ECON 256: Poverty, Growth & Inequality

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Searching For Causality in Development

What things have a causal impact on economic growth and development?

Often Suggested Factors:

- Geography and Climate

- Culture

- Institutions
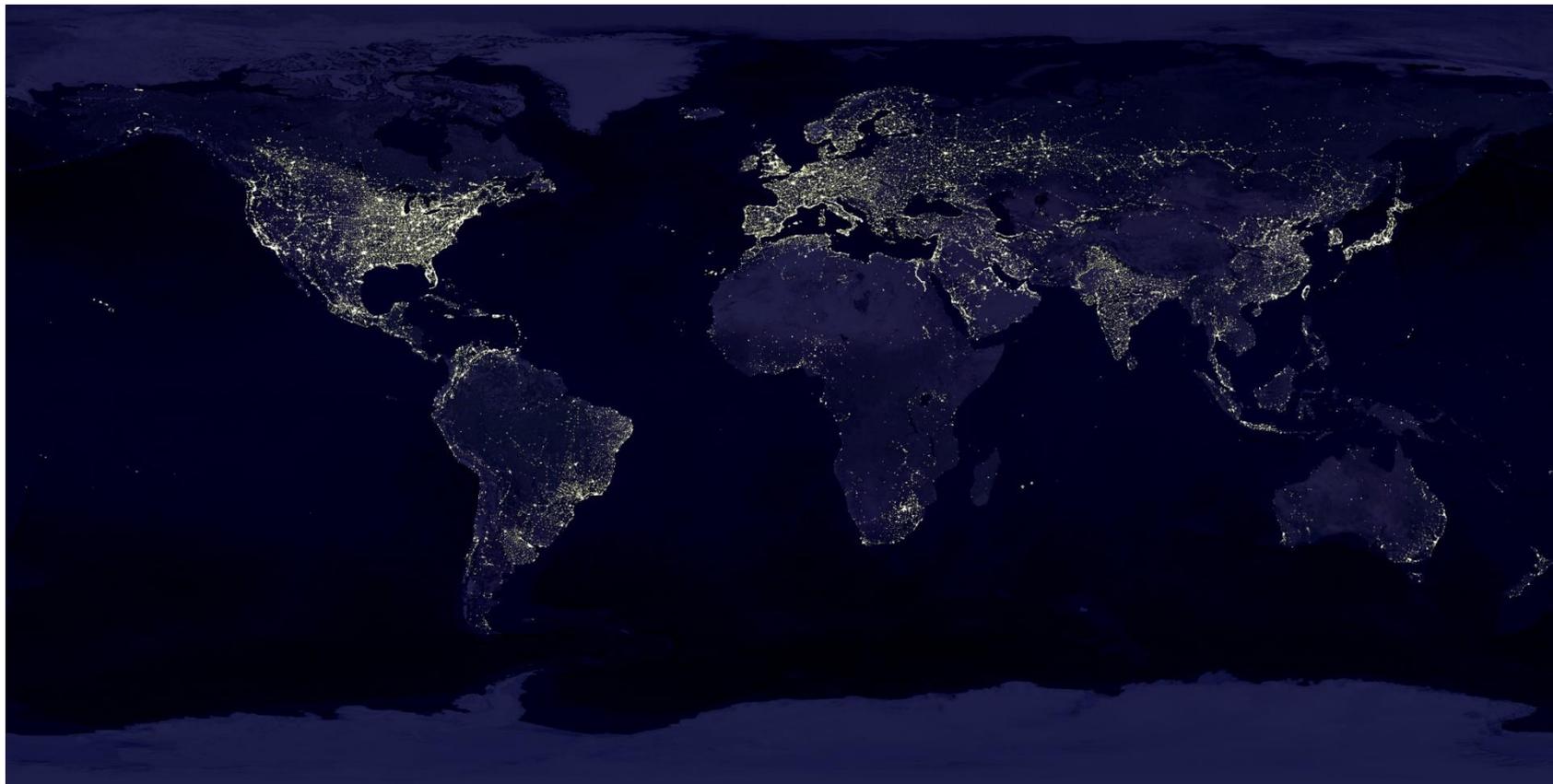
Geography and Development

