

Public Goods, Externalities, Taxes and Inequality

Market Failures

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SOMS

Market Failures

Failure of market economy	Government intervention	Current examples of government policy
Inefficiency:		
Monopoly	Encourage competition	Antitrust laws, deregulation
Externalities	Intervene in markets	Antipollution laws, antismoking ordinances
Public goods	Encourage beneficial activities	Provide public education, build roads
Inequality:		
Unacceptable inequalities of income and wealth	Redistribute income	Progressive taxation of income and wealth Income-support or transfer programs (e.g., subsidize health care)
Macroeconomic problems:		
Business cycles (high inflation and unemployment)	Stabilize through macroeconomic policies	Monetary policies (e.g., changes in money supply and interest rates) Fiscal policies (e.g., taxes and spending programs)
Slow economic growth	Stimulate growth	Improve efficiency of tax system Raise national savings rate by reducing budget deficit or increasing budget surplus

TABLE 2-1. Government Can Remedy the Shortcomings of the Market

Role of government in economies

Governments have two economic functions:

1. Enforce property rights and provide legitimate means for the redistribution of income and wealth.
2. Non-market allocation of resources when markets fail.

Markets are said to 'fail' when they allocate resources inefficiently, so that too much of some goods, and too few of others, are produced.

Market Failure

Sometimes markets fail to allocate resources efficiently.

There are four main types of market failure.

1. Public goods
2. Taxes and redistribution
3. Concentration of monopoly power
4. Externalities

PUBLIC GOODS

Public Good: A good or service that can be consumed simultaneously by everyone and from which no one can be excluded.

Non-rival: Everyone can consume it at the same time.

Non-exclusion: No one can be excluded from consuming it.

There are many classes of goods, and some exhibit one or both of these features to some degree.

<p>Excludable Rival (Pure Private Good) Most consumer goods Apples and iPhones</p>	<p>Excludable Non-rival Highways Stadium Clubs</p>
<p>Non-excludable Rival Clean air and water Parks and Grazing lands</p>	<p>Non-excludable Non-rival (Pure Public Good) National Defense Security Street-lights</p>

Only pure private goods can be allocated efficiently through the market without some kind of market failure.

Many goods that are based on networks, such as highways, railroads, communications lead to some kind of market failure that often leads to some kind of government action.

Though excludability can be difficult, it's the non-rival nature of consumption that leads to the market failure most of the time.

For private goods: The marginal benefit is the maximum amount a person is willing and able to pay for one more unit.

For public goods: The marginal benefit is the maximum amount *everyone together* is willing to pay for one more unit of the good.

For private goods: We find market demand by adding the individual demand curves of consumers *horizontally*.

For public goods: We find the marginal benefit curve or society's demand curve by adding individual marginal benefit curves *vertically, because each person consumes each unit of the public good*.

The efficient provision of a public good occurs at the quantity where the marginal benefit equals the marginal cost, or, where the net benefit, (total benefit -total cost of provision) is maximized.

But, since a public good is non-excludable, people have no incentive to pay for the good. They can't be excluded from consuming it, so, whether they pay or not, they receive it.

And, since it is non-rival, each person consumes *all of it at the same time*.

So, people will *take a free ride* when they can, and not pay or not report the true value of a public good, because they consume it any time it is provided, whether they pay for it or not.

Because of the free rider problem, individuals have no incentive to pay for public goods, and therefore, private firms fail to provide the good.

Instead, a public agency is required to provide pure public goods.

