



TOPIC II: DEVELOPMENT

ECON1401, UNSW

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ROADMAP

1. Ricardo and Malthus
2. Some basic facts about growth
3. Is there convergence in growth? In what sense?
4. What are the fundamental causes of growth?
5. What is the role of urbanisation?
6. What is the role of democracy?

Historical data source: Maddison ([link](#))

Slides based on lecture notes by Nalini Prasad and Roberto Bonfatti

PRELIMINARY NOTES

- ▶ Handy to look at the log of income per capita when growth is nearly proportional
 - ▶ if $x(t)$ grows at a proportional rate, $\ln(x(t))$ grows linearly
 - ▶ exponential growth at constant rate is a useful caricature of reality
- ⇒ you will see it used
- ▶ Corr(x,y) is short-hand for correlation between x and y i.e. when x changes, y changes (positively unless specified)
- ▶ We will use Income per capita, however this does not capture inequality *within* countries (e.g. South Africa)

DAVID RICARDO (1772-1823)

Ricardo is important not only for his contributions, but for he embodies the ideal modern economist

- a He is a man of the world: skilful trader, knows the actual markets well
- b He is a logical and mathematical mind
- c He is able to build a model of the economy that is very useful in illustrating a fundamental mechanism
 - i it is realistic enough to be able to generate the economic issues of interest
 - ii it abstract from all that is inessential
 - iii it is useful for policy making (abrogation of Corn Laws)

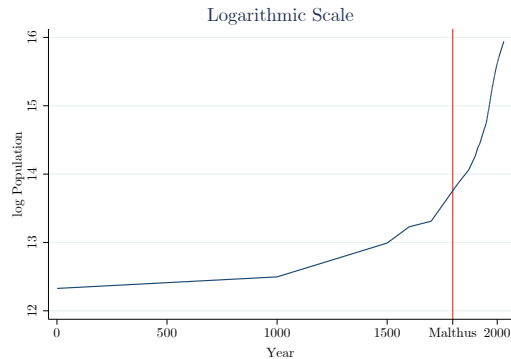
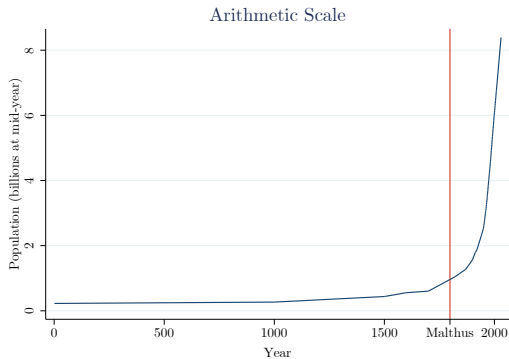
THOMAS ROBERT MALTHUS (1766-1834)

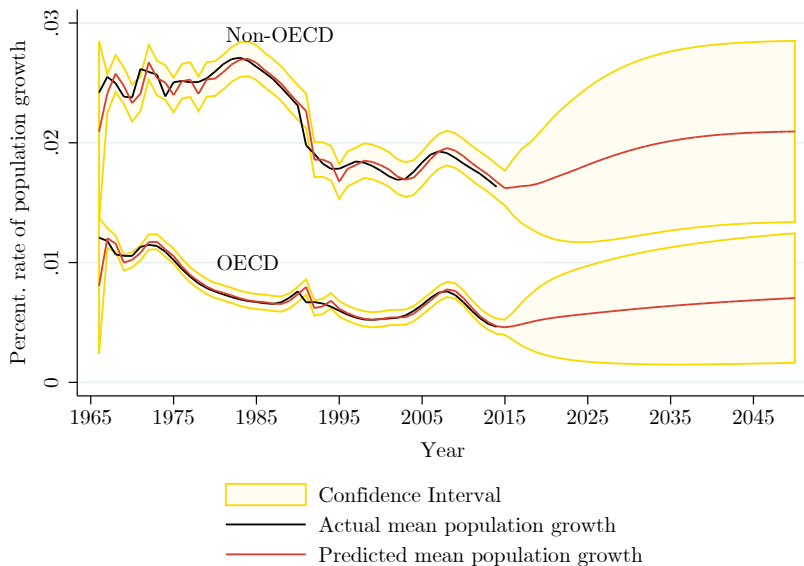
- ▶ Production depends on labour, productivity of farmable land and quantity of farmable land
- ▶ Human population (hence demand for food) grows exponentially
- ▶ Population growth increases as per-capita consumption increases
- ▶ Farmable land can be expanded but at a much slower rate (deforestation, draining a wetland)
- ▶ Technology growth is slow if not fixed
- ▶ In any case, the amount of land on Earth is fixed

