background for the next topic)
  - Pricing models: CAPM, APT, bond market
- Microeconomics: applications on the financial market

Intertemporal Choice : Capital, Consumption and Investment

1 Robinson Crusoe Economy

- total utility function: dimishing marginal utility
- indifference curve: average is preferred to extreme
- intertemporal consumption: marginal rate of substitution (MRS)
  - $MRS_{C_1}^{C_0} = \left. \frac{\partial C_1}{\partial C_0} \right|_{U=\text{constant}} = -(1+\rho^j)$
  - ρ^j denotes the subjective rate of time preference for individual j. High ρ^j means the person j is impatient.
  - MRS shows a trade-off: how many extra units C_1has to be received in order to give up one unit of C_0
- an individual endowed with a resource bundle (y_0, y_1)
- introduction of productive investment opportunity
- consumer's choice : MRS = MRT (marginal rate of transformation), implies $\rho^j = r^j$; r^j
- If $C_0 < y_0$, the person save and invest. If $C_0 > y_0$, the person will disinvest
- A person will save and invest until his subjective rate of time preference equals to rate of return on the last investment

2 Consumption and Investment with Capital Markets

- Assumption: borrow or lend unlimited amount at r, a market-determined rate of interest, no ponzi game condition (you cannot spend more than your life-time income)
- The principal amount , X_0. Future value : $X_1 = X_0 + rX_0$
- Present value : $X_0 = \frac{X_1}{(1+r)}$
- Present value of the initial endowment : $W_0 = y_0 + \frac{y_1}{1+r}$
- Future value of the initial endowment : $W_1 = (1+r)W_0 = (1+r)y_0 + y_1$
- Budget constraint : Capital market line, $C_1 = (1+r)(W_0 - C_0)$
- Consumer's choice: MRS = MRT, $\rho^j = r$
- In equilibium, $MRS^i = MRS^j = 1+r$
- All individuals are better off with capital market
- income effect and substitution effect of a change in interest rate (ignore PPC)

Now Practice exercise 1. Visit the class web, http://be-moodle.econ.tu.ac.th/.

Next Decision Under Uncertainty. To prepare, you may read Chapter 5 in Pindyck, Robert S. and Daniel E. Rubinfeld, Microeconomics, (6th ed.), New Jersey: Prentice -Hall, 2005.