

# Development economics

## Lecture 1: Introduction to development economics and the economic lives of the poor

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LMU, April 25, 2019

## Poverty in the world (World Bank)

- ▶ 12% of all humans live without electricity (95.5% in South Sudan, 0% in the EU).
- ▶ 81% of adults are illiterate in Niger (0 in Norway).
- ▶ 1 billion people lack access to clean water (72% in rural Angola, 0 in the EU).
- ▶ Life expectancy in Sierra Leone is 51 years (84 in Japan).
- ▶ 700 million people live on less than \$1.9 a day (minimum wage in Denmark is \$18 excluding pension benefits).
- ▶ 23% of children around the world are stunted (46% in Guatemala, about 2% in high income countries).
- ▶ Mortality rate is 42/1000 for under-5 children (157 in Angola, 4 in Germany)

Time for a little experiment...



<https://forms.gle/9BVYsEfapLCtrD1x8>

## Small, Loewenstein, and Slovic (2006)

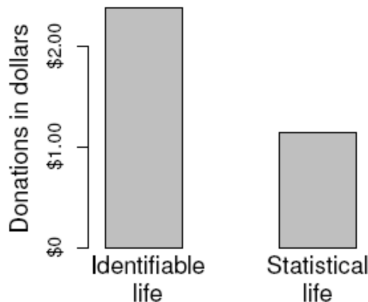
### Identifiable Lives Condition

Rokia, a 7-year-old girl from Mali, Africa, is desperately poor and faces a threat of severe hunger or even starvation. Her life will be changed for the better as a result of your financial gift. With your support, and the support of other caring sponsors, Save the Children will work with Rokia's family and other members of the community to help feed her, provide her with education, as well as basic medical care and hygiene education.

### Statistical Lives Condition

- ▶ Food shortages in Malawi are affecting more than 3 million children.
- ▶ In Zambia, severe rainfall deficits have resulted in a 42% drop in maize production. As a result, about 3 million Zambians face hunger.
- ▶ One third of the population of Angola have been forced to flee their homes.
- ▶ More than 11 million people in Ethiopia need immediate food assistance.

## Small, Loewenstein, and Slovic (2006)



### ► What to do?

1. Nothing — there is just too many poor people, we cannot help them all.
2. **Try to understand the situation in poor countries and the lives of the poor to help develop clever policies and avoid those doomed to fail (Our aim here).**

## Overview of the course

Historical overview of economic growth and cross-country comparison

Introduction to development economics using statistical indicators of poverty (macroeconomic approach)

Economic lives of the poor (microeconomic approach)

Last mile problems: steps towards extreme poverty eradication

# Structure of the course

## ► Lectures

1. **Introduction**
2. Traditional growth models
3. Traditional growth models
4. Modern (endogenous) growth models, and poverty traps
5. Games in economic development
6. Measuring poverty, inequality, and discrimination
7. Culture, institutions, and the role of history
8. The role of foreign aid
9. Health and nutrition
10. Education
11. Behavioral development economics
12. Credit markets and microcredit: theory
13. Microcredit: evidence

# Structure of the course

## ► Tutorials

1. Introduction to Stata
2. Replicating Mankiw, Romer, and Weil (1992 QJE)
3. Replicating Miguel and Roland (2011 JDE)
4. Replicating Acemoglu, Johnson, and Robinson (2001 AER)  
and subsequent critique
5. Replicating Miguel and Kremer (2004 ECTA)
6. Replicating Karlan and Zinman (2009 ECTA)



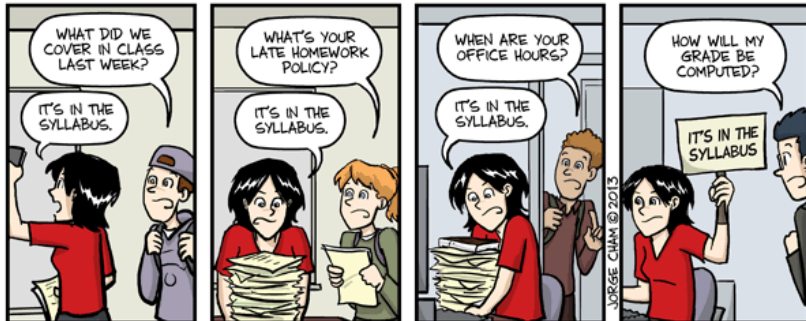
# Grading

- ▶ Final exam (100%) - June 13
- ▶ Academic integrity

# Textbook and readings

- ▶ Principle textbook will be: Ray, D. (1998): Development economics. Princeton University Press.
- ▶ Much more reading in the syllabus.
  - ▶ All materials available at:  
<http://www.vojtechbartos.net/teaching/development-economics-lmu-2019-summer/>
  - ▶ All readings available at the website.
  - ▶ Password for the readings: **lmudevecon2019**
- ▶ Reading and understanding academic papers!
  - ▶ Example today (Banerjee and Duflo, 2007)

## It's in the syllabus!



# IT'S IN THE SYLLABUS

This message brought to you by every instructor that ever lived.