⇒ **Need for population control**

WORLD POPULATION

After all Malthus was right to say population growth is multiplicative





NEO-MALTHUSIANS

- ▶ Malthus recommended abstinence, late marriage, contraception or emigration to control population growth
- ▶ He also noted that vice, war, diseases and infanticide effectively restrained population growth
- ▶ His **pessimism** made a comeback more recently
- ▶ *The Population Bomb*, by Ehrlich
 - ▶ “In the 1970s hundreds of millions of people are going to starve to death”
 - ▶ “If I were a gambler, I would take even money that England will not exist in 2000”

OPTIMISTS

“The Ultimate Resource”, by Julia Simon

- ▶ Population is the solution to scarcity and environmental problems, since rising pop forces innovation
- ▶ Food production quadrupled since the 1950 while using only +1% land
- ▶ The demographic pressure-innovation pattern is recurring
- ▶ The outcome of this mechanism has been historically higher living standards
- ▶ + people \Rightarrow + production and exchange of ideas \Rightarrow ++ innovation

NEUTRALISTS

- ▶ The worrying food shortages issues were actually due to bad institutions
- ▶ If you control for institutions, there's no correlation between pop growth and econ growth
- ▶ Populations grow after tech innovations, but do not affect technological change nor affect future outcomes

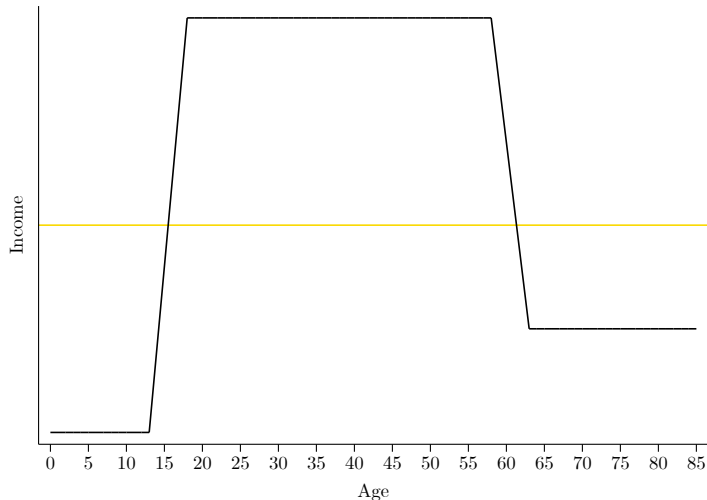
THE DEMOGRAPHIC TRANSITION VIEW

What matter for econ growth is not the pop level, but the **age structure**

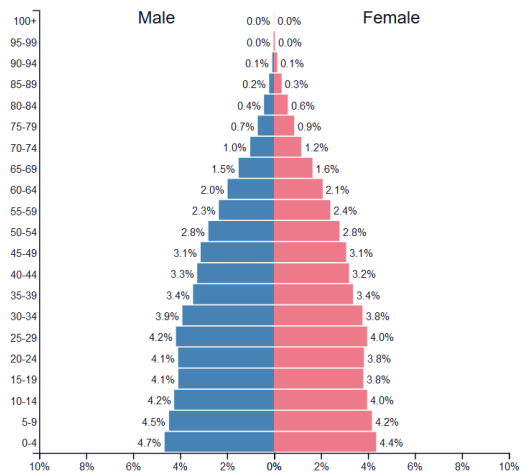
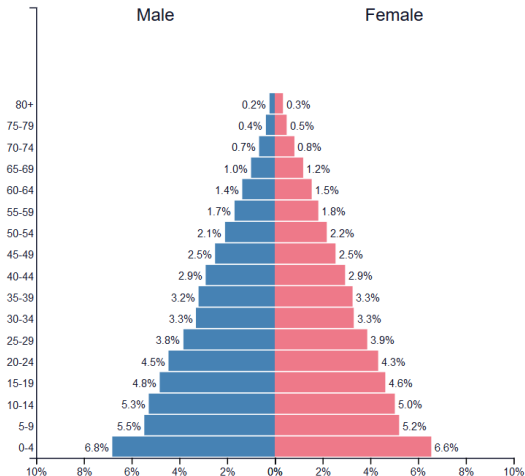
1. The *young* require intensive investment in health and education
2. *Adults* supply labour and savings
3. The *old* require health care and retirement income

The relative size of each group determines the relative intensity of the respective econ behaviour

