

H1: Economic development: Facts and figures

Global inequalities

Large differences in the quality of life

Indicators

- Life expectancy = higher in northern Europe and some part of Asia, lowest in Sub Saharan Africa
- Child mortality = high in low income countries
- Adult literacy
- World map of happiness (very subjective)
- Income

Differences in quality of life are strongly linked to income

Income and life expectancy are correlated

Income and child mortality = trend is stronger due to a higher variation in child mortality

Income and literacy = positively correlated with decreasing marginal returns

Income and happiness = decreasing marginal returns but not necessarily linear

Every one used to be poor and it's getting better (historical perspective)

More people have access to drinking water, have escaped poverty,...

Short economic history of the world

Industrial revolution triggered a lot of innovation => global knowledge grew exponentially => economies of scale

Economic growth started in the west

- Western Europe was the first to experience continuous economic growth
- This started with the industrial revolution in the UK
- Because of technological progress the west could produce more and more goods and services per person
- This economic wealth also translated into political power (colonizing)

Europe became more powerful because it was more developed and not the other way around

- European countries plundered their colonies, but this was not the most important source of their wealth
- The West became wealthy because it could produce more goods and services

Japan catches up

- Japan started imitating the West in the 19th century
- Strong industrialization in the early 20th century => military power in WW2
- After WW2: extremely strong economic growth
- Japan is now one of the richest countries in the world

East Asia's Growth miracle

- Asia was comparable to Africa until the 1960s
- East Asia witnessed another growth miracle: the "Four Asian Tigers" (Hong Kong, Singapore, Taiwan and South Korea)
- These economies had spectacular growth during the 1960s – 1980s
- They are now all high-income regions

- Other countries in East Asia are growing strongly as well: Malaysia, Thailand and Indonesia are now middle income countries

Asia's Large Economies: China and India

- In China the share of people living in poverty decreased from 88% to 2% between 1981 – 2013
 - o China reformed its economy step by step after the death of Mao
- In India from 54% to 21% between 1981 – 2011

Africa's Growth Tragedy

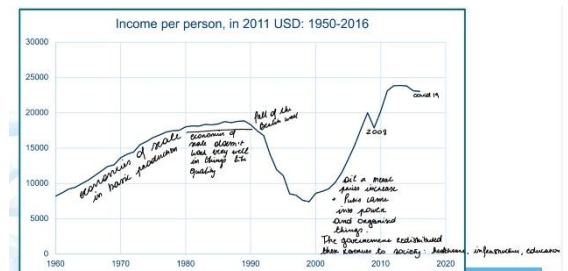
- Since the 1960s, most African countries grew very slowly (or not at all)
- Many of the poorest countries in the world are in Sub-Saharan Africa
- However there are some exceptions (Botswana, Mauritius)
- Over the past two decades several African countries have been growing
- Growth momentum remains fragile = unstable commodity prices, drought, pests and security issue, post covid struggles

Latin American's Difficult Growth

- Latin America's income was growing at an acceptable rate until 1980
- During the 1980s, the continent had a 'lost decade' => many debt crisis
- Growth started to pick up again in the 1990s and 2000s but has slowed down again
- Fundamental problems in Latin America = huge inequalities => political problems

The Great Experiments: the Former Communist countries

- Communism did not work as expected = important incentive problems and information problems
- Free market reforms had mixed effects = strong growth effects in China but major disruptions in SU



Structural change

When countries develop, they witness structural change => economic transformations and social transformations

H2: What is development: indicators and issues

Income: development as economic growth

Measurements

GDP = gross domestic product

- GDP gives the market value of all final goods and services sold in a country in a given year
- Economic growth is usually defines as growth in GDP

GNI = gross national income

- GNI measures the total income of residents of a country in a given year
- GNI involves incomes received both domestically and from overseas

Comparing over time

- Inflation: increase in the general price level of goods and services
- Nominal GDP = includes the effect of price changes (inflation can drive up GDP in absence of actual economic growth)
- Real GDP = corrects for the effect of price changes

Comparing across countries

- GDP per capita to adjust for population sizes
- Different currencies and cost of living?
 - o Exchange rate method overstates poverty in poor countries (they do not capture all differences in the cost of living)
 - o PPP = purchasing power parity
 - Construct a comparable basket of goods and services
 - PPP ratio = number of money needed to buy the same basket in another country

Shortcomings of income as a indicator

- GDP can underestimate true economic activity
 - o Does not take into account anything that had no market value
 - o Does not take into account quality improvements and new goods and services
 - o Does not include the informal economy
- GDP can overestimate improvements in well-being or quality of life
 - o GDP/capita = average
 - o GDP does not reflect sustainability of economic growth

The key instrument to achieving higher well-being?

Strong correlation between income and other important dimensions of development (health, education, subjective well-being)

However some dimensions of development are only weakly correlated with income (political institutions, personal security)

Environmental quality is negatively correlated with income

Poverty: development as poverty reduction

Absolute poverty = poverty is defines as an absolute situation, you are poor if you cannot afford XorY

Relative poverty = poverty is defines in a social context: you are poor if you have less income than others in your society (measures inequality)

Measurements

Consumption

- Consumption creates utility
- Consumption is easier to measure than income
- Consumption smoothing = stabilization of consumption over one's life
- Difficulties = information not available at an individual level, measurements errors, various adjustments needed to measure true consumption
- Consumption needs to be adjusted for
 - o Changes in prices over time => consumer price index (deflator)
 - o Spatial price differences => PPP adjusted exchange rates + regional CPI
 - o Monetary value of home production => purchase/sale price
 - o Imputed value of public goods and services

Poverty measures

- poverty line
 - o Can be based on nutrition indicators, basic needs, international poverty lines
 - o Relative poverty lines = cost of social inclusion

- Poverty headcount: total number of people below the line
- Poverty ratio: number of people below the line as a % of population
- Poverty gap ratio: measures the depth of poverty
 - o How much money would you need to lift everyone over the poverty line
 - o Divide this amount by the total population
 - o Express this amount as a % of the poverty line

Shortcomings

- Poverty measures focus on monetary poverty
- Poverty line is an arbitrary threshold
- There can be large within-country differences in poverty measures

Poverty traps

= any self-reinforcing mechanism which causes poverty to persist

I.e.: health trap, conflict trap (halving the income of a country => double the risks of conflict)

Inequality: development as inequality reduction

Measurements

- Share of income held by the top X% relative to the share held by the bottom Y%
- Lorenz curve
- Gini coefficient
 - o 0 = perfect equality of incomes
 - o 1 = perfect inequality

Shortcomings

- Focus on monetary inequality
- Focus on inequality of outcomes
- Equity (=equality of opportunity matters as well)
 - o Human Opportunity Index = measures country-level access to various 'opportunities'

Inequality, poverty and economic growth

Inequality had long been overlooked

Kuznets curve = inverted U-curve between inequality and GDP/capita

- Hypothesis: inequality increases in the early stages of growth in a developing country but begins to fall after some point
- Hypothesis does not hold within countries over time
- Critique = countries followed a inverse Kuznets curve

Inequality: good or bad for economic growth?

- Inequality creates incentives for entrepreneurs to take risks
- Increases savings/investments/capital accumulation?
- Social and political instability => inequality can induce crime and political unrest
- Enables rent-seeking by elites?

Human development: development as meeting basic human needs

Measurements (ex ante)

- Access to health care (extent to which those in need of health services receive quality care that obtains the desired result)
- Pupil/trained teacher ratio
- Net enrolment rate

- Gross enrolment rate
- Standardized test scores
- Literacy rate

Measurements (ex post)

- Life expectancy at birth
- Life expectancy or Health Adjusted Life Expectancy
- Child mortality rate

Education inequality = even as countries make overall progress on education outcomes, disadvantaged subpopulations are likely to be left behind

United Nations Human Development Index = created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone

What is development? Broader measures

Happy planet index

- Inequality of these outcomes
- Ecological footprint
- Life expectancy
- Experienced well being

Genuine Progress Indicator = aims to measure sustainable economic welfare rather than pure economic growth

- Benefits
 - o Addresses many of the shortcomings of GDP
 - o Holistic approach: takes into account many dimensions of economic development
- Drawbacks
 - o Data requirements are huge
 - o Policy relevance? GPI gives no or misleading policy guidelines

Human development as freedom?

- Freedom rating: scores on political rights and civil liberties

Development as institutional quality?

- World Bank Country Policy and Institutional Assessment
- Centre for Systemic Peace Polity IV = indicators of democracy/autocracy
- Centre for Systemic Peace Polity ICV = revised combined polity score 2018

Development thinkers all agree what is needed for success

- Growth where private firms and markets create decent jobs and opportunity
- Social sectors such as health and education provide the skills and health to take advantages of opportunities
- Poor countries lag behind in their assets and endowments
- Need for investments in infrastructure, health and education
- Need for social, political and economic institutions that help markets and society function in a broadly inclusive way

4 propositions to summarize the economics of poverty and development

- Countries are poor because they are poorly endowed
- Market failures are costly for poor people and may trap them in poverty
- Growth traps stem from market failure that are costly for poor countries

- Growth traps stem from failures in states and governance

H3 Analysing development questions

Reverse causality

Y affects X rather than X affecting Y

Examples

- When a country's debts rise, GDP slows down \Leftrightarrow low growth causes debt to increase
- Better nutrition raises income \Leftrightarrow higher income enables better nutrition

Identifying causality: 'all other things equal'

To identify the causal effect of X on Y, we need to know what happens to Y when X changes holding all other things equal (ceteris paribus)

Counterfactual = what would have happened to Y if X would not have changed?