[WWW.PHDCOMICS.COM](http://WWW.PHDCOMICS.COM)

## Overview of the course

### Historical overview of economic growth and cross-country comparison

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## Why focusing on income?

*"By the problem of economics development I mean [...] accounting for the observed pattern, across countries and across time, in levels and rates of growth of per capita income. This may seem too narrow a definition [...] but thinking about income patterns will necessarily involve us in thinking about many other aspects of societies too."*  
— R. E. Lucas (1988)

- ▶ Four questions to motivate the course:
  1. Why do we care about GDP?
  2. Is income (GDP) the ultimate goal? Or just the means through which we achieve development?
  3. What do we expect from *development*?
  4. Why the poor countries remain poor?
    - ▶ Don't worry, we'll try to find some answers throughout the course

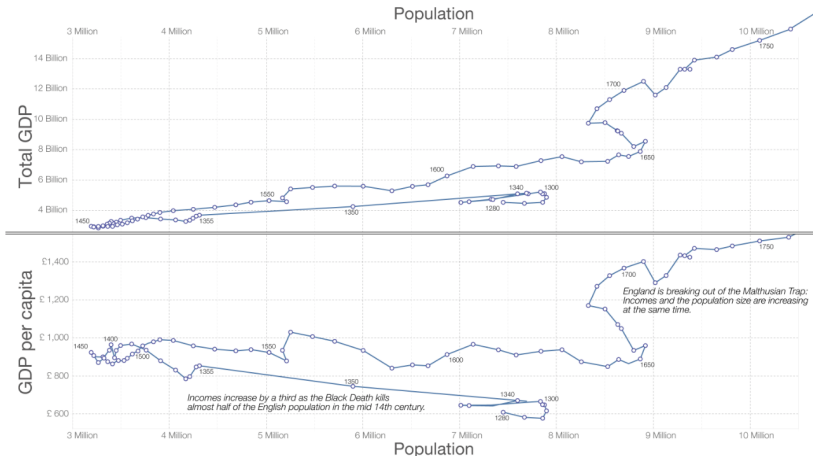
# Malthusian world

## The Malthusian Economy: GDP, GDP per capita, and the size of the population in England from 1280 to 1770



GDP is adjusted for inflation and expressed in 2013 prices.

Before sustained economic growth was achieved the English economy was trapped in a 'Malthusian Economy', productivity increases lead to population increases so that per capita the output did not increase. And vice versa, population decreases, such as the strong decline due to the plague in the mid-14th century, lead to increasing output per capita for those that survived the Black Death. For reference and in the same prices: GDP per capita in 2015 was £28,161 in the UK.

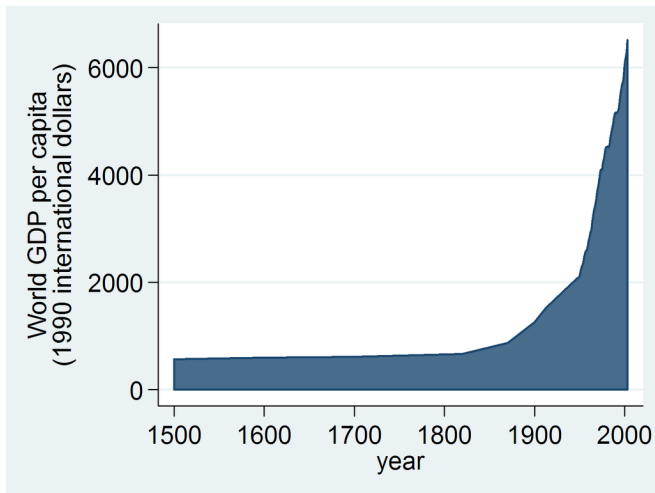


Data source: Broadberry et al and Bank of England. Data prior to 1700 refers to England; data thereafter refers to the UK. Averages over 5 year intervals are shown here.

