

Experimenting for Cities?

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Aim

- ▶ Try to make the case for experiments (RCTs) to understand appropriate policy for cities.
- ▶ Plan:
 - ▶ Outline some questions about development and cities.
 - ▶ Discuss the kinds of experiments we can run.
 - ▶ Give examples of experiments that address important questions and illustrate modes of experimentation.

Why Do This?

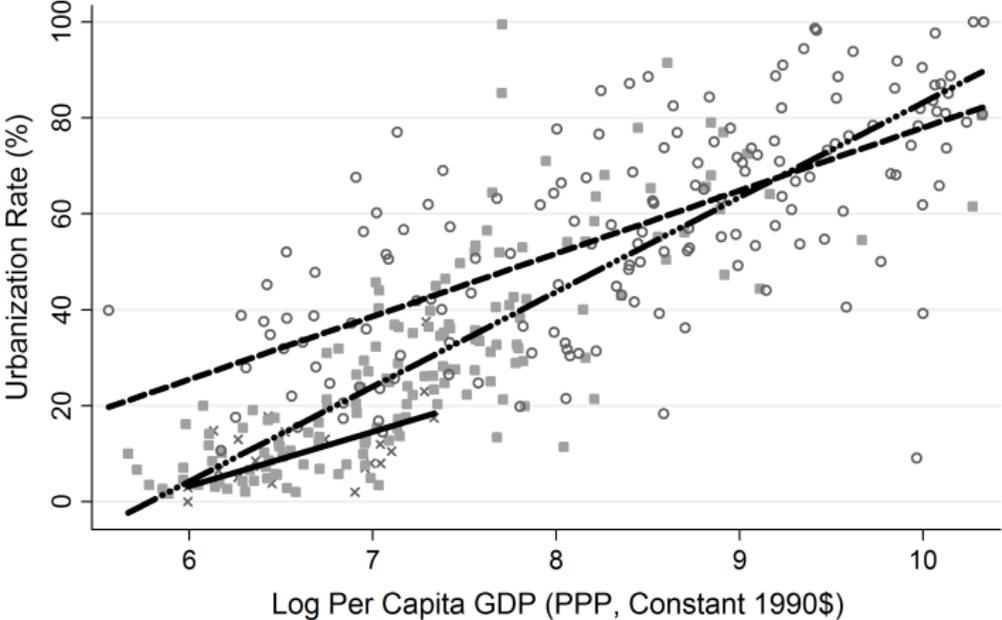
1. Encourage a discussion about the extent to which experimentation can help.
2. Provide policy makers with ideas about how IGC economists can help.