Countries may be rich/poor due to where they are located (geography)

- [Guns, Germs, and Steel](#) by Historian Jared Diamond is a recent example of this hypothesis

Reasons for Thinking Geography may be Important for Wealth of Nations

- Wealth and Poverty are geographically concentrated

- Historically, geography has been an important factor behind the formation of cities (Rivers, Natural Resources, Agricultural Land Quality, Ease of Defense)

- Historical examples of civilizations that have collapsed due to resource exhaustion and environmental degradation

Visible Light Map

GDP per Capita in USD
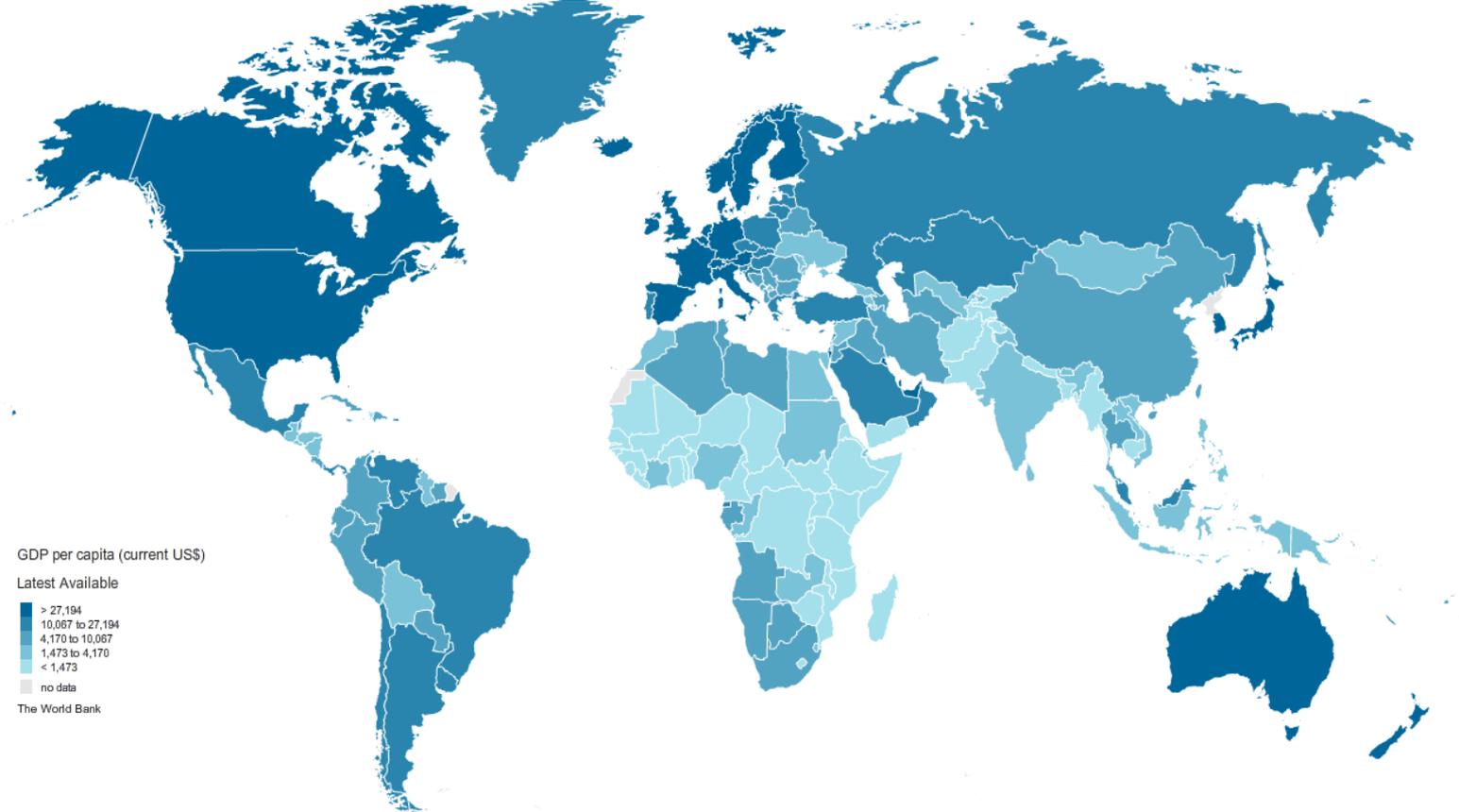
GDP per capita (current US$)

