Data on historical per capita GDP, see Maddison (2007)

Lecture 5

1. Traditional view

Landes 2006: China “was in a position to match and even anticipate the European achievement”

Did not take advantage of i. to generate sustained scientific and technological advances endogenously and ii. to learn from Europe

• i. lacked free market and institutionalized property rights • ii. values of the society (this is a cultural explanation)

* Cultural argument hard to distinguish from state
* Is China as a bad learner convincing?
* Role of the market

About role of the market: Shiue and Keller 2007

Conclude that market performance is perhaps necessary but not sufficient for industrialization

Chinese institutions supportive of trade

Find that there were no large difference in terms of market integration between China and Western Europe in the late eighteenth century

Market integration as a consequence of IR rather than cause

Prior to the IR: Allen et al 2011 for China, Ottomans: Ozmucur and Pamuk 2002

were at the low end of European living standards prior to the Industrial Revolution

Allen: They conclude that only England and the Low Countries had pulled ahead of the rest

Bosker 2013: importance of representative institutions in Europe in generating this divergence

Institutions favoring market exchange, Vasco da Gama

Kuran 2004 Instutions, Waqf

Rubin 2011 interest bans

Chaney: politics, Military decline of barbary Corsairs

Bosker, Buringh and van-Zanden 2013

The success of this more state-independent, water-based, trade-oriented, urban system is an important reason that the urban center of gravity shifted from the Islamic world to Europe, making London, instead of Baghdad, the largest, most important city in this part of the world.

## Institutions

**Literature on the functions of the state – note how institutions are defined differently, do not use as one broad term and that authors all held the same argument. There are theoretical bullshit and some papers with empirical evidence**

### Landes 2006 (actually not even technically 2006, the paper was just repeating his 1969 book)

China “was in a position to match and even anticipate the European achievement”

Did not take advantage of i. to generate sustained scientific and technological advances endogenously and ii. to learn from Europe

• i. lacked free market and institutionalized property rights • ii. values of the society (this is a cultural explanation)

Lecturer’s retorts:

* Cultural argument hard to distinguish from state
* Is China as a bad learner convincing?
* Role of the market

Key difference to North and Weingast: allocative institutions not necessary and sufficient for modern economic growth. China may have been as market-oriented as the leading areas in Western Europe, with similarly good institutions of allocative efficiency. Yet it did not experience an industrial revolution in the eighteenth century, possibly because it lacked, for example, **institutions that support technical progress**, which are different from the allocative institutions supporting market integration.

Shiue and Keller emphasized how the Chinese government was perhaps not supportive enough and pointed to the flaw in the North/Schleifer/Acemoglu framework of governments not hindering, it was actually pretty market-oriented

### The North Bullshit on institutions

1. North 1991 “Institutions”– allocative function of the state

The state and associated institutions provide the legal framework that **enables private contracts** for economic transactions. At the same time, the state is an **instrument for transferring resources from one group to another**. According to this view, institutions are good if they both support private contracts and provide protection against expropriation from the state and other powerful groups.

* Explanation derives from a **game-theoretic framework – recall micro market failure and repeated games in Cournot monopoly etc.**

Cooperation is difficult to sustain when the game is not repeated (or there is an endgame), when information on the other players is lacking, and when there are large numbers of players.

Need resources to define and enforce exchange agreements even if everyone had the same objective function. Transaction costs would be reduced by institutions

* Historical example of how institutional evolution in Early Modern (11th-16th century) Europe borrowed from the Middle East (Byzantium/Islamic laws) to (1) those that increased the mobility of capital, (2) those that lowered information costs, and (3) those that spread risk.

1. North and Weingast 1989 – constitutions and parliamentary reform good for trust in government to not manipulate economic rules, good for free market.

According to Douglass C. North and others, by 1700 Britain and the Netherlands had developed **exceptionally well-functioning markets** supported with a set of institutions—non-distortionary pricing systems, common law, and property rights—that would lead to more **efficient resource use and provide far greater incentives to make investments that would raise income per capita**. This facilitated the movement of goods across locations and furthered developments of industrial expansion.

* Trust in a government, e.g. constitutions guarantee responsible governance, is good for the development of free markets. The development of free markets must be accompanied by some credible restrictions on the state's ability to manipulate economic rules to the advantage of itself and its constituents.
  + Institutional change following the Glorious Revolution

Parliamentary supremacy: Parliament also gained a central role in financial matters. Its exclusive authority to raise new taxes was firmly reestablished; at the same time the Crown's independent sources of revenue were also limited. Shortly thereafter, Parliament gained the never-before-held right to audit how the government had expended its funds.

