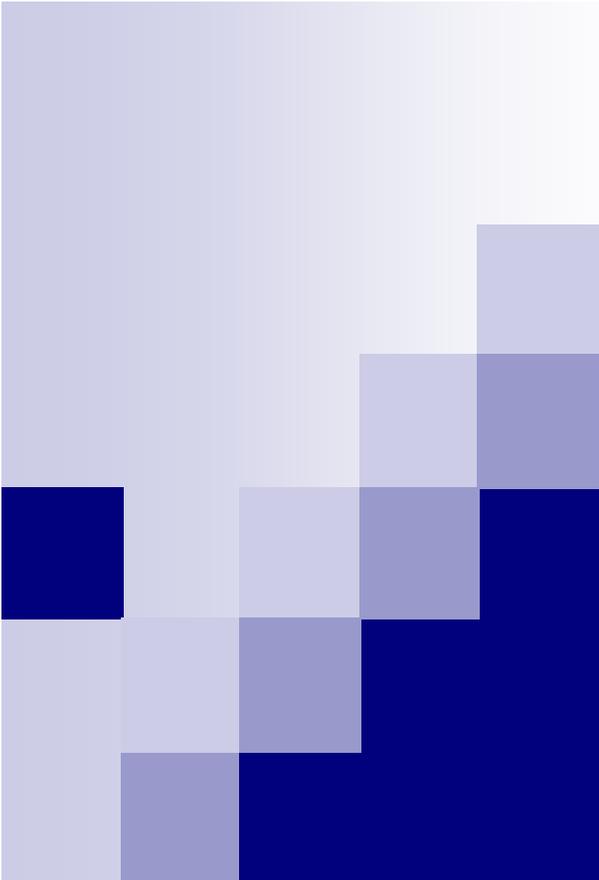


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14.771 Development Economics: Microeconomic Issues and Policy Models
Fall 2008

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Why study (micro) development economics ?

(and what is there to study?)



Astonishing differences between countries

- Richest country in the World...
- Poorest country in the World...
- At PPP?
- Translate into astonishing differences in well being (e.g. infant mortality)—see tables.
- Lucas's well known phrase is certainly justified: once you start thinking about it, there is no reason to stop!
- This is the object of development economics: why do poor countries stay poor? why do poor people in poor countries have such short and hard lives?
- And, at least in our view, what can be done about it (a resolutely normative view of economics)?



Perhaps we just need to study growth (macroeconomics)?

- Banerjee (2008) “Big answers for Big questions”
- Will the tide lift all boats (growth is sufficient for poverty reduction)?
 - No correlation between growth and increase in inequality (Sala-i-Martin; Dollar and Kray): growth is correlated about one for one with poverty reduction
 - Widely debated (Data is poor; Debate on counting the poor is hot and raging—e.g. India. Experiences vary: the effect of growth on poverty is different from Country to Country -Ravallion)
- Even if true, it could still be the case that poverty reduction cause growth, rather than the other way around...



Do we know what makes growth happen?

- Aggregate production function:

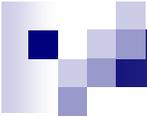
$$Y = f(A, K, H)$$

- Mankiw, Romer, Weil (1992) find that 80% of the difference in growth across countries can be explained by savings rate and investment in human capital.
- Caselli (2005): Two thirds of the variation remains unexplained by these factors.
- Problem of attributing causality: Does education cause growth of the other way around (Bills and Klenow).



What do we know about the effect of Policies on Growth?

- Acemoglu, Johnson, Robinson (2001, 2002); La Porta, Lopez de Silanes, Shleifer, Vishny (many papers): Very long run factors matter: who colonized you? did they decided to stay?
- Once you account for that, short run policies do not appear to be very correlated with growth (Rodrik, Subramanian, Trebbi, 2002).
- Very different policies lead to very different outcomes
- It is difficult to learn from country experience in a statistical sense, because each is so specific (just one China).
- In contrast, we can learn a lot about the effect of a specific policy on a specific outcome in a particular place by looking at micro data from this country (we will do a lot of this this semester).

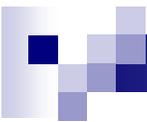


Can we describe the economy with an aggregate production function?