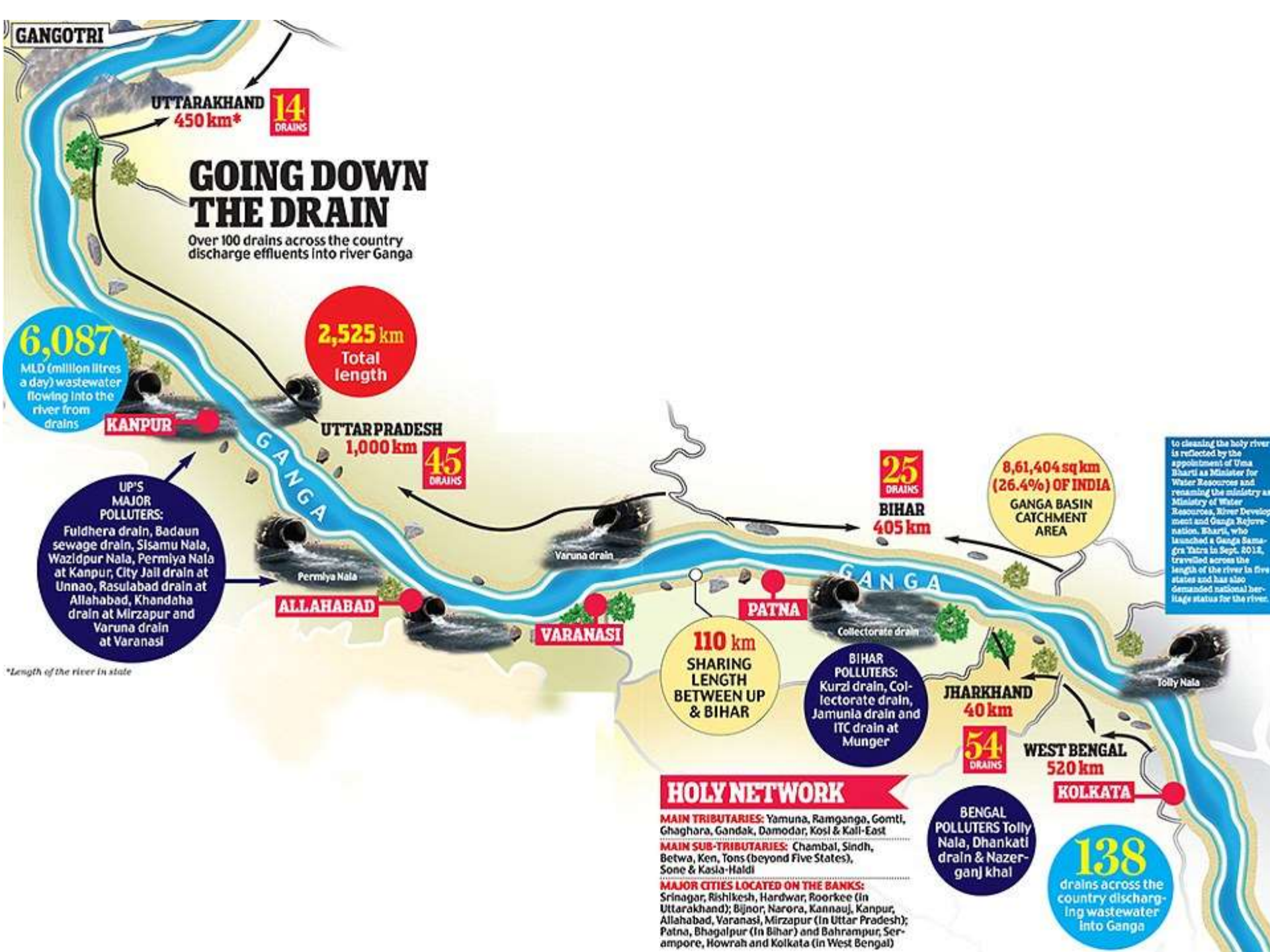
A well informed and rational voting public can bring about efficient provision of public goods.

But, individuals often do not have an economic incentive to be rational or informed as voters.

EXTERNALITIES







	Positive	Negative
Consumption	Bakery + Perfumery	Second hand Smoking
Production	Honey Bee (Apiary) +apple orchard	Upstream industrial pollutant on the river. The downstream fisheries

Market Externalities:

Externalities from production: Discharge into a creek from a manufacturing process.

Externalities from consumption: second hand cigarette smoke.