Balance of power: **"The crown demands, the Commons grants, and the Lords assent to the grant."** A balance of power between the Crown and Parliament significantly limited publicly supplied private benefits.

* + Government credibility

Government borrowed more. This is evidenced by the increase in the size of government debt, which grew during the nine years of war from £1 million to nearly £17 million. This level of debt—approximately 40 percent of GNP—was previously unattainable. Moreover, the ability of the new government to finance a war at unprecedented levels played a critical role in defeating France.

Market rates fell. Its initial long-term loans in the early 1690s were at 14 percent (see Table 4). By the end of the 1690s the rate was about half, between 6 and 8 percent.

* + Private capital markets benefitted as well

new financial instruments which were thus created . . . and because [the instruments] issued by a credit-worthy borrower are themselves readily saleable, the effect was further to lubricate the channels linking savings and investment by creating a large stock of negotiable paper assets which new savers could buy. There were lower private interest rates, larger-scale trading in private securities, and growth and development of banks.

### Shleifer’s bullshit on institutions

Even more childish argument than North or Landes, this is literally no protection of private property = bad government, hinder economic growth, no nuance, also blatantly historically wrong

I don’t get how this guy read Montesquieu Spirit of the Laws and came up with this conclusion… “Great enterprises in commerce not found in monarchical, but republican governments”. he then goes on to say he prefers absolutist government since it’s consensual, with intermediary bodies governing the state. Montesquieu preferred absolutism to republicanism… At least read the entire book ffs.

1. Glaeser and Shleifer (2002) civil law could be exploited by bad government

Common law: transmitted from England to other places. Common law on lay judges, broader legal principles, and oral arguments

Civil law: roots in Roman law, adopted by continental states. Civil law relies on professional judges, legal codes, and written records

Emergence of the different legal systems: France chose to rely on state-employed judges precisely because local feudal lords were too powerful: there was no possibility of effective local justice when these lords' interests were involved. England, in contrast, had weaker local magnates, and so its juries were less vulnerable to subversion and could be trusted with adjudication. Moreover, these differences in basic conditions persisted for centuries, mainly because of persistently greater power of local magnates in France than in England.

Implications for the security of property rights: If import civil law, and sovereign does not have similar preferences to community, this would encourage the sovereign’s control over judges and legal rules to politicize dispute resolution. But the transplantation of common law does not suffer from this problem since juries and judges are independent. Thus, **civil law system catalyzes less secure property rights with a “bad” government.**

Doesn’t prove anything – bad government is exogenous in this case…

1. De Long and Shleifer Princes and Merchants: European City growth before IR 1993

Constraints on power = security of property

We find that, on average, for each century that such a region is free of government by an absolute prince, its total population living in cities of 30,000 or more inhabitants grew by 120,000, relative to a century of absolutist rule. 1050-1800

Retorts:

* Measurement of economic prosperity – people living in cities. So an economy with lots of craftsmen and some manufactured products is great but having a lot of agriculture is not? A good economy is literally defined on the basis of states with lots of merchants like the Northern Netherlands and Genoa – land labour ratio was insanely low. Previous result of geography?
* Problem of selective representation: didn’t have any empires. Don’t need all Spanish people to produce stuff in cities if I get everything from the empire? Also, empires are clearly very much state lead initiatives with a lot of monopolies going on in the French and Spanish empires. The British and the Dutch had less of state organization but still they need the state to build a navy? The whole “princely state bad” argument is just against empires in general.

### Acemoglu Role of the government: enforce property rights, restrictions on government, very North

However, there’s no guarantee in practice that extractive institutions cannot be overthrown and stop having an effect on the current state of the economy. A passing remark by Sapienza and Zingales that refutes the Acemoglu institution continuity illustrates how persistence based on legal establishments would not stand: they are designed to be changeable, and Argentina had four different constitutions in the last 60 years.[[1]](#footnote-1) Acemoglu also over relied on social conflict theory. The theory of social conflict downplays the importance of consensus and concessions between social groups in political decision making. In an instance where the political establishment changes after independence from colonisation, the new political group in power would be inclined to concede to policies that benefit the masses in order to maintain popularity and therefore their hold on power. The legitimacy of power of a country that broke away from the shackles of colonisation would be one where they led the masses were freed from colonial oppression and can now live a better life, and not a legitimacy imposed via violence like the colonisers, hence giving them more incentive to build inclusive institutions. As an example, consider Argentina’s independence in 1816 and its economic development. Even though the revolutionary government in Buenos Aires collapsed in the 1820s, Rosas’ government was federalist, and he was portrayed as the arbiter of a balance between the masses and the elites. In Bradford and de Long’s study, where they were examining countries that in 1870s were likely to converge to a high degree of productivity and income per capita, Argentina was a country with high productivity and would have been likely to converge with western Europe and the US.[[2]](#footnote-2) It was not the continuity from colonial institutions that hindered its growth but in fact extractive military dictatorships in the 1930s.