Causal effect of X on Y = actual change in Y – counterfactual change in Y

Correlation or causality?

Spurious correlation

completely due to chance

Omitted variable bias

X captures effect of another variable W on Y

- W drives the changes in both X and Y

Examples

- Age affects reading skills (older children tend to read better)
- Age affects shoe size (older children tend to have larger feet)

Selection bias

X captures effect of 'selection' variable W on Y

Example: Will you earn more if you attend private rather than public school in the USA?

- Private school students have higher wages \rightarrow result of higher quality education? Or could it be that only a selection of people attend private schools and these people would have had higher wages anyway?

How can we identify causal effects?

Randomized Controlled Trial (RCT)

= gold standard

- Experiment of participants who are randomly allocated to treatment group and control group

Fundamental assumption = randomizing treatment

- No systematic difference treatment & control (=no selection bias)
- No omitted variable bias
- Control group mimics the counterfactual

RCTs in the lab = problem of lab settings raise issues of external validity

- Often specific selection of people (college students)
- No real life decisions (and limited real-life consequences)

- Artificial setting (do people make the same decisions in identical situations outside of the lab?)

Potential problems with RCTs

- Hawthorne effect = subjects change their behaviour because they know they are being studied
- John Henry Effect (compensatory rivalry) = subject in the control group try to overcome their disadvantage
- Ethical issues
- Practical issues = feasibility, spill-over effects, attrition (losing respondents)

Criticism on RCTs

- RCT do the small questions but if every does to small ones, who does the big ones?
- RCT are very small experiments

Natural experiments

Exposure to treatment is determined by nature or other factors outside of the researchers' control and can be assumed to be random

Instrumental variables = an external factor that influences X but not the outcome of Y

- Two conditions
 - o Relevance
 - o Exclusion restriction

H5: institutions and economic development

= impact of institutions and the quality of government

Institutions govern some kind of behaviour

The basic idea

- Institutions are the rule of the game in society
- Countries with poor institutions will have poor economic growth

Formal institutions = have contracts

Informal institutions = unspoken agreements

Why did some countries grow, and other not?

- Crucial role of the industrial revolution in economic development
- The IR and technological innovations allowed major productivity gains through economies of scale in production and trade
- specialization and exchange allow growth through economies of scale with technological innovation (only possible if people do what they say they are going to do)
 - ⇒ how to coordinate and enforce decisions and exchanges?

Coordination mechanisms (institutions)

- Tradition (social norms) = rules that you've been brought up with
- Command systems = centralised decision making
 - o The state decides and enforces production and exchange
 - o Disadvantage = lack of knowledge of both input and output
- The market = centralised decision making
 - o Individual choices often supported by state regulation of contracts
 - o Information is in the form of prices → simple supply and demand

Corporation – insights from game theory

- Wealth maximizing individuals find it worthwhile to cooperate with other player when
 - o The play is repeated (dynamic games)
 - o They possess information about the other players past performance
 - o When there are small numbers of players
- Cooperation is difficult when
 - o The play is not repeated
 - o Information about other players is poor
 - o When there are large numbers of players

Effective institutions

- Raise the benefits of cooperation
- Raise the costs of defection
- Reduce the transaction costs per exchange
- = allow to realize potential gains from trade and specialization

When do markets work?

= in a market economy: people can buy and sell what they want

- There is an incentive to produce better and cheaper products
 - o Firms who produce better and cheaper will grow so they can serve more customers
 - o There will be innovation and economic growth as firms try to make new, better and cheaper products
- Market = innovation machine

Obstacles to optimal market exchange

- Monopoly and entry restrictions => poor quality, no innovation and high prices
- Distorted incentives => less effort by people, less new firms, less investments and therefore less goods and services for consumers, less innovation and less growth
I.e. tax uncertainty and tax level
- Imperfect information => in general imperfect information undermines trust and leads to market failures
- Cheating (problems with contract enforcements) => no exchange
- Security of property => less investment in productive assets and less growth

Institutions to make the market work guarantee

- Relatively free entry and competition
- Taxes not too high
- Quality standards/ certification to enhance information
- Courts or other institutions to enforce contracts
- Laws, police and courts to protect your property

Institutions in low-income countries

- Monopoly and entry restrictions => many low-income countries have state monopolies or have complicated rules, licences... to start a new firm
- Incentives = many poor countries have high and arbitrary taxes or the state can simply confiscate private property
- Contracts and courts often difficult to enforce contracts
- Laws, police and courts to protect property => in many countries it is difficult to prove that you own something and the police and the courts may be corrupt
 - o Strong correlation between expropriation risk and income per capita

Institutions overall

- There are large differences in the quality of institutions worldwide
- These differences are related to differences in income
- Poorer countries have on average worse institutions (more risk, less freedom, more corruption and less incentives to invest)
 - ⇒ Bad institutions create a large informal sector
 - Result = “dead capital”
 - Millions of people own houses, land, companies,.. but not officially
 - This makes it hard to rent, sell and use as collateral for a loan
 - You are limited to dealing with people you know personally

Informal sector: consequences

- Less business opportunities
 - Only deal with people you know
 - Very hard to run your business
 - Much uncertainty
 - Difficulty to get a loan
- More risks
 - Since everything is unofficial, it's hard to sue someone who cheats on you
 - It's hard to insure a building that officially does not exist..
- Less tax revenue for the government
 - Difficult to provide public goods
 - Difficult to give good wages to public employees

Why do bad institutions exist?

Ideology/ culture

Wrong ideas about how the economy works?

Opportunistic reason for bad regulations

- Often regulation is bad for everyone but can be good for some people

= political economy

- i.e. Entry restriction = reduces competition (bad for most, good for the companies that remain)
 - why don't people rebel against this?
 - The economic cost to most people is relatively small
 - The benefit to the few companies is very big
 - Most people won't bother but the companies will => rent seeking
- Political continuity = Some rules are bad for most people but good for rulers
 - High taxes to keep your enemies poor
 - Tax rural communities to subsidize people in the cities
 - Most revolts happen in the cities so keep people calm => city bias
- Resistance against new technology (ex. Tzar Nikolai feared industry would lead to stronger opposition so only one railway was built)

Institutional persistence

- Changing rules, institutions, norms.. always creates winners and losers
- In general the losers will try to block institutional change
- This is why bad institutions can continue for a long time

In summary; why do bad institutions exist?

- Rent seeking by groups in society
- Political stability by keeping the elite in power
 - ⇒ Changing rules creates winners and losers, losers will try to block change => we can expect institutional persistence

Origins of institutions

Many countries with bad institutions are ex colonies, but not all ex-colonies have bad institutions

2 types of colonies

- Settlement colonies = colonizers displaced the original population and lived there themselves
 - ⇒ they import good institutions for themselves
- Extraction colonies = colonizers decided not live there permanently but simply to extract wealth from the colony
 - ⇒ Because of institutional persistence those institutions still live on today

Central evidence = settler mortality (instrumental variable)

- Colonist did not settle if the country had a hostile climate, high rate of diseases
- So the areas where the mortality of the initial colonizers was low are places where colonizers decided to stay
- If settler mortality was high, they decided to build extraction colonies
 - ⇒ Link between settler mortality and the quality of institutions
- Criticism
 - For many ex colonies settler mortality data is not available, or only for some groups of the population which probably had a higher risk of data anyway (selection bias)

Case study = Ghana and cote d'ivor

Heterodox economics

Dependency theory = relationship between the global north and south is a central issue → the global south is in a disadvantageous position vis-à-vis the global north

- Development as a way for the periphery (poor countries) to break out of its dependent relationship with the core (rich countries)
 - Does not necessarily mean following the path of developed countries, but rather post-colonial countries finding their own path to improve the wellbeing of the people living there

H6: institutions and liberalization

= a comparative analysis of the liberalization experiences in China, Eastern Europe and Africa

Reforms in China and Vietnam

- Lifted hundreds of millions of people out of poverty
- Led to the greatest increase in economic well-being within a 15 year period

Reforms in former SU and Eastern Europe

- Decline in output
- Mixed effects of productivity
- Increase in poverty

Reforms in Africa

- Evidence is inconclusive whether market-oriented reforms brought either poverty reduction or economic growth in SSA

3 kind of reforms

- Agricultural liberalization: from collective farming and state-owned land to private farming and land ownership
- Price liberalization: from state to market determination
- Economic privatizations

What is reform or liberalization?

