

FUNDAMENTAL DETERMINANTS OF DIFFERENCES IN ECONOMIC PERFORMANCE

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Proximate vs. Fundamental Causes

The Solow growth model:

- Growth is due to technological progress.
- Cross-country income differences are due to a combination of technological differences, differences in physical and human capital per worker.

These are *proximate* causes of economic growth and success.

Why do some countries are 20 to 30 times poorer than other?

There should be some *fundamental* causes of economic growth.

Why is it important?

It is important to understand fundamental causes to:

- ① complete our theory of growth;
- ② to ensure that more nations grow faster if we understand the causes (targeting proximate causes is just like treating the symptoms and not the disease).

Fundamental causes

The major candidate causes of economic growth can be classified into four main hypotheses.

- 1 **The luck hypothesis** (otherwise identical countries experience different paths because of some small uncertainty or heterogeneity, or choose different equilibria among possible, for example, in technology adoption).
- 2 **The geography hypothesis** (soil quality and agricultural productivity, natural resources (e.g. coal) and industrialization, disease environment/preferences and economic performance).
- 3 **The culture hypothesis** (beliefs, preferences, values: influence choices of occupations, savings rates, willingness to accumulate physical and human capital).
- 4 **The institutions hypothesis** (rules, regulations, policies that affect economic incentives).

Some important differences

Note that, unlike geography, culture, and luck, institutions are *social choices* and can be changed (laws, constitutions, policies, etc.). Culture is slowly evolving and is hardly under the direct control of society.

Thus, institutions are themselves choices and are *endogenous* outcomes in the economy.

Even though institutions can be affected initially by culture, geography, and luck, we want to understand direct effects of each of our fundamental causes of growth.

Luck and multiple equilibria

Multiple equilibria can arise due to coordination failures: “good” equilibrium (high income levels, sustained growth), and “bad” equilibrium (poverty and stagnation).

It is hard to attribute high income in the U.S. to selection of a good equilibrium and low income in Nigeria to selection of a bad equilibrium. Some stochastic events caused it? Unlikely. Why do we see divergence over the course of 500 years? Selection models emphasize Pareto-ranked equilibria (all are better off under the good equilibrium) and ignore heterogeneity (some may be better off under the bad equilibrium). *Persistence* of a bad steady state may be due to institutions, policies and culture.

Another challenge is how to explain growth miracles like South Korea and Singapore, or China? Can Mao be attributed to bad luck? The leaders hypothesis: leaders are linked to the choice of institutions. **No role** for leaders **in democratic societies** where institutions place checks on leaders and politicians.

Geography

Geography may determine the opportunity set and preferences of individual agents in societies.

- ① Montesquieu (1748): people are more vigorous in cold climates; lazy in hot climates.
- ② The impact of climates on technology (especially agriculture). Jared Diamond: geographical differences in Americas and Europe determined the timing of settled agriculture and shaped societies' development of complex organizations and advanced civilian and military technologies. Why not? Because the nature of the modern growth is in industrialization.
- ③ Disease burden. Sachs: malaria reduces the annual growth rate of Sub-Saharan economies by as much as 2.6% per year. What causes what: poverty causes diseases, or diseases cause poverty?

Institutions

Institutions are humanly devised and place constraints on human behavior. Societies with institutions encouraging factor accumulation, innovation and efficient allocation of resources will prosper relative to societies without such institutions.

Schumpeter's creative destruction: new firms improve over and destroy incumbents; necessary that incumbents are unable to block technological progress, and requires some equality of economic opportunity.

More likely, all the fundamental causes are important.

Culture

Religion, values, preferences. For a given set of institutions, “culture” may define the choice of good or bad equilibria.

Max Weber (1930): origins of industrialization in Western Europe can be traced back to the Protestant reformation and the rise of Calvinism. Emphasized the set of beliefs that valued hard work, thrift and saving.

Some cultures do not encourage cooperation (notion of “social capital”). E.g., Southern Italy vs. Northern Italy.

Challenges: hard to measure “culture.” Growth miracles like South Korea and Singapore are due to Asian culture? Why didn't they have a rapid growth earlier? Why then North Korea performs poorly? Why China didn't perform well under Mao?

The effect of institutions on growth

Claim: Differences in economic institutions rather than culture, luck, or geography cause differences in per capita incomes.

If so, given a society is “endowed” with poor geography, luck, and culture, changing institutions to those protecting private property will improve economic performance in the long-run.

Figure 4.1.

Figure 4.1: correlation between the “protection against expropriation risk” and per capita incomes—*positive*.

Why positive?

Is it **direct causality**: better institutions causally lead to better economic performance?

Or **reverse causation** (e.g., wealthy can afford to enforce property rights)?