1. 2001 AJR, "The Colonial Origins of Comparative Development: An Empirical Investigation."

图示, 文本

描述已自动生成Good use of instrumental variables…

Settler colonies like Australia (neo-Europe), settlers wanted institutions and political rights like those prevailing in England at the time

Extractive institutions: Latin America, Belgian Congo etc. Spanish had a lot of monopolies and regulations. Same logic to Sokolof and Engerman: if agents make irreversible investments that are complementary to a particular set of institutions, they will be more willing to support them.

Regressions have controlled for geographic variables: latitude and continent, suggested they were not important and correlated with institutions.

It is useful to point out that our findings do not imply that institutions today are predetermined by colonial policies and cannot be changed. We emphasize colonial experience as one of the many factors affecting institutions. Since mortality rates faced by settlers are arguably exogenous, they are useful as an instrument to isolate the effect of institutions on performance. In fact, our reading is that these results suggest substantial economic gains from improving institutions, for example as in the case of Japan during the Meiji Restoration or South Korea during the 1960’s. There are many questions that our analysis does not address. Institutions are treated largely as a “black box”: The results indicate that reducing expropriation risk (or improving other aspects of the “cluster of institutions”) would result in significant gains in income per capita, but do not point out what concrete steps would lead to an improvement in these institutions. Institutional features, such as **expropriation risk, property rights enforcement, or rule of law, should probably be interpreted as an equilibrium outcome, related to some more fundamental “institutions,”** e.g., presidential versus parliamentary system, which can be changed directly. A more detailed analysis of the effect of more fundamental institutions on property rights and expropriation risk is an important area for future study.

1. AJR 2002 Reversal of Fortune: Geography and Institutions in the making of the modern world income distribution (colonisation sucks, further on extractive and inclusive institutions)

Among the areas colonized by European powers during the past 500 years, those that were relatively rich in 1500 are now relatively poor. Given the crude nature of the proxies for prosperity 500 years ago, some degree of caution is required, but the broad patterns in the data seem uncontroversial. If rich more extraction?

We argued that the institutional reversal resulted from the differential profitability of alternative colonization strategies in different environments. **In prosperous and densely settled areas, Europeans introduced or maintained already-existing extractive institutions to force the local population to work in mines and plantations, and took over existing tax and tribute systems. In contrast, in previously sparsely settled areas, Europeans settled in large numbers and created institutions of private property, providing secure property rights to a broad cross section of the society and encouraging commerce and industry.** This institutional reversal laid the seeds of the reversal in relative incomes. But most likely, the scale of the reversal and the subsequent divergence in incomes are due to the emergence of the opportunity to industrialize during the nineteenth century. While societies with extractive institutions or those with highly hierarchical structures could exploit available agricultural technologies relatively effectively, the spread of industrial technology required the participation of a broad cross section of the society—the smallholders, the middle class, and the entrepreneurs. The age of industry, therefore, created a considerable advantage for societies with institutions of private property. Consistent with this view, we documented that these societies took much better advantage of the opportunity to industrialize.

Very Sokoloff and Engerman argument – if extracted successfully don’t want inclusive institutions after independence.

1. Acemoglu, Johnson, Robinson (2005) – "The rise Europe: Atlantic trade, institutional change, and economic growth."

Private property protection and no extractive power.

1500-1850

Atlantic trade -> merchants have political bargaining power, e.g. using earnings against struggle with the crown -> more inclusive institutions e.g. Britain and the Dutch

Goes hand in hand with the papers that like the Glorious Revolution as a precursor to the IR. Recall Chaney’s paper on Mamluks vs feudalism, North 1989 paper.

1. Acemoglu, D. (2003). "Why not a political Coase theorem?"

The Coase Theorem in Economics: In economics, the Coase Theorem suggests that if property rights are clearly defined and transaction costs are low, parties will negotiate to an efficient allocation of resources regardless of the initial allocation of these rights.