- Land reform (& farm restructuring)
 - o Central Europe = restitution to former owners and outsiders => strong property rights
 - Farm restructuring = large farms remain dominant, effective restructuring of farm management
 - o Russia share distribution => only to insiders => weak property rights
 - Farm restructuring = large farms remain dominant, little change in farm management but now private
 - o China: Physical distribution => only to insiders => strong property rights
 - Farm restructuring = complete break up of collectives
 - o Effects
 - Strong property rights had:
 - Positive effect on productivity
 - No effect on output
 - Nature of rights (strong vs. weak) more important than distribution (insider vs outsider)
 - Strong user right sufficient for growth
- Price/subsidy policy reform => more market oriented prices
 - o = removing price distortions will improve allocation of production and consumption and reduce inefficiencies
 - o Reforms caused major price effects
 - o Output increased only in those countries where price ratio improved
 - o Liberalization may affect the coordination mechanisms
 - Vertical coordination in supply chains
 - Input supply programs, trade credit, investment assistance program..
 - Interlinked contracting
 - Before = marketing/processing and input provision were vertically coordinated and linked
 - During = Breakdown of vertical coordination during privatization and liberalization processes => collapse of access to inputs and supply disruptions
 - After = re-emergence of vertical coordination, but private sector led + contracting systems at farm level
- Market liberalization (competition) = price liberalization and market liberalization
 - o Allow private competition
 - Increase ex ante outside option for supplier => increase surplus for supplier
 - Improve manager incentives => more surplus creation
 - Increase buyer reputation costs => increase surplus share for supplier
 - Reduce supplier reputation costs => less surplus creation
 - Increase ex post outside option for supplier => less surplus creation

Sub Saharan Africa

Why was SSA growth lower than that of China?

- No initial boost from property rights reform in labour intensive system (SSA never collectivized)
- More market disruption = because of SSA liberalization strategies with disruptions as a consequence
- Reduction in taxes was less than in China

Why was SSA growth higher than CEE and FSU in early reform years?

- No initial decline from property rights reform in capital/land intensive systems
- Less market disruptions in SSA = smaller share of production was dependent on externally supplied inputs and vertical coordination
- Price incentives improved instead of worsening in Europe

Why was SSA growth lower than CEE and FSU after initial stage?

- Price adjustments cause one-off output effect
- Less private-sector driven restructuring with growth spill overs due to less inflow of FDI and lower incomes in SSA

Hypotheses on commodity variations in SSA

- Cereals and tubers
 - o Low value staple food crops
 - o State remains important in exchange and VC
 - o Private sector limited to spot market transactions
 - o Less disruptions because limited external inputs
- Industrial crops
 - o Medium value traditional export commodities
 - o External inputs
 - o Shift from public to private VC
 - o Major contract enforcement problems with competition
- Fruits and vegetables
 - o Mixture of low value for local market and low input
 - o High value, high input non traditional exports
 - o Recent growth
 - o Entirely private sector VC organized

H7: geography and history

The very long run: deep causes of historical development

Central question: why did Eurasian civilizations colonize large parts of the rest of the world and not the other way around?

Proximate factors = Eurasians possessed several advantages

- More advanced technology
- Immunity to lethal epidemic diseases
- More complex political organization

Ultimate factor = Eurasia had favourable geography

- Largest number and diversity of domesticable plants and animals
 - o More varieties and abundance of large seeded wild grasses => early development of food production and storage technologies

- More animals that could be domesticated => food, leather, wool, fertilizer,... and germs (as a weapon)
- Major orientation of East to West instead of North to South
 - New domesticated species could spread quickly and easily across the entire continent ⇔ Africa and Americas have very different climates because north south orientation
- ⇒ Eurasians were first to engage in intensive food production

From intensive food production => guns, germs and steel?

- Intensive food production and storage allow for food surpluses => sedentary communities with large and dense populations allowed for non-food-producing groups specializing in other activities
 - Professional craftsmen create combat and navigation technology used by professional soldiers
 - Complex social and political organization allowed for amassing resources and large scale, long distance exploration, war and conquest
 - Dense populations living close to domesticated animals resulted in many lethal epidemic diseases to which Eurasians became immune

Criticism on Diamon

- Deterministic theory: no attention for the role of human agency, institutions or culture
- Oversold the importance of geography
 - Underestimated the nutritional value of crops outside of Eurasia
 - Overestimated difficulty adapting crops to other climatic conditions
 - Ignored separations of areas within Eurasia by deserts and mountains

Deep causes of economic development today

Geography

Water navigability

Landlocked countries face

- Fewer trade opportunities
- Dependent on transport, infrastructure en ports of coastal neighbours
- Higher transportation costs for traded goods

Nearly al landlocked countries are poor (those that are not have good neighbours)

Topography

Ruggedness = large variation in elevation and slope, uneven or broken terrain

- Countries with highest ruggedness are often poor

The topography of a country affects

- Transportation costs
- Mobility of production factors
- Ease of technology diffusion
- Suitability for agriculture

Ecological zones

Ecological zone may affect

- Agricultural productivity
 - Rainfall, temperature, pest and parasites ecology, soil quality and erosion

- Disease burden

Tropical zones are generally characterized by:

- High year round temperatures
- Absence of winter frost => kills germs
- Higher disease burden for human, animals and crops
- Resulting in => poorer human health => lower labour productivity => lower agricultural productivity => poorer human health => ..

Tropical underdevelopment

- Economies in tropical zones are generally poorer
- This is true within countries and region
- Tropical landlocked countries are especially poor

The economic and social burden of Malaria => malaria is a burden geographically determined in warm humid areas

- Poverty promotes malaria and malaria contributes to poverty
- Prevalence of malaria has increasingly shifted to tropical zones
- Loss of physical capital = medical expenses, lost working days, reduced tourism
- Loss of human capital = school absenteeism, damaged learning ability, malnutrition ..

History

Path dependency = the idea that decisions we are faced with depend on past trajectories and decisions made

- Historical events put countries/people/societies on a certain path, crafting today's economic capacities and institutions that affect development outcomes

History: the African slave trades

What is the impact of the African slave trades on economic development?

- Negative relationship between the number of slaves exported from each country and subsequent economic performance
 - o Selection bias? Were countries most hit by slave trade already more poor before? NO the other way around
 - o The impact of African slave trade on economic development today is negative and large, the negative impact persists over time: why?
 - Social and ethnic fragmentation
 - Weakened or hostile relations between villages because of 'gun-slave cycle'
 - Weakening and underdevelopment of states
 - Long-term political instability and negative impact on institutions
- Slave trade created persistent mistrust in many societies
 - o Slave trade have a large, negative impact on trust today
 - o Mistrust limits cooperation, increases contract enforcements costs, makes investment and credit more costly..
- Ruggedness: the blessing of bad geography in Africa
 - o African countries with more rugged terrain are actually richer => transport to capture slaves was more difficult

Conclusion

- Countries with more slave trade are clearly poorer today
- Ethnic groups with more exposure to slave trade show persistent mistrust today
- While ruggedness is normally bad for growth, in Africa it impeded the slave trade

The history of development thinking

Each of these periods left its mark on how we think about development today

- Industrialization still plays an important role in our concept of economic development
- Role of the state is subject to continuous debate and the argument used comes from specific periods
- Some still argue that developing countries should 'catch up'

Crucial lesson from history: development and underdevelopment are linked: general trade and economic policies may be good for parts of the world but bad for others

Conclusions

Geography matters: the geographical environment has an impact on historical and present day economic development

History matters: historical events can have long-lasting effects on economic development and history determines how a country can develop

H8 convergence theory

Solow growth model = the main pillar of growth theory that other subsequent theories have been built on

Without growth, raising the well-being of selected segments of the population would have to be done through taxation and redistribution (not Pareto efficient)

Physical capital = the stock of equipment and structures used to produce goods and services

Economic growth in the Solow model

Economies may grow for a while, but not forever: i.e. an economy that begins with a stock of capital per person below its steady-state value will experience growth in k and y along the transition path to the steady state

Shocks in the investment rate and the population growth rate

- Changes in the investment rate or the population growth affect the growth rate, but only temporarily until reaching the new steady states
- And do not affect the long-run growth rate of output per person
- At t^* , as output per person begins to grow more rapidly, the changes affect the long-run level of output per person
- What affects the long-run growth rate of output per person is the technological progress

σ -convergence = a decline over time in the cross-sectional dispersion of per person income; convergence in the level of GDP

β -convergence = poor economies growing faster than rich ones; convergence in growth rate

conditional β convergence = if each country has a different s and n it will have a different state, only countries that have the same steady state, the convergence hypothesis should hold

H9 population and human capital

Population growth explained

Demographic concepts

Crude birth rate (b): number of live births per 1000 people

Crude death rate (d): number of deaths per 1000 people

Infant/child mortality: number of deaths of children less than 1/5 years old per 1000 live births

Rate of natural increase of the population (r) = b-d

Total fertility = average number of children that will be born to a woman during her reproductive years (15 – 49)

Replacement fertility rate (for 0 natural population growth) = 2.1

Birth and death rates depend on the age structure of the population

- If the proportion of young people is high, the death rates can be lower

In most industrialized countries the total fertility rate is below the replacement level