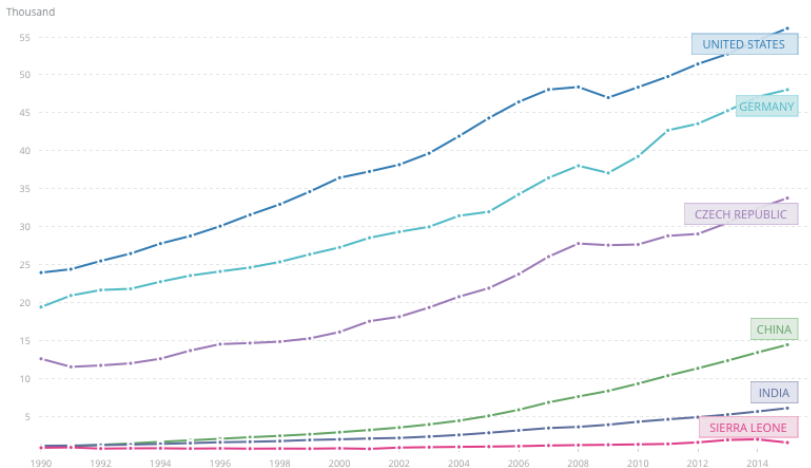
The visualization is available at [OurWorldinData.org](https://OurWorldinData.org) where you find more visualizations and research on global development.

Licensed under CC-BY-SA by the author Max Roser.

# Extreme growth in past 150 years – global GDP per capita between 1500 and 2000 (in 1990 USD)



# Historical overview: growing split between the rich and the poor





# Stickiness of incomes: the poor remain poor

2010

	0 – ¼	¼ – ½	½ – 1	1-2	2 – ∞
1970 0 – ¼	92	8	0	0	0
¼ – ½	40	40	20	0	0
½ – 1	0	29	64	7	0
1-2	0	0	8	75	17
2 – ∞	0	0	0	0	100

- ▶ "Transition matrix"
- ▶ Grouped by fractions of world (average) per capita income

## Stickiness of incomes: the poor remain poor

- ▶ Why aren't the poor countries catching up?
  1. Growth theory would predict that with low capital/labor ratio, capital should flow to poor countries where marginal product of capital should be relatively high – "Lucas Paradox"
  2. Many technologies have been developed in the west and can be adopted in the poor countries – "leapfrogging"

Overview of the course

Historical overview of economic growth and cross-country comparison

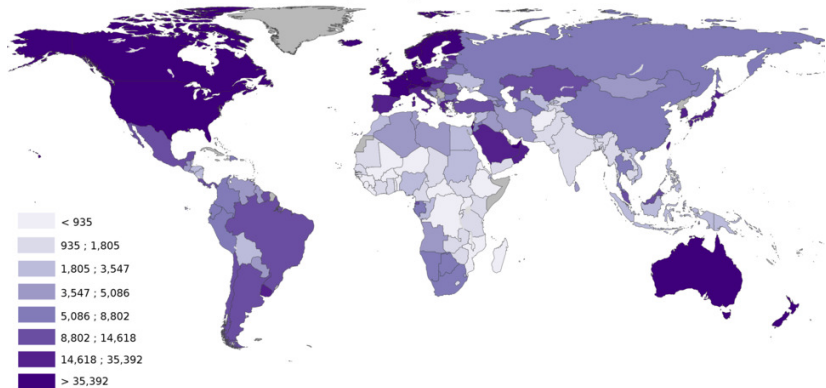
Introduction to development economics using statistical indicators of poverty (macroeconomic approach)

Economic lives of the poor (microeconomic approach)

Last mile problems: steps towards extreme poverty eradication

# Income inequality across countries – GDP (PPP) per person (2015)

Gross domestic product per capita (Dollars)



Source : IMF - 2015  
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# Extreme poverty worldwide (2013)

Globally there are 746 million people in extreme poverty (in 2013)

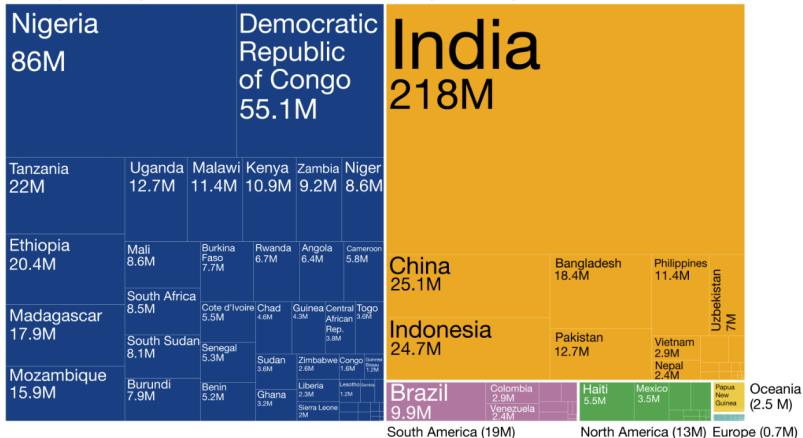
Extreme poverty is defined as living with less than \$1.90/day.

This is measured in international dollars (i.e. price differences between countries are taken into account).