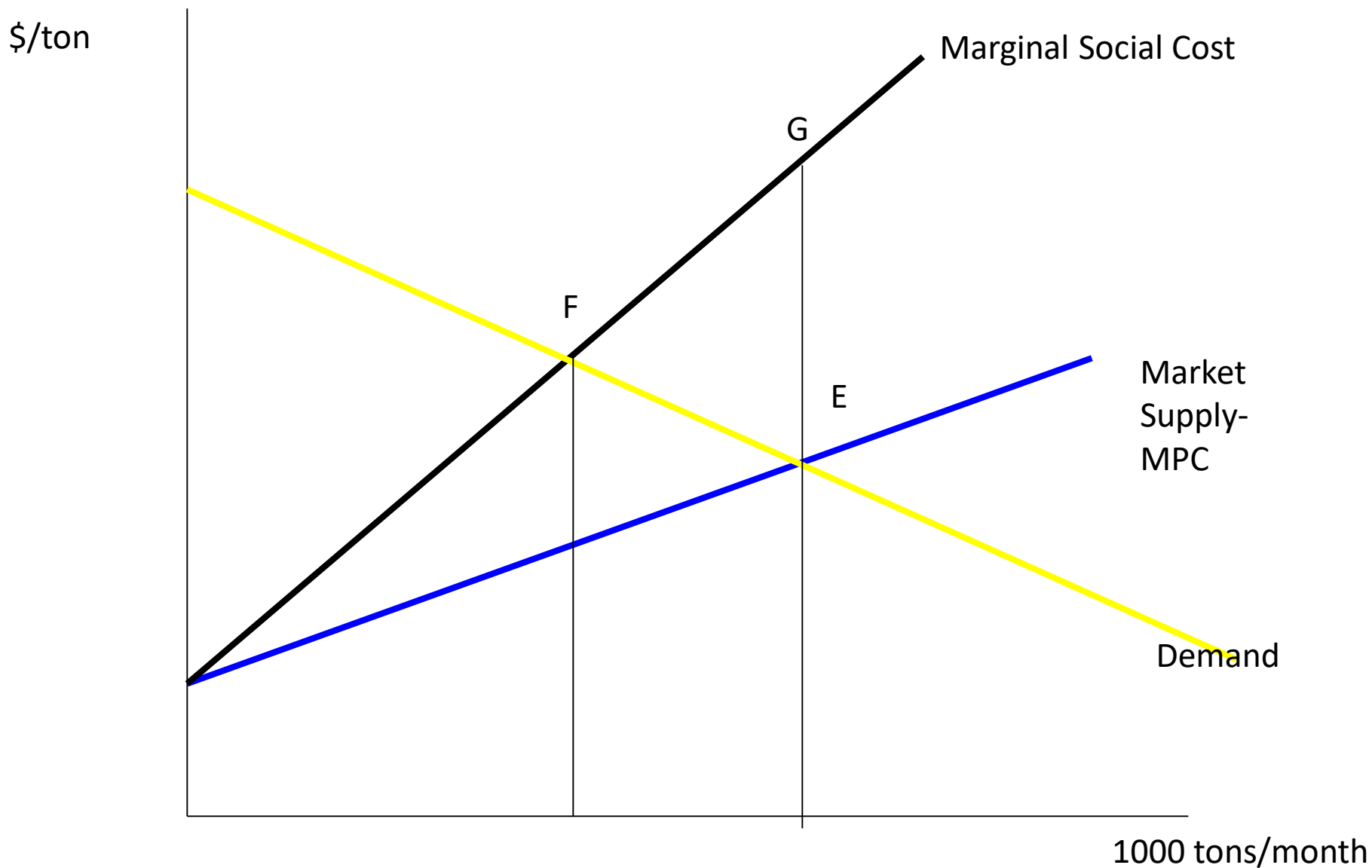
When we discuss marginal cost in production, we've been assuming that marginal external costs are zero, so that $\text{marginal private cost} = \text{marginal social cost}$.

But, $\text{Marginal Social Costs} = \text{Marginal Private Costs} + \text{Marginal External Costs}$

Marginal external costs cannot be captured by the market process for allocating the good they are *external to the market*.

But, external costs are real, they are just not covered by the market process. they are still paid by someone, but inefficiently.

EFG represents the dead weight loss.
E is the inefficient market equilibrium.
F is the efficient equilibrium, including external costs.



Can a market ever handle external costs?

Yes, in the ideal case of perfect property rights, described by Ronald Coase.