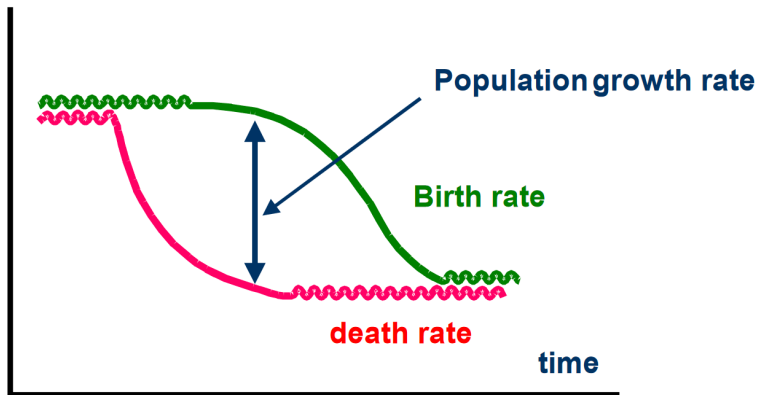
THE LIFE-CYCLE-INCOME HYPOTHESIS



DEMOGRAPHIC PYRAMID

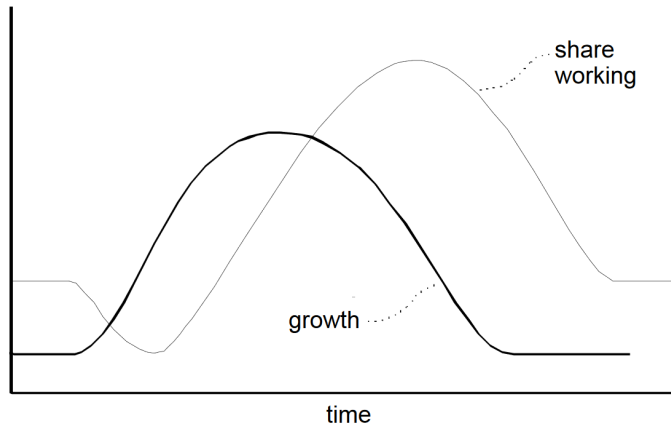


THE TRANSITION



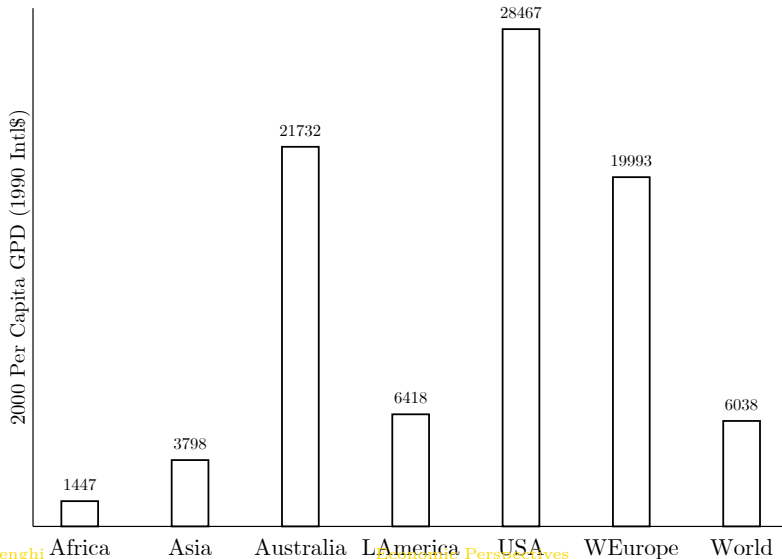
Source: Bloom, Canning and Sevilla (2004)

POPULATION GROWTH & AGE STRUCTURE

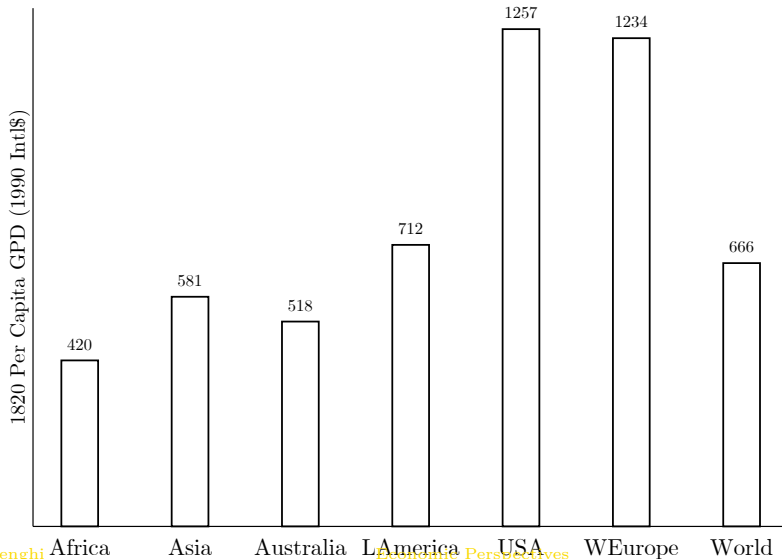


Source: Bloom, Canning and Sevilla (2004)

