

FINAL EXAM FOR ARE 251/ECON 270A

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I. SHORT QUESTIONS

Respond concisely in words and equations to the following short questions. Questions marked **(T,F,U)** should be answered “True,” “False,” or “Uncertain,” and your answer should be briefly justified. Note that points will be awarded based only on your reasoning, not on the answer itself, even if correct.

1. **(T,F,U)** Shortfalls in individual households’ incomes are more likely to occur when interest rates are high.
2. If the (common) preferences of all the people in the village exhibit a level of relative risk aversion greater than one, and all individuals have unlimited access to credit markets at an interest rate equal to the rate of time preference, then what can you say about the evolution of inequality in the village? Will the typical person expect to her consumption expenditures to increase or decrease over time?
3. **(T,F,U)** If intra-household allocations between a male and female are determined by Nash bargaining, then a dramatic increase in the female’s income (as is sometimes created by interventions such as those undertaken by the Grameen Bank) will typically lead to increases in the share of household expenditures on goods and services particularly valued by the female.

II. TECHNOLOGY ADOPTION AND ITS CONSEQUENCES

Consider a village consisting of n infinitely-lived, risk-averse agents who derive momentary utility from consumption and leisure via a von Neumann-Morgensten utility function

$$u(c) + v(1 - a),$$

where c denotes consumption expenditures, and a denotes the proportion of the period devoted to labor. Villagers discount future utility at a rate $1/\beta - 1$.

Half of the village owns land, on which rice is produced. Output may be either high or low. Rice output on a given plot of land is conditionally independent of output on other plots, with the probability of high output given by $p(a)$.

An NGO is introducing a new variety of rice to selected villages in the region. “High” output with the new variety is greater than with the old, but “Low” output is also lower. The probability function $p(a)$ remains the same, but expected output is somewhat greater with the new variety.

1. What data would you want to collect to test the hypothesis that allocations were efficient in the village? What test would you conduct?
2. How might your results help the NGO to predict whether or not the new variety would be adopted, if the NGO were to introduce it?

3. If the NGO introduces the new strain and allocations *are* efficient, then how would you expect the fortunes of the landless households to differ from the fortunes of the landed?
4. Suppose that allocations were efficient and insurance complete *before* the introduction of the new strain, but afterwards the consumption of landowners increases relative to other villagers whenever they experience a “high” output. What might you conclude about the sources of this apparent inefficiency? Is there anything you or the NGO might be able to do to correct it?

III. PRESENTATIONS

Say something trenchant about three of the “Chosen papers” that have been presented this semester. Note that “trenchant” generally implies concision.