Some Facts and Theories about Cities

The Role of Experiments

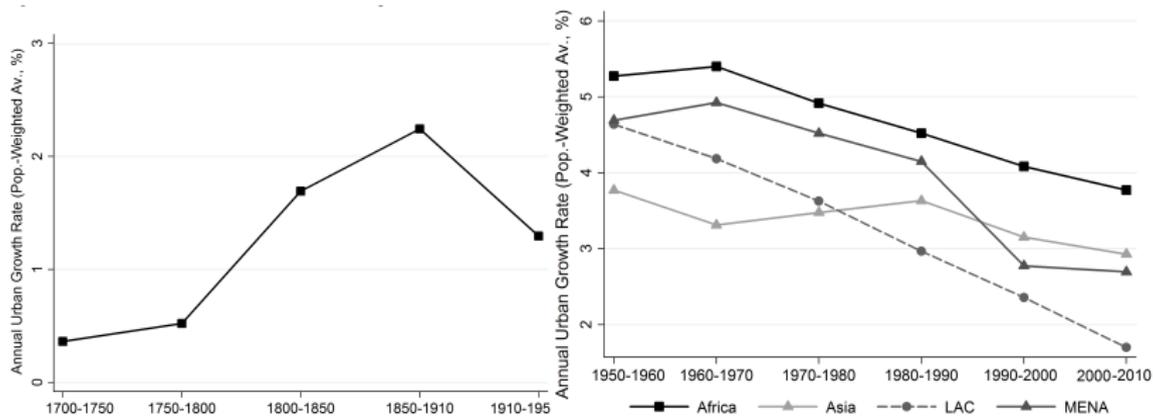
Examples

Urbanization Faster and Earlier



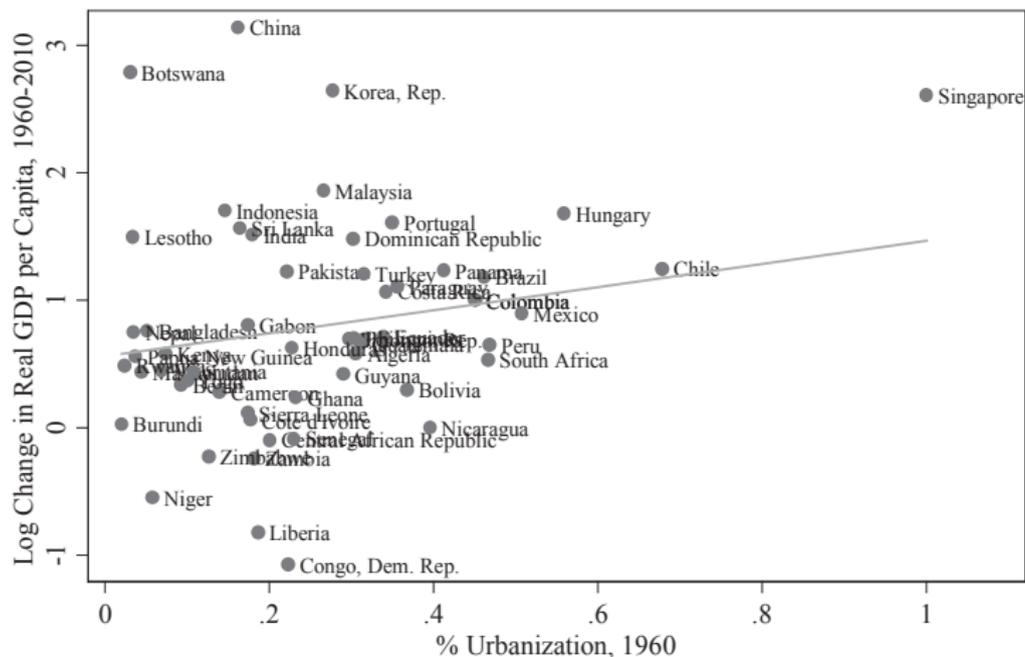
Gollin, Jedwab, Vollrath 2014

Urbanization Faster and Earlier



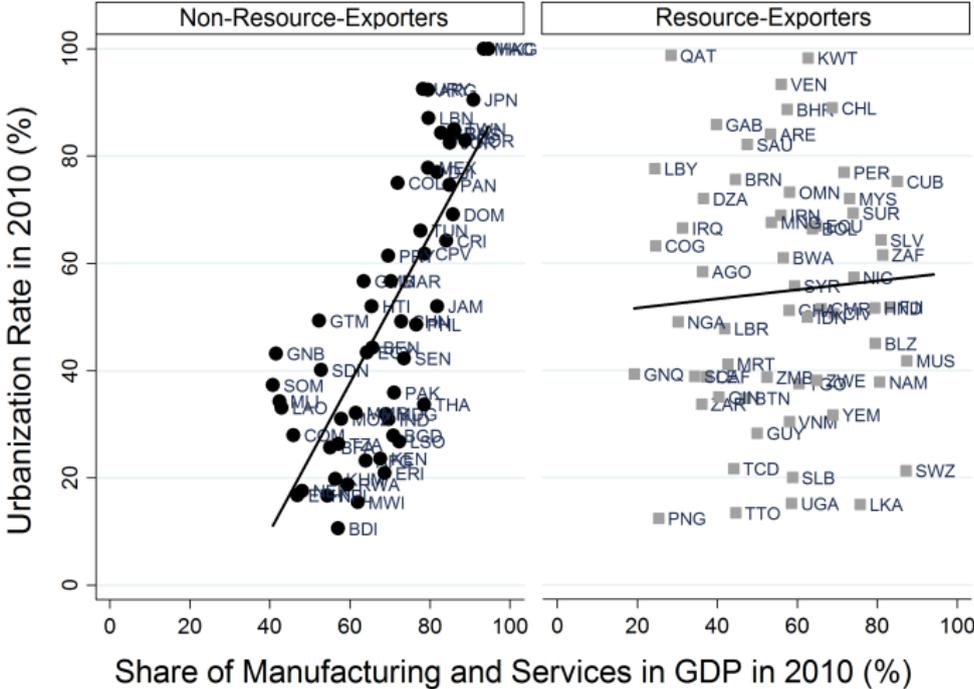
Christiansen and Jedwab 2014

Urbanization Correlated with Productivity and Productivity Growth



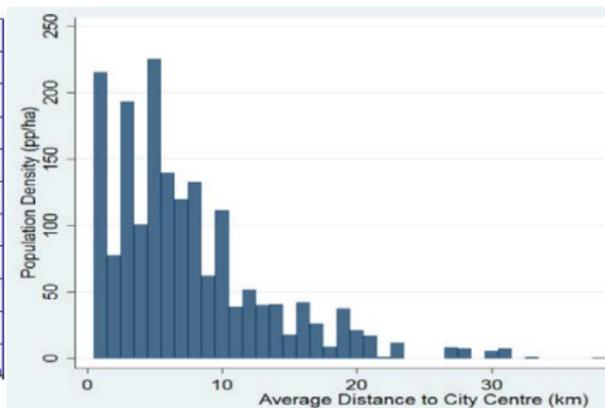
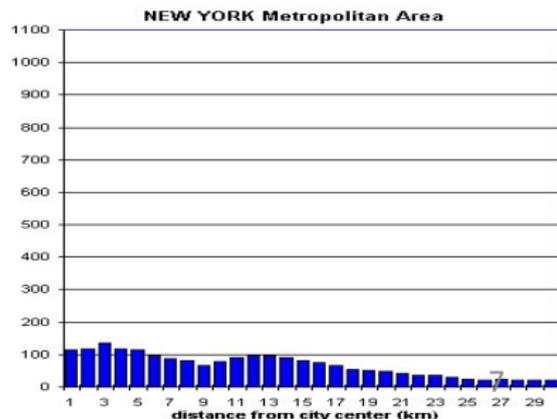
Urban/Rural Wage gap: 2-3 (GLW)

