DEVELOPMENT FIELD EXAM

January 12, 2011


This exam has two parts: A section of four long questions and a section of four short questions. You should answer only three of the four longer questions. However, please answer all four short questions.


LONGER QUESTIONS

Complete three of these longer questions. Each is worth 30 points. These may require a more sustained argument than the short questions, but clarity and concision are still very desirable. We would prefer that you do not use a blue book, but instead use letter-sized notepaper, written on one side. Please also begin each long question you complete on a new sheet of paper.

1. **Insurance and Inequality** Consider a village of $n$ farmers who live over $T$ periods. Each person has a time-separable von Neumann-Morgenstern utility function, and derives utility from consumption. Each farmer $i$ harvests a quantity of the consumption good $e_i \in \{1, 2\}$ in every period, with the probability of a good harvest varying by person (but not over time), so that $\Pr(e_i = 2) = \pi_i$.

   (a) Supposing that $n = 2$, sketch a state-date tree for the economy described above.

   (b) Relaxing the assumption that $n = 2$, assume that the momentary utility functions of farmers $i$ and $j$ (i.e., the functions governing the utility they receive from consumption at a particular date-state) are both increasing, concave, and continuously differentiable. Show that in an efficient allocation these two farmers' marginal utilities will be perfectly correlated.

   (c) Now suppose that with probability $\psi > 0$ known to the farmers, a government program is introduced at time $t$ that will give eligible farmers (say just farmer 1 in this village) an additional unit of the consumption good in every period from $t$ on. How does this additional source of risk affect the date-state tree you sketched above?

   (d) If in fact the program is introduced, then how do you expect the announcement of this program to affect the allocation of consumption between eligible and ineligible farmers at $t$? At $t + 1$? At $t - 1$?

   (e) It turns out that this village is merely one in a population of villages which are being randomly assigned to "treatment" and "control" groups, with the "treatment" being the introduction of the program. A "baseline" survey of consumption

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expenditures is being conducted at $t-1$, with a follow-up scheduled for $t+1$. The reseachers conducting the study are planning to use a "double-difference" strategy to estimate the average treatment effect on consumption (for eligible farmers) and on "spillovers" for the consumption of ineligible farmers. What do your answers to (b) and (d) imply about the interpretation of these estimates?

2. **Technology Adoption** Analyze and contrast the positions of Foster and Rosenzweig, Duflo, Kremer, and Robinson, and Suri, on the importance of profitability for the adoption of fertilizer and improved seeds in Africa. Explain with precision how each support its position, reporting in detail on the empirical evidence if it applies. Explain how each argues against studies that contradict its position in the debate. State your own view in this debate.

3. **Ethnic and social divisions**

    (a) Characterize the empirical relationship between country-level ethnic diversity, public policy outcomes, and economic performance over the past fifty years. Which region of the world was arguably the most adversely affected by high levels of ethnic diversity?

    (b) Discuss at least two distinct theoretical mechanisms that could link high ethnic diversity to low public goods provision. Discuss the empirical evidence on the relative importance of these various channels.

    (c) Describe at least one public policy approach that could potentially mitigate the adverse effects of diversity on public goods and economic performance. In your view, are these policies likely to be successful in practice? Why or why not?

4. **Education and economic development**

    (a) Discuss the various channels for why education matters for development. What does the empirical evidence say about the relationship between growth and education? How might education affect the way we think about the effects of institutions on growth? Be sure to cite relevant studies.

    (b) If education is important for development, why are policy interventions necessary? Discuss in detail two studies that have studied interventions aimed at increasing the demand for schooling. Discuss in detail two studies that have looked at supply-side interventions for schooling. Be sure to provide a discussion of the data, econometric approach, and robustness of the findings.

Please answer these questions in no more than one or two paragraphs. Each of these questions is worth ten points. Questions marked (T,F,U) should be answered True, False, or Uncertain; however, only your explanation of your answer to such questions will have any bearing on your score.

1. Consider a farm-household consisting of two people, One and Two. Each has time-separable von Neumann-Morgenstern preferences, with momentary utility functions increasing, concave, and continuously differentiable. Initially, the only way in which the two differ is that One is more patient than Two (i.e., One's discount factor is larger than Two's), and data collected at $t = 0$ show that each consumes the same bundle. But data collected subsequently show increasing levels of inequality, with two consuming a progressively smaller share of household resources. Researcher $A$ claims that this is perfectly natural, and doesn't call for any policy response: the two people are simply making an optimal intertemporal trade, with patient One making an initial loan to impatient Two, which is then subsequently repaid. Professor $B$ has read Mazzocco (2007) and claims otherwise, asserting that this increasing inequality is instead a consequence of inefficient intra-household allocation. How could you go about settling this disagreement empirically? What data would you need, and what kinds of tests might you conduct?

2. How do Jacoby, Li and Rozelle define and measure hazard of expropriation?

3. What impact did the HIV/AIDS epidemic have on African per capita income growth during the 1980-2010 period? Briefly lay out the leading macro and micro factors.

4. Briefly describe the Big Push model of Murphy, Shleifer, and Vishny (1989). Discuss one set of conditions under which multiple equilibria will arise in their model?