

# Lecture 5

## "Underdevelopment": Contributing Factors History

Nurgul Tilenbaeva

American University - Central Asia

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# Seminal Contributions

The literature linking **history** to **economic development** has its origins in 3 distinct but related strands of research:

- 1 *Acemoglu et al. (2001)* "The Colonial Origins of Comparative Development: an Empirical Investigation";
- 2 *La Porta et al. (1997, 1998)* "Legal Determinants of External Finance"; "Law and Finance";
- 3 *Engerman & Sokoloff (1997, 2002)* "Factor Endowments, Institutions, and Differential Paths of Growth among New World Economies: View from Economic Historians of the United States".

# Seminal Contributions

All three studies document the lasting impact that Europe's colonization had on the development paths of former colonies. They argue that an important part of the causal mechanism was the impact that colonial rule had on the domestic institutions that persisted after independence.

- 1 *Acemoglu et al. (2001)* sought to better understand the historical origins of current institutions and their importance for long-term economic development.
- 2 *La Porta et al. (1997, 1998)* examined the importance of colonial rule, but they focused on the legal institutions that were transplanted by the different colonial powers and the long-term consequences this had for investor protection and financial development.
- 3 *Engerman & Sokoloff (1997, 2002)* examined the importance of factor endowments and colonial rule for the subsequent economic development of colonies within the Americas.

# Seminal Contributions

Where the studies differ is in their views of which aspects of colonial rule were crucial for shaping institutions and in the specifics of the proposed causal mechanisms.

- 1 For *Acemoglu et al. (2001)* the initial disease environment shaped the extent to which secure property rights were established in the colony, and through their persistence, these initial institutions had a large effect on long-term economic development.
- 2 For *La Porta et al. (1997, 1998)*, the identity of the colonizer determined whether a civil law or common law legal system was established, which was important for long-term development.
- 3 *Engerman & Sokoloff (1997, 2002)* focused on the importance of a region's endowment of geography suitable for growing lucrative globally traded cash crops that were best cultivated using large-scale plantations and slave labor. These large plantations resulted in economic and political inequality, which impeded the development of institutions and long-term economic growth.

## Acemoglu, Johnson, and Robinson (2001)

- Authors hypothesize that, because colonies with a less deadly disease environment had greater European settlement, growth-promoting institutions were established in these colonies to protect property rights during colonial rule.
- In colonies in which European mortality was high and settlement low, the colonizers did not have an incentive to establish strong property rights and instead established extractive rent-seeking institutions.
- Using this logic, the authors estimate the causal effect of current domestic institutions on per capita income, using early European mortality rates as an instrument for institutions.

## Acemoglu, Johnson, and Robinson (2001)

- One of the assumptions underlying the IV strategy is that initial settler mortality is not correlated with current income other than through domestic institutions.
- In the first stage of their IV procedure, the authors found a strong negative relationship between initial settler mortality and current institutional quality.
- The second-stage estimates indicate that domestic institutions exert a strong positive effect on per capita income.

## La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998)

- Authors argue that countries with legal systems based on British common law offer greater investor protection relative to countries with legal systems based on civil law.
- In British colonies common law-based legal systems were transplanted.
- The European countries with a legal system based on Roman civil law (Spain, France, Portugal) transplanted civil law legal systems.
- Authors used this historic fact to examine the causal effect of the strength of legal rules protecting investor rights on financial development.

## La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998)

- They argue that for former colonies legal origin is largely exogenous to country characteristics and is therefore a potential instrument that can be used to estimate the effect of the protection of investor rights on financial development.
- The first stage of their instrumental variables (IV) estimates shows that common law countries, relative to civil law countries, do have better investor protection.
- Their second-stage estimates indicate that countries with weaker investor protection have smaller debt and equity markets.

# Seminal Contributions

## Engerman & Sokoloff (1997, 2002)

- Authors argue that the different development experiences of the countries in the Americas can be explained by initial differences in endowments of land and geography suitable for growing globally traded crops like sugar, which were best grown on large-scale plantations using slave labor.
- These areas were characterized by severe economic and political inequality, which resulted in the subsequent evolution of domestic institutions that protected the privileges of the elites and restricted the participation of the rest of the population in the commercial economy.
- In former Spanish colonies, endowments of rich mineral resources further strengthened the tendency toward political and economic inequality.