- Aggregate production function:

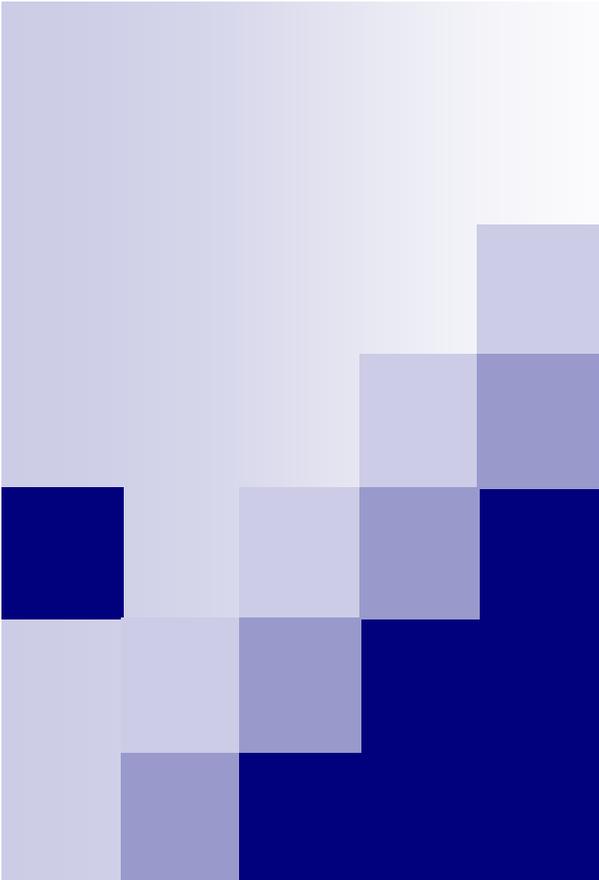
$$Y = f(A, K, H)$$

- We don't think of the economy as one big machine...
- What justifies the aggregate production function is the assumption that each factor (human capital, capital) gets allocated to its most productive use: the marginal return of every investment is equalized.
- This is a reasonable assumption, since this is what market forces should ensure.
- And in this case, it does not matter where exactly capital and human capital are invested: we can think of one aggregate stock (Solow).

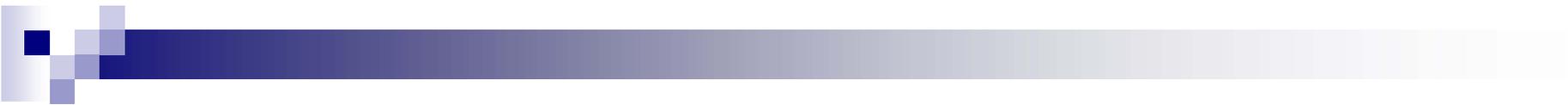


Can we describe the economy with an aggregate production function?

- One nice thing about this assumption is that it can be tested: is it true that the returns to capital are equalized within an economy: We can look at the returns to capital in various places
- And the answer is... it is not at all true!! Returns to capital (and human capital) vary much more within countries than across countries, which is the puzzle that set Lucas on his pathbreaking effort to think about growth.
- What are the barriers that would prevent the returns to capital to equalize in developing countries?
- We better start thinking about that in some details...
- We won't get a good understanding of growth until we understand the micro- mechanisms at play: once we do, we will be able to think better about how everything aggregates up.

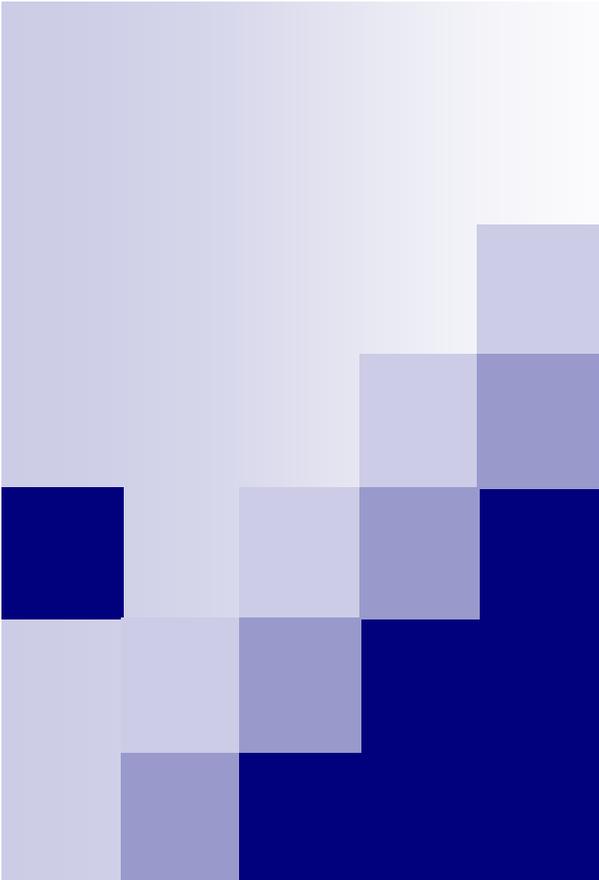


What is there to
study? A birdview of
the course...



The economic lives of the poor- What is middle class about the middle classes? (Banerjee-Duflo, 2007,2008)

- Bring together data on the **very poor**, defined as those with consumption below \$1.08 a day at 1993 PPP.
- And the **poor** defined as those below \$2.16 a day at 1993 PPP
- And the middle classes (2-4 and 6-10)
- From various detailed household surveys
- Gives us a sense of how the poor live, what are the big questions to be asked.