Africa (383 million)

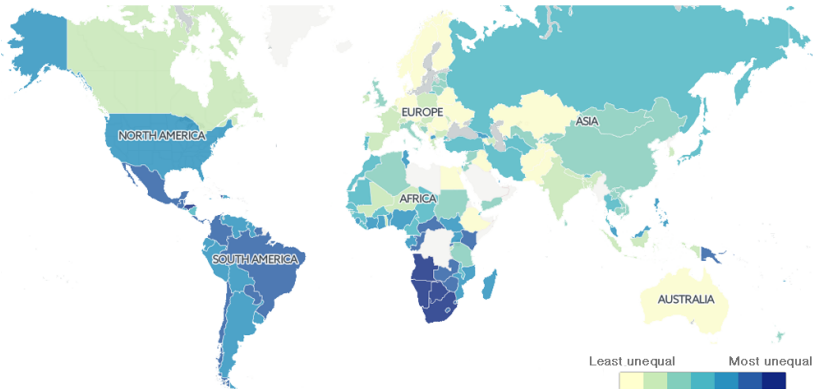
Asia (327 million)



# Income inequality within countries – GINI coefficient (2014)

## The most unequal regions in the world

GINI index measure of inequality

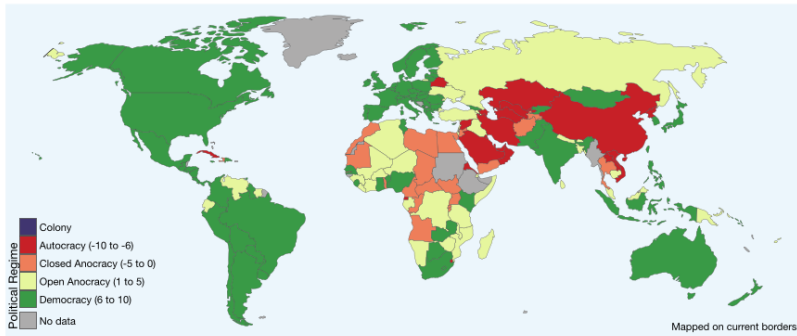


# Democracy around the world – Democracy index (2015)

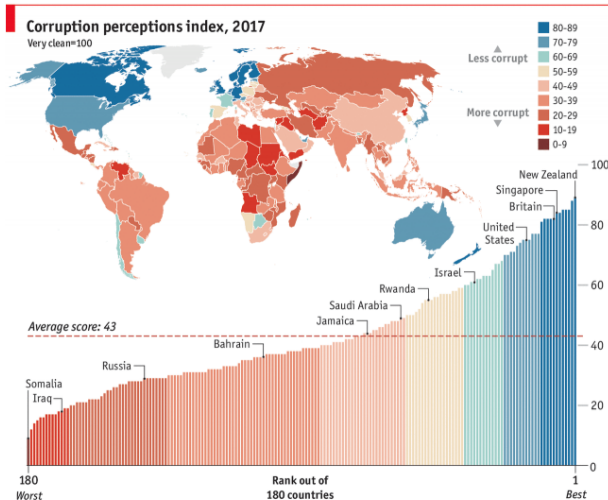
## Political Regime, 2015



The Polity IV score classifies the type of political regime for each country on a range from -10 (full autocracy) to +10 (full democracy). Regimes that fall into the middle of this spectrum are called anocracies.



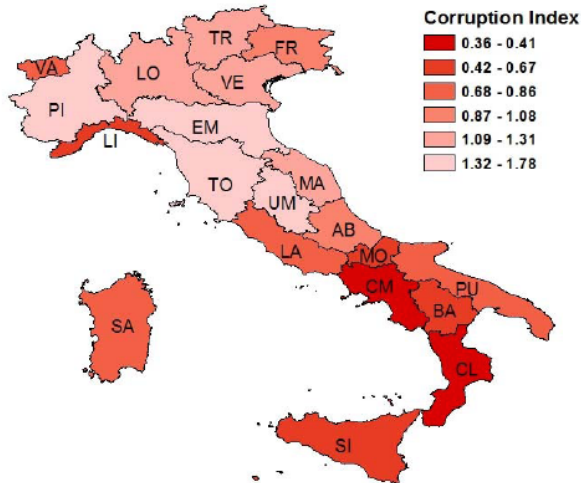
# Corruption around the world – Corruption perceptions index (2017)



Source: Transparency International  
Economist.com



## Corruption within country – case of Italy (1997)



## Using Gapminder to project data

- ▶ Hans Rosling, professor of international health at Karolinska Institute, Sweden.
  - ▶ Founder of [www.gapminder.org](http://www.gapminder.org)
  - ▶ Show video: [goo.gl/dQBF0i](https://goo.gl/dQBF0i) (start 1:05, go to 4:05, then start from 10:30, stop again at 14:30)

Overview of the course

Historical overview of economic growth and cross-country comparison

Introduction to development economics using statistical indicators of poverty (macroeconomic approach)

**Economic lives of the poor (microeconomic approach)**

Last mile problems: steps towards extreme poverty eradication

## Economic lives of the poor

- ▶ Banerjee, A. V., and Duflo, E. (2007). The Economic Lives of the Poor. *Journal of Economic Perspectives*, 21(1), 141–167.
- ▶ World Development Report (1990): "extremely poor" – those who are currently living on no more than \$1 per day per person (measured at the 1985 purchasing PPP)
- ▶ Reading an academic paper:
  1. Question: How do the poor of the world live?
  2. Why interesting?
  3. Method? Description of household surveys from 13 countries.
  4. Results?
  5. Limitations?
  6. Policy conclusions?

