Intertemporal Consumption and Risk

1. In an economy that has money market but investment is not possible, is it possible for a consumer who is previously a borrower to switch to a lender when his current endowment increases? Show by a graph and explain.
2. In the lecture, we assume that Y_0 is positive while Y_1 is zero when we construct a production possibility curve (PPC) by saving and investment. Now suppose that both endowments at current time and in the future are positive. What will happen to the PPC?
3. In an economy that has money market and investment is also possible, if a person has no endowment in both periods at all, what should he do in order to have positive consumption in both periods?
4. Mr. Somsak's preferences depend on both consumption in the current (C_0) and future periods (C_1). The two products are not perfectly substitutes. Somsak has no current endowment $(Y_0 = 0)$, but his fruit orchard will provide him with $Y_1 = 220$ units in the next period.
   (a) Calculate the present value of the endowment when the interest rate is 10 percent for both lending and borrowing.
   (b) Use the information in (a) to draw a budget line. Mark the endowment point, the intercepts on both axes, and calculate the slope of the budget line.
   (c) Show the equilibrium which will likely to occur for Somsak. Specify the size of borrowing or lending in the current period including the amount of good needed to be returned (if he borrows) or to be received (if he lends). Explain your answers clearly.
   (d) Suppose there is a general election in the current period and one of the contender for the members of the House of Representatives gives out 50 unit of good to Somsak in the current period. With the same interest rate what would be the future value of his new endowment?
   (e) From (d) draw a new budget line and compare with the old one. Mark the new endowment point, the intercepts on both axes and explain.
   (f) From (d) and (e) answer question (c) again. Do the answers change from before? If so, how? Explain.
5. Mr. Somsak has a job offer from a bank which will pay him a fixed salary of 54,000 Baht. A direct sales company, which has been operating at a loss, also offers him a salary of 4,000 Baht. However, the company will pay him an extra commission of 100,000 Baht if the company manages to become profitable. There is a probability of 0.5 that he will get the commission. Somsak has the following preferences:

Income (Thousand Baht)	Total utility
4	60
37	190
104	320

(a) Show the calculation of the expected income of the direct sales job. (3 marks)

(b) Show the calculation of its associated expected utility. Which job do you think he will choose? Explain. (7 marks)

(c) Show by graph and calculate the risk premium of the direct sales job. (3 marks)

(d) Suppose the job at the bank offers him only 35,000 Baht instead. Which job do you think he will choose? Explain. (7 marks)