Dependency ratio = population of non working age / population of working age

- Youth dependency ratio = population of non working age (0-14) / population of working age
- Elderly dependency ratio = population of non working age (65 -...)/ population of working age
- Pyramid = high birth rate and high death rate => high youth dependency ratio
- Tower = declining birth rate and rising life expectancy => high elderly ratio

Demographic transition model

Demographic transition = process by which a country's demographic characteristics are transformed as it develops

- Attempts to explain why all developed nations have more or less passed through the same stages

Phase 1: high birth rates and high death rates

Deaths were high

- Subsistence agriculture or hunter-gatherer societies
- Famine, plagues and wars
- No modern sanitation

Births were high

- Desired fertility increased when humans became sedentary
- Low technology of fertility control

Much of the world was in this stage until 1700

- In the 18th century the Western world started transitioning to the second phase

Phase 2: high birth rates and fall in death rates

Death rates fell because

- Increases in agricultural productivity
- Sanitation methods
- Biomedical medicine

Birth rates remain the same

- Macro inertia
 - o Everyone had a lot of children that were now of the child bearing age
⇔ birth rates high even when fertility rates are reduced
- Micro inertia
 - o Incomplete information about how many children would die and parents would think that a lot more children would die
 - o Socioeconomic factors and societal norms regarding children are generally slow to adjust to the reality of falling death rate

Phase 3: low birth rates and low death rates

Birth rates fall over time

- Overcoming macro inertia

- Parents update their expectations on declining child mortality
- Social norms about fertility change over time
- More women find their way to the labour market (opportunity cost of children would rise)

Demographic transition in developing countries

Birth rates higher than in pre-industrial Western Europe

Rapid declines in death rates

- Highly effective imported modern medical and public health technologies
- However in some countries death rates failed to drop further after an initial period of rapid decline

Stage 2 of the demographic transition characterized by population growth rates above 2 %

Causes of natural population growth

Natural population growth arises from the difference between birth rates and death rates

- Mortality rates depend on
 - o Life expectancy
 - o Age structure of the population
- Birth rates depend on
 - o Total fertility rate
 - o Age structure of the population

Causes of fertility

- A matter of supply of contraceptives
 - o Contraceptives reduce fertility only by bringing actual fertility closer to desired fertility
 - o Experimental evidence suggests that the effect of supplying of fertility is small
- Demand for children (desired fertility)
 - o Children are a source of income (can provide services to parents at home or work outside of home)
 - o Children are a source of insurance (old age protection)
 - P = desired probability of having at least 1 child to care for parents
 - q = probability that a child dies or is unable or unwilling to care for parents
 - p = actual probability of having at least 1 child to care for parents
 - If parents have 1 child $p = 1 - q$
 - If parents have n children $p = 1 - q^n$
 - Choose n so that $1 - q^n \geq P$
 - Reduced child mortality (lower q) allows parent to meet their protection objective with a smaller number of children
 - o Children are a source of satisfaction
 - o Fertility decisions are also influenced by culture and religious beliefs

Population

The world population continues to grow but at a slower pace than at any time since 1960

The average number of children born to women over a lifetime has fallen markedly in many regions over the past several decades

The share of the population under age 25 is declining

The total population of the least developed countries is growing at a rate that is 2.5 times faster than the growth rate of the total population of the rest of the world

Population growth

Population growth as a liability?

- Population tax: percentage loss in GDP/capita growth due to population growth
- Real wages will not start rising with growth until surplus labour has been eliminated
- Environmental degradation
- Congestion externalities (traffic..)
- Difficulties in providing public goods for rapidly growing population

Population growth as an asset

- Source of youthful labour
- Source of social security contributions
- Expanding markets
- Demographic dividend
 - o Opportunity for a low dependency ratio and high rates of labour force participation
 - o High rates of saving
 - o Frees up resources for investment

Human capital

= the stock of knowledge, skills, social and personality attributes, embodied in the ability to perform labour and to produce economic value

Health and economic growth

- Strong cross-country correlation between measures of health and economic growth (omitted variable bias?)

Education and economic growth

- Only positive relation between male school attainment at the secondary level and higher levels and GDP growth
 - o Highly educated women are not well utilized in the labour markets

The level of cognitive skills of a nation's students has a large effect on its subsequent economic growth rate

Education and inequality

- Raising the average level of education
 - o Makes low-skilled workers scarcer => increase in wage for low-skilled work
- Increases the supply of highly educated workers => decrease in the relative wage for high skilled workers
 - ⇒ Reduces wage dispersion

Large and persistent association between education and health

- Health → education
 - o Child nutrition = crucial for cognitive development
- Education → health
 - o More educated individuals are more likely to know about diseases, seek medical advice and follow treatment

Education increases earnings which facilitates access to health care

H10 Migration

International migration

scale

- Absolute number of international migrants is rising rapidly but their share of the global population is still relatively small and stable
 - o Global number of international migrants has grown somewhat faster than the world's population over the past decade
- Number of refugees has grown rapidly in recent years

Concentration

- Nearly 4/5 of refugees live in countries neighbouring their countries of origin
- Immigration is highly concentrated = top 10 destinations host 50% of migrants
- Increasing concentration of immigrants in wealthier regions of the world
- Migration is not dominated by movements from developing to developed countries
- Emigration has become more dispersed
- Migrants have become less concentrated by corridor
 - o Refugee flows are much more concentrated
- Migrants are moving further

Internal migration

Africa = intra African migration

- Sub Saharans migrating close to home
- Number of sub Saharan migrants rose by more than 40% between 2010 – 2020

Scale

- Most movements actually take place within the boundaries of a country
 - o Measuring and comparing internal migration is particularly challenging
 - Information about moves in a country is much more scarce
 - Much more difficult to define who is a 'migrant'
- From rural to urban areas
 - o Shift of labour part of agriculture → crucial part of the structural transformations of economies and economic development
 - o 23% of rural raised individuals moved to urban areas
- Between rural areas = most common migration flow in SSA
 - o Access to land, non-farm work in rural areas..
- Between urban areas
- From urban to rural areas

Drivers of migration

Push factors

- Violence: very clear and strong correlation between violence and subsequent out-migration
- Extreme weather conditions

Pull factors

- Wage differences: people are more likely to move between two countries if the wage differences between the source and destination are greater
 - o Hold up for refugees as well, although the relationship is much less clear
 - o Also for internal migration
- Differences in employment rates and opportunities
 - o Emigrants, on average, choose higher-employment destination countries

- Immigrants tend to come from lower-employment countries

Cost benefit analyses

- Harris Todaro model = why is there continuing rapid rural urban migration in spite of high urban unemployment in SSA?
- Strong negative relationship between distance/travelling time and internal out migration
- A major cost of migration is having to settle in a new location
 - Find jobs and housing
 - Locate and gain access to services
 - Familiarize themselves with cultural norms
 - Costs will be significantly reduced when migrants have a social network at the destination

New economics of labour migration

- Migration decisions are often made jointly between migrant and some group of non-migrants (costs and benefits are shared)
- Household rather than the individual = decision maker
- Migration = risk sharing

Who migrates?

- Migration hump = emigration rises with economic development until a threshold (upper middle income level) and only then falls
- Explanation for initial positive relation
 - Demographic transition → large fraction of young people
 - More people can afford to migrate
 - More people will have the economic potential to realize significant benefits from migration
 - More people can access the information they need to emigrate
- Internal migration is similarly not dominated by the poorest
- Refugees
 - Refugees are usually from poorer countries
 - Rate of refugees decreases as income increases

Impact of migration

On migrants themselves

Self selection into migration

- Migrants are likely to have different characteristics than non-migrants → these characteristics could cause differences between non-migrants and migrants even if they had stayed in the same location

Natural experiment in New Zealand

- Weekly wage of principal applicants rose within a year
- Migration increases height and reduces stunting among children
- Migration increases BMI and obesity among adolescents

Comparing within households in Tanzania

- Migrants experienced 36% higher consumption growth to those who stayed behind
- Children of rural-urban migrants are taller, heavier and more educated for their age

On the migrants' families and communities of origin

Remittances + increased trade + reduced unemployment vs loss of human capital

Natural experiment

- Increase in remittances
 - o Increased expenditure on education, improved school attendance, higher health expenditures and investment in entrepreneurial activities
 - o So statistically increase in current consumption
- Adverse effects
 - o Remittances do not compensate for lost labour earnings
 - o Ownership of livestock, durables and access to financial services is also lower for the remaining household members for the control group

Brain drain rate = share of individuals of at least 25 years old with certain education level that are living abroad

- Brain drain worries policy makers in migrant-sending countries
- Loss of human capital stock in the developing countries
- Developing countries governments invest in education, while the highly-educated emigrate without contributing back into tax system
- Brain waste = not all high-skilled migrants work in high-skilled jobs

Brain gain = high-skilled migration can increase human capital levels

- Incentive channel → migration enhances return to education
- Sending and sharing of knowledge, expertise, investments to home country

On the host communities

Migrants can choose their location and do not arrive at a random time → linked to economic conditions

- We can observe increasing wages and increasing levels of immigration. Yet this does not mean that immigration increased wages, as migrants may simply have chosen this destination because of an omitted factor that is causing the rising wages

Labour market effects of immigration (short-term)

- Immigrants are often blamed for economic downturns and displacing natives from their jobs but reality is more complex
 - o Native-born who most directly compete with immigrant labour will lose
 - o Other groups may compliment the immigrants in the labour market and will experience productivity gains
 - o Elasticity of native labour supply will determine whether immigration effect will show up primarily in wages or employment
- For most countries, immigrants are actually more educated than natives
 - o Increase in the relative abundance of skilled people
 - o Increase the relative wage of low-skilled native-born workers

Migrants chose their destination and the timing of their move

- There can be a demand shock inducing migration
- Difficult to establish causal relationship between arrival of migrants and subsequent wage and employment level

Natural experiment

- The wage of high school dropouts in Miami fell by around 30%
- More educated workers did not experience a substantial wage drop

Impacting of hosting forced migrants in poor countries?