Challenges in Politics: Acemoglu argues that this theorem does not translate well into politics due to several inherent complications:

**Commitment Problems**: Political agents often cannot commit to or enforce agreements in the same way as economic agents can, largely due to the lack of a higher authority to enforce such agreements and the dynamic nature of political power. Those in power cannot commit to not using their power as long as they do not relinquish it in ways that benefit them in the future, citizens cannot commit to not making side payments to authorities if authorities relinquish power. – think broken repeated games

**Conflict and Redistribution**: Political actions often involve conflict and attempts at redistribution, which are fundamentally different from market transactions. Redistribution in politics can change the future distribution of power, influencing future interactions in ways not typically accounted for in economic models. – think Pandora’s box search

**Asymmetric Information and Strategic Behavior**: Political settings often involve significant asymmetric information and strategic behavior that prevent straightforward negotiation and bargaining seen in economic transactions. – think unobservable types in education and hiring, moral hazard necessarily arises.

Implications: The inability to apply the Coase Theorem to politics has profound implications for understanding political behavior and outcomes. It implies that political inefficiencies, such as excessive rent-seeking, conflicts, and unstable agreements, may be inherently difficult to resolve through negotiation alone.

1. Acemoglu and Robinson (2000). “Political Losers as a Barrier to Economic Development”

We argue that the effect of economic change on political power is a key factor in determining whether technological advances and beneficial economic changes will be blocked. In other words, we propose a “political-loser hypothesis.” We argue that it is groups whose political power (not economic rents) is eroded who will block technological advances. If agents are economic losers but have no political power, they cannot impede technological progress. If they have and maintain political power (i.e., are not political losers), then they have no incentive to block progress. It is therefore agents who have political power and fear losing it who will have incentives to block.

Examples: British IR landed interests thought that their social prestige was secure

Russia and Austria-Hungary both attempted to block tech but Russia realized through the defeat in the Crimean war that blocking tech was a horrible idea.

## Geography

### Extra long-duree continuity, referencing the Romer model. Whole idea is that an abundance of agriculture creates a non-producing class.

1. Olsson and Hibbs 2005

Biogeographic productive potentials->transitions to sedentary agriculture->non-food producing class of knowledge creators -> endogenous technical progress and rapid population growth

The model implies that the earlier the transition from hunter–gatherer to agricultural production, the longer the period of endogenous growth of knowledge, the earlier the transition to industrial production, and the higher the level of economic development – even in the present day.

Our regressions showed that as much as half of the 1997 international variation in log output per person can be explained by our noisy measures of exogenous geography and prehistoric biogeography.

Reference the Romer model of explosive growth: technology growth depends on population growth since a certain fraction of the population is going to be non-producing and then get ideas. There is increasing returns to scale in R&D production in both the Romer and Jones models.

* There is explosive growth due to IRS in production of ideas. Can moderate IRS for advanced economies.
* This is incompatible with the idea of a competitive market since MC<AC, but if perfect competition P=MC, so then P<AC, there will just be monopolies. Can address this with a trick: R&D perfect competition, final goods perfect competition, intermediate goods monopolist?
* This is a good fit for the industrial revolution. You get little to no industrial tech and then a big boom- consistent with IRS in the beginning. Where industries required intense capital investment, there were few entrants, which fits the Romer model, e.g. Liverpool and Manchester Railway had little competition.
* Continuity might be a bit too much. Running on 1997 GDP per capita very specifically. China has grown a lot due to opening up of markets, the three Baltic states have seen substantial growth due to integration into the EU – if we did the same study but ran the data on GDP per capita today would the same result have occurred?
* But you do need some level of institutional support for innovation, according to Landes. China was doing extremely well agriculturally but did not have the level of innovation required. Moreover, the institutions cannot be destructive of ideas – the whole long-run argument hinges on how ideas can be made and accumulated to one day become explosive. Landes again: China had a lot of good innovation but seemingly forgot about them.

1. Allen 1997 Agriculture and the Origins of the State in Ancient Egypt

**A non-producing social elite could be maintained because the population was immobile, always better to live next to water and get exploited than running into the desert to die.**

This paper argues that successful states in the ancient world depended on the ability of elites to extract a surplus from farmers and other producers. This ability was greatest when the population was immobile. The success of the Pharaohs was due to the geography of Egypt—the deserts bordering the Nile meant that habitation was confined to the valley. Farmers could flee tax or rent collectors only along the river. The population control problem was, thus, simpler than elsewhere and was the reason a unified state was created and lasted for millenia.