# Further Developments in the Literature

- The earliest subsequent studies typically examined correlations between variables quantifying the impact of colonial rule consistent with the notion that history can matter, even in the long-run. But they could not establish causality.

*Examples:* Grier (1999), Englebort (2000a,b), Bertocchi & Canova (2002), and Price (2003).

# Further Developments in the Literature

- In the next generation of studies much more effort has been put into collecting and compiling new variables based on detailed historic data. They also used better identification strategies that relied on instrumental variables, falsification tests, regression discontinuities, differences-in-differences estimation, or propensity score matching techniques.

*Examples:* Acemoglu & Johnson (2004), Banerjee & Iyer (2005), Iyer (2007), Berger (2008), Dell (2008), etc.

# Further Developments in the Literature

- The literature has also moved beyond simply estimating reduced-form causal relationships between historic events and economic development. For many studies, the goal is also to explain exactly how and why specific historic events can continue to matter today. That is, the literature has moved from asking whether history matters to asking why history matters.

*Examples:* Acemoglu & Johnson (2004), Acemoglu et al. (2005a), Iyer (2007), Dell (2008), Munshi & Wilson (2008), etc.

# Why History Matters

## Multiple Equilibria and Path Dependence

In models with *multiple equilibria*, historic events have permanent effects on development if they cause a movement from one equilibrium to another.

*Examples:* Murphy et al. (1993), Acemoglu (1995), and Mehlum et al. (2003).

Examples why multiple equilibria may exist:

- We use a QWERTY keyboard rather than the significantly more efficient DVORAK keyboard;
- Cars are driven on the right-hand side of the road in the United States but on the left-hand side in the United Kingdom.

## Multiple Equilibria and Path Dependence

Empirical tests for the existence of multiple equilibria:

- To examine cases with an extremely large shock to an equilibrium;
- Test whether the shock causes a movement from the previous equilibrium to a new equilibrium.

## Multiple Equilibria and Path Dependence

### Davis & Weinstein (2008, 2002):

- Authors examined the effect of bombings on 114 Japanese cities during World War II.
- They found that the cities returned to their prebombing populations, regained their shares in total manufacturing output, and, most surprisingly, also regained their pre-existing industrial composition.
  - 1 *Is this evidence for a single equilibrium or multiple equilibria?*

## Multiple Equilibria and Path Dependence

**Davis & Weinstein (2008, 2002):**

- 1 *Is this evidence for a single equilibrium or multiple equilibria?*
  - The results point toward the existence of a unique stable equilibrium of production, rather than the existence of multiple equilibria.

## Multiple Equilibria and Path Dependence

### **Miguel & Roland (2006):**

- Authors studied the long-term effects of the U.S. bombings in Vietnam.
- They found that the bombings had no long-term effects on populations, poverty, or consumption 25 years later.

## Multiple Equilibria and Path Dependence

- ② *Does this mean that multiple equilibria do not exist in these environments?*

## Multiple Equilibria and Path Dependence

- ② *Does this mean that multiple equilibria do not exist in these environments?*
- Other equilibria may exist, but the shocks were not large enough to cause movement to a new equilibrium.
  - The shocks may have been large enough to cause a movement, but because the prebombing equilibrium is focal, this equilibrium may have been selected after the bombings among all possible equilibria.

## Multiple Equilibria and Path Dependence

### Redding et al. (2007):

- Authors examine the location of airport hubs in Germany before and after the division of Germany following World War II.
- They showed that, after division, the location of West Germany's primary airport hub switched from Berlin to Frankfurt.
- After reunification in 1990, the location of the hub did not switch back to Berlin.
- Thus, the temporary division of Germany resulted in a permanent movement of the location of Germany's largest airport hub.
  - ③ *Is this evidence for a single equilibrium or multiple equilibria?*

## Multiple Equilibria and Path Dependence

**Redding et al. (2007):**

- ③ *Is this evidence for a single equilibrium or multiple equilibria?*
  - This is evidence for the existence of multiple equilibria.