Different Causes of Urbanization?

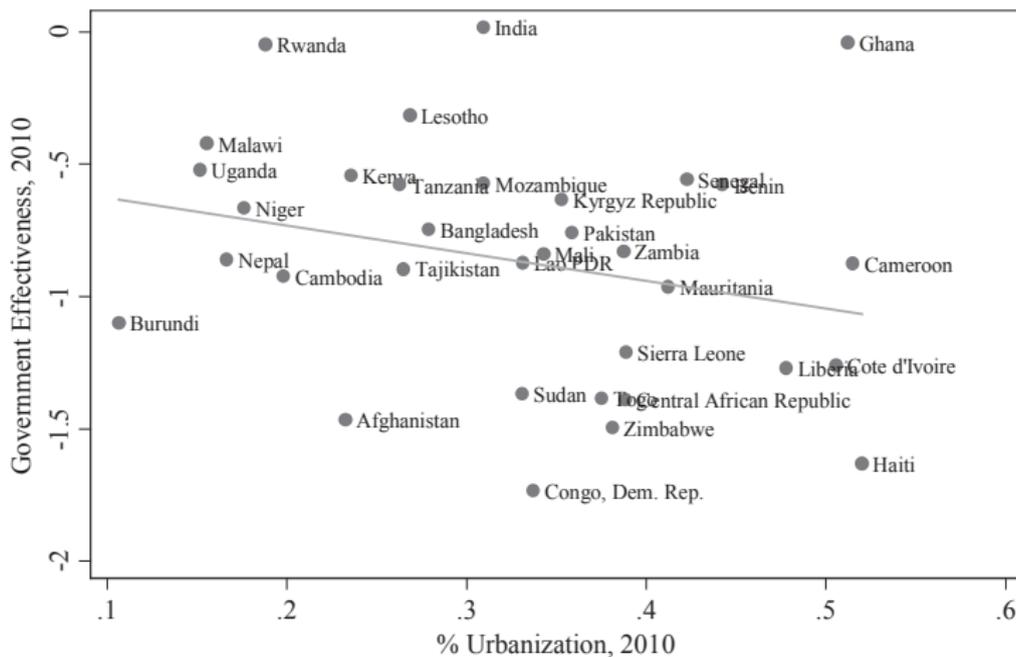


Gollin, Jedwab, Vollrath 2014

Different Types of Urbanization?



Different Level of Public Development



Glaeser 2014.

Questions and Observations

Questions:

1. Should rapid urbanisation continue?
2. Does density lead to productivity growth?
3. How to increase amenity *and* density?

Observation:

- ▶ Costs of getting it wrong are high.

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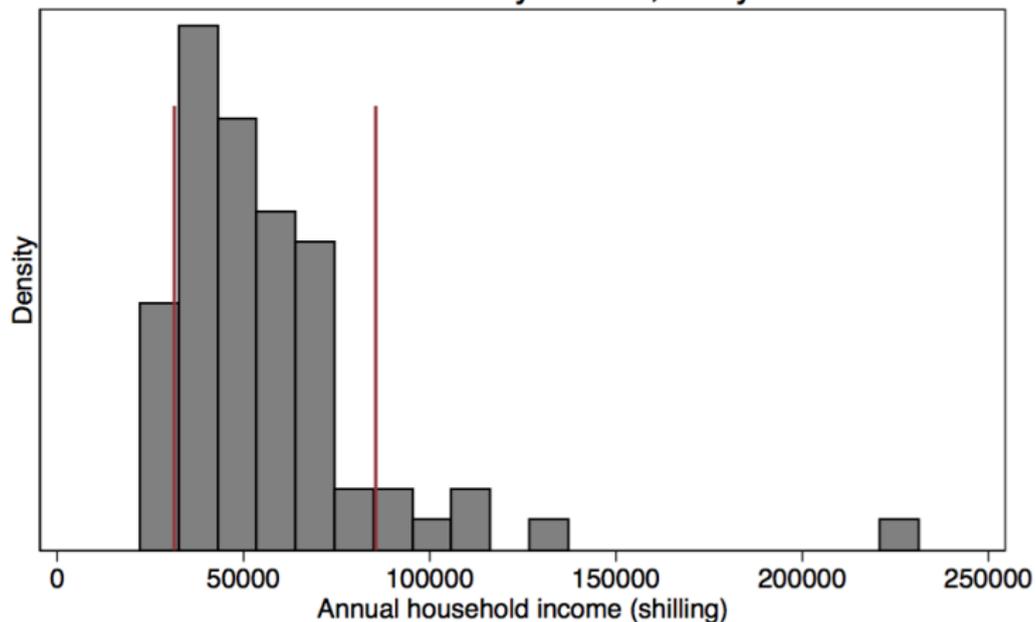
The Role of Experiments