Coase Theorem: Private transactions can lead to efficient outcomes when market externalities exist if:

1. There are only a small number of parties involved.
2. Transactions costs are low.
3. Property rights are assigned.

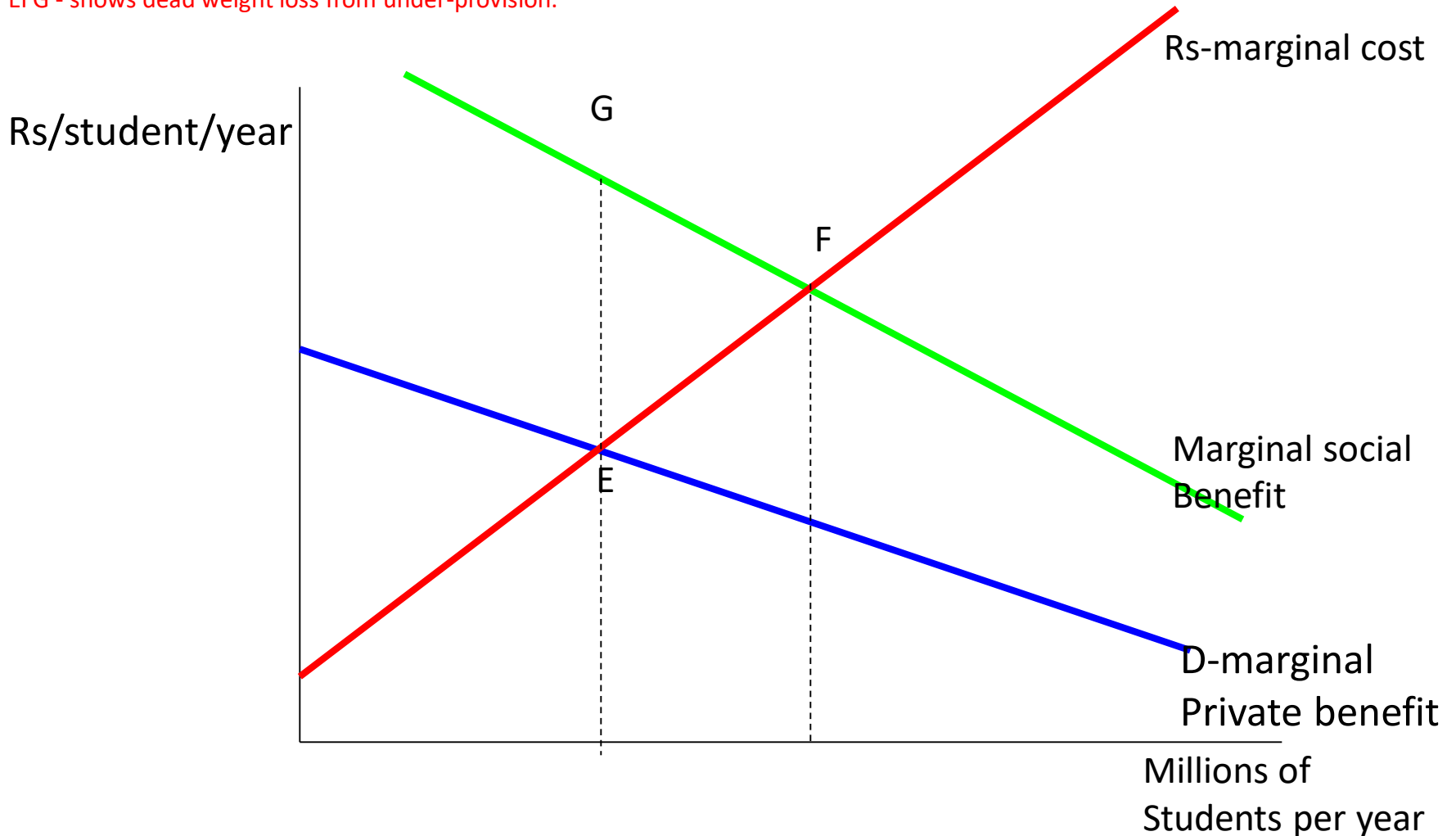
In these cases, private individuals will take all costs and benefits into account.

On the benefit side of the market, external benefits mean that marginal private benefits no longer equal marginal social benefits. Any external benefits should be added to the market demand curve.

Point E is the inefficient market outcome. There is under-provision of the good, education.

F - gives efficient social outcome quantity.

EFG - shows dead weight loss from under-provision.