## Multiple Equilibria and Path Dependence

### Henrich (2004):

- Humans first arrived in what today is Tasmania 22,000 years ago across a land bridge that connected present-day Australia to Tasmania.
- 12,000 years ago rising sea levels drowned the land bridge, turning it into what is now the shallow Bass Strait.
- The technologies used by the Tasmanians deteriorated over time;
- The Tasmanians lost their ability to construct bone tools, make cold-weather clothing, and catch fish.

## Multiple Equilibria and Path Dependence

### Henrich (2004):

- The author developed a model where skills are imperfectly transmitted from the most skillful or successful individual in the society to all other members of the society.
- He showed that in this environment the size of the population matters, because in a larger population the most skilled individual is, on average, more skilled.
- He also showed that, because of imperfect transmission, there exists a minimum population size below which the average skills of the society decreases over time.
  - ④ *How does the model explain technology losses by the Tasmanians?*

## Multiple Equilibria and Path Dependence

### Henrich (2004):

- ④ *How does the model explain technology losses by the Tasmanians?*
  - Therefore, his model explains the Tasmanian technology losses as a result of the drop in effective population size after rising sea levels isolated Tasmania from Australia.

## Multiple Equilibria and Path Dependence

### Henrich (2004):

- The Tasmanian experience provides a dramatic example of *path dependence*.
- One historic event - the rising sea levels and flooding of the Bass Strait - resulted in a permanent change in the evolutionary process and moved the society to a new trajectory, where technologies and skills deteriorated over time.
- One historic event permanently changed the long-term social and economic development of the Tasmanians.

# Why History Matters

## Domestic Institutions

Historic events can affect economic development in the long run if they alter deep determinants of long-term economic growth. The deep determinant that has received the greatest attention in the literature is *domestic institutions*. The emphasis on institutions can be seen clearly from the fact that in each of the seminal papers the mechanism through which colonial rule affects current development is domestic institutions.

# Why History Matters

## Domestic Institutions

### **Acemoglu et al. (2005a):**

- Authors study the effect that early Atlantic trade had in Europe.
- They argue that, in countries with access to the lucrative Atlantic three corner trade, economic and political power shifted toward commercial interests.
- As the merchant class became more powerful, they were able to alter domestic institutions to protect their interests against the interests of the royalty.
- These institutional changes, in turn, had a positive effect on long-term prosperity.
- Authors showed that the rise of Europe was actually a rise of the nations with access to the lucrative Atlantic trade, namely Britain, France, the Netherlands, Portugal, and Spain.

## Domestic Institutions

### Jha (2008):

- Author examines the effect of early medieval trade on the formation and persistence of institutions promoting religious tolerance.
- He shows that when looking across cities within India, one finds a positive relationship between participation in overseas trade during the medieval period and religious conflict during the late nineteenth and early twentieth centuries.
- Being a town that was a medieval trading port made it less likely that the town later experienced Hindu-Muslim riots.

## Domestic Institutions

### **Jha (2008):**

- Using historical evidence, author argues that, because Muslims provided access to the markets of the Middle East, in the towns connected to this overseas trade the returns to Hindu-Muslim cooperation were much higher.
- As a result, institutions that supported exchange and a peaceful coexistence between Hindus and Muslims were developed.

# Why History Matters

## Domestic Institutions

### Acemoglu & Johnson (2004):

- Authors make a distinction between two broad clusters of institutions that they refer to as "property rights institutions" and "contracting institutions".
- Property rights institutions protect individuals from theft or expropriation by the government or elites.
- Contracting institutions enforce private contracts written between individuals.
- The study explores the historical determinants of both types of institutions.

## Domestic Institutions

### **Acemoglu & Johnson (2004):**

- Authors used legal origin as an instrument for contracting institutions and initial settler mortality as an instrument for property rights institutions.
- They found that property rights institutions have a positive and significant effect on income, investment, and financial development.
- Contracting institutions appear to have much more limited impact, affecting only the form of financial intermediation.