Five channels of state formation from agriculture:

i. Hydraulic theory: e.g. Nile • ii. Population growth: diminishing returns... • iii. Trade • iv. Ecosystems approach: efficient adaptations to the natural environment • v. Circumscription theory: harder to flee

Not always true that agriculture would produce a non-producing social elite with great social stratification. Levant through Syria, Anatolia, northern Mesopotamia, to the flanks of the Zagros Mountains. The geography was different, it was very flat, going away was easy if a guy asks you for more taxes.

* A good retort to Olsson and Hibbs. Not all agriculturally-rich places can produce a non-producing elite who could just exploit the farmers due to geography. Olsson and Hibbs would be a bit too generalizing in their claim.

### Geography interacts with other factors, e.g. institutions. Acemoglu’s disease paper works in the same vein also.

1. Sokoloff and Engerman 2000 Institutions, Factor Endowments, and Paths of Development in the New World

Why was the US and Canada rich and the rest of America poor?

They all had high marginal product of labour

First category: Cash crop producing slave economy like the West indies were born of well-suited soils and climates. Extreme unequal distributions of wealth and human capital. -> evolution of institutions that protected the privileges of the elites and restricted opportunities for the broad mass of the population to participate in commercial economies after the abolition of slavery.

Second category: Spanish America Peru and New Mexico. Factor endowments of rich mineral resources and substantial numbers of natives surviving contact with Europeans. Concessionary rulership with creoles. Spanish Crown highly inhibitive of whites moving to the colonies. Also extreme wealth inequality.

Third category: US and Canada. For these reasons, their development, especially north of the Chesapeake, was based on laborers of European descent who had relatively high and similar levels of human capital. [Yes, then you get Virginian republicanism that closely resembled the Greek democratic model.

Specifically, in those societies that began with extreme inequality, elites were better able to establish a legal framework that insured them disproportionate shares of political power, and to use that greater influence to establish rules, laws, and other government policies that advantaged members of the elite relative to nonmembers- contributing to persistence over time of the high degree of inequality

1. Ruggedness Nunn and Puga 2012

日程表

中度可信度描述已自动生成

We also find that rugged terrain had an additional effect in Africa during the fifteenth to nineteenth centuries: it afforded protection to those being raided during Africa’s slave trades. By allowing areas to escape from the detrimental effects that the slave trades had on subsequent economic development, ruggedness also creates long-run benefits in Africa through an indirect historic channel. We show that this differential effect of ruggedness is found in Africa only, it cannot be explained by Africa’s unique geographic environment, and it is fully accounted for by Africa’s slave trades. On the whole, the results provide one example of the importance of geography through historic channels.

## Culture

“those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation.” – Alesina and Giuliano 2015

Collectivism = production or innovation regarding efficiency, refer to how human capital as an argument against Solow’s must convergence – decreasing MPK maybe not as fast as we thought

Individualism = research based innovation, refer to Romer model where you need lots of people to R&D

### Individualism and collectivism

Greif 1994 Cultural Beliefs and the Organisation of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies – culture can influence institutions

Consider in tandem with Glaeser and Shleifer – laws can be made because of culture, they assumed what type of law to adopt was dependent on the government

Maghribi traders vs Genoese traders. Why do societies fail to adopt the institutional structure of more economically successful ones?

However, the initial formation of legal systems could also be directly influenced by culture. In Greif’s study of the Genoese and Maghribi merchants and intermediaries, the Genoese produced formal codified property law whereas the Maghribi didn’t.[[3]](#footnote-3) He argued that in a collectivist society like the Maghribi’s, informal contracts and information sharing was enough to produce trust between trading members and did not call for codified property law like in an individualist society.

Language of insurance: full insurance insures against all uncertainty, when uncertainty smaller, even when both agents risk averse insurance smaller

Gorodnichenko and Roland Culture, Institutions, and the Wealth of Nations

Try to explain income disparities. In this paper, we argue that individualist culture plays a key role in stimulating innovations and, hence, in explaining long-run economic growth, alongside other important factors such as institutions and human capital.