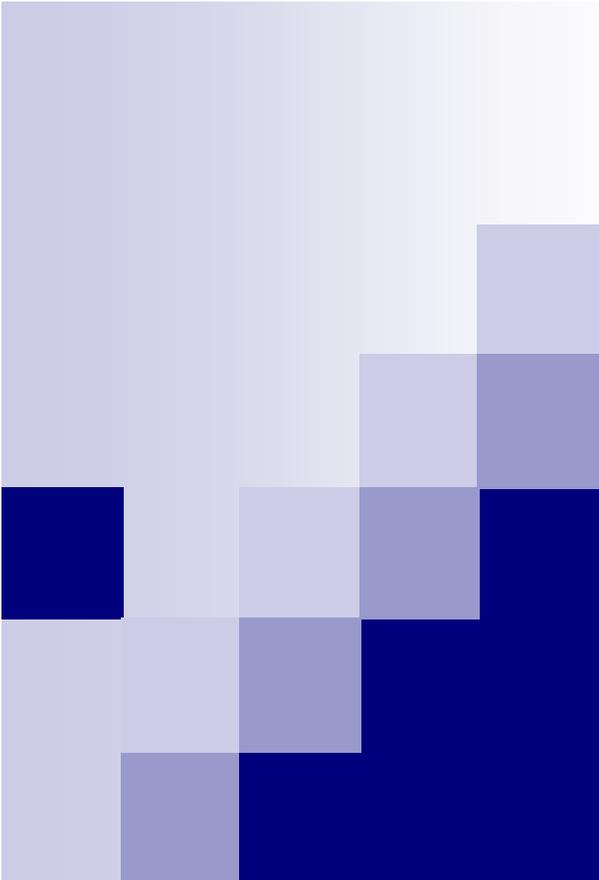


Family Sizes



A young population...

- Look at table 2
 - Large families
 - Many children
 - Big changes from the very poor to the less poor
 - Do large family sizes cause poverty or the other way around?



How do the poor
spend their money?



How the poor spend their money

As a Share of Total Consumption

	<u>Food</u>	<u>Alcohol/ Tobacco</u>	<u>Education</u>	<u>Health</u>
Rural				
Cote d'Ivoire	64.4%	2.7%	5.8%	2.2%
Guatemala	65.9%	0.4%	0.1%	0.3%
India - Udaipur	56.0%	5.0%	1.6%	5.1%
India - UP/Bihar	80.1%	3.1%	0.3%	5.2%
Indonesia	66.1%	6.0%	6.3%	1.3%
Mexico	49.6%	8.1%	6.9%	0.0%
Nicaragua	57.3%	0.1%	2.3%	4.1%
Pakistan	67.3%	3.1%	3.4%	3.4%
Panama	67.8%		2.5%	4.0%
Papua New Guinea	78.2%	4.1%	1.8%	0.3%
Peru	71.8%	1.0%	1.9%	0.4%
South Africa	71.5%	2.5%	0.8%	0.0%
Timor Leste	76.5%	0.0%	0.8%	0.9%

How the poor spend their money

As a Share of Total Consumption

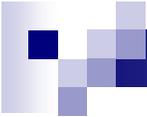
Rural	Entertainment	% HHs with any Festival	
		Festivals	Expenditure
Cote d'Ivoire			
Guatemala	0.0%	1.3%	59.9%
India - Udaipur		0.1%	7.7%
India - UP/Bihar	0.0%	14.1%	99.4%
Indonesia	0.1%	2.2%	
Mexico	0.0%	2.2%	80.3%
Nicaragua	0.7%	0.0%	2.7%
Pakistan	0.0%	0.0%	1.8%
Panama	0.3%	2.4%	64.8%
Papua New Guinea	0.6%	0.0%	0.0%
Peru	0.2%	1.5%	21.7%
Peru	0.0%		
South Africa	0.1%	3.2%	90.3%
Timor Leste	0.0%	0.0%	49.0%



Food?

- Are the very poor spending every marginal penny on they can on getting more food?
- The share of expenditure between 78% in Papua New Guinea and 50% in Mexico.
- Other large items include:
 - Tobacco/alcohol (up to 8%)
 - Festivals (up to 14% when asked in detail)
- The poor spend 30% of their food budget on rice and wheat which cost between 70% and 100% more per calorie than other grains
- Food share is falling over time in most countries. So, more surprisingly, is calory share...
- Yet, Average BMI is 17.8 in Udaipur (a poor Indian district) compared to a cut-off for under-nourished of 18.5 & 55% are anemic.

- Are the poor eating enough?