Examples

Why Experiments?

We Don't Know the Answers

Household income by district, Kenya 2005

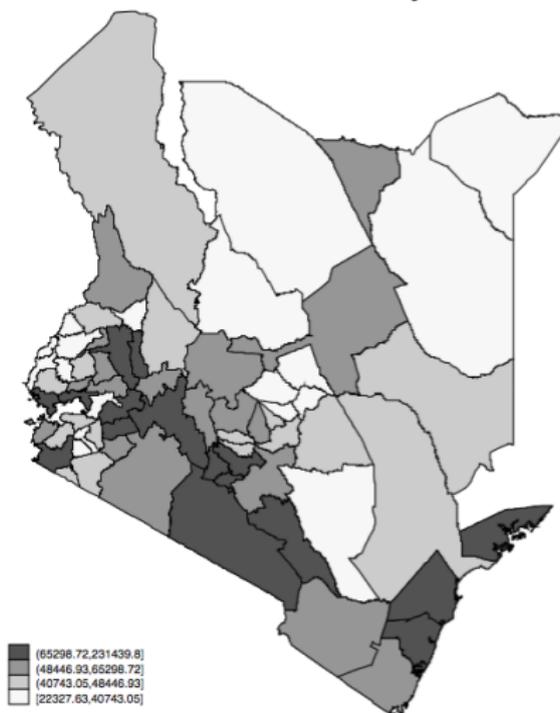


90/10 income gap: 2.72.

Source: FAO RIGA-H database.