# Economic lives of the poor: Method

Country	Source	Year	Avg. monthly consumption per capita (In PPP\$)	Households (HHs) living on less than			
				\$1.08 per person per day		\$2.16 per person per day	
				Number surveyed	Percent of total surveyed HHs	Number surveyed	Percent of total surveyed HHs
Cote d'Ivoire	LSMS	1988	664.13	375	14%	1,411	49%
Guatemala	GFHS	1995	301.92	469	18%	910	34%
India-Hyderabad	Banerjee-Duflo- Glennester	2005	71.61	106	7%	1,030	56%
India-Udaipur	Banerjee-Deaton- Duflo	2004	43.12	482	47%	883	86%
Indonesia	IFLS	2000	142.84	320	4%	2,106	26%
Mexico	MxFLS	2002	167.97	959	15%	2,698	39%
Nicaragua	LSMS	2001	117.34	333	6%	1,322	28%
Pakistan	LSMS	1991	48.01	1,573	40%	3,632	83%
Panama	LSMS	1997	359.73	123	2%	439	6%
Papua New Guinea	LSMS	1996	133.38	185	15%	485	38%
Peru	LSMS	1994	151.88	297	7%	821	20%
South Africa	LSMS	1993	291.33	413	5%	1,641	19%
Tanzania	LSMS	1993	50.85	1,184	35%	2,941	73%
Timor Leste	LSMS	2001	64.42	662	15%	2,426	51%

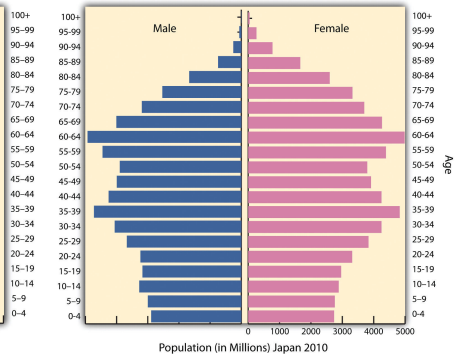
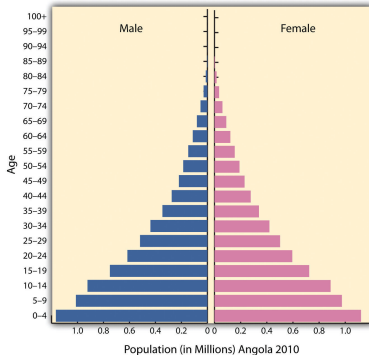
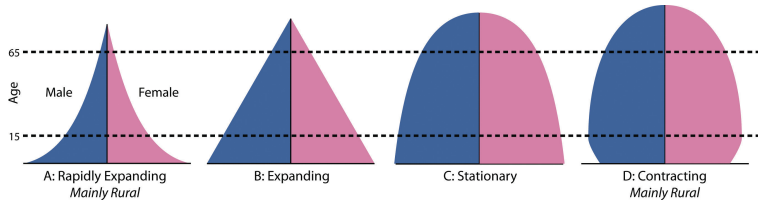
## Economic lives of the poor: Results

1. Families of the poor
2. Spending money
3. Earning money
4. Markets for the poor
5. Physical infrastructure
6. Understanding the behavior of the poor

## Economic lives of the poor: Families of the poor

- ▶ Very poor families:
  1. Are large (median 7 to 8), poor families little smaller (median: 6 to 7) – compared to US: 2.5 - both more adults & children
  2. Have lots of children (median: 3 to 9) – compared to US: 1.8
  3. Have few elderly.