This kind of inefficiency can be solved by

- subsidy, public or private,
- tradable permits (vouchers) or other means
- Joint production –merge and acquisitions

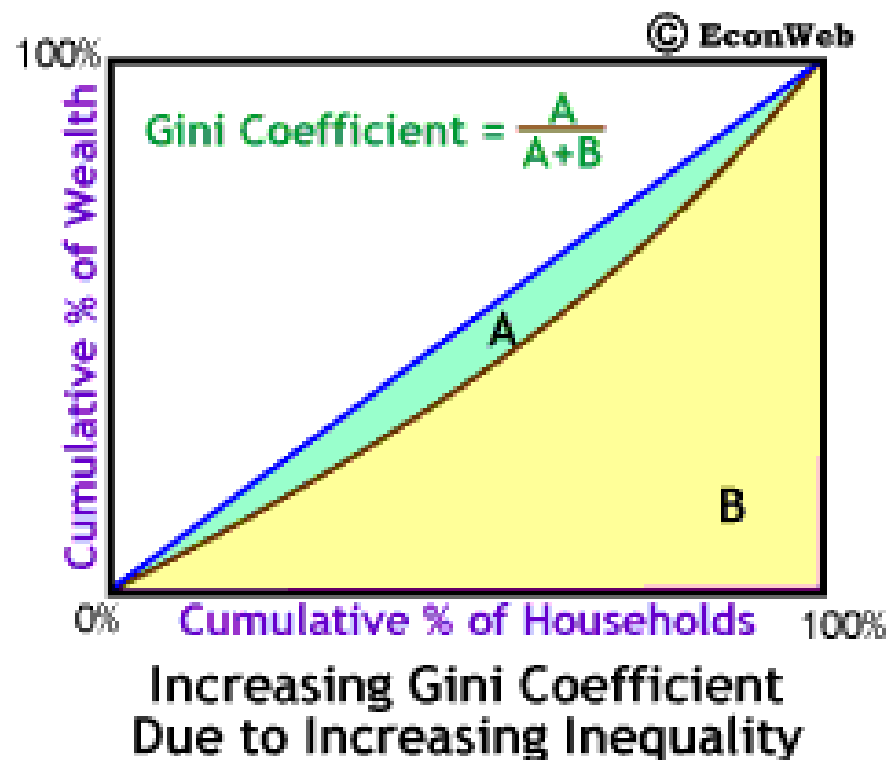
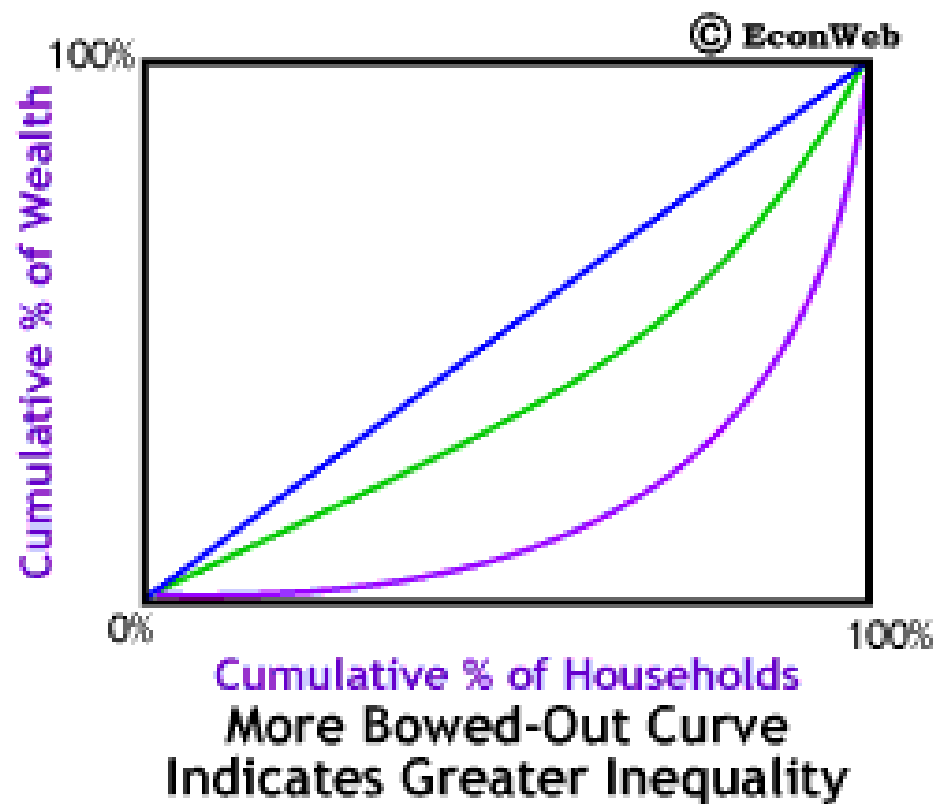
INEQUALITY

