Final Exam

This is a take-home, open book exam. Please don’t work together. It is due tomorrow, Thursday, Dec 1 at noon. You can drop it off at Rohini’s office in the EGC, or email it to rohini.pande@yale.edu.

1 Evaluating and Monitoring Government Transfer Programs

Suppose household income is given by

\[ Y_i = \alpha_0 + \alpha_1 S_i + \delta A_i + \epsilon_i \]

where \( S_i \) is an indicator variable for whether the household receives a government transfer (can be interpreted as subsidized credit, food subsidy etc). \( A_i \) is a latent unobserved by the econometrician variable indicating household ability to earn money (e.g. entrepreneurial skills). Receipt of government transfer is determined by the following linear probability model:

\[ S_i = \beta_0 + \beta_1 T_i + \nu_i \]

where \( T_i \) is an indicator variable which equals one if household \( i \) is a ”target household”. Targeting is determined as follows:

\[ T_i = \delta_0 + \delta_1 L_i + \delta_2 A_i + \epsilon_i \]

where \( L_i \) is a dummy indicator variable for ”landless’ status (e.g., owns less than half acre of land). Target households are chosen by a bureaucrat who determines target status as a
function of a household's land holdings as well as its ability. That is, she observes at least
a signal that is correlated with $A_i$. Assume that $\epsilon_i$, $\nu_i$ and $u_i$ are orthogonal to all r.h.s.
variables and $A_i$. Finally assume ability is uncorrelated with land ownership.

Part A

- Compute the probability limit for the Wald-IV estimate of $\alpha_1$ where $L_i$ is the instru-
mment. Is this estimator consistent?

- How is your estimator affected if $\delta_1$ goes locally to zero?

- Compute the Wald-IV estimate of $\alpha_1$ when we instead use $T_i$ as the instrument. Is the
  estimator consistent? When is it most likely to generate misleading results (answer
  with reference to specific parameters)?

- Assume you also observe total acreage owned by each household, $A_i$. How would you
  use this extra information to augment the household income equation.

- Given the augmented equation, discuss how your IV estimator (using landless as the
  instrument) relates to regression discontinuity design.

Part B

The fact that $A_i$ is unobserved at large gives the authority choosing beneficiaries substantial
discretion. A natural concern is corruption. Suppose you are asked to design a randomized
evaluation to check whether increasing the cost of corruption to officials alters beneficiary
selection.

- What intervention would you choose? Be clear about how you expect this intervention
to affect the cost of corruption.

- What outcome variable would you consider? Discuss how you would set up the ex-
  periment to measure this.
• The Banerjee paper on misgovernance suggested that attempts to monitor corruption can often cause other distortions in the allocation process. Given your choice of outcome variable, what kind of distortion might you expect to see? Discuss what implications such distortions might have for (i) the internal validity and (ii) the external validity of your evaluation.

Part C

One solution often proposed for corruption is decentralization of beneficiary selection to an elected village council. Consider such a decentralization where the funds continue to be provided by the central government to the elected village council.

• Discuss two ways in which you will expect decentralization to alter beneficiary selection. For each case discuss how your IV estimator (using landlessness as an instrument) is likely to be affected.

2 The Cost of Children and Sibling Rivalry

In this question, use the Côte d’Ivoire Living Standards Measurement Survey to investigate some issues of intrahousehold resource allocation. The Stata dataset final.dta can be downloaded from the class web site. You will not need to use all of this data to answer these questions. The choice of empirical strategy and variables and observations to use is up to you. So please explain the reasons for your choices. For each part of the question, explain both the strengths and weaknesses of the approach you have taken. Finally, for each part of the questions, what additional information (that is not included in the data we have provided) would be most useful in making a convincing argument?

A few things to keep in mind about this data:

1. This is a rotating panel – as you will be able to tell from the hid and year variables, households are rotated into and out of the panel. No household is interviewed more than twice.
2. Unless otherwise noted in variable labels, expenditures and incomes are over annual periods, in current CFA francs.

3. If you have questions about variable definitions, email us and we’ll respond as quickly as possible; if you don’t get a response sufficiently quickly, clearly state the assumptions you are making about the definition of the variable, and move on.

2.1 Part A: Expenditures on Children

Do households in Côte d’Ivoire spend more on infant boys or on infant girls?

2.2 Part B: Sibling Rivalry

1. Is there any evidence in the CILSS that the amount that households spend on a child depend upon the gender composition of that child’s siblings?

2. Consider the education outcomes in education.dta. How is the educational attainment of a child related to the gender composition of his/her siblings? Are boys and girls affected similarly by the gender of their siblings?

You might want to look at Garg and Morduch, “Sibling Rivalry and the Gender Gap” http://www.nyu.edu/projects/morduch/documents/development/Sibling_Rivalry_and_Gender_Gap.pdf, though there will be no need to read it in all its detail. You don’t have the data to do everything they do, nor would we want you to just replicate their specification exactly.