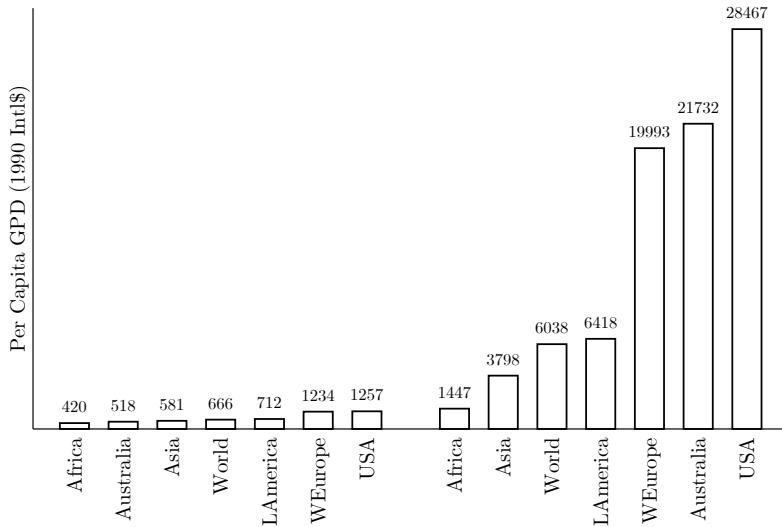
Today, some countries are **much** richer than others



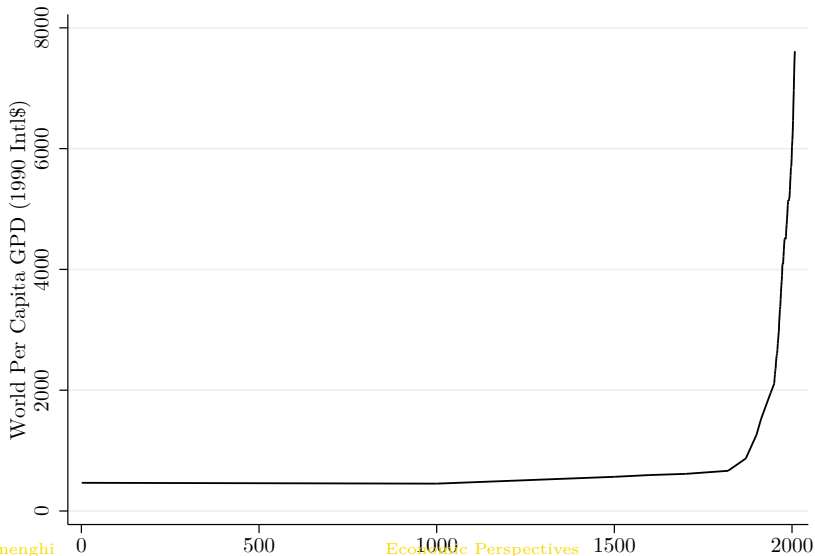
In the past, the separation was far lower



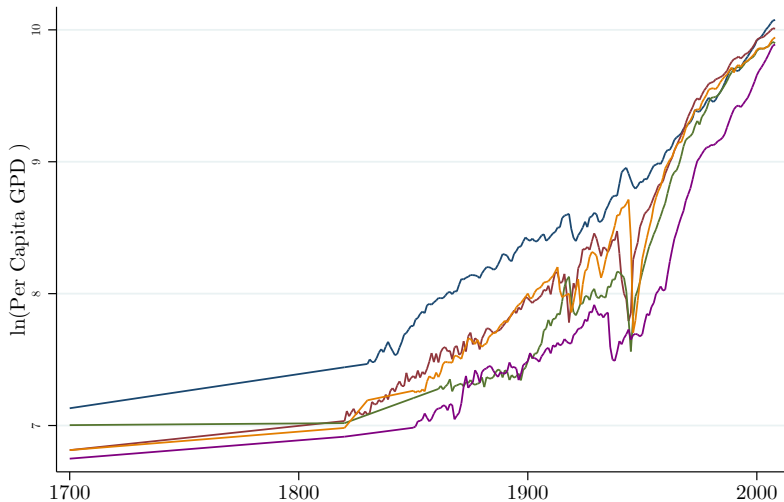
The current distribution was created around 1820 and remained unchanged*