Inequality

- ④ “Inequality” has two meanings
 - Overall dispersion of an outcome
 - Group differences in an outcome

Measuring Inequality

- **Lorenz curve** is a graphical device used to represent distributional inequality.
- **Gini coefficient** is a numerical measure of inequality based on the Lorenz curve. These measures can be used to represent any sort of distributional inequity
- Along the horizontal axis we measure the **Cumulative Percent of Households** (poorest to richest).
- Along the vertical axis we measure the **Cumulative Percent of Wealth/Income**



Taxes and Inequality

Most taxes create a dead-weight loss of some kind, depending on Price elasticities of demand and supply.

In general, societies try to tax goods that have little dead weight loss, that is, goods with either low price elasticities of demand or low price elasticities of supply.

Income taxes, though, are important because:

1. They can be collected as income is earned (withholding)
2. They can raise large amounts of revenue with relatively low rates.

A progressive income tax, because it is based on the concept of ability to pay.

POVERTY

Poverty

- Poverty Headcount Ratio
- Percentage of population below the national poverty line)
- ~whose income is less than one dollar a day (World Bank methodology)
- Poverty line dependence on a calorie intake – Indian measurement methodology

- Poverty line as an all-India poverty line bundle valued in monetary terms covering both food and non-food dimensions.
- It establishes the all-India average requirements of calories, proteins and fats based on official nutritional norms and finds a food basket that simultaneously meets all these normative requirements
- average monthly per capita consumption expenditure on food as the poverty line.