Latest Available

- > 27,194
- 10,067 to 27,194
- 4,170 to 10,067
- 1,473 to 4,170
- < 1,473
- no data

The World Bank

Source: World Bank eAtlas

Thinking about Causality: Geography and Development

Geography and Development are strongly correlated

- Intuitively, makes sense. Geography could encourage or limit growth

- Diamond argues (roughly): Geography of Europe led to dense settlements which encouraged innovation and created resistance to germs. Also, easier to settle due to plants and animals.

- Western countries dominated World because they were set up for success geographically

Culture and Development

Countries may also be rich/poor due to Culture

- Lots of stereotypes related to Culture and its role on development growth. Strong correlations also exist between various cultural attributes and wealth (e.g. religiousness).

- Western countries were Christian. Webers "Protestant Work Ethic" theory.

- Strong parallels with popular discussion on poverty among groups within U.S.

Complication for Culture: Culture is fluid.

- Does wealth change geography? Generally not.

- Does wealth change culture? Absolutely.

Thinking about Causality: Geography/Culture and Development

Not Feasible: Controlled Lab Experiments. Randomized Assignment.

• For most part, can't "assign" treatment of geography/culture to a country.

Potentially Feasible: Instrumental Variables, Natural Experiments, Theory-based Methods

• Theory: If Geography/Culture determine wealth $\Rightarrow$ Fixing should keep wealth fixed

• Instrumental Variables: What things determine geography/culture, but not (directly) growth?

• Natural Experiments: Examples where geography/culture changed? Can we examine growth?

Geographic/Cultural Determinism: Testing Theory

Are Countries Rich because of Geography/Culture?

• If so, then countries with same geography/culture should have similar wealth

• This tends to be true. Countries with similar geography/culture have similar wealth.

Problems with the Geographic Determinism Theory

• Lots of counter-examples: Countries with similar geography/culture, very different wealth.

• Difficulty explaining rapid rise and fall of various countries in last century.

• Better at explaining which countries were rich/poor pre-industrial revolution?

Counter-Example: Haiti versus Dominican Republic

GDP per Capita, PPP: Puerto Rico ($35k), Jamaica ($25k), Cuba ($20k),
Dominican Republic ($15k), Haiti ($2k)

Haiti (left) versus Dominican Republic (right)

Why is Haiti so Poor?

Massive Differences between Haiti and Dominican Republic

- GDP per Capita (PPP): $2,000 vs $15,000. Life expectancy: 61 years vs 74 years.

Some people still say Geography

- Mountains tilt rain towards Dominican Republic, which has better farms, less deforestation, more tourism.

- **Differences in Culture?** Haiti speaks French. Dominican Republic speaks Spanish.

- Problem with Geography/Culture: Wasn't always this way. How to explain divergence?

Haiti versus Dominican Republic: GDP per Capita (PPP)