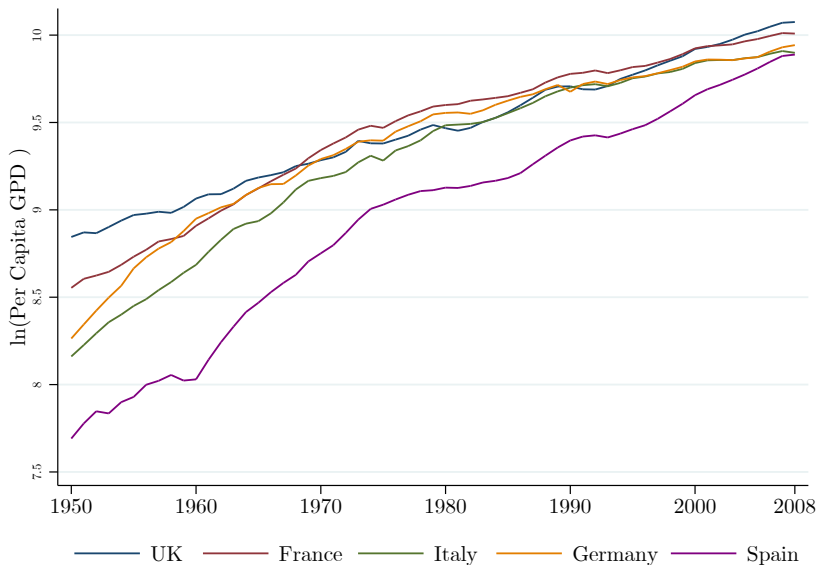


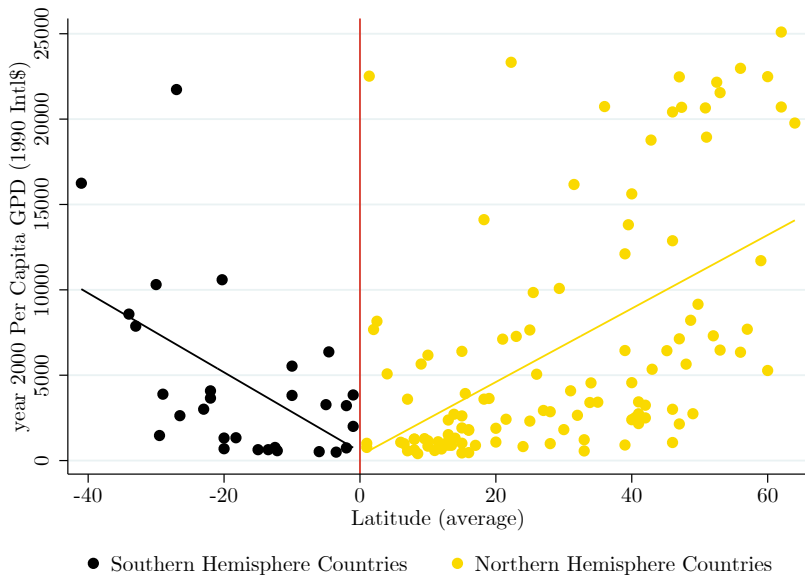
Growth is a recent phenomenon



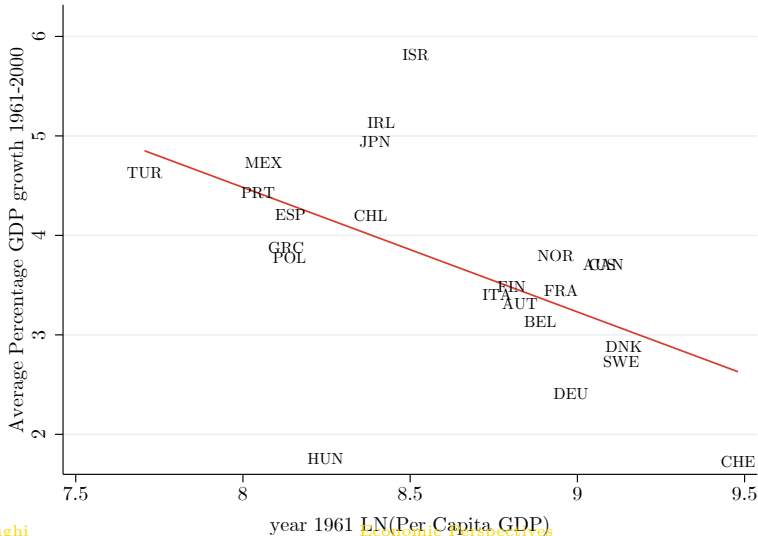
In Europe, UK lead and the others followed, **converging**