We Don't Know the Answers

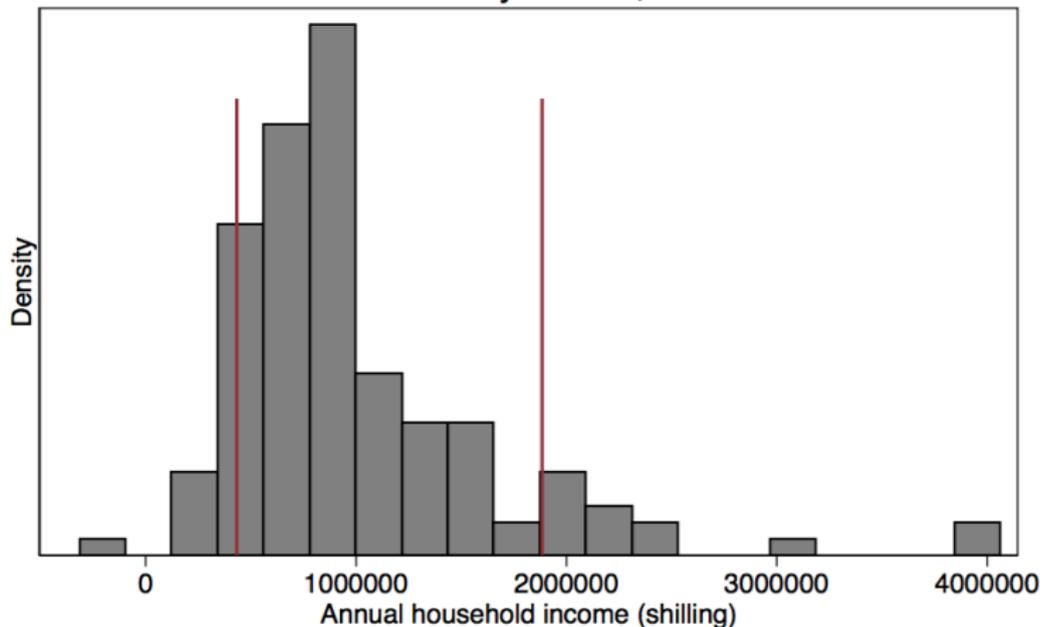
Household income in Kenya, 2005



Mean income is 56,469 shillings (743 USD). Source: FAO RIGA-H database

We Don't Know the Answers

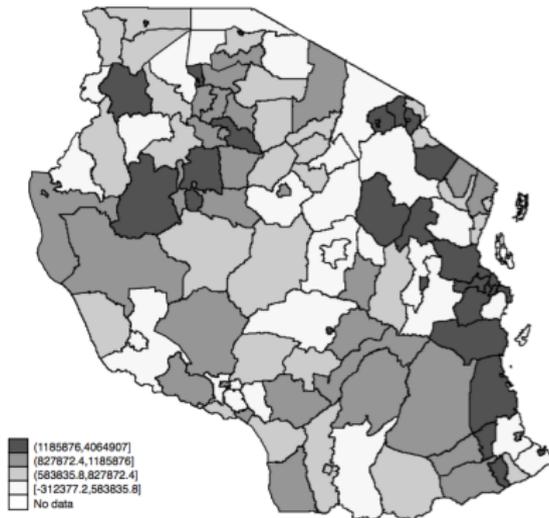
Household income by district, Tanzania 2009



90/10 income gap: 4.35.
Source: FAO RIGA-H database.

We Don't Know the Answers

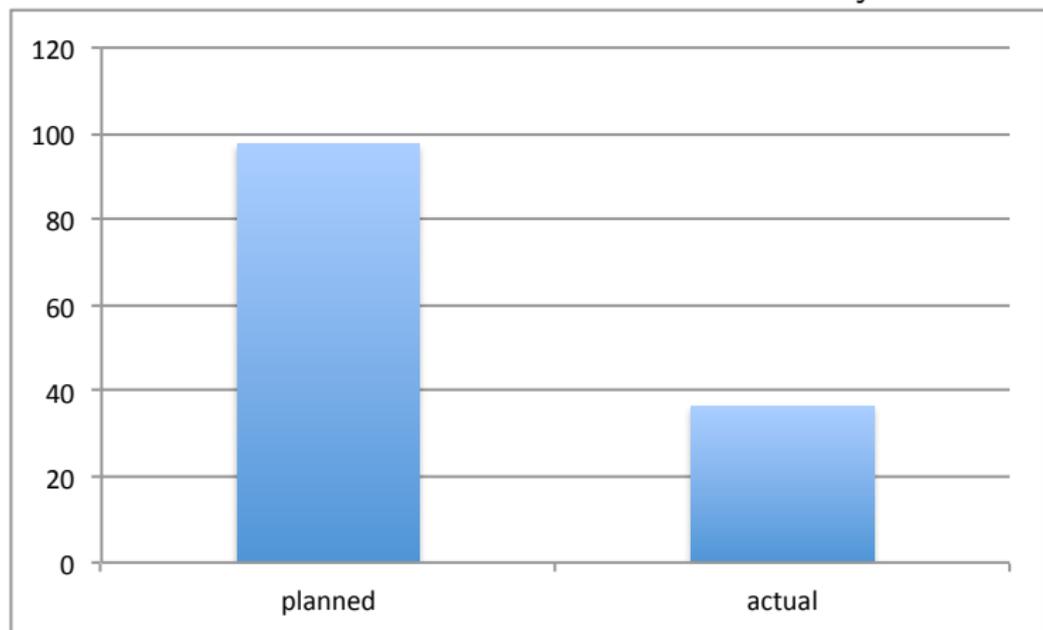
Household income in Tanzania, 2009



Mean income is 1005822 shillings (762 USD). Source: FAO RIGA-H database

We Can't Predict the Outcomes

Predicted and Actual Fertilizer Use: Kenya



Duflo, Kremer and Robinson 2011

Its Natural

- ▶ How do you decide on the best route to work?
- ▶ How do you decide on the best pair of shoes?
- ▶ But, somehow we forget about this when we engage in policy.

Types of Experiments

Mechanisms versus Policy Evaluations

- ▶ Broken Windows Policing (BWP)
 - ▶ Broken windows imply "no one cares", leads to more crime
 - ▶ So we should police small problems
- ▶ Two approaches to evaluate:
 - ▶ Policy Evaluation: RCT of BWP
 - ▶ Direct policy relevance, expensive, perhaps infeasible.
 - ▶ Mechanism Experiment: RCT of breaking windows
 - ▶ No directly policy relevance, but useful, feasible and cheap.

An Approach

- ▶ Should I build a BRT?
 1. Learn from others (requires evaluation).
 2. Know mechanisms: would faster commuting increase productivity?
 3. Know magnitudes: how many poor people will be displaced?
 4. Build and test: how many feeder routes do I need and where should they be?

