

Labor Economics Field Exam
Spring 2012

Instructions

You have 4 hours to complete this exam.

This is a closed book examination. No written materials are allowed. You can use a calculator.

THE EXAM IS COMPOSED OF TWO QUESTIONS. EACH QUESTION IS WORTH 100 POINTS. YOU MUST OBTAIN AN AVERAGE OF 75 POINTS IN THE TWO QUESTIONS TO PASS THE LABOR FIELD EXAM.

Please answer each question in separate booklets.

First Question. 100 Points

Consider an economy populated by 2 overlapping generations of men and women of size N . In each period t , a new generation of the same size is born and lives for 2 periods. Men and women can be either single or married and make decisions about marriage, divorce, labor supply, h , time spent on household production, d , individual consumption, c , and savings in a risk-free asset b . Agents can marry in both periods of their life. If a man and a woman are married, they are characterized by a match quality θ .

Suppose that until period $\tau - 1$, divorce in this economy is regulated by a mutual consent regime, i.e. a couple is allowed to divorce only if both spouses consent to it. From period τ , the economy is characterized by a unilateral divorce regime, i.e. a couple can file for divorce if for at least one spouse it is optimal to divorce. In all periods, in case of divorce the two spouses receive half of the available resources.

1. (15 points) Write down a model of the household that can be used to characterize household decisions in the mutual consent regime. Explain why mutual consent can be characterized using this model.
2. (15 points) Write down a model of the household that can be used to characterize household decisions in the unilateral divorce regime. Explain why unilateral divorce can be characterized using this model.
3. (10 points) Consider a household that enters period τ as married. Does the switch from mutual consent to unilateral divorce increase or decrease the probability that the couple will divorce? Answer the question as formally as possible (use the two models to answer the question).
4. (10 points) Describe under which conditions the wife's welfare increases after the switch from mutual consent to unilateral divorce. Under these conditions, do wives work more or less with unilateral consent?
5. (10 points) Consider now a man and a woman that must decide whether to marry in period $t < \tau$ and compare them to an identical couple that must decide whether to marry in period $t \geq \tau$. What is the effect of the change in divorce regime on the marriage decision. Be as formal as possible in your answer.

6. (10 points) Suppose now that in all periods married individuals must save in individual accounts (there are no joint accounts). This regime is called property-based regime. In this case, if the two spouses decide to divorce, they receive the resources invested in their account. Rewrite the two models to take into account this modification.
7. (10 points) Describe under which conditions the wife's welfare increases after the switch from mutual consent to unilateral divorce when the economy is characterized by a property-based regime. Under these conditions, do wives work more or less with unilateral consent?
8. (10 points) Suppose you wish to estimate the household models you developed. Construct one or more experiments that would generate the data that would enable you to consistently estimate the main parameters/functions of the model.
9. (10 points) Describe at least one interesting counterfactual that can be simulated using your estimated model. Explain why it is interesting.

Second Question. 100 Points

PART 1: Indicate whether the following statements are true or false. Explain your answer in 4 or 5 lines. Each question is worth 10 points.

- (a) The Life Cycle/Permanent Income (LC/PI) hypothesis implies that the growth of consumption follows a Martingale, that is:

$$\Delta C_{t+1} = \epsilon_{t+1},$$

where ΔC_{t+1} captures changes in income that are not anticipated in period t , i.e. $E_t[\epsilon_{t+1}] = 0$.

A researcher decides to test the hypothesis by regressing ΔC_{t+1} on variables that are known in period t . In particular, she regresses ΔC_{t+1} on lagged values of income, that is, Y_{t-2} , Y_{t-3} , etc, and finds that the coefficients on these variables are not statistically significant.

True or False: This is a powerful test of the theory, and hence her results can be interpreted as strongly supporting the LC/PI hypothesis.

- (b) If the LC/PI hypothesis is true, you would expect to find larger changes in consumption for households where one member becomes unemployed than for those where one member retires.
- (c) Early structural models of female labor supply made two simplifying assumptions: i) the husband always works; and ii) households cannot borrow nor save. Under such assumptions, the standard life cycle model of female participation will tend to understate women's labor force entry and exit rates.
- (d) A researcher has data on individual wages for different industries. For each industry, he regresses wages on age and education and then computes the variance of the residuals. He finds that this variance is very low in the textile industry and it is very high in the publishing industry.

True or false: This result implies that wage risk, and in particular productivity risk, is higher in the publishing industry than in the textile industry.

PART 2: Choose **TWO** out of the next three question. Each answer should be approximately one page long. Each is worth 30 points.

- (a) The simplest version of the life cycle model predicts that, in the presence of income uncertainty, most household should hold some wealth.

The data show that a significant fraction of households hold no wealth. Several papers have argued that this empirical regularity can be compatible with the LC/PI hypothesis in the presence of insurance programs, which provide a consumption floor.

- (a) Explain the intuition behind this argument.
- (b) The introduction of Medicaid increased the consumption floor for poor households. Suppose Medicaid was introduced at different points in time in different states. Explain how you could use this variation to derive a simple test of the argument above. Which type of data would you need?
- (b) Explain why endogenizing human capital accumulation is important for estimating the intertemporal elasticity of substitution of labor supply. Give an intuition for the bias that results if human capital accumulation is ignored (i.e. if wages are assumed exogenous).

- (c) For this question, assume that all monetary values are expressed in real terms.

Consider a country where workers start receiving Social Security benefits at age 60 independently of their labor supply. In year t , the Government suddenly announces than from year $t + 1$ onwards an earnings test will be introduced. Workers above age 60 will have all their earnings above \$5,000 taxed away (unlike in the US, workers will not get back these earnings in the future).

A researcher compares the earnings of 60-year-old workers in periods t and $t + 1$. In period t , 80% of workers have earnings above \$5,000. In period $t + 1$, 80% of workers have earnings exactly equal to \$5,000, and nobody has earnings above \$5,000.

After some years, the researcher repeats the analysis, now comparing period t and period $t + 35$. What do you think will have happened to the proportion of workers earning exactly \$5,000 in period $t + 35$? Do you expect it to be higher or lower than 80%? Refer to the LC/PI hypothesis and the intertemporal elasticity of substitution of labor supply to explain your answer.