How the poor spend their money

As a Share of Total Consumption

	<u>Food</u>	<u>Alcohol/ Tobacco</u>	<u>Education</u>	<u>Health</u>
Rural				
Cote d'Ivoire	64.4%	2.7%	5.8%	2.2%
Guatemala	65.9%	0.4%	0.1%	0.3%
India - Udaipur	56.0%	5.0%	1.6%	5.1%
India - UP/Bihar	80.1%	3.1%	0.3%	5.2%
Indonesia	66.1%	6.0%	6.3%	1.3%
Mexico	49.6%	8.1%	6.9%	0.0%
Nicaragua	57.3%	0.1%	2.3%	4.1%
Pakistan	67.3%	3.1%	3.4%	3.4%
Panama	67.8%		2.5%	4.0%
Papua New Guinea	78.2%	4.1%	1.8%	0.3%
Peru	71.8%	1.0%	1.9%	0.4%
South Africa	71.5%	2.5%	0.8%	0.0%
Timor Leste	76.5%	0.0%	0.8%	0.9%

Health in the Household

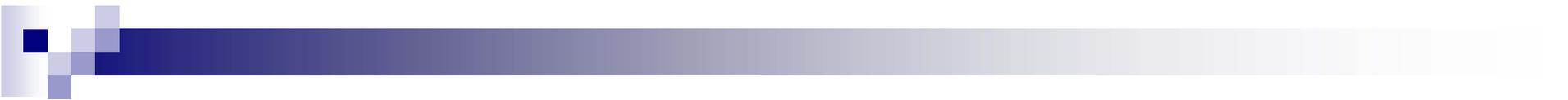
	In Last Month				
	<u>Percent of HH Members Sick</u>	<u>A Household's Average # of Consultations</u>	<u>Percent of Households that met At Least Once with a Consultant</u>		<u>Infant Mortality</u>
			<u>Public</u>	<u>Private</u>	
Rural					
Cote d'Ivoire	21.4%	1.28	49.7%	3.2%	6.2%
Guatemala					6.2%
India - Hyderabad					
India - Udaipur	46.1%	0.11	20.1%	58.1%	10.0%
India - UP/Bihar	12.5%	0.81	13.9%	47.3%	7.7%
Indonesia	24.2%	0.77	20.7%	27.3%	3.4%
Mexico	46.3%	1.11	47.7%	0.0%	6.9%
Nicaragua	34.9%	0.15	46.0%	5.0%	
Pakistan	28.0%	0.45	24.0%	48.8%	16.7%
Panama	15.2%	0.10	23.8%	0.0%	
Papua New Guinea					
Peru	11.1%	0.10	20.9%	8.5%	
South Africa	12.5%	0.12	16.4%	6.9%	8.6%
Tanzania	13.2%	0.07	23.2%	14.0%	8.7%
Timor Leste	11.7%	0.21	30.2%	0.5%	



Education

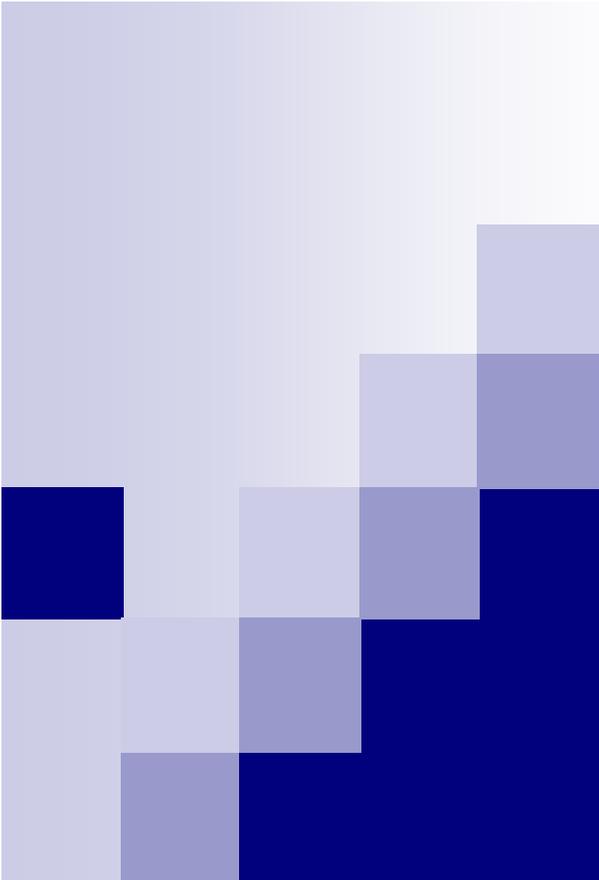
Percent of Children in School

	Female, Age:		Male, Age:	
	<u>7-12</u>	<u>13-18</u>	<u>7-12</u>	<u>13-18</u>
Rural				
Cote d'Ivoire	32.3%	22.8%	45.5%	21.1%
India - Udaipur	60.7%	13.0%	82.6%	24.7%
India - UP/Bihar	51.4%	20.2%	72.1%	51.2%
Indonesia	93.4%	45.9%	82.4%	39.3%
Mexico	94.5%	56.5%	93.5%	38.6%
Nicaragua	67.5%	38.0%	65.4%	27.5%
Pakistan	30.7%	9.2%	64.1%	41.3%
Panama	79.0%	14.6%	85.1%	27.0%
Papua New Guinea	53.0%	33.5%	71.4%	70.9%
Peru	94.2%	64.7%	93.3%	73.7%
South Africa	83.6%	87.5%	80.5%	76.9%
Tanzania	51.2%	53.3%	47.2%	61.4%
Timor Leste	76.6%	89.7%	80.0%	86.8%

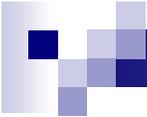


Health and Education

- Lots of illnesses
- Lots of visits, to private and public doctors
- High expenditures on health, which increase steeply with income
- Most children are in school, even among the poor... But expenditure on education increases steeply with income as well.