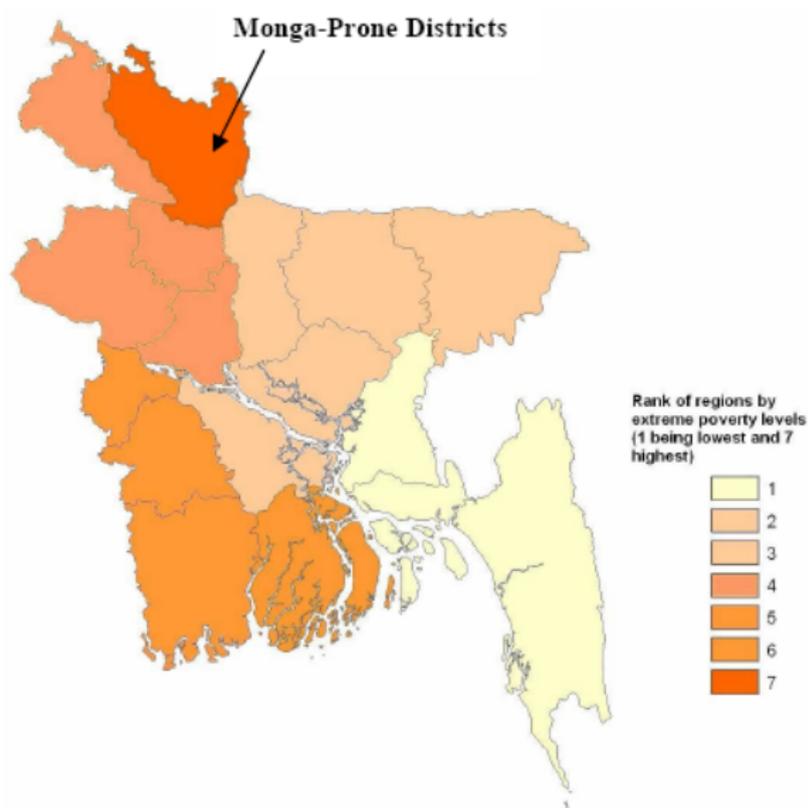
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The Role of Experiments

Examples

Question: Should we Encourage or Discourage Movement?

Bryan, Chowdhury, Mobarak 2014



30% of households send a seasonal migrant to Dhaka.

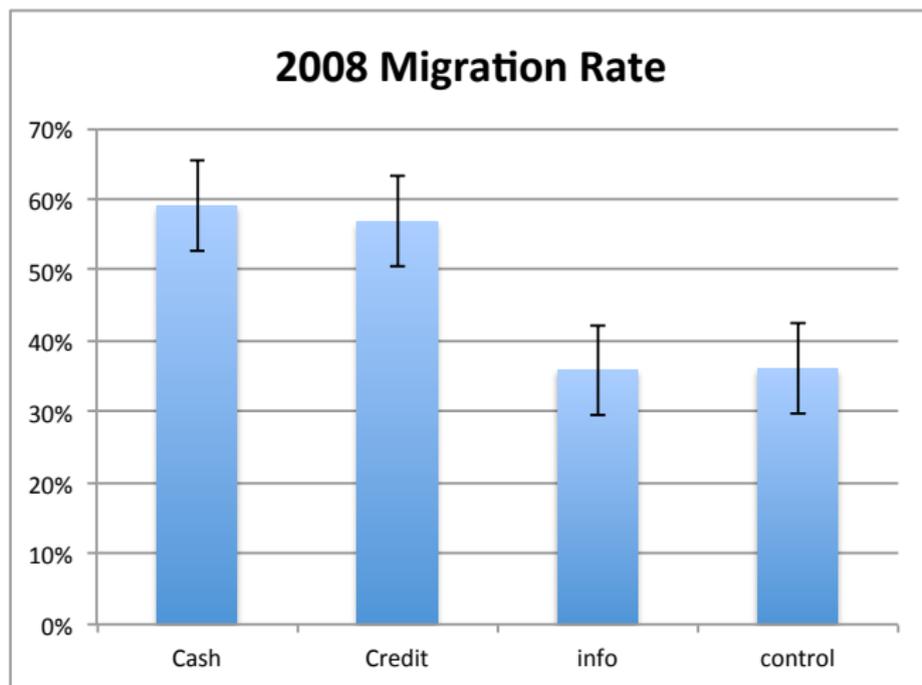
Possible Hypotheses

1. Migration allows people to increase their incomes, exploiting the wage gap.
2. People of Rangpur are different, there may be gains to discouraging migration.

How to we Distinguish?