# Why History Matters

## Cultural Norms of Behavior

Another way in which historic events can have long-term impacts is if these past events permanently affect culture or norms of behavior.

### **Max Weber (1930):**

- Author hypothesized that the Protestant Reformation was instrumental in facilitating the rise of industrial capitalism in Western Europe.
- He argued that Protestantism, in contrast to Catholicism, approves the virtues of hard work and the accumulation of wealth and that these values, referred to as the "Protestant work ethic", provided the moral foundation that spurred the transition to a modern market-based industrial economy.

# Why History Matters

## Cultural Norms of Behavior

Empirical studies exploring the link between history and culture typically attempt to isolate culture by comparing some measure or proxy of a cultural belief across individuals in the same external environment. Two strategies are employed:

- 1 To bring the same environment to people of different backgrounds.
- 2 To examine situations where individuals from different backgrounds have been brought into the same environment.

# Why History Matters

## Cultural Norms of Behavior

### **Cohen et al. (1996):**

- Authors tested whether in the U.S. South there is a "culture of honor", where a special importance is placed in defending one's reputation and honor, even if this requires aggression and violence.
- The North was historically settled by groups with a farming background, whereas the South was settled primarily by the Celts who had been herders and had never engaged in large-scale agriculture.
- In herding cultures, with their low population densities and weak states, protection of one's property was left to the individual.
- The result of this is that some aspects of the norms of aggressive behavior that were developed as a means to protect one's herds continue to persist today.

# Why History Matters

## Cultural Norms of Behavior

### **Cohen et al. (1996):**

- To test this hypothesis, authors conducted a series of experiments involving white men from the U.S. North and South.
- In the experiments, each individual was bumped by an accomplice and called an "asshole". (The participants did not know this was part of the experiment).
- Using a number of methods including direct observation, psychological tests, and saliva tests, the authors compared the effects of this incident on Southerners relative to Northerners.
- They found that the Southerners became more upset, were more likely to feel their masculinity was threatened, became more physiologically and cognitively primed for aggression and were more likely to engage in subsequent aggressive behavior.

## Cultural Norms of Behavior

### **Guiso et al. (2008):**

- Authors empirically tested the hypothesis that within Italy city states that became independent during the 1000-1300 period developed higher levels of social capital and that these higher levels of social capital continue to persist.
- They showed a positive relationship between measures of social capital and whether the city was free in 1176.

# Why History Matters

## Cultural Norms of Behavior

### **Guiso et al. (2008):**

- Motivated by the historic fact that, after the collapse of the Holy Roman Empire, local autonomy was formed around existing religious authorities, the authors used whether a town had a local bishop in the fifth century as one instrument.
- Their second instrument is motivated by the authors' argument that a city that was a part of the Etruscan civilization during the eighth century was more likely to have become an independent city during the Middle Ages.

## Cultural Norms of Behavior

### **Tabellini (2007):**

- He identified the causal effect of norms on economic development.
- Author examined differences in trust in others, respect for others, and confidence in the benefit of individual effort across regions within Europe.
- Using an IV estimation strategy to isolate exogenous variation in cultural norms, he used two historically based instruments:
  - the literacy rate at the end of the 19th century;
  - the political institutions in place over the past several centuries.

## Cultural Norms of Behavior

### **Tabellini (2007):**

- According to the first-stage estimates, European regions with historically lower literacy and less well-developed institutions today have less trust in others, less respect for others, and less confidence in the benefit of individual effort.
- The second stage of the IV estimates reports a positive effect of the measured norms on current per capita income levels and average annual growth between 1977 and 2001.

## Cultural Norms of Behavior

### **Nunn & Wantchekon (2009):**

- Authors examined whether the Trans-Atlantic and Indian Ocean slave trades were responsible for a culture of mistrust within Africa.
- They found a very strong negative relationship between an individual's reported trust in others and the number of slaves taken from the individual's ethnic group during the slave trades.