Saving and Accumulation



What do the poor own

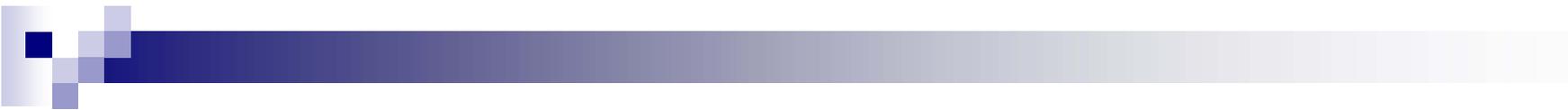
Percent of Households with:

	<u>Radio</u>	<u>Television</u>	<u>Bicycle</u>	<u>Land</u>
Rural				
Cote d'Ivoire	43.3%	14.3%	34.4%	62.7%
Guatemala	58.5%	20.3%	23.1%	36.7%
India - Hyderabad				
India - Udaipur	11.4%	0.0%	13.5%	98.9%
India - UP/Bihar	28.3%	7.3%	65.8%	
Indonesia		26.5%		49.6%
Mexico			41.3%	4.0%
Nicaragua	59.3%	8.3%	11.1%	50.4%
Pakistan	23.1%		27.0%	30.4%
Panama	43.6%	3.3%	0.0%	85.1%
Papua New Guinea	18.0%	0.0%	5.3%	
Peru	73.3%	9.8%	9.8%	65.5%
South Africa	72.2%	7.2%	20.0%	1.4%
Tanzania		0.0%		92.3%
Timor Leste	14.3%	0.6%	0.9%	95.2%



Ownership

- In the median country a majority of the rural poor own land.
- Other than that they own very little: in the Udaipur sample, 10% or less have a chair or a table
- In the median country less than 15% have a bicycle and less than 10% own a television.
- In Udaipur very few possible business assets: Less than 1% own a tractor, a bullock cart, a motorized cycle, a fan



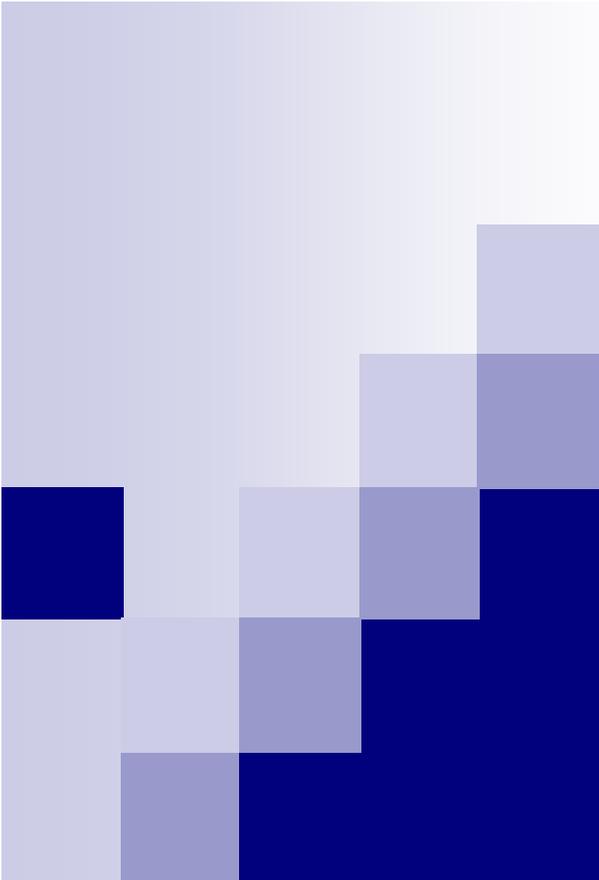
Savings and fluctuations

- They seem to have very little by way of savings
- Few bank Accounts
- Large fluctuations: Udaipur
 - in the last year 37% of the very poor households the adults starved for an entire day.
 - 45% cut the size of their meals
 - Only 57% report that they have enough to eat throughout the year
 - Those families that report missing meals are 0.23 standard deviations less well being



Questions

- Why so many children?
- Why don't they eat more?
- Why so many illnesses?
- Why so many private visits?
- Why so few assets?
- Are the poor getting enough education?