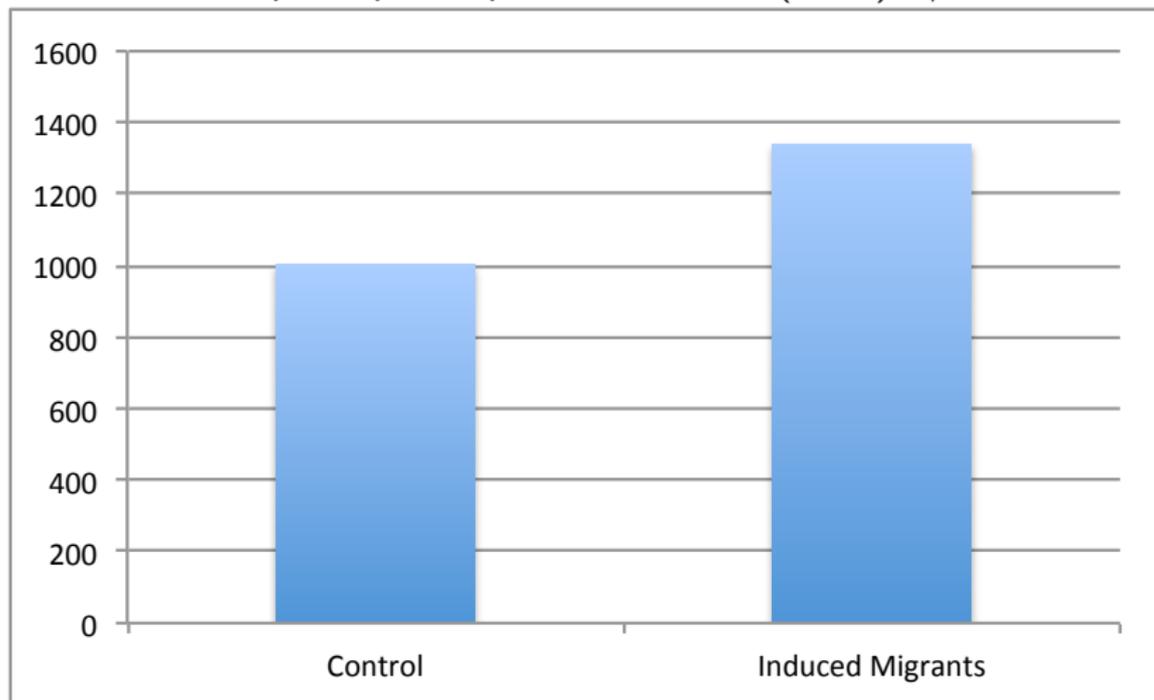
- ▶ Experiment undertaken just before Monga 2008.
- ▶ 100 Villages in Lalmonirhat and Kurigram.
- ▶ Four treatments:
 - ▶ 16 control villages (304 hh);
 - ▶ 16 villages given information (304 hh);
 - ▶ 37 villages offered 600 Tk if they migrated (703 hh); and
 - ▶ 31 villages offered 600 Tk of credit if they migrated (589 hh).

Results: Migration Rate

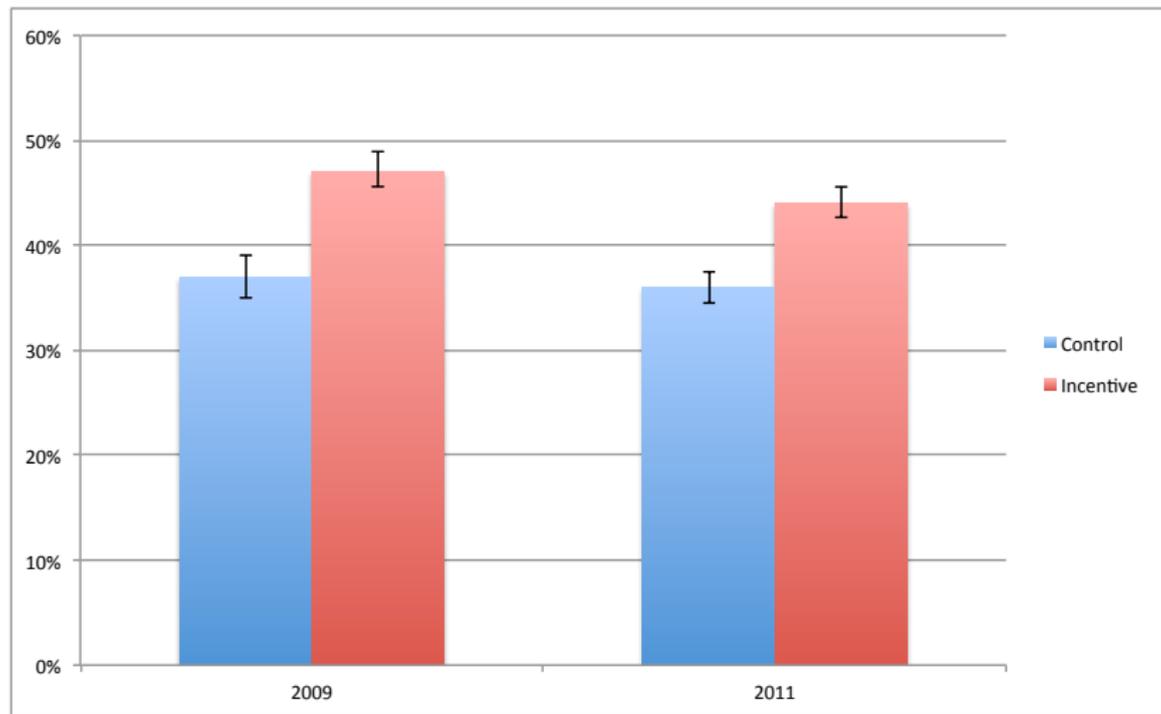


Results: Consumption

Consumption per Capital Per Month (Taka) \uparrow 33%



Results: Ongoing Migration



What do we learn?