Poverty Headcount Ratio in India

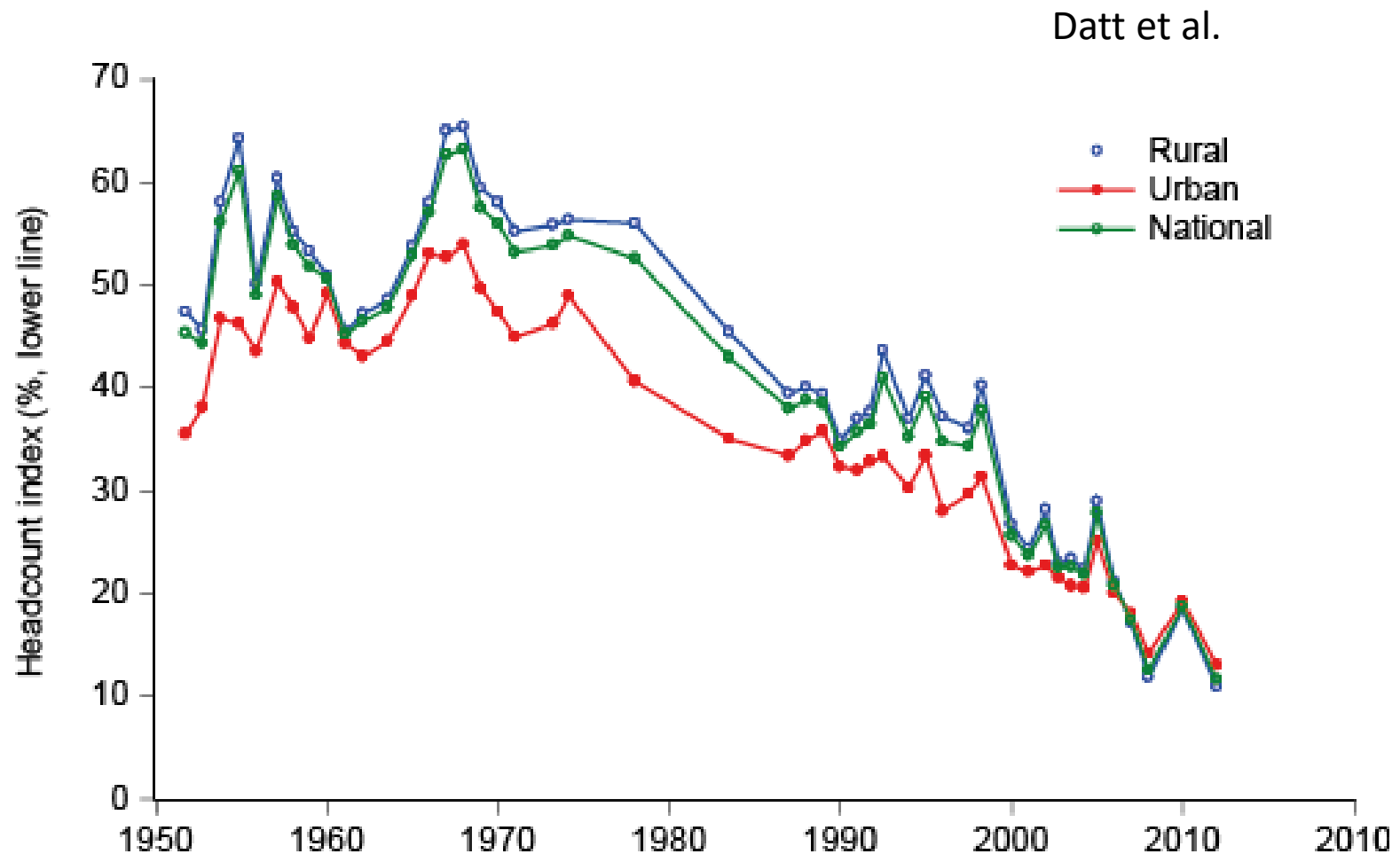
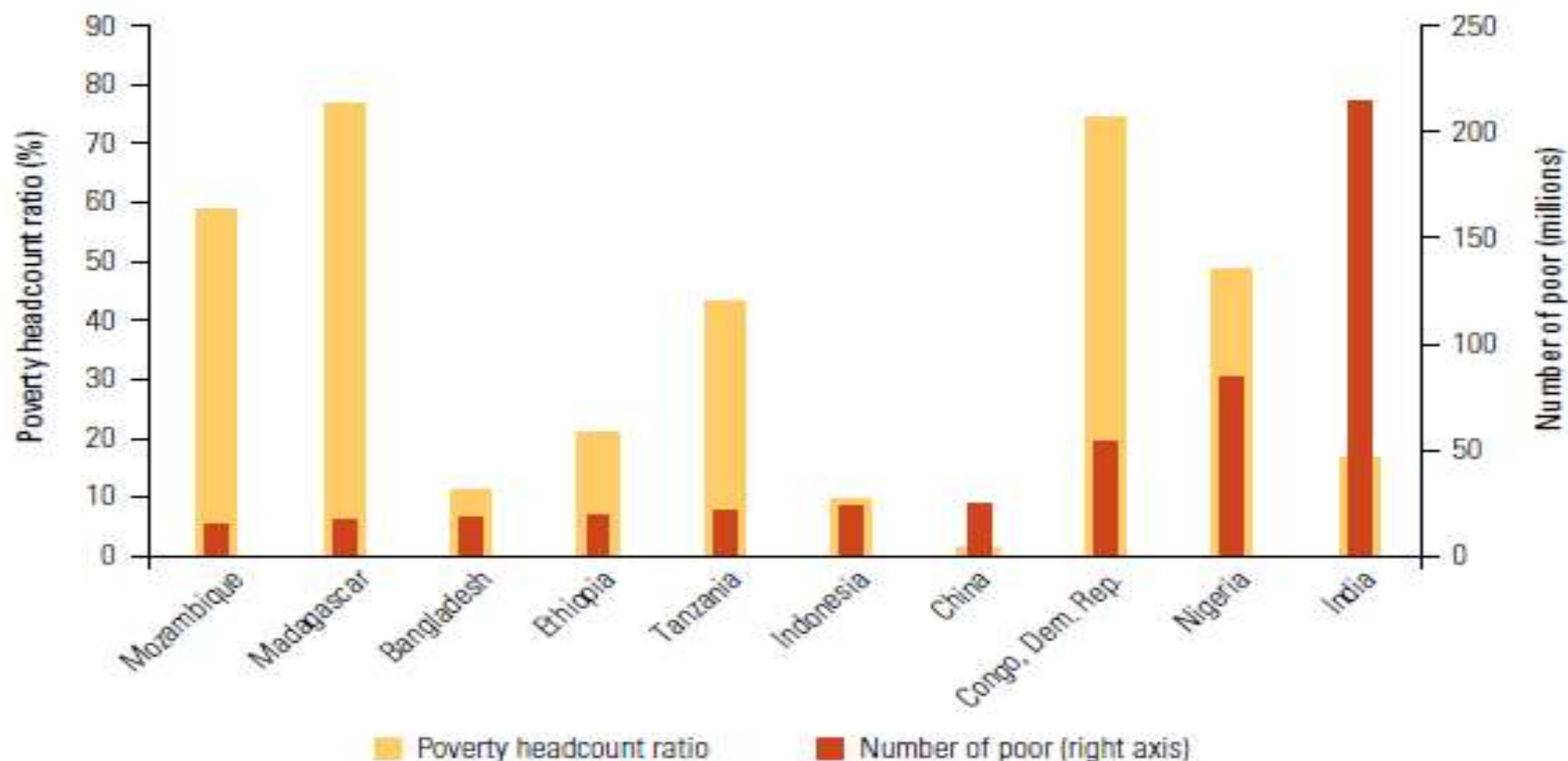