How do the poor
earn their money?

How the poor earn their money: Occupation

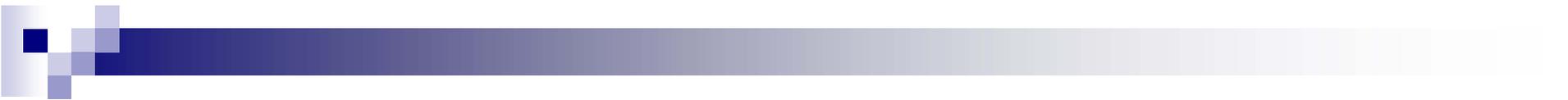
Rural	Percent of	Median Ares	Percent of Households in which At Least One Member:	
	Households that own land	Of Land Owned	Is Self Employed In Agriculture	Other
Cote d'Ivoire	62.7%	300	37.2%	25.9%
Guatemala	36.7%	29	64.4%	22.6%
India - Udaipur	98.9%	60	98.4%	5.9%
India - UP/Bihar		40	72.1%	40.2%
Indonesia	49.6%	60	49.8%	36.6%
Mexico	4.0%		4.9%	20.4%
Nicaragua	50.4%	280	54.7%	11.6%
Pakistan	30.4%	162	72.1%	35.5%
Panama	85.1%	300	69.1%	17.7%
Peru	65.5%	150	71.7%	25.2%
South Africa	1.4%		0.0%	9.1%
Tanzania	92.3%	182		
Timor Leste	95.2%	100	78.5%	12.0%

How the poor earn their money: Occupation

Percent of Households in which At Least One Member:		Percent of HHs
Works for a Wage or Salary in		That Receive Income
Agriculture	Other	From Multiple Sectors

Rural

Cote d'Ivoire	52.4%	78.3%	72.1%
Guatemala	31.4%	86.4%	83.8%
India - Udaipur	8.5%	90.7%	94.0%
India - UP/Bihar	2.0%	18.9%	41.8%
Indonesia	31.1%	34.3%	50.4%
Mexico	2.8%	72.6%	13.2%
Nicaragua	0.3%	42.8%	18.4%
Pakistan	32.6%	50.8%	66.8%
Panama	0.0%	0.0%	19.2%
Peru			34.8%
South Africa	27.9%	26.6%	0.4%
Tanzania			
Timor Leste			10.4%



Little bit of everything

- In most countries a majority of household get income from self-employment
- Agriculture is far from being everything! Even in rural areas self-employment is both in agriculture and outside it and many do both)
- Compared to the middle class, the poor are as likely to be entrepreneurs
- The next commonest occupation is wage work, including a lot of casual work. Many households do both.
- The big difference between the poor and the middle classes is the stability of the job (casual labor vs salaried job)
- 20% of the households in rural Udaipur say agriculture is their main source of earnings. 75% say their main earnings come from wage work. Yet almost all of them own land and cultivate it.



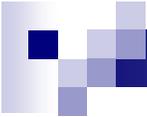
Non-Agriculture Enterprises Owned by Household

	<u>Percent of HHs with at least One Non-Agricultural Business</u>	<u>In Each Business:</u>		<u>Percent of Businesses that Own:</u>	
		<u>Paid Workers</u>	<u>Paid + Unpaid</u>	<u>Vehicles</u>	<u>Machines</u>
Rural					
Cote d'Ivoire	66.4%	0.14	2.48	2.6%	66.5%
India - UP/Bihar	35.0%				
Indonesia	29.4%	0.11	1.55	0.0%	
Mexico	7.8%	0.59	2.16	0.0%	
Nicaragua	14.0%	0.08	1.39	7.5%	0.0%
Pakistan	34.3%	0.13	1.16	36.7%	0.0%
Panama	15.2%	0.00	1.58	0.0%	
Papua New Guinea					
Peru	34.5%		1.50		



The businesses the poor run

- Families often run multiple businesses
- Businesses are very small. Almost no outside labor
- In Hyderabad only 20% of businesses have their own premises and the commonest businesses assets are pushcarts, scales and tables.
- In Hyderabad the main businesses are tailoring, fruit/vegetable selling, general stores, telephone booths, selling milk, driving a small taxi: Skills?