- In the short run , violence, environmental degradation and disease propagation are major risks to the host populations
- In the long run, infrastructure, trade and labour markets are key channels that determine the impacts
 - o Positive spill overs due to increased size of the local market
 - o Positive spill overs from road and health investments by international organizations

H11 Aid

Definition

Foreign aid

- Humanitarian aid= crisis intervention
 - o Short term
 - o To solve immediate problems
 - o Food, medical support..
- Development aid = aims at long-term development
 - o In kind: goods
 - o Financial: money
 - o Technical assistance: experts and advice

Development aid

- Official development assistance (ODA)
 - o Government aid that promotes and specifically targets the economic development and welfare of developing countries
 - o Non-commercial & no military aid
 - o Grants & soft loans
 - o UN target = 0.7% of GNI
- Official assistance: between high-income countries
- Private Voluntary Assistance: NGOs, foundations, ..

Official Development Assistance

- Bilateral: from one country government to another
- Multilateral: aid goes from donor countries to international aid agency to receiving countries

Bilateral ODA

- Tied: recipient country needs to do something in order to receive aid
 - o Tied aid limits choices for the receiving country
 - o If forces the receiving country to buy more expensive goods
 - o Efforts to reduce tied aid, seems to be working
- Untied

Aid from a historical perspective

Roots of foreign aid in the 19th century

- European colonialism; aid to colonies
- BUT massive resource extraction on-going

1945-1982: 'Glorious Years of Development': reconstruction, Asian experience

Really took off after WW2: Marshall plan

- Massive plan to rebuild Europe after war
- Conditionality, e.g. on trade: increase exports to US & eliminate discrimination against US imports

- Rapid European recovery was ascribed to Marshall plan (= debated)

Multilateral institutions

- Worldbank
 - o International Bank for Reconstruction and Development
- United Nations
 - o Food and Agriculture Organization
 - o United Conference on Trade and Development
 - o Various other branches
- Inter-American development Bank
- International Monetary Fund

Aid in historical perspective

- 1950s: the objective of aid was to accelerate GDP growth
- 1960s: increase in share of multilateral aid and development objectives of GDP growth and employment
- 1970s: increased focus on poverty reduction, income distribution and satisfaction of basic needs
- This all took place in the cold war era. Geopolitical and strategic objectives of US & Russia affected development aid spending

1982 – 1997: ‘The age of Globalization’: end of the Cold War, globalization, Latin American debt crisis

Mid 1980s: debt crisis, persistent downturn on macro-economic stabilization and adjustment, the Washington consensus

Focus on conditionalities = a set of economic or policy-performance standard imposed by the donor for the developing country to qualify for loans or grants, binding the aid recipient to reforms deemed necessary for effective use of development assistance

- Conditionalities required recipients to restructure economy: focus on liberalization, privatization, descaling the state

1997 – today: ‘post Washington consensus’: failures of development

Since 1995

- Shift away from conditionalities towards country-led development strategies
- Increased attention for importance of good governance and aid effectiveness
- Rise of impact evaluations

Lower levels of foreign aid due to

- Disillusionment with results of Washington Consensus
- End of Cold War
- Detachment from former colonies

Aid today

1970s = rich countries agreed they would raise their ODA to 0.7% of GNI

- Now: 0.3%
- Some countries meet the norm (Scandinavian), most don't

Sovereign donor objectives

- Altruism
- Economic interest (tied aid)
- Geopolitical and strategic interests

- USA has given to most of its foreign aid to Egypt and Israel (because of their interest in the Arabic wars)
- Japan seems to give the most money to those who vote along the same lines in the UN
- Legacy relationships
 - France has given the most to its former colonies

The aid debate

The believers (Jeffrey Sachs)

Central argument: there is a poverty trap

- Poverty trap creates a vicious cycle, which reinforces poverty
 - Too poor to buy good health care ... bad health makes you less productive
 - Too poor to buy good education ... poor education makes you less productive
 - Poverty traps at country level
 - Fiscal trap: development requires public goods & services. But the government may lack financial means to provide these
 - Demographic trap: poorest countries have high fertility rates. Poor families can not afford to invest in nutrition, health, education of all their children. Next generation also poor & high fertility rates.
- However, a big push can lift people and countries out of this cycle
 - ⇒ We need much more foreign aid to end poverty

Additional argument: geographical factors

- Poor soils, droughts, rugged terrain
- Ecological conditions that favour infectious diseases
- Being landlocked
 - ⇒ These problems could be solved but they require extra investment

The combination of poverty traps and handicaps condemns these countries to poverty

Wide range of interventions to break out of the poverty trap

- Barriers that must be overcome (poverty trap, saving, technology, trade..)
- UN list 449 interventions
 - Fertilizer, improved seeds
 - Health clinics
 - Insecticide treated bed nets against malaria
 - ...
- Need to be done all at the same time

Critics

- Nina Munk: some successes, many failures
- Nature: weak evaluation design

Aid sceptics (Easterly, Moyo and Deaton)

Easterly advances many arguments against Sachs' views

- No systematic evidence for poverty traps
 - Some of the poorest countries became success stories (India, China)
 - Although some countries may be in a poverty trap, the average poor country is not
- No strong evidence for the effectiveness of aid on growth
 - Several studies show a positive impact of aid on GDP or growth

- Several studies get an opposite result
- Bad government matters more than poverty traps
 - Initial low income seems to play no role in growth, after controlling for corruption. Instead corruption clearly lead to lower growth
 - Bad governments are definitely part of the problem
- “social engineering” approach versus “piecemeal reform”
 - instead of aiming at very big utopian goals; try to aim at small specific goals
 - searchers vs planners
 - searchers try to find answers to specific problems through trial and error; bottom-up: only insiders have enough knowledge to find solutions
 - planners believe outsiders know enough to impose solutions; top down
- Development is not a technological problem

Some things work (Banerjee, Duflo and Collier)

RCT revolution

- Focus on small questions rather than big questions
- Small interventions can have huge impacts

Promising intervention can fail in interesting ways

- Many agriculture experts see the use of modern inputs as key to agriculture productivity
- Behavioural bias: procrastination
 - Immediately after harvest: 47% → 70%
 - Had a higher impact than a 50% subsidy later in the season
- ⇒ Not a general theory works.. rather shows that reality is complicated .. need to test what works

Conclusion

Does foreign aid really work?

Micro – macro paradox

- Many small-scale studies show promising results of interventions
- Large-scale country-level studies show no clear evidence that aids works

Possible explanations

- ODA are often given for strategic reasons
- Trouble with top-down programs
 - Information
 - Not easy to know what people need, want or what will work and how much it will cost
 - Not easy to know what the best intervention is – or even what exactly the problem is
 - Incentives: how do you convince people to actually implement the project?
 - Evaluation: how do you know if an intervention works?

Implications

- World is too complicated for big, top-down plans
- This does not mean foreign aid is useless
- We know many things more
- We need innovation, experimentation and rigorous evaluation

H12 Credit markets, microfinance and financing for development

Credit markets & microfinance

Importance of well functioning credit markets

= crucial for modern economies

A match between: people with money but without investment ideas or consumption needs AND people without money but with interesting investment ideas or consumption need

There is a time lag between buying input and selling output (i.e. farmers)

Two ways of financing a company

- Debt = has to be repaid with interest
- Equity = capital owned by the firm
 - ⇒ In developed countries companies use both
 - ⇒ Large companies can find extra equity on the stock market and can borrow money on financial markets

Diminishing return to capital = using more capital gives you more profit, but at a reducing rate

If people can't borrow → output is limited by their wealth => inefficient

It's possible to increase total input in society by transferring capital from the rich entrepreneur to the poor entrepreneur

- Assumption: all else is the same, they have the same skills, same talents. The only difference is their wealth
 - Because of diminishing return to capital, poor entrepreneurs can have a very high return on investment
- ⇒ We would expect money flowing from rich countries to poor countries or from rich companies to poor companies to poor companies in the same country
- This doesn't happen

Lending to the poor

Facts

1. Very high interest rates in informal markets (where there are no banks only private lenders)
2. Extreme variability of interest rates even within the same village or town (very informal market => very personal market)
3. Rich can obtain larger loans, but pay lower rates
 - Credit limit often proportional to net worth
4. Those who borrow more typically pay lower interest rates
5. Rate of default are quite low (people who end up not paying their loan because it is a very informal/personal market)

Reasons why it is difficult to provide credit to the poor

1. Limited liability
 - Suppose a borrower cannot repay his loan (involuntary default)
 - A bank can't really do much..
 - In development countries there is collateral and laws to enforce this
2. Limited enforcement
 - Suppose a borrower refuses to repay his loan (voluntary default)
 - A bank can't force the borrower to pay

In poor countries people often don't have good collateral

- Too poor
- Property rights are not well defined
- Assets they own, are not very good as collateral (animals)
 - ⇒ Best way to avoid involuntary default is to select good clients
 - ⇒ Because contract enforcement is difficult in poor countries, lender have to think of other ways to discourage strategic defaults

How to make strategic defaults unattractive?