## Cultural Norms of Behavior

### **Nunn & Wantchekon (2009):**

- The study also attempted to distinguish between the two most plausible channels through which the slave trade could have adversely affected trust.
  - ① The slave trade altered the cultural norms of the ethnic groups exposed to the trade, making them inherently less trusting.
  - ② The slave trade resulted in a long-term deterioration of the legal and political institutions, and these weak institutions cause individuals to be less trusting of others.
- Identification between the two channels is based on the fact that, in relocating, individuals take their internal norms with them, but leave their external institutional environment behind.

# Why History Matters

## Cultural Norms of Behavior

### **Nunn & Wantchekon (2009):**

- If the slave trade affects trust primarily through internalized norms and cultural beliefs, which are ethnically based and internal to the individuals, then, when looking across individuals, what should matter is whether their ancestors were heavily enslaved.
- If the slave trade affects trust primarily through its deterioration of domestic institutions, which are external to the individual and geographically immobile, then what should matter is whether the external environment in which the individual is living was heavily affected by the slave trades.
- The results provide evidence consistent with the slave trade adversely affecting trust through both cultural norms and institutions, but the magnitude of the culture channel is approximately twice the magnitude of the institutions channel.

# Why History Matters

## Knowledge and Technology

Knowledge, education, and technology may also be channels through which historic events have long-term impacts.

### **Woodberry (2004):**

- Author documents correlations between measures of the historic presence of missionaries and current per capita income and democracy across former nonsettler colonies.
- He argued that the historical presence of missionaries, particularly Protestant missionaries, resulted in a number of benefits for the native populations, such as increased education and a decrease in injustice and abuse by the colonizers.
- Because these abuses angered the indigenous populations, making missionary work more difficult, missionaries had an incentive to fight against these injustices, which served to promote democracy after independence.

# Why History Matters

## Knowledge and Technology

Although most studies focus on the transfer of education and knowledge from Europe to the colonies, historically, knowledge is also transferred in the opposite direction. An example is the Columbian Exchange.

### **Nunn & Qian (2008):**

- Authors examine the introduction of the potato to the Old World from the New World.
- Their study estimates the impact of the new food technology on population growth and development in the Old World.
- The authors showed that the potato was calorically and nutritionally superior to all Old World crops, including wheat, barley, rye, and rice.
- Because of this, for the parts of the Old World that were able to adopt the potato, its diffusion from the New World resulted in a large positive shock to agricultural productivity.

# Why History Matters

## Knowledge and Technology

### **Nunn & Qian (2008):**

- Authors used a difference-in-differences estimation strategy and compared the difference in population growth before introduction relative to the population growth after introduction between countries that were able to adopt potatoes and those that were not.
- The introduction of the potato had a very large positive impact on population growth, accounting for approximately one quarter of the observed increase in population after 1700.
- They also found that the introduction of the potato spurred economic development, which they measured by the urbanization rate, but that this effect is felt approximately 100 years after the increase in population growth.

# Why History Matters

## Knowledge and Technology

### **Comin et al. (2007):**

- Authors documented a positive relationship between historic technology levels (as far back as 1000 BC) and current income per capita across different parts of the world.
- They interpreted their findings using a model where the stock of existing technology decreases the cost of adopting new technologies.
- Authors showed that if a society has a more advanced technology in the past, then, because of lower costs to technology acquisition, this will increase its stock of technology and income today.
- Therefore, past technology levels can have a direct causal impact on current economic development.

# The Relationship between History and Geography

An alternative determinant of economic development that is often pitted against history is **geography**.

Proponents of the geography view argue that unchanging fixed geographic factors, such as ecology, climate, natural endowments, and the disease environment, are the primary determinants of long-term economic development. This view has been emphasized by a number of studies that highlight strong statistical correlations between economic development and a variety of geographic characteristics, such as:

- climate (Kamarck 1976);
- disease environment (Sachs et al. 2001, Sachs & Malaney 2002);
- natural openness (Rappaport & Sachs 2003);
- resource endowments (Sachs & Warner 2001).

- Nunn, N. (2009). The Importance of History for Economic Development. *Annual Review of Economics*, 1(1), 65–92.