FIGURE 2.7 Number of the Poor, Top 10 Countries, 2013



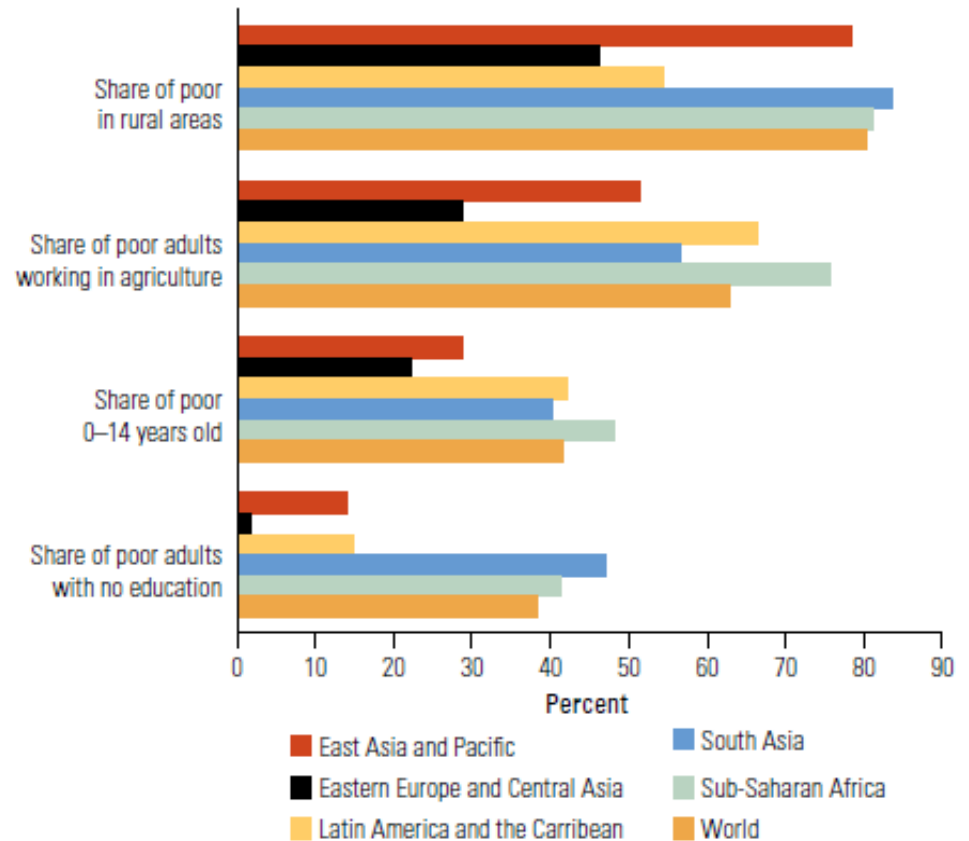
Source: Most recent estimates, based on 2013 data using PovcalNet (online analysis tool), World Bank, Washington, DC, <http://iresearch.worldbank.org/PovcalNet/>.

Note: Poverty is measured using the 2011 US\$1.90-a-day PPP poverty line.

WHO ARE THE POOR AND WHERE DO THEY LIVE?

- 80% live in **rural areas**
- 2/3 work in **agriculture**
- **Half** are children
- Most have **little or no formal education**
- **Yet, regional** differences

FIGURE 2.9 Profile of the Poor, by Characteristics and Region, 2013



Source: Castañeda et al. 2016.

Note: Poverty is measured using the 2011 US\$1.90-a-day PPP poverty line.