- Threaten with violence
- Use social pressure
- Refuse to give loans in future
 - ⇒ Explains why formal banks don't reach the poor

Problem with finding good clients/low risks is information = Lenders lack information on

- A borrower's intrinsic quality (as an entrepreneur)
- A borrower's actions
 - ⇒ Borrower knows this => asymmetric information
- Adverse selection is the result of unobserved quality
 - Leads to higher interest rates and only 'bad risks' remain
 - Can (partly) be overcome by screening = ask people who know the borrower about their talent and skills (expensive)
- Moral hazard is the result of unobserved actions
 - Borrower may be less careful with money that he borrowed so this leads to higher risk of failure
 - Can (partly) be overcome by monitoring = regularly visit the borrower to make sure that he is using the money wisely (expensive)

Most poor people borrow from local money lenders who use screening and monitoring

- Discourage defaults
- Know their clients personally
- They could ask other people about the trustworthiness, skills and talents of the borrower
- They can control what the borrower does with the money
- They can easily refuse to lend money in the future if borrower defaults
 - ⇒ Default rate tends to be low

The microfinance revolution

Idea of microfinance = combine the benefits of local money lenders with the benefits of banks

- Group of borrowers
 - If one person defaults, all others are responsible for paying back his loan
 - Result of this group liability
 - People will form groups with people they trust (screening)
 - People will control each other's behaviours (monitoring)
- ⇒ There is a strong social pressure to repay the loan

Recently MFI have started to offer other products as well

- Microsavings: savings account for small amounts of money
- Microinsurance: small insurance policies

Difference between MFIs and money lenders

- MFIs are not as flexible

- Costs are lower
 - o Administration costs
 - o Screening costs (people select each other)
 - o Monitoring costs (people monitor each other)
 - o Less costs of chasing overdue loans
- Interest rates in microcredits are lower

Impact evaluation

- Microfinance works
 - o More businesses started, more purchases of durable goods
 - o Some households consumed more, but no reckless spending
 - No radical transformation
 - o No real change in position of women in household
 - o Not much bigger spending on health and education
 - o Increases in businesses rather small
- ⇒ In general, income effect is rather modest, but other benefits as consumption smoothing, social benefits, public goods cooperation

Findings from 6 randomized evaluations of microcredit

- Some evidence that expanded access to credit increases business activity
- No statistical impact on income, not transformative in the sense of lifting people out of poverty but it affords people more freedom in their choices and the possibility of being more self reliant
- Lack of effect on social spending
- Decrease in discretionary spending
- Some hints of positive effect on female empowerment and well-being

Limits of microfinance

- Because of group lending people will join groups with those they know very well and this may discriminate against newcomers
- Group lending discriminates against people who want to take risks, however taking risks is important for economic growth
- Rigidity
- Microfinance is really micro

Financing for (sustainable) development

Private domestic funds

- Use of pension funds
- CSR = corporate social responsibility
- Principles for Responsible investment
- UN global impact

Public domestic funds

- Efficient management of government funds
- Domestic resource mobilization: letting more people pay taxes
- Curbing illicit financial flows: money that is leaving developing countries
- Natural resources – resources for infrastructure

Private international funds

- Remittances
- FDI
- Private philanthropy, NGO

Public international funds

- ODA
- International solidarity levy on air taxes
- Solidarity tobacco contributions
- Financial transaction tax
- Climate finance
- Vertical funds
- IMF special drawing rights

How to combine financial resources = Integrated National Financing Frameworks

- Help governments to mobilise the full range of financing options and to combine them with appropriate policies and reforms
- Aim to align planning and financing, strengthen coordination between stakeholders and increase the impact of available resources

Innovative financing

Definition = “innovative financing comprises mechanism of raising funds or stimulating actions in support of international development that go beyond traditional spending approaches by either the official or private sectors

New approaches for pooling private and public revenue streams to scale up or develop activities for the benefit of partner countries

New revenue streams earmarked to developmental activities on a multi-year basis

New incentives to address market failures or scale up ongoing developmental activities

Role of innovative finance instruments

- Generating additional funds
 - o Emerging donors
 - o Socially responsible investing
 - o Solidarity taxes
 - o Carbon finance
- Making funds more efficient
 - o Local currency bonds
 - o Frontloading on development aid
 - o Index-based risk financing
 - o Partial risk guarantees
- Linking funds to results
 - o Result-based financing
 - o Advance market commitments

Examples of innovative financing

- Voluntary solidarity contributions
- Frontloading and debt-based instruments (see slides)
- State guarantees and other market-based mechanisms

H13 Natural Resource Curse

Natural resource wealth = natural assets such as materials, minerals, forest, water and fertile land that occur in nature and can be used for economic gain

Natural resource curse = countries with natural resources tend to have lower economic growth and worse development outcomes than countries with fewer natural resources

- Inverse relationship between the share of natural resource exports in GDP and GDP per capita growth

Correlation or causality?

- Also countries that have natural resources that aren't poor (Norway, Canada..)
- Importance of distinguishing between natural resource abundance and dependence
 - o Abundance = the amount of natural capital that a country has at its disposal
 - o Dependence = the extent to which a country relies on natural resources for its livelihood
- Norway, Canada and Australia all have vast reserves of natural resources, but the revenue only makes up for a modest part of their economy
- Whether a country is dependent on natural resources will be determined by
 - o Natural resources abundance, the size of the economy and policy choices on how much natural resources to extract/export
 - Influenced by a lot of other (omitted) variables that can also affect GDP growth
- Dependence is measured by the share of natural resources export in GDP
 - o Omitted variable bias
 - The factor that determines the extent to which a country relies on natural resource revenues could be the actual problem
 - Overreliance on one sector is always problematic

Economic and fiscal explanations

Dutch disease

Small open economy

3 sectors

1. Natural resource sector
2. Tradables sector (agriculture and manufacturing) ⇔ prices are set in the world market
3. Non-tradables sector (services) ⇔ prices are set in the domestic economy

Spending effect

= extra foreign currency enters the country and is converted into local currency

- ↑ demand for local currency
- ↑ price of local currency

And is spent on tradables (world prices) and non tradables (domestic prices)

- ↑ demand for non tradables
- ↑ domestic prices

Leading to an appreciation of the real exchange rate => making the countries tradables more expensive in the world markets

Resource movement effect

Booming natural resource sector attracts additional capital and labour + to meet the increased demand for non-tradable labour and capital are shifted toward the non-tradable sector → decay of the tradables sector

- Decay of the manufacturer sector is believed to be harmful because it is a sector generally considered to be an important source of long-term economic growth and welfare

Volatility

Volatile nature of natural resource revenues

- Variation in the rates of extraction
- Variability in the timing of payments
- Large fluctuations in commodity prices

Volatility creates market instability and uncertainty => hampers effective long-term planning

Liquidity and credit constraints that hamper innovation and growth

Government revenues will fluctuate with natural resource exports

- Difficult to align public finance revenues and expenditures
- Boom and bust cycles in government spending

Volatility can be further amplified by international lending

- When commodity prices are high, resource-rich countries borrow from abroad
- When prices fall, lenders demand repayment and force expenditure

Myopic behaviour

= short-sightedness among private and public actors

Myopic sloth = doing too little because you think the money will come in forever

- Lax policies and neglect of structural measures to achieve diversification and sustainable growth

Myopic exuberance = doing too much because you think the money will come in forever

- Failing to recognize that natural resource booms are temporary, and often depletable leads to excessive spending and borrowing
 - o White elephants = inefficient investment projects with a negative social surplus

Political and institutional mechanisms

State unaccountability

State accountability

- European states were constructed in the process of earning income. Bargaining between states and groups of citizens, played a major role in institutionalizing representative legislatures and, less directly democracy and civil liberties.
- When government rely on income for their revenue states and citizens have common interest → material prosperity of citizens increases their taxability

⇔

State unaccountability

- Natural resources are an 'unearned' state income and requires little organizational and political effort in working citizens → disconnect between citizens and their government