PPP-converted GDP/capita in Dominican Republic and Haiti (1950-2009)
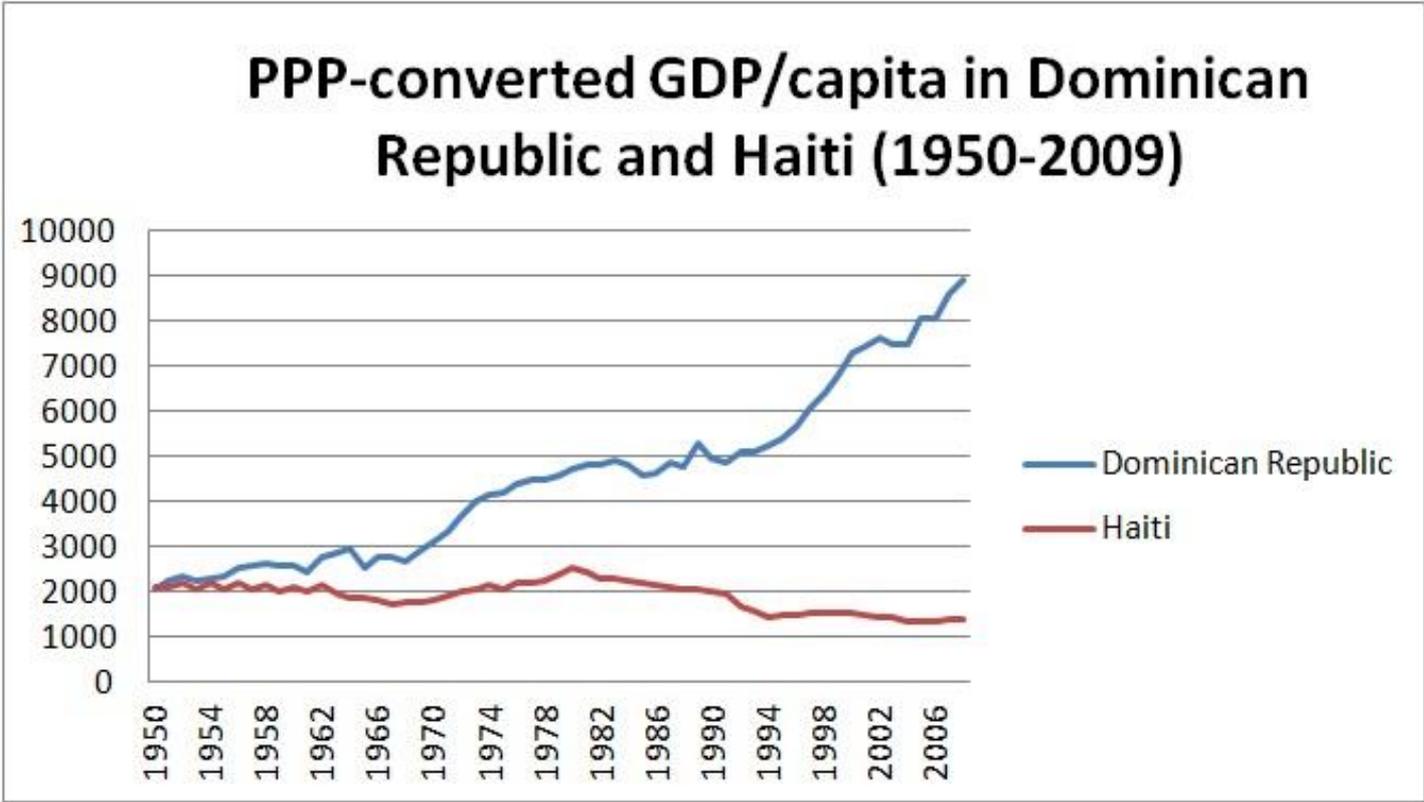
Counter-Examples to Geography/Culture

Lots of examples of countries that diverged despite similar culture/geography

North Korea vs South Korea: Split in 1945 following WWII. Split was determined by agreement between USSR and United States. Korean War, 1950 – 1953, left countries separated.

East vs West Berlin: Split in 1945 following WWII. Split was determined by agreement between USSR and United States. Countries reunified in 1990.

Splits were not caused by culture or geography (except being physically closer to USSR).

• Countries quickly diverged in terms of wealth. What could have caused it?

• Not Geography, no changes. Culture did change, but culture was similar at point of split.

Further Discussion of Geography

Counter examples certainly show geography/initial culture not only thing that affects wealth

- However, may still have some importance

Natural Experiment: Importance of Geography

- Cities tend to locate in best areas for growth/development (farmland, resources, transportation)

- Also have Path Dependence in where cities are located

- Maybe cities aren't located in optimal areas, and this plays role in why countries richer/poorer

Historical Setting and Natural Experiment

Roman Empire ruled present day Britain and France

- When Rome collapsed, most Roman towns in Britain and France fell

- Difference: towns in Britain destroyed completely, not the case in France

- Did later towns locate in same place as Roman ones? No for Britain. Yes for France.

What are the effects of Geographic Path Dependence?

- Preliminary, but some evidence that towns in France were "locked" into bad locations

- Could part of reason for growth of U.S. be that it was settled relatively recently?

- Related Question: Is Culture Path Dependent?