Is it due to **omitted variables** (e.g., geography: warm climates breed tyrants that promote bad institutions and poor economies—see Figure 4.2)?

The effect of institutions on growth—contd.

Figure 4.2: correlation between latitude and per capita incomes—*negative*.

Countries with more temperate climates perform better than countries with warmer climates (those closer to equator).

Direct effects of institutions

How to establish a causality between institutions and development?

Need some exogenous variation in institutions, some sort of “natural experiments” (geography and culture held constant but institutions dramatically change).

The Korean experiment

Until the end of World War II, Korea was under Japanese occupation. In 1948, Korea separated into North (communistic) and South Korea (private property and capitalist institutions).

Before this “natural experiment” both Koreas were largely homogenous in disease environment, geography, culture, and development. Thus, any differences in incomes afterwards can be attributed to different choices of institutions. By 2000, income in South Korea was \$16,100, while in North Korea it was \$1,000.

Cannot generalize this example since communism vs. capitalism are two extremes of institutions; need a larger scale natural experiment.

The Colonial experiment: The Reversal of Fortune

After 1492, Europeans conquered and colonized many nations.

Established diverse institutions so that we can see...

The Reversal of Fortune: initially rich (the Aztecs and the Incas in America, and the Mughals in India) are now poor; initially less-developed nations in Australia, North America are now rich.

Some patterns

- Use proxies for incomes in 1500 (before colonization): urbanization and population density.
- **Figure 4.3** shows, for modern data, that urbanization is a good proxy of economic performance.
- **Figures 4.4** and **4.5** show the phenomenon of the reversal among European colonies. Also, figures show that temperate areas were generally *less* prosperous than the tropical areas, while the pattern now is opposite.
- Is it some sort of a “reversion-to-the-mean” phenomenon? If we exclude the colonies, there is no evidence of a similar reversal. Also, urbanization rates and density are persistent.
- Europeans put into place different institutions in different colonies.

The Colonial experiment

- The reversal took place largely in the 19th century and connected to industrialization. Probably rules out “sophisticated geography hypothesis”: geography matters in a time-varying manner. That is, latitude-specific agricultural technologies (heavy metal ploughs) that worked in temperate zones (North America, Australia, Argentina), not in tropical soils (Peru, Mexico, Africa).
- Culture? Unlikely since it does not explain the timing of the reversal.
- Luck? Unlikely since institutions imposed were not random.

The reversal and the institutions hypothesis

- Institutions? **Figures 4.6** and **4.7**: high initial levels of population density and urbanization are connected with worse institutions now. The “reversal of institutions”: more densely settled areas ended up with worse institutions, while initially poorer and sparsely-settled areas with growth-enhancing institutions.
- Why better institutions were imposed in relatively poor and less densely populated areas?
- More profitable to extract resources (gold, slave labor, sugar, etc.) offering these resources (areas with developed civilization and a denser population structure).
- In place with little to extract it was in the interests of Europeans to introduce economic institutions protecting their own rights.

Settlements, Mortality and Development

The decision of Europeans to settle was affected by disease environment and the feasibility of settlements.

If the mortality in the area was high, it lowered the likelihood to settle, which led to poor institutions imposed, poor current institutions, and poor performance now.

Settlements

- **Figure 4.8** shows that settler mortality rates differed across the colonies and those with high settler mortality rates (due to malaria, fever) have poor institutions now.
- Crucial for the argument: settler mortality affected only institutions and not current economic performance, that is differences in settler mortality affected the choice of institutions, which then affected economic performance.
- Over 75% of the income gap between relatively rich and poor countries today is due to differences in their economic institutions.
- Societies with good institutions took advantage of the opportunity to industrialize.

Culture? Geography?

- Positive association between latitude and income per capita (**Figure 4.2**) can be explained by the European colonization strategies: settle in the areas with lower likelihood of dying (temperate zones), establish good institutions, have high income now.
- Culture was ruled out by Acemoglu, Johnson and Robinson (2001), when the effect of institutions was accounted for. Some examples: not all British colonies are successful now (African countries, India, Bangladesh), Dutch (good institutions) and their colonies in South Asia (these colonies are not performing well now). I.e., identities of colonizers are not found to matter.

Disease and Development

Is geography a fundamental cause? Higher prevalence of diseases will affect the productivity of a workforce.

- Health affects incomes, but incomes affect health. How to measure the effect of health of incomes? Need to have some exogenous variation in health, which is not related to nations' incomes.
- Use large improvements in life expectancy in the relatively poor countries that improved starting in the 1940s. Health interventions, new chemicals, and drugs—*international epidemiological transition* (e.g., discovery of penicillin).
- There was a positive effect of improved life expectancy on population (more healthy nation is bigger nation), but no evidence of a positive effect on income per capita.