When states can rely on their natural resource wealth

- Government revenues are independent of prosperity of citizens (no common goal)
- No need to be responsive to citizens' needs in order to induce a greater willingness to pay taxes
- No need to develop a bureaucratic apparatus and provide efficient civil service

Endowment effect (social psychology of taxation)

- People feel differently about out-of-pocket losses and foregone gains

- Possession increases perceived value
- Income tax has to be paid out of earning = out-of-pocket loss
- Natural resource wealth that is wasted or captured = more likely to be perceived as foregone gain
 - ⇒ Motivation to hold the government accountable is less strong in the case of natural resource revenues than in case of taxes

Threat to democracy

= natural resources help create and sustain authoritarian regimes

Rentier state theory

1. Rentier effect
 - a. Taxation effect = governments that derive sufficient revenues from oil will tax their populations less heavily, the public will be less likely to demand accountability
 - b. Spending effect = patronage (providing material gains directly to elites to minimize potential support for an opposition)
 - c. Group formation effect = resource wealth is used to prevent formation of independent social groups (that may be inclined to demand political rights)
2. Repression effects = oil revenues allow rulers to better protect themselves against popular pressures or coups
 - Oil wealth can create ethnic/regional tensions and conflicts
 - Increased internal security/military spending
3. Modernization effect = oil-spurred economic development is not conducive to social change

Rentier state theory was created to explain oil wealth but can be expanded to other natural resources

- Oil wealth increases the survival chances of autocratic regimes
- Adverse relationship between exports of fuel, minerals and metal export and democratization

Effect of oil discovery on democratization

- If you were democratic before you remain more or less the same
- If you weren't democratic and discovered oil you did worse than countries with no oil discovery

Rent-seeking and corruption

Large barriers to entry in resource extraction sector = usually controlled by enormous corporations or state authorities (monopoly or cartels)

The elites or powerful groups generally take a larger share of these revenues and distribute it for benefit of their immediate circles

Availability of large profits from natural resource extraction fosters rent-seeking behaviour (aimed at self-enrichment rather than increasing productive potential of the economy)

Re-allocation of effort and resources from productive activities toward rent-seeking

Conflict

Vast natural resource wealth provides both the motive and financing for conflict in an already weakened state structure

Motive

- Greedy rebels
 - o Rebels want to benefit from resources independent from the state
 - o Natural resources increase the value of capturing the state
 - o Supports separatist movements in producing regions
- Greedy outsiders
 - o Natural resources may be an incentive for third parties to engage in or foster civil conflicts
- Grievance

Extractive multinationals

Governments face considerable challenges in dealing with this type of international corporation

- Limited competition
- Asymmetric information = government is likely to have less information about the value of the resources
- Agency problem = resource extraction companies can propose a deal which is personally rewarding for the government agent and the company at the expense of the society
- Little transparency = governments may have little capacity to scrutinize whether payments from companies are compliant with the terms of the contract

The resource curse

Conditional versions of the resource curse

- Quality of institutions = only 'grabber friendly' institutions promote rent seeking at the expense of productive activities
- Electoral competition = no resource curse in democracies with a parliamentary form of government
- Human capital = natural resources reduce economic growth in countries with low levels of human capital

Type of resources

- Point-source natural resources
- Diffuse natural resources

Looking beyond growth : Human capital

"natural capital crowds out human capital"

Presence of natural capital resource wealth reduces incentives to invest in education and health

- Resource based industries are generally not human capital intensive
- Countries that are confident that their natural resources are their main important assets may neglect the development of their human resources (myopic sloth)
- Volatility induces uncertainty which can reduce willingness to engage in long-term education investments

Resource rich countries have

- Less school enrolment
- More under-five mortality
- Lower levels of human development

Escaping the curse

Transparency

Access to information about natural resource revenues is assumed to contribute to

- Competition between firms and more efficient negotiation processes

- Strengthening accountability and good governance
- Limit opportunities for rent-seeking and corruption

Impact of transparency will depend on

- Ability to process the information
- Ability and incentives to act on the processed information

Extractive Industries Initiative

- Member countries disclose information on tax-payments, licenses, contracts, production and other key elements around resource extraction
- Problems
 - o Voluntary
 - o Over emphasis on the revenue side
 - o Mixed evidence of impact on corruption and other development goals

Sovereign wealth funds

= inspired by the success of Norway's Petroleum Fund

- Avoid boom bust patterns of spending
- Save for future generations
- Prevents Dutch Disease if assets are "sterilized", held outside the country's monetary system

Problem = need for detailed accumulation and spending rules = institutional on institutional quality

Direct dividends

Citizens have an individual interest in protecting the fund (source of the transfers) and holding the government accountable

H14 Agriculture and development

Why study agriculture?

- Agriculture was the basis for historical development
- Eurasian continent had a head start because they had a lot more domestic plants and animals => need to store food => need to stay in 1 place => can build things in this place

Agriculture for development

Agriculture as a source of growth

Agriculture is the key source of growth especially in the early stages of growth

- In developing countries, agriculture contributes strongly to GDP and employment

Low-income countries have comparative advantages in agriculture

- Rich in natural resources & potential to grow
- Weak in business climate
- Large economies of scale in manufacturing

Agriculture contributes to growth through

- Product markets
 - o Higher productivity in agriculture → possible to sustain larger urban population engaged in other activities
 - Lower prices of food
 - Lower nominal wages for industry
 - Larger return of investment in industry
 - Economic growth
- Capital contributions

- Financial surplus of agriculture: money not needed in the agriculture sector can be invested somewhere else
 - Taxes, forced deliveries, invisible transfers
- Foreign exchange contributions
 - Agriculture exports are main source of foreign currency coming into several countries
 - Foreign currency can be used to pay for other imports
 - Export taxes are an easier source of taxation than income tax
- Labour and welfare contributions
 - As agriculture sector becomes more productive → release labour from agriculture → rural-urban migration
 - Internal brain drain: education paid by agriculture but benefits for industry
 - Farm financed social welfare: in case of economic downturn workers return to the safety net of agriculture
- Market contributions
 - Increases in productivity in agriculture will lead to demand for industrial machinery
 - This also leads to higher industrial growth
 - Also higher agricultural incomes → higher demand
 - Virtuous cycle between agriculture and industry

Conclusion: investing in agriculture has growth spill over effects in the rest of the economy, especially at low levels of growth

Agriculture for poverty reduction

Agriculture is an effective way to reduce poverty especially for developing countries at low levels of income

Effect of agriculture on poverty is determined by

- Who participates in and benefits from growth in sector
 - Big vs small players
 - Staple vs export crops
- Size of the agriculture sector
- Strength of economy wide linkages to other economic activities (i.e. are fertilizers imported?)
- Socio economic setting
 - Stage of development
 - Topographical conditions and resource endowments
 - Agro-ecological potential

Agriculture for resource saving

Agriculture = major (mis)user of natural resources + big source of climate change

Agriculture can also be an engine for tackling climate change

- Incentives for conservation
- Resource-saving technologies
- Making farm systems resilient to climate change
- Achieving yield gains in environmentally friendly ways

Food production and population growth

Positive relation: population growth enhanced food production

Demand driven theory

Population growth → more mouths to feed → necessity for innovation

Population growth induces the improvement of agricultural technologies and hence enhances food production through increased demand

Technology and food supply are endogenously determined by population growth

Evidence

- Where population pressure is low, very low-intensive agricultural practices are used
- Where population pressure is high, more intensive land use practices are used
- Doesn't always hold up

Supply driven theory

Population growth → more potential inventors → innovation

Imagine everyone has an independent chance of coming up with an idea that will benefit the rest of the human race → the more we are, the higher the probability that someone among us comes up with a great idea

Population growth induces the improvement of agricultural technologies and enhances food production (supply side)

Evidence

- Over time population growth & technological change are positively correlated at a global level
- BUT in a cross-section of countries, countries with large population should have higher rate of technological progress – this is not the case

Negative relation

Malthus = production of food has linear growth and population exponential

- Malthusian catastrophe = war, famine, conflict that can decimate the population so that there is enough food again

Evidence

- We have avoided Malthusian catastrophe on a global scale
 - o Malthusians underestimate technological progress, which enabled rapid increases in agricultural productivity
- Global scale isn't local scale
 - o We produce enough food to feed the world but there is still hunger and malnutrition
 - Global food is not evenly distributed
 - Local Malthusian crisis

Determinants of food demand

- Population size
- Urbanization = change in food habits + increase in the share of net food buyers
- Income = as income rises, the demand for food rises
- Non food uses = animal feed and energy

Determinants of food supply

- Inputs

- Agricultural productivity
- Future trends in food supply
 - o Supply of arable land is limited and land conversion not agriculture comes at a high cost
 - o Use of improved inputs remains limited (including labour)
 - o Yield growth is slowing down
 - o Climate change: impact on agricultural production and productivity highly dependent on region, but net effect on yields will be negative

To be able to feed the world

- Need to increase agricultural yields
- Need to reduce environmental impact of agriculture
- Boosting crop yields in some regions
 - o Biotechnological innovations
 - o Input saving production systems
- Reducing food losses and wastage
- Changing diets

H15 food and hunger

Average dietary energy supply adequacy = adequacy of the national food supply in terms of calories as a percentage of the average dietary energy requirement of a country

Food security = when all people at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life

- Physical availability of food = supply side
 - o Food supply is spread unevenly across the world and within countries
 - o There should be enough food in most countries
- Economic and physical access to food
 - o Household resources determine the quantity and quality of purchased food
 - Energy dense and nutrient poor diets are cheap and consumed more by those with limited means
 - Food desert = portions of land without a supermarket
 - o social factors may prevent households from obtaining food (discrimination, taboos)
- Food utilization = i.e. cooking method and preferences
 - o What food we eat (among accessible foods) depends on preferences, taboos, social norms
 - o Ability of the human body to absorb nutrients depends strongly on their health status
 - o How food is processed, combined and prepared has large implications for its nutritional content
- Stability of the other three dimensions over time
 - o Vulnerability = risk of shocks
 - Food price shocks, environmental shocks..
 - o Resilience = ability to cope and thrive in the face of shocks
 - Adapt farming practices, strengthen markets..