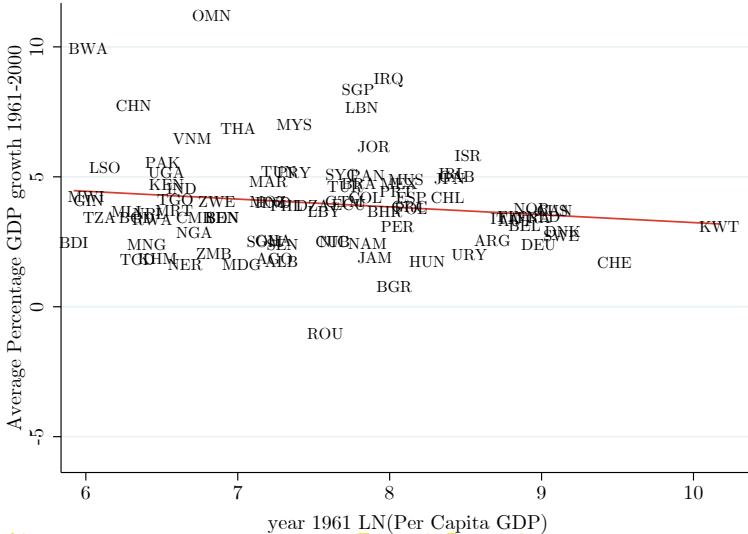






CONDITIONAL CONVERGENCE: OECD COUNTRIES





MAIN HYPOTHESIS

1. Luck \rightarrow multiple equilibria, good and bad
2. Geography
3. Institutions
4. Culture

GUNS, GERMS AND STEEL, BY JARED DIAMOND

1. Eurasia (esp. the Mediterranean & Middle East) had geo advantage in storable, protein-rich plants and domesticable animals
2. Domesticated animals made Europeans resistant to (and carriers of) deadly diseases → influenza, measles,...
3. Eurasia E-W orientation allowed for easy trade of ideas, animals, plants and diseases
4. Geography favoured political fragmentation ⇒ competition ⇒ innovation

GUNS, GERMS AND STEEL, BY JARED DIAMOND

Punchline: initial environmental conditions allowed the Eurasian societies to develop first, as an ecological system reaching higher levels complexity because it is fed with better inputs

See **this** Reddit discussion

Notice that:

- ▶ He is a biologist and looks at the world with *that* interest
- ▶ He is disliked by historians (they love the *particular*) and not loved by economists (they love institutions)

One fair point: many technological innovations originated in the East first (e.g. printing, guns, compass)

WHY NATIONS FAIL?, BY ACEMOGLU AND ROBINSON

- ▶ Divergence in income started around 1500
 - ▶ Nations had either:
 - ▶ **Inclusive** institutions: protecting property rights and allowing citizens to participate in the growth process
 - ▶ **Extractive** institutions: small elite controlling econ and political systems and using power to extract wealth from the ones generating it
- ⇒ Institutions in 1500 explain differences in growth today

WHY NATIONS FAIL?, BY ACEMOGLU AND ROBINSON

Inclusive institutions are characterised by:

- ▶ Secure property rights
- ▶ Law and order
- ▶ Markets and state supporting them (through regulation and public services)
 - level playing field
- ▶ Low barriers for creation of new business
- ▶ Access to education and opportunities for the vast majority of citizens
- ▶ Presence of incentives to invest and innovate

GDP PER CAPITA, 1990 INTERNATIONAL DOLLARS

	1820	1992	Avg Annual Growth, 1820-1992 (%)
Temperate	794	10,095	1.4
Non-Temperate	543	2,556	0.9
Ratio	0.68	0.25	

Sachs (2001), based on Maddison (1995). The Temperate Region is taken to be Western Europe, the Western Offshoots, Southern Europe, Eastern Europe, Japan, Half China. The rest in in the Non-Temperate Region.

“In 1820, GNP per capita in the tropical regions was roughly 70 percent of GNP in the temperate-zone. By 1992, GNP per capita in the tropical regions was 25 percent of that in the temperate-zone.”

SACHS (2001) TROPICAL UNDERDEVELOPMENT

- ▶ Corr(ecological zones, per capita income) → outlier: HKG, SGP, Communism
- ▶ Navigable .vs Landlocked → E.g. Bolivia, Burkina Faso, Laos (also tropical)
- ▶ Tech often diffusable within ecological zones could **not** diffuse **across** them
- ▶ Major crops (rice, maize, and wheat) more productive in temperate areas
- ▶ Burden of (more resilient) disease → +50% infant mortality, -8% life expectancy
- ▶ The initial imbalance is now feeding further disparity ⇒ institutions

IS GEOGRAPHY ENOUGH?

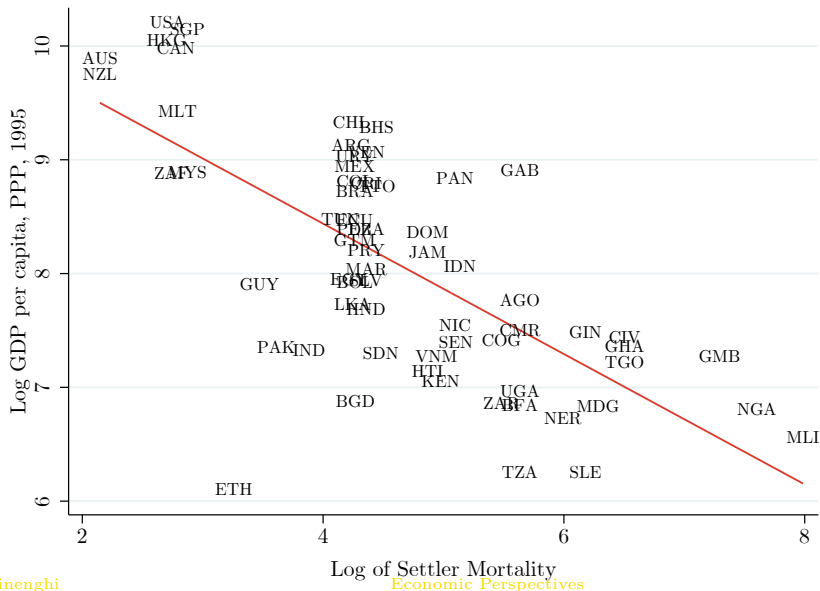
If geography is the only cause,
why do we observe this? Why
does a border matter?