Further Discussion of Geography: City Expansion

Path Dependence and City Expansion

• World population has increased tremendously in last 200 years.

• There is a lot of path dependence for where people live (tend to live near where they were born)

• Cities weren't settled with this population growth in mind

Instrumental Variable Approach

• City Shape is determined by Geography. Theory says "optimal" city shape is circular.

• Approach: Use geographic restrictions to circular expansion to understand city outcomes

Instrumental Approach

Why Use an Instrument

- Geography (Mountains, Water) affects City Shape

- City Shape may affect city outcomes (wages, rent, poverty, etc).

- However, City Shape is potentially influenced by those outcomes or confounding factors (example: regulations might affect both wages and city shape)

Instrumental Variable

- Predict where people should live (optimal city shape), and use as instrument for Geography

- Instrument only affected by Geography. Outcomes/Confounding factors don't affect instrument

- Look at relationship between instrument and outcomes to see impact of Geography on outcomes

Geography of Mumbai

Geography of Mumbai: Prediction of Where People Should Live

Geography of Mumbai: Prediction of Where People Should Live

Instrumental Variable Approach Results

Harari (2015): Implications of Instrumental Variable Approach

- Geography of city plays role in population (+), real wages (-), and real rents (+)

- Evidence that people prefer to live in "compact" cities (ones that are allowed to develop as circle)

Large predicted welfare costs of deteriorating shape as cities grow (Urban Sprawl)

- Exacerbated by building height restrictions

- Mitigated by better road infrastructure

Thinking about Causality: Institutions and Development

Geography and Institutions are also strongly correlated

- Countries with "good" institutions have experienced more Growth

- Countries with "bad" institutions have experienced slow or negative Growth

- Can potentially explain the counter examples we discussed earlier (Haiti has bad institutions, Dominican Republic has good institutions)

Questions that will remain open

- How are institutions formed?

- How do we transition from bad institutions to good institutions?

Thinking about Causality: Institutions and Development

Partially Feasible: Controlled Lab Experiments. Randomized Assignment.

• Can't assign institutions to a country, but can assign institutions to a set of people.

• See how people react to different institutions. Try to use to think about development.

Feasible: Instrumental Variables, Natural Experiments, Theory-based Methods

• Theory: If Institutions determine wealth $\Rightarrow$ Changing should change wealth

• Instrumental Variables: What things determine institutions, but not (directly) growth?

• Natural Experiments: Examples where institutions changed? Can we examine growth?

Natural Experiment: Institutions and Development

Counter-examples we mentioned earlier are perfect examples of natural experiments.

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East vs West Berlin: Split in 1945 following WWII. Split was determined by agreement between USSR and United States. Countries reunified in 1990.

Splits were not caused by culture or geography

• Institutions changed dramatically after separation (Communism vs Capitalism)

• Countries quickly diverged in terms of wealth. Fits story of Institutions.