- ▶ Migration restriction cannot be justified as helping migrants.
- ▶ Restriction must be based on large externalities
- ▶ Search for an optimal policy of encouragement!?
- ▶ An Example of a mechanism experiment.

Franklin 2015: Job Search in Addis

- ▶ Question:
 - ▶ Does commute cost hinder job search?
- ▶ Design
 - ▶ 255 Individuals provided the cost of transport to the city if they showed at a specific location.
 - ▶ 622 provided with no transport subsidy.
- ▶ Results:
 - ▶ Those that received the subsidy are 6% more likely to be employed
- ▶ Sees a 6% rise in employment rates

What Do We Learn

- ▶ information Matters for Job search.
- ▶ Encouraging movement of information is valuable.
- ▶ Could we design a better policy?

Does Density Promote Innovation?

Theory

- ▶ Retail efficiency a large part of productivity:
 - ▶ Foster, Haltiwanger and Kirzan (2006)
- ▶ Density may help with the spread of ideas:
 - ▶ Easy for everyone to adopt Facebook in a city.
 - ▶ Easy for everyone to adopt Square in a city.
- ▶ But, hard to know if true:
 - ▶ Square targets the city.
 - ▶ People who live in cities are different.

Ashraf and Glaeser (ongoing)



Experiment

1. Working with Zooniverse on Role out: Researchers know the plans
2. Random variation in geographic density of those given access.

What Can we Learn?

- ▶ Does density encourage the spread of new ideas.
- ▶ Is density relevant for encouraging productivity increase
- ▶ Proof of concept:
 - ▶ Can be applied to other technologies

How to Design Bus Rapid Transit?

Lahore MetroBus: Field and Vyborny (in Progress)



Design

- ▶ Current lack of feeder routes to outer areas.
- ▶ From a set of 40 possible routes:
 - ▶ 15 will be opened and subsidies for 9 months.
 - ▶ 25 will not be.
- ▶ Respects a capacity constraint.

What Can we Learn

- ▶ Policy evaluation:
 - ▶ Impact of having a feeder line on job outcomes, health, work etc.
- ▶ Mechanism evaluation:
 - ▶ Impact of reducing movement costs.
 - ▶ Who benefits most from transportation access?

Dar Es Salaam Dart

- ▶ A Question
 - ▶ If rental prices rise along the Dart corridor, what will happen to the poor?
 - ▶ Expected rent rise is about USD 20 per month.
- ▶ Experimental proposal:
 - ▶ Subsidies a years rent for 500 residents.
 - ▶ 500 control Residents
- ▶ What can we learn:
 - ▶ What happens to those who are forced to move?
 - ▶ Health, commute times, job prospects.

How should people be housed in Addis Ababa?

Questions about Housing

- ▶ Reasons to rehouse the poor:
 - ▶ Poor live in inadequate housing.
 - ▶ Housing is often in potentially high value areas.
 - ▶ Increase both amenity and density.
- ▶ Reasons to not rehouse the poor:
 - ▶ People live close to their jobs
 - ▶ People live in communities
 - ▶ Housing will be of low quality.
 - ▶ The poor will sell and housing subsidies will go to the rich.

AA Integrated Housing Development Program

Gebrehiwot, Franklin and Weldesilassie (In Progress)

- ▶ In 2015 about 100 000 housing units will be allocated to Individuals.
- ▶ Falls well short of the 1 000 000 needed.
- ▶ A fair way to allocate: Lottery among eligible applicants
 - ▶ Creates a randomised controlled trial.
 - ▶ Those that do not win become a control group.

Questions

- ▶ What is the impact of the housing on:
 - ▶ Having a job?
 - ▶ Health?
 - ▶ Consumption?
- ▶ Sub-questions
 - ▶ Are impacts bigger if networks are moved together?
 - ▶ Are impacts bigger if people end up closer to their current jobs?

- ▶ A chance to learn from a large policy evaluation
- ▶ Results will be useful for other cities.
- ▶ In many cases randomisation is easy, as it is the only reasonable and ethical way to allocated goods in demand.

Conclusions

- ▶ Many more areas for possible experimentation:
 - ▶ Sanitation,
 - ▶ Taxation.
 - ▶ ...
- ▶ Hopefully we can learn what works.