# Economic lives of the poor: Families of the poor





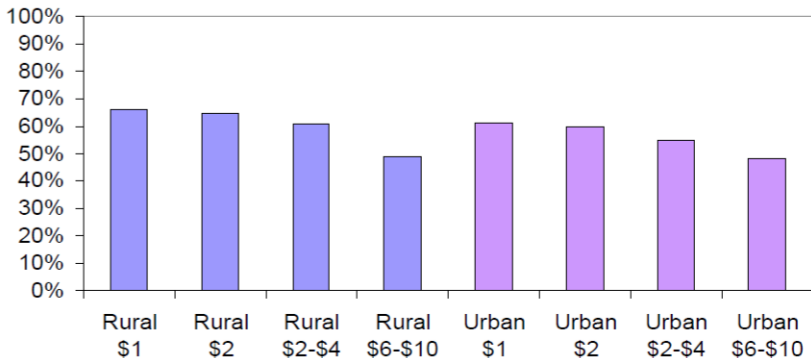
# Economic lives of the poor: Spending money

		As a Share of Total Consumption				
		Food	Alcohol/ Tobacco	Education	Health	Entertainment
<b>Living on less than \$1 a day</b>						
<b>Rural</b>						
	Cote d'Ivoire	64.4%	2.7%	5.8%	2.2%	0.0%
	Guatemala	65.9%	0.4%	0.1%	0.3%	
	India - Udaipur	56.0%	5.0%	1.6%	5.1%	0.0%
	India - UP/Bihar	80.1%	3.1%	0.3%	5.2%	0.1%
	Indonesia	66.1%	6.0%	6.3%	1.3%	0.0%
	Mexico	49.6%	8.1%	6.9%	0.0%	0.7%
	Nicaragua	57.3%	0.1%	2.3%	4.1%	0.0%
	Pakistan	67.3%	3.1%	3.4%	3.4%	0.3%
	Panama	67.8%		2.5%	4.0%	0.6%
	Papua New Guinea	78.2%	4.1%	1.8%	0.3%	0.2%
	Peru	71.8%	1.0%	1.9%	0.4%	0.0%
	South Africa	71.5%	2.5%	0.8%	0.0%	0.1%
	Timor Leste	76.5%	0.0%	0.8%	0.9%	0.0%

## Economic lives of the poor: Spending money

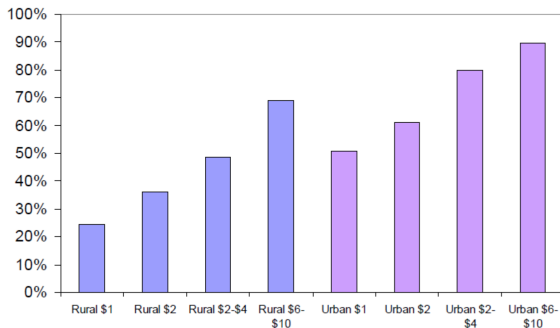
- Budget share Engel curve:  $\frac{\partial \text{Food}}{\partial \text{Income}} < 0$

**Percentage of Household Budget spent on Food**



# Economic lives of the poor: Spending money

- ▶ Percentage of households owning a TV



- ▶ Asset ownership used as a measure of poverty. Why?
- ▶ Majority of the poor own some agricultural land.

## Economic lives of the poor: Earning money

- ▶ Majority of the extremely poor and poor have multiple (informal) jobs
  - ▶ The median family in this survey has three working members and seven occupations (Banerjee, 2006).
  - ▶ Frequent migration for work (seasonal)
  - ▶ But not everywhere: urban South Africa or Panama
    - ▶ Remember Hans Rosling: "there are more than 200 countries, not just 2 my neighbor knows: industrialized and developing"
- ▶ Between 25 (some urban) to 98 (some rural) self-employed in agriculture (subsistence)
  - ▶ But almost no one reports agriculture as main source of income!
- ▶ Very little specialization, businesses at very small scale (show photo)
  - ▶ Almost no assets (only 4% motorized vehicle)
  - ▶ Almost no paid employees per business (b/w 0.14 to 0.53)

## Economic lives of the poor: Earning money



## Economic lives of the poor: Markets for the poor

- ▶ Credit markets: many people have **debts**, very few have formal **loans**
  - ▶ Majority of loans in multiple surveys come from money-lenders and local shopkeepers
  - ▶ High interest rates: around 3.5% *per month*
  - ▶ Back of the envelope calculations: they pay 50% annual interest rate!
  - ▶ Land cannot be used as collateral: often no entitlements or lack of legal enforcement

## Economic lives of the poor: Markets for the poor

- ▶ Very low rates of **savings** among the poor (temptations and safety concerns main reasons): 14% have some savings accounts
- ▶ Very low access to **insurance**: 6% covered
  - ▶ Reliance on social networks: families, neighbours, community, caste...
  - ▶ Low levels of investment in risky but profitable new technologies (improved seeds; Morduch, 1995)