Hidden hunger = micronutrient deficiencies occurs when the quality of food that people eat do not meet their nutrient requirements, so they are not getting the essential vitamins and minerals they need for their growth and development

Nutrition

EAT lancet diet

- Scientific targets for healthy diets and sustainable food production
- To meet this diet
 - o Globally: requires x2 consumption of fruits, vegetables, legumes and fruit, 50% reduction in global consumption of added sugars and red meat
 - o Sub-Sahara Africa: obtaining adequate micronutrients from plant source foods alone can be difficult

The importance of child nutrition

If a child receives proper nutrition this results in

- Lower morbidity and mortality in childhood
- Higher cognitive motor, socioemotional development
- Higher school performance and learning capacity
- More work capacity and productivity

South Asian enigma

- 54million of stunted and 7.8million of wasted children live in Southern Asia
- Persistent and unusually high rates of child undernutrition despite economic progress
- Explanations
 - o Monsoon climate
 - o Weak health institutions
 - o Overcrowding
 - o Cultural beliefs and tradition
 - o Intrahousehold dynamic: women play a great role in child nutrition and in these country they have a lesser social role and can't make decisions

Undernutrition and overweight and obesity occurring simultaneously within individuals, household and population

- Especially in countries that are in rapid economic transition
- Nutrition transition = large shift in the structure of diets and physical activity patterns as a consequence of socioeconomic and demographic changes

Combatting hunger and malnutrition

- Economic growth
- (avoiding) political conflicts
- Trade
- Social safety nets
- Subsidies
- Infrastructure
- Policy interventions such as food aid
- Specific nutrition interventions

Food aid

- Costly (especially when involving intercontinental shipments)
- Time consuming
- Disincentives effects for domestic food production and distortion of local markets

In-kind or cash aid

- Pro food aid
 - o Food transfers are more sticky

- Gender concerns (food = women's resource)
- Pro cash transfers
 - Freedom of choice
 - Cost
 - Undesirable food aid

Fortification = adding micronutrients to staple food during processing

- Problems: consumer resistance, compounds used to fortify foods may be lost during processing or storage
- Biofortification = the process by which the nutritional quality of food crops is improved through agronomic practices, conventional plant breeding, or modern biotechnology

H16 the environment and development

State of our climate

Temperature is rising

Greenhouse gases are rising (CO₂, CH₄ and N₂O)

Ocean heat content = changes in the oceans chemistry => more acidic

Sea level rises = very bad for low land regions and islands

Environmental effects of global warming

- Irregular precipitation
- Heavy rainfall and floods
- Tropical cyclones
- Severe storms
- Drought
- Wildfires
- Mass extinction

Economic effects of climate change

Income loss and inequality

- Low income people are affected the most from weather related disasters
- Poverty trap of climate change
- More municipal waste and consumption of water

Gender inequality

- Women in many countries tasked with collecting water and firewood = more susceptible to damages from climate hazards
- Drought poverty traps

Age inequality = young and old are more susceptible to climate hazards

Ethnic and racial inequalities

- Minority farmers in Myanmar are more susceptible to damages due to lack of effective warning systems and infrastructure
- In Latin America, Afro-Latinos and indigenous groups were found to suffer from disproportionate climate effects

Food insecurity

Climate variability and extreme weather events are the key driver of the recent rise in global hunger

- Decreases in yields of wheat, rice and maize caused by increased heat and water stress

Population displacement

Potential issues due to displacement

- Increasing number of refugees
- Conflict and unrest: competition over resources, land rights, food and water
- Urban stress
 - o Higher population density, more slums, less hygiene and amenities
 - o Higher air and water pollution

Health

Climate change affects several determinants of health

- Clean air, safe drinking water, sufficient food and secure shelter

Areas with weak health infrastructure will be the least able to cope without assistance to prepare and respond = developing countries at risk

Heat stress exacerbates pre-existing heart failure and kidney disease and reduces labour quality

Economic development and the environment

Environmental dependence = developing countries are the ones mostly affected by climate change but have contributed little to emissions

Poor are both agents and victims of environmental degradation

- Victims
 - o The poor live in environmentally degraded lands which are less expensive because the rich avoid them
 - o People living in poverty have less political clout to reduce pollution where they live
 - o Living in less productive polluted lands gives the poor less opportunity to work their way out of poverty
- Agents
 - o The high fertility rate of people living in poverty increase pressure on resources
 - o Short time horizon of the poor (living paycheck to paycheck)
 - o Land tenure insecurity = less likely to invest in more sustainable activities
 - o Incentives for rainforest resettlement

Sustainability: meeting the needs of the present generations without compromising the needs of future generations

Sustainable development needs

- Appropriate valuation of future social benefits
- Proper attention to market failure
- Valuing natural resources as capital stock

Growth vs the environment

Capital assets

- Manufactures capital
- Human capital
- Environmental capital: forests, soil, quality, water..

Factor in preservation or loss of environmental resources when estimating economic growth and human well being

Sustainable net national income (NNI*) = GNI - depreciation of manufactures capital (Dm) – depreciation of environmental capital (Dn)

$$NNI^{**} = GNI - Dm - Dn - R - A$$

- With R: expenditure required to restore environmental capital
- With A: expenditure required to avert destruction of environmental capital

Hypothetical income-pollution relationship: Environmental Kuznets curve

- Income rises = first increase of pollution, second investment in sustainability
 - o Better environmental policies can shift the curve downwards
- BUT: average patterns that do not indicate causality
 - o Reverse causality: environmental pollution → slow economic growth
 - o Omitted variable bias: bad institutions → high pollution and low income per capita

Economic models of environmental issues

Privately owned resources

If all resources are privately owned and there are no market distortions, then resources will be allocated efficiently

For this you need perfect property rights markets

1. Universality: all resources are privately owned
2. Exclusivity: it must be possible to prevent others from benefiting from a privately owned resource
3. Transferability: the owner of a resource may sell the resource when desired
4. Enforceability: the intended market distribution of the benefits from resources must be enforceable

Common property rights

if commonly owned

- Each worker is also able to collect the entire production of its work

tragedy of the commons: a situation in a shared-resource system where individual users, acting independently according to their own self-interest, behave contrary to the common good of all users by depleting or spoiling the shared resource through their collective action.

- Users fail to take externalities into account: that as each uses more of the common resource the average return is lowered for other users

Conditions for fair and efficient management of common property

- Clearly defined boundaries of the resource system
- Proportional equivalence between benefits and costs for users
- Collective-choice arrangements including those affected
- Monitoring, with those who audit accountable to users
- Graduated sanction
- Conflict-resolution mechanisms
- Recognition of rights to organize
- Nested enterprises when resources are part of larger systems

Solutions

What developing countries can do

1. Proper resource pricing
2. Community involvement: involvement boosts contribution to sustainability programs
3. Clearer property rights and resource ownership: increased investment in household and agriculture
4. Improves economic alternatives for poor: alternative rural employment opportunities
5. Improved economic status for women
 - o Women largely involved in resource rich tasks

- Improving female education reduces family size
- 6. Industrial emissions abatement policies: policies listing environmental damage
- 7. Proactive stand toward adapting to climate change

How industrialized countries can help developing countries

1. Lower developing country costs for environmental preservation (=financial aid)
2. Trade policies
3. Debt relief and debt for nature swaps
4. Development assistance to climate change

What developed countries can do for the global environment

1. Emissions control, including greenhouse gases
2. R&D on green technology and pollution control
3. Transfer of technology to developing countries
4. Restrictions on unsustainable production

Key aspects of the Paris Agreement: long-term temperature goal, global peaking and climate neutrality, mitigation, maintaining sinks and reservoirs, adaptation, ...

COP26

- Mitigation = reducing emissions
- Adaptation = helping those already impacted
- Finance = enabling countries to deliver on their climate goals
- Collaboration = working together to deliver even greater action