North Korea vs South Korea

Source: @MaxCRoser, Mattias Lindgren
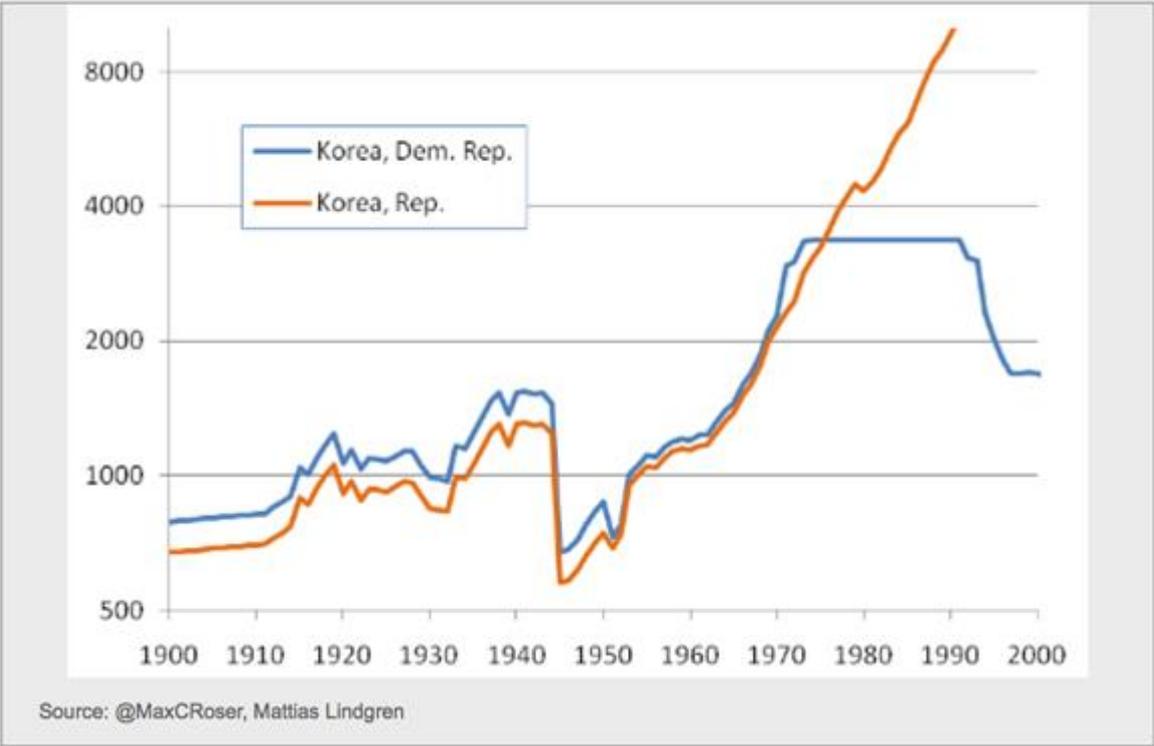
Institutions and Development

Reasons for Thinking Institutions may be Important for Wealth of Nations

- Strong correlation between various measures of institution quality and development

- Economic theory predicts institutions are important for development and growth (e.g. encouraging innovation)

- Natural Experiments: When North Korea/South Korea split and East Germany/West Germany split, they quickly diverged in terms of development as new institutions were introduced.

How Do Institutions Form?

Understanding how institutions form is important for determining causality. Don't fully know.

Two Extremes for Institution Formation

- **Efficiency:** Society chooses institutions to maximize total economic/social surplus, "size of pie". Winners and losers from institutions, but everybody's welfare is taken into account. Leads to inclusive institutions.

- **Elites:** Elites chooses institutions to maximize their economic surplus. Partially by increasing the "size of pie", partially by ensuring they get a bigger share than they otherwise would. Leads to extractive institutions.

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We will discuss Acemoglu, Johnson, & Robinson (2001), which provides evidence that colonialism influenced the development of institutions and studies the impact of institutions on development

Inclusive Institutions

Inclusive Institutions foster innovation and allow for social and economic mobility

- Innovation involves **creative destruction**, meaning there will be losers for innovation. For economic growth, it is important to allow this process to take place.

- The American Dream: If you're smart and work hard, can achieve success. Upward social mobility is possible.

- (Flip side) American Nightmare: People who are at the top should not be protected from downward social and economic mobility.

What Inclusive Institutions Support

- Property rights and contract enforcement. Markets and Competition. Access to education (equality of opportunity). Political inclusiveness.

Extractive Institutions

Extractive Institutions are designed to keep the elites in power and benefit only the elites

- Historically, most societies ruled by extractive institutions.

- Growth is still possible under extractive institutions, but typically not due to creative destruction. Limits to growth if don't allow for creative destruction.

Examples of Extractive Institutions

- Colonialism, Slavery, Corruption in Government, Regulation designed to serve as barriers to competition. Unequal access to opportunity and education, unequal justice, and unequal representation.

Misallocation: One Pathway for How Institutions Matter

We will evaluate how **misallocation** influences economics output in our next problem set

Misallocation:

- Poor institutions might lead to non-optimal allocations of factor inputs across firms and sectors (e.g. if factors are allocated based on a political basis rather than economic basis)

- To evaluate the impact of misallocation, we'll need a theory of how far away current allocations are from optimal ones, and the effect this has on the economy

- We can do this, by assuming that the rates of return on factors should be equal across plants and sectors, and then we can use a model to predict what output would be in such a world