## Economic lives of the poor: Physical infrastructure

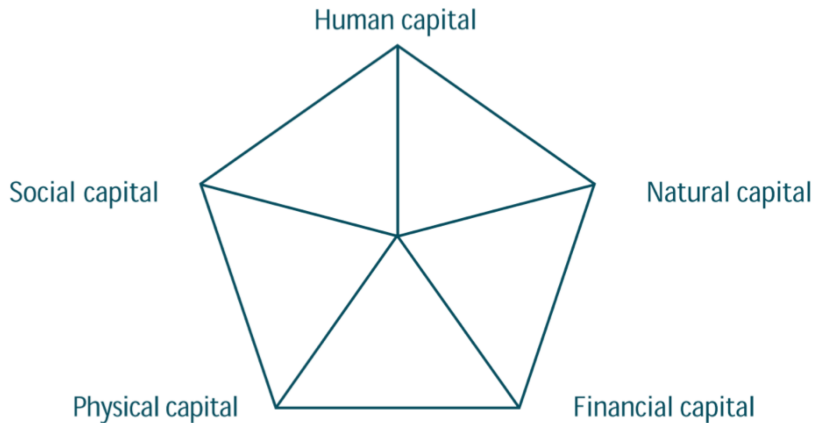
- ▶ What is infrastructure? Roads, electricity, water, sewage, health centres and schools, telecommunications...
- ▶ Very poor access to infrastructure: none of the extremely poor in Udaipur have access to tap water, electricity, or latrines.
- ▶ Access to electricity varies, but generally unstable; frequent power cuts
- ▶ Access & quality of health care and education inadequate: frequent absences, very low qualification
  - ▶ Chaudhury, Hammer, Kremer, Muralidharan, and Rogers (2005): Measuring absence of teachers and health workers in Bangladesh, Ecuador, India, Indonesia, Peru, and Uganda
    - ▶ Teacher absence rates: 19%
    - ▶ Health worker absence rates: 35%
    - ▶ Absences higher in poorest places
  - ▶ Pratham (2006): 34.9% of the children age 7 to 14 cannot read a simple paragraph in India.



# Economic lives of the poor: Understanding the behavior of the poor

- ▶ Levels of self-reported happiness of the poor not particularly low (Banerjee, Duflo, and Deaton, 2004), but...
- ▶ ... the poor do report being under a great deal of stress, both financial and psychological.
- ▶ The poor face self-control problems (as everybody else does):
  - ▶ lack of savings
  - ▶ insufficient spending on food
  - ▶ underinvestment in profitable technologies (fertilizer example)...

# Asset pentagon



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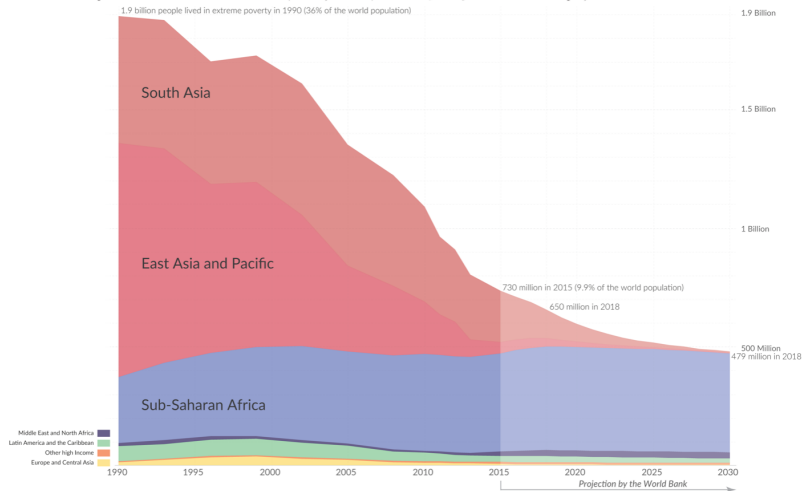
**Last mile problems: steps towards extreme poverty eradication**

# Extreme poverty eradication

## The number of people in extreme poverty – including projections to 2030

Extreme poverty is defined by the 'international poverty line' as living on less than \$1.90/day. This is measured by adjusting for price changes over time and for price differences between countries (PPP adjustment). From 2015 to 2030 the World Bank's projections are shown.

Our World  
in Data



Data source: World Bank data from 1990 to 2015. The projections from 2015 to 2030 are published in the World Bank report *Poverty and Shared Prosperity 2018*.

This is a visualization from [OurWorldInData.org](https://ourworldindata.org), where you find data and research on how the world is changing.

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## Steps towards ending extreme poverty

- ▶ Dramatic decline in world poverty. Share of population living at less than \$1.90 PPP/day (PovcalNet 2018):
  - ▶ 1981: 42 percent
  - ▶ 2013: 11 percent
- ▶ **Traditional view:** Economic growth ("a rising tide lifts all boats") + intentional redistribution through aid (domestic or foreign) → poverty reduction
- ▶ **Page and Pande (2018):** maybe not (under current conditions)...