Migration

Percent of Adults who Have Migrated

Since Birth

For Work

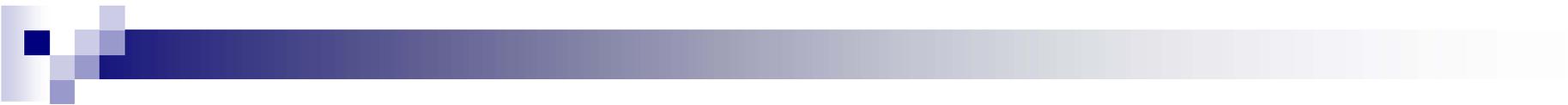
Rural

Cote d'Ivoire	26.9%	11.1%
Guatemala		
Indonesia	34.3%	30.8%
Mexico	48.7%	45.6%
Nicaragua	22.4%	5.6%
Pakistan	16.7%	3.7%
Panama	34.8%	0.6%
Papua New Guinea	4.8%	
Peru	15.3%	6.7%
Timor Leste	61.6%	



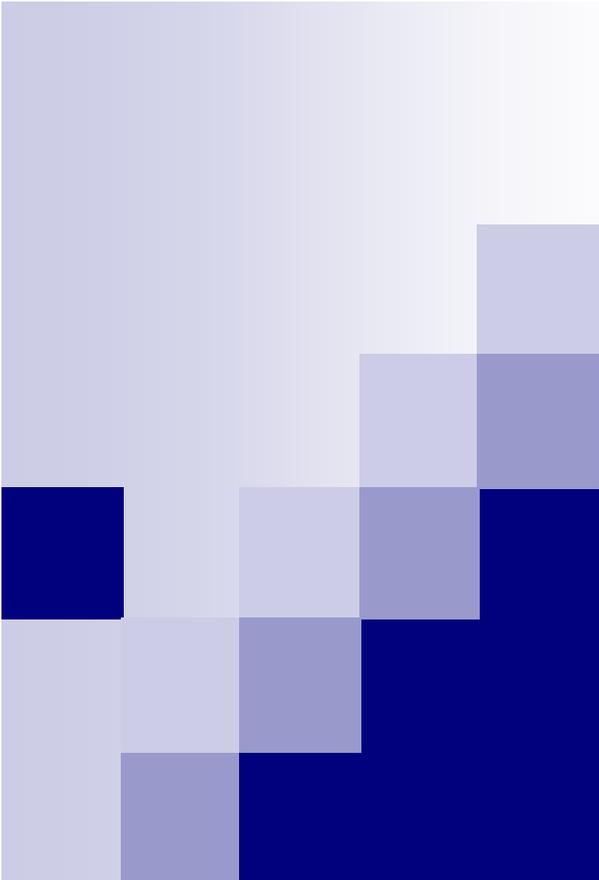
Migration

- In most countries in our sample long term migration for work is rare among the poor
- More frequent among the rich
- Temporary migration on the other hand seems quite common. In 60% of the very poor households in Udaipur someone had migrated for work.
- Average duration of a completed episode is 40 days.
- Total time spent away in a year on average is 18 weeks.
- Yet for many of them it provides the majority of their income.



Questions

- Why are the businesses so small?
- Why so many entrepreneurs?
- Why don't they migrate for longer?
- Why so little specialization?



The Economic environment of the poor



Credit and savings

- An enormous fraction of the poor in many countries carry some debt
- Almost none of them got it from the formal banking sector
- High interest rate: often more than 3% a month!
- Very few people have formal savings accounts.



Market for Insurance and the poor

Percent of Total Households with Insurance:

	<u>Any Type</u>	<u>Health</u>	<u>Life</u>
--	-----------------	---------------	-------------

Rural

Cote d'Ivoire			
Guatemala			
India - Hyderabad			
India - Udaipur			3.8%
India - UP/Bihar	9.2%	4.7%	3.8%
Indonesia	6.0%	3.9%	0.0%
Mexico		50.7%	
Nicaragua	0.0%	5.5%	
Pakistan			
Panama		0.0%	0.0%
Papua New Guinea			
Peru		5.6%	0.0%
South Africa	5.4%		
Tanzania			
Timor Leste			



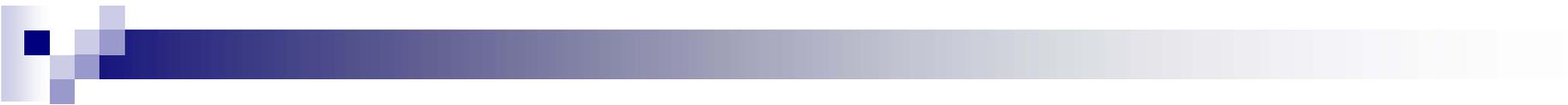
Insurance

- Very little formal insurance against anything
- Large fluctuation in food consumption/school enrollment in response to exogenous income shocks