THE REVERSAL OF FORTUNES HYPOTHESIS: ACEMOGLU, JOHNSON AND ROBINSON (2001)

- ▶ Negative relationship between countries relatively rich in 1500 and their relative wealth today
- ▶ Europeans started meddling with foreign governments after 1500
- ▶ (Expected) High mortality rates colonies: settling impossible, just extraction
 - Belgian Congo
- ▶ (Expected) Low mortality colonies: settling, foundation of “Neo-Europes” (Crosby 1986) → Australia, USA

“mortality rates faced by the settlers more than 100 years ago explains over 25 percent of the variation in current institutions”



THE REVERSAL OF FORTUNES HYPOTHESIS: ACEMOGLU, JOHNSON AND ROBINSON (2001)

- ▶ Analysis relies on assumption that the disease environment affected growth only through the reaction of settler to it
 - no direct effect on log per capita GDP
- ▶ Defence: the main diseases were malaria and yellow fever, which had limited effects on indigenous
- ▶ Once controlling for institutions, distance from the equator nor being an African country explain lower incomes

“When we have had to speak in defence of our rights, we have never yet been defeated or proved in the wrong, but in every case we vanquish all our opponents and have the best of it in argument. Is, then, Philip any the worse off for that, or Athens any the better? Far from it; for afterwards, when he takes up arms and marches to battle, ready to risk all he has, and we sit idle, alike those who have pleaded our cause and those who have been listening to them, then, naturally enough, deeds outweigh words, and everyone cares about not what we once said with justice or might now say, but what we do.”

— Forth Philippic, Demosthenes, 341 BC

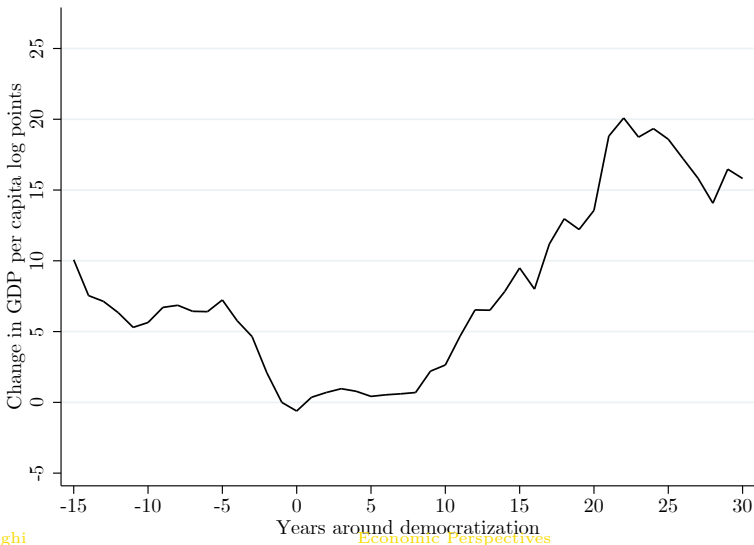
DOES DEMOCRACY CAUSE GROWTH?

- ▶ Almost everyone living in a democratic country values democracy
 - ▶ However, we are only interested in how conducive it is to economic growth
 - ▶ Indeed one could argue that a monarchy or oligarchy:
 1. Is not binded by short-term goals (electoral cycle) → investment!
 2. Is not afraid of taking unpopular decisions
 3. Can decide and act quickly
 - ▶ All this relies on the capacity and goodwill of the monarch or oligarchy
- ⇒ **not trivial question**

DARON ACEMOGLU ET AL. 2019: DEMOCRACY DOES CAUSE GROWTH

- ▶ Until recently the evidence in favour was very weak if not null
- ▶ Data between 1960-2010
- ▶ Use of multiple estimation strategies, with different pros and cons → there's agreement!
- ▶ Main result: 25 years after democratisation, GDP per capita is 20% higher than if it didn't happen
- ▶ Notice causal language (counterfactual)
- ▶ Secondary findings (weaker): it does so though investment, econ reforms, schooling and health care and internal peace