IV prevalence of a gene influencing personality traits, both between countries and within a country

Individualist: encourage innovation

Collectivist: good for production, coordination of workers and units

Plays the divergence at 1500 game, post-Malthusian economy favours innovation: However, **as the economy exits the Malthusian stage (e.g., after the Black Plague), the collectivism-individualism difference across cultures starts to play a new and different role.** Since individualistic societies grow faster than collectivist societies after the Malthusian stage, countries with an individualistic culture eventually become richer and more affluent than collectivist countries that initially had a higher level of development, thus yielding a reversal of fortune.

Controlled for expropriation risk, just culture not institutions.

Temin 1997 – refer to human capital view also

Example about how organization with collective culture could be beneficial in the case of Japan.

But hey British individualist culture was great for the industrial revolution.

Japanese management can make this investment in the workers for two reasons. First, the workers have enough formal education to appreciate the patterns they see in taking different jobs. Second, the workers will stay on the job long enough for the firm to recoup the benefits of their added human capital. This job attachment is the lifetime employment system of the J-firm, to recall Aoki's abstraction. Large Japanese firms remain committed to the implicit contract with their workers even in the troubled 1990s. As expressed in American newspapers—and in contrast with AT&T—the J firms do not lay off workers even in bad times.

### Protestantism and the Weberian argument

The Protestant Ethic and the Spirit of Capitalism argued that the Protestant ethic of Calvinism was a powerful force behind the development of capitalism in its early phases. Weber saw culture as the driving force behind differences in economic development. The Protestant work ethic drove people to work harder. This is kind of closer to the collectivist argument.

In Acemoglu et al.’s study, protestant countries experienced 4.5% greater urbanisation growth between 1500 and 1850, and 30% more GDP growth between 1500 and 1820. Also, when Atlantic trade is included in the regression, this variable is either significant or barely significant.[[4]](#footnote-4) Since Protestantism is significant for urbanisation rates even when an Atlantic trader dummy is considered, there could have been a unique effect of Protestantism on economic growth.

propensity to save and work of individual Protestants

Becker and Woessmann Was Weber Wrong?

The channel of propagation is different

We provide an alternative theory: Protestant economies prospered because instruction in reading the Bible generated the human capital crucial to economic prosperity. (Martin Luther said reading the bible for yourself was important) We test the theory using county-level data from late-nineteenth-century Prussia, exploiting the initial concentric dispersion of the Reformation to use distance to Wittenberg as an instrument for Protestantism. We find that Protestantism indeed led to higher economic prosperity, but also to better education. Our results are consistent with Protestants’ higher literacy accounting for most of the gap in economic prosperity.

Within country comparison to get rid of institutional differences.

#### Mutually enhancing with historical institutions

Guiso et al. 2016 Long Term persistence: Northern and Southern Italy

Our paper shows that shared beliefs of individual self-determination can promote civic engagement and cooperation. If self-efficacy is a measure of an individual’s perception of the impact of his effort, people with stronger self-efficacy beliefs should contribute more to the public good because they think that their impact is greater.

**Northern cities that experienced a period of independence in the Middle Ages have significantly higher levels of civic capital today as measured by all three indicators.**

History causes a feeling of self-efficacy – the belief a person holds regarding their power to affect situations positively.

Transmission Mechanism

Informal institutions: artisan’s guilds and associations survived the disappearance of free city-states

Historical experience affected the attitude of the local population and this attitude survived to this day

Educational transmissions of beliefs – even if kids get raised the same way they will be socialised into a cultural norm as well

## Human capital and population

### Demographics – Malthusian model

Ashraf and Galor 2011

The Malthusian theory generates the following testable predictions: (i) W**ithin a country, an increase in productivity would lead in the long run to a larger population, without altering the long-run level of income per capita**. (ii) Across countries, those characterized by superior land productivity or a superior level of technology would have, all else equal, higher population densities in the long run, but their standards of living would not reflect the degree of their technological advancement. These predictions emerge from a Malthusian model as long as the model is based upon two fundamental features: (i) a positive effect of the standard of living on population growth, and (ii) decreasing returns to labour due to the presence of a fixed factor of production—land.

Population density in 1000 CE explained by log years since neolithic transition (see the geography paper, eg Diamond 1997), log land productivity, latitude, distance to river

There is exogenous variation in tech advancement generated by differences in prehistoric biogeographical endowments

图表, 散点图

描述已自动生成

Chaney and Hornbeck 2016 Evidence from the 1609 Spanish Expulsion of the Moriscos

Sharp drops in the population level should be associated with an increase in output per worker

Natural experiment: In 1609, the Spanish Crown suddenly and unexpectedly expelled Spain’s roughly 300,000 Moriscos. Our empirical analysis focuses on the Kingdom of Valencia, which lost 130,000 Moriscos or roughly one-third of its pre-expulsion population. This loss of population is roughly similar in magnitude to the Black Death in Europe.