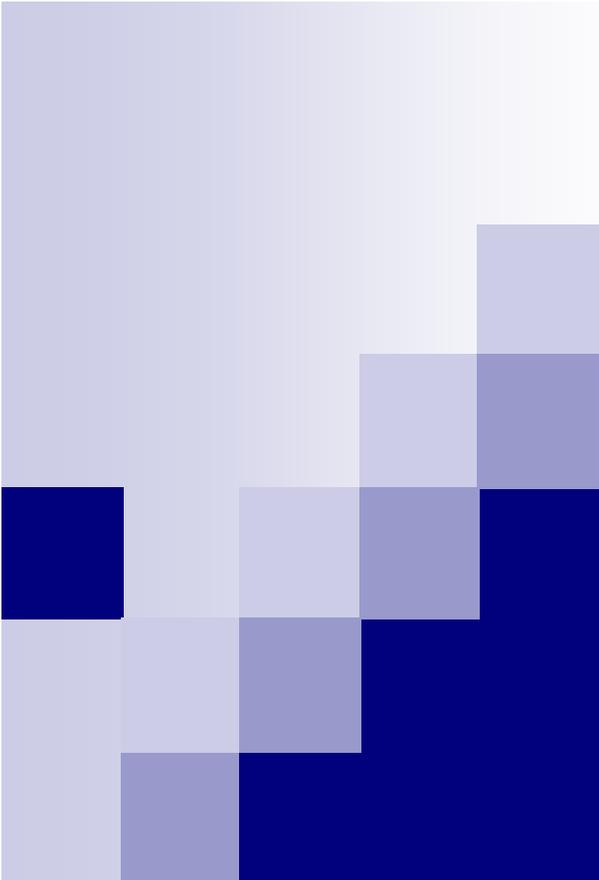
Land

- The very poor are very likely to have land
- The less poor some times even more likely, and they often even hold less!

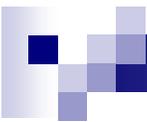


Questions

- Why no formal credit and insurance?
- Are informal systems good substitute for formal systems?
- Why are interest rates so high?
- How can the poor afford such high interest rates?
- Why don't they repay their debt as a way to save?
- Why do so many people have land?



Public goods and infrastructures



Economics environment of the poor: Basic infrastructure

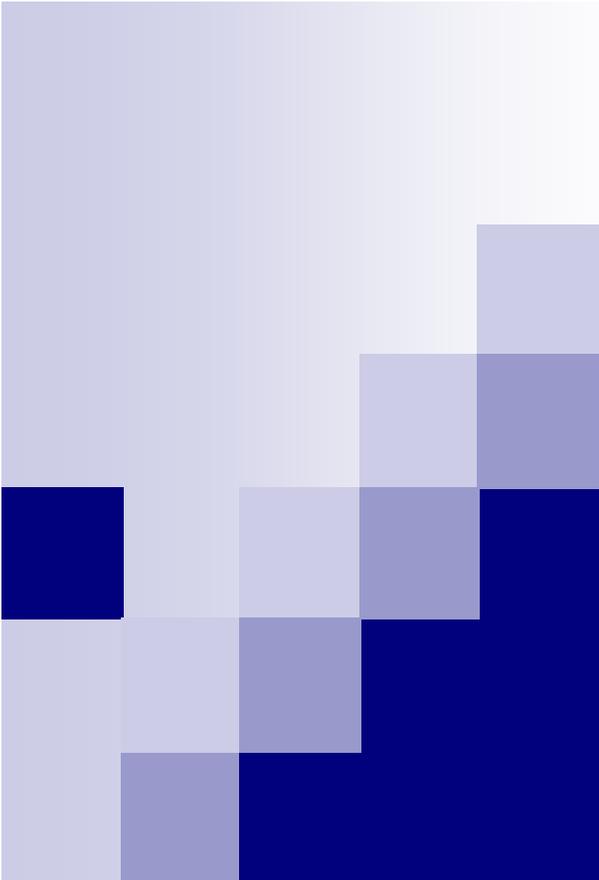
Percent of Households with:

	<u>In-House Tap Water</u>	<u>Toilet/ Latrine</u>	<u>Electricity</u>
Rural			
Cote d'Ivoire	11.8%	27.1%	45.1%
Guatemala	37.7%	50.5%	29.9%
India - Udaipur	0.0%	0.0%	8.3%
India - UP/Bihar	1.9%	3.4%	8.7%
Indonesia	5.6%	30.5%	96.9%
Mexico			99.0%
Nicaragua	12.3%	59.0%	16.4%
Pakistan	9.9%	28.5%	55.5%
Panama		37.7%	0.0%
Papua New Guinea	1.7%	95.2%	2.0%
Peru	29.7%		12.2%
South Africa	4.4%	58.9%	5.6%
Tanzania	0.7%	91.6%	1.1%
Timor Leste	2.3%	31.3%	8.8%



Poor quality of public good and infrastructure

- Enormous variation across country/income groups in availability of physical infrastructure (water/electricity)
- Health and education infrastructure
 - Expenditures of the poor on education are not too high despite fairly high enrollment
 - However... private school enrollment rises steeply with income
 - So does expenditure per health visits
- Quality of public infrastructure ??



The game plan...



This semester is about building blocks

- Household behavior (health, education, technology adoption)
- Public infrastructure (service delivery; infrastructure: dams/phone/electricity etc)
- Markets (land; credit; savings; product)



And what comes next...

- Macro: incorporating the building blocks in good models (14.772; Macro 1)
- Political economy: what are the determinants of the delivery of these public goods (14.773?)