DARON ACEMOGLU ET AL. 2019: DEMOCRACY DOES CAUSE GROWTH



POZUELO ET AL (2016): DEMOCRACY DOES NOT CAUSE GROWTH

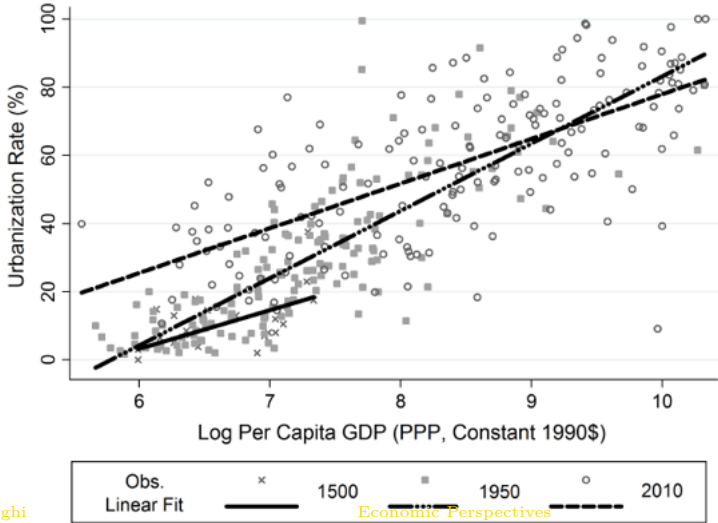
In this study (link), the researchers maintain that democracy has no effect on growth

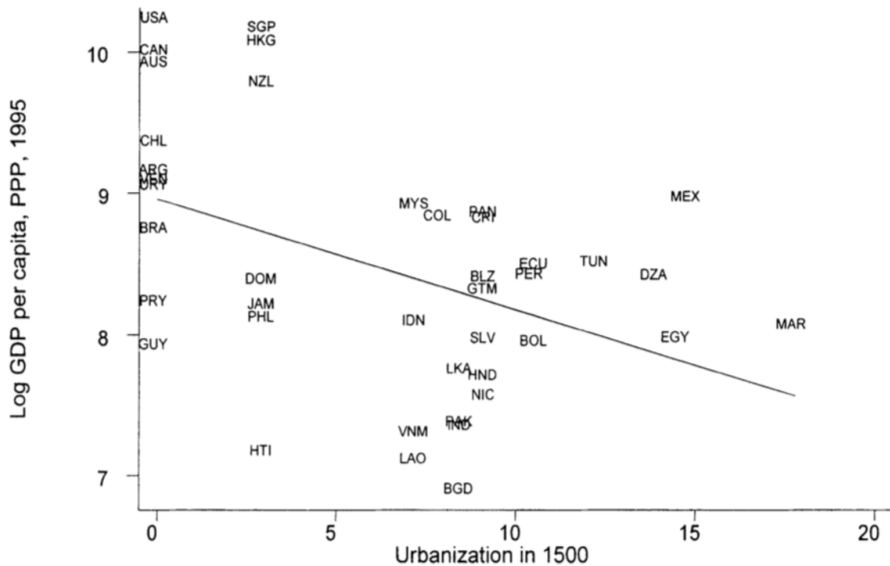
- ▶ Which does not imply that dictatorship does
- ▶ Democratic transitions are often *endogenous*, i.e. due to economic problems
- ▶ Endogeneity leads to biased estimates (reverse causality)
- ▶ Hence they use transition that a panel of 165 democracy experts identify as exogenous (death of leader, political cause)
- ▶ Sample of 27 exogenous transition...

URBANISATION & GROWTH: JEDWAD & VOLLRATH (2015)

- ▶ $\text{Corr}(\text{Urbanisation}, \text{Income Per Capita}) \rightarrow$ supports institution hypothesis
- ▶ 1500-mid-20th century: (+) *urb rate* for richest countries, (=) poorest
- ▶ Mid-20th century-today: (+) *urb rate* for the poorest, primarily
- ▶ New mega-cities in poor country with large pop bases (Dhaka, Lagos) \rightarrow $\text{Corr}(\text{city size}, \text{welfare})$ breaking
- ▶ Relationship is changing over time

FIGURE 2: Urbanization and Economic Development Across Time: 1500, 1950 and 2010





URBANISATION & GROWTH

- ▶ Classical pros: Agricultural revolutions, Industrial revolutions, Resource revolutions, Agglomeration effects

- ▶ Cons or neutral: misallocation (inefficient allocation) of workforce from rural to urban areas
 - ▶ urban amenities
 - ▶ easier to build now (cars, elevators)
 - ▶ urban bias (policy)
 - ▶ rural poverty, land pressure (demography), disasters and wars \Rightarrow overcrowded cities, low-productivity

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