# Poverty distribution then (1987)

<i>Millions in extreme poverty</i>	<i>Poverty headcount (%)</i>	<i>Share of world's poor (%)</i>	<i>Ranking in # of world's poor</i>	<i>Millions in extreme poverty</i>	<i>Poverty headcount (%)</i>	<i>Share of world's poor (%)</i>	<i>Ranking in # of world's poor</i>
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## A: 1987

Low-income countries:					Middle-income countries:				
Total	1,587	57.3	90.3		Total	115.2	11.9	6.5	
China	659.5	60.8	37.5	1	Brazil	25.1	17.8	1.4	9
India	391.1	47.9	22.2	2	Philippines	15.4	26.9	0.9	12
Indonesia	122.5	71.4	7.0	3	South Africa	8.9	25.8	0.5	17
Pakistan	61.1	62.2	3.5	4	Thailand	8.3	15.4	0.5	19
Nigeria	56.8	64.5	3.2	5	Mexico	7.8	9.7	0.4	20
Vietnam	42.3	68.5	2.4	6					
Myanmar	36.5	94.4	2.1	7					
Bangladesh	33.4	33.9	1.9	8					
Ethiopia	24.6	56.6	1.4	10					
Dem. Rep. of the Congo	19.6	62.3	1.1	11					
Tanzania	15.0	64.7	0.9	13					
Nepal	12.7	72.6	0.7	14					
Mozambique	11.7	89.5	0.7	15					
Uganda	10.7	68.2	0.6	16					
Sudan	8.4	45.7	0.5	18					

# Poverty distribution now (2013)

<i>Millions in extreme poverty</i>	<i>Poverty headcount (%)</i>	<i>Share of world's poor (%)</i>	<i>Ranking in # of world's poor</i>	<i>Millions in extreme poverty</i>	<i>Poverty headcount (%)</i>	<i>Share of world's poor (%)</i>	<i>Ranking in # of world's poor</i>
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## B: 2013

Low-income countries:					Middle-income countries:				
Total	284.3	36.9	36.3		Total	478.1	9.6	61.1	
Dem. Rep. of the Congo	54.1	75.9	6.9	3	India	210.4	16.5	26.9	1
Ethiopia	27.8	29.3	3.6	4	Nigeria	85.2	49.6	10.9	2
Bangladesh	26.5	16.8	3.4	5	China	25.2	1.9	3.2	6
Tanzania	23.3	45.9	3.0	8	Indonesia	23.6	9.4	3.0	7
Madagascar	17.9	77.8	2.3	9	Pakistan	12.7	7.0	1.6	13
Mozambique	16.9	63.9	2.2	10	Philippines	10.7	10.8	1.4	15
Kenya	15.1	33.7	1.9	11	South Africa	9.3	17.5	1.2	16
Uganda	13.5	35.8	1.7	12	Zambia	8.9	58.8	1.1	17
Malawi	11.7	70.4	1.5	14	South Sudan	7.8	69.5	0.9	20
Mali	8.6	52.0	1.1	18					
Niger	8.5	46.3	1.1	19					

## Poverty distribution now (2013)



(a) Low income (Mukini, Zambia)



(b) High poverty middle income (Manila, Philippines)



## Steps towards ending extreme poverty

- ▶ Two types of countries:
  - ▶ **Low-income fragile states:** Afghanistan, Liberia, and the Democratic Republic of Congo (DRC)
    - ▶ Periods of relative growth for few and of conflict.
    - ▶ Require immediate foreign aid.
  - ▶ Fast-growing but increasingly unequal **high-poverty middle-income** countries: India, Nigeria, China, Indonesia, Pakistan, the Philippines, South Africa, and Zambia
    - ▶ Their share is rising
    - ▶ Receive less foreign aid, state government must take lead.
    - ▶ Simple cash transfers do not deliver transformative effects ("poverty is more than just a lack of money")
    - ▶ Provision of education, health, and financial services.
    - ▶ Requires strong state, and well-functioning and enforceable regulations →

## "Invisible infrastructure" (Page and Pandey 2018)

- ▶ Traditional infrastructure: already discussed: provision of transport (roads), electricity (power grid, power plants), health care (hospitals), education (schools)...
- ▶ Invisible infrastructure: on top of above, incentive and information structures that bring the actions of those who control resources in line with the needs of the poor

## How can foreign aid help? (Page and Pandey 2018)

- ▶ Oftentimes foreign aid bypasses local governments. Why?
- ▶ Page and Pandey (2018): Not a good idea, otherwise:
  - ▶ **Long term harm:** aid transfers bypassing state → state capacity to provide invisible infrastructure harmed
  - ▶ **Short term harm:** governments bypassed lack local information flows about what works in context and preference aggregation through elections. The loss of these tools can damage long-term prospects for poverty reduction, because people who feel they have no voice in development may be less willing to support it by paying taxes.
- ▶ Call for support with interventions to build capable, democratic state institutions.