Moriscos were Christians but were taxed like Muslims. When they were expelled, the Valencian nobility made sure that they didn’t take valuable assets with them. Christian migrants began to occupy former Morisco areas following the expulsion, but the nobles intended to maintain the extractive institutions.

After the Moriscos’ expulsion in 1609, districts with a greater Morisco population share experienced a substantial relative decline in population. Population convergence was generally fast in the sample region but population convergence was delayed until 1786 in former-Morisco districts. Output declined in former-Morisco areas after the expulsion but converged more quickly than population. **Output per capita increased immediately after the expulsion and remained higher until 1786.** While increases in output per capita typically resulted in convergence across the sample region, there were sustained higher rates of growth in output per capita in former-Morisco districts.

Natural experiments: The empirical analysis compares districts with a greater Morisco population share to a plausible historical counterfactual, represented by districts with a smaller initial Morisco population share. Furthermore, the analysis is able to control for other changes that might differ with local geographic characteristics.

Interplay with institutions: Labour scarcity might have encouraged the relaxation of extractive institutions but these extractive institutions were perpetuated due to the coordinated financial incentives of powerful elites. Nobles and their creditors were heavily dependent on revenue streams from Morisco peasants and the Moriscos’ expulsion threatened to collapse the socio-economic system. The King helped to co-ordinate a settlement that maintained high rates of extraction in former-Morisco areas, rather than risk radical social changes along with the widespread confiscation of nobles’ landholdings.

Contrary to Allen’s claim that when a place has less people therefore less extractive therefore Britain ends serfdom faster

### Demographic transition

#### Transition at around 19th century and early 20th century

Galor and Weil 1998 From Malthusian Stagnation to Modern Growth

表格

中度可信度描述已自动生成

Initially, as living standards rose, fertility increased and mortality fell. Rise in fertility, peaking at around 1870s. Kids went to school – level of resources in each child improved.

As income continued to rise, population growth fell. The reduction in fertility was most rapid in Europe around the **turn of the century** (1800). Furthermore, the reversal of the Malthusian relation between income and population growth corresponded to an increase in the level of resources invested in each child.

Endogenous transition

Initially not many people, tech. is low, technological progress raises return to human capital, induces parents to substitute quality for quantity of children, which in turn makes technological progress faster

In support of this story – but emphasizes a human capital generation approach not really an endogenously created human capital due to improvements in technology approach

Guianne 2011 the historical fertility transition: a guide for economists

Prior to the transition, women bore as many as eight children each, and the **elasticity of fertility with respect to incomes was positive**. Today, many women have no children at all, and the **elasticity of fertility with respect to incomes is zero or even negative**.

6 explanations

Mortality declines, can afford to have less children

Innovations in contraceptive methods

Increases in the direct costs of children, e.g. Prussian 1839 act established a minimum work age of 9 years

Opportunity costs of childbearing, e.g. IR brought women more work opportunities

Changes in the costs of and returns to child quality – having a better quality child is a good idea. Only 1915 returns to education in Iowa available

Social insurance and old-age support

* Most of these have an endogeneity problem – is it because of less children that then the gov says Imma improve education? Galor and Weil say tech, Guianne says these policies, either way they will all become endogenous and then the demographic transition will drag out

Becker et al. Trade-off between fertility and education: evidence from before the demographic transition

Relentless application of constrained utility maximization

We present first evidence that such a trade-off indeed existed already in the nineteenth century, exploiting a unique census-based dataset of 334 Prussian counties in 1849.

Our empirical analysis starts by showing the existence of the trade-off in 1849 using ordinary least squares regressions. We then investigate both directions of causality employing an instrumental-variable approach. To identify the exogenous effect of education on fertility, we employ variation in education that stems from cross-county differences in landownership inequality and distance to Wittenberg.

We find evidence of a significant interaction between quantity and quality of children in 1849 Prussia. The results are robust to a rich set of controls for the level of economic development and to the incidence of mortality. Finally, we study the long-run impact of educational differences for the demographic transition using census data from the turn of the nineteenth to the twentieth century. Our results suggest that the fertility transition in Prussia at the turn of the century was more pronounced in those counties with higher educational enrolment in 1849.

AT: Galor and Weil

In their framework, however, the **Q–Q trade-off results in an actual comprehensive longitudinal decline of fertility only in the second stage of the industrial revolution**. In this section, we explore the **possibility of such long-run effects of investments in human capital on the fertility transition** by estimating the predictive power of school enrolment in 1849 for the decline in the crude birth rate (CBR) and in the marital fertility rate (MFR) during the Prussian demographic transition at the turn to the twentieth century. **Our results indicate that differences in educational investment in 1849 are associated with the strength of the fertility transition in 1880–1905 across Prussian counties.**

#### 1500 demographic transition, well before other literature

2 Voigtlander and Voth papers - large population shocks could lead to sustained increases in incomes by changing the demographic regime, can be reconciled with the Malthusian model. It’s just hard to empirically verify because they span such large populations. Chaney and Hornbeck improves upon that with a natural experiment.

Voigtländer, N. and H.-J. Voth (2013a). "Gifts of Mars: Warfare and Europe's early rise to riches." Journal of Economic Perspectives 27 (4): 165-186; <http://www.jstor.org/stable/23560027>

Factors of geography important – diseases.

Wars raised mortality not primarily because of fighting itself; instead, armies crossing the continent spread deadly diseases such as the plague, typhus, or smallpox. The massive, continued destruction of human life that followed led to reduced population pressure. In our view, it was a prime determinant of Europe’s unusually high per capita incomes before the Industrial Revolution.

* Problem of reverse causality: countries that were powerful engaged in wars

Same mechanism as Chaney and Hornbeck, less population, more output per capita

Voigtländer, N. and H.-J. Voth (2013b). "How the west 'invented' fertility restriction." American Economic Review 103 (6): 2227-2264; <http://www.jstor.org/stable/42920649>

**Natural endowments matter – after the black death** productivity was increasing, income per capita was also increasing due to women’s participation in the labour force

a decrease in population could improve labour productivity. The increase in women’s participation in the labour force was present after the black death and not only just after the industrial revolution. Voigtlander and Voth demonstrated that a decrease in population after the plague favoured animal husbandry, which was a high productivity sector relative to grain production for women, and thus increased the opportunity cost of marriage and childbearing.[[5]](#footnote-5) In western Europe, where animal husbandry was a highly productive sector, overall productivity increased since the economy shifted more towards a high productivity sector, whereas the land endowments in Southern Europe or China was not inducive to a fertility transition like that in Europe.[[6]](#footnote-6)

### Human Capital

#### Human capital instead of institutions

Glaeser, la Porta et al. 2004 Do Institutions cause growth

Growth and human capital accumulation lead to institutional improvement

Human capital is a more basic source of growth than institutions, poor countries get out of poverty through good policies often pursued by dictators and can subsequently improve their political institutions

Lipset 1960: educated people are more likely to resolve their differences through negotiation and voting. Education -> courts operate, literacy -> spread of knowledge about the government’s malfeasance. This model can work for South Korea, Taiwan, and China, which grew rapidly under one-party dictatorships, first two eventually turning into democracies.

The measures of institutions are not persistent and are merely results of the government actions and not proxies for institutions. Measures include: risk of expropriation by the government, government effectiveness, constraints on the executive.

图形用户界面, 文本, 电子邮件

描述已自动生成

Initial level of education is a strong predictor of subsequent economic growth

* Technological externalities
* Economic returns to education in developing countries not especially high, human capital -> more benign politics, externality is not technological but political
* Yes, correlation with average assessments of institutional quality, but no relationship between growth and constitutional measures.
  + Average assessments of institutions enter into growth regressions, they improve as the economy gets richer

图表, 散点图

描述已自动生成

文本

描述已自动生成

#### SBTC

Remember how Acemoglu’s paper on SBTC through this endogenous channel required elastic substitution between highly skilled and low skilled labour

Rocha, Claudio, Soares Human Capital Persistence and Development 2017

**Not entirely endogenous SBTC, need a technical shock for the better human capital to be in use. Closer to Goldin and Katz (2008)’s model**

We exploit variation induced by a state-sponsored settlement policy that attracted immigrants with higher levels of schooling to particular regions of Brazil in the late nineteenth and early twentieth century. We show that one century after the policy, municipalities that received settlements had higher levels of schooling and higher income per capita. **We provide evidence that long-run effects worked through higher supply of educational inputs and shifts in the structure of occupations toward skill-intensive sectors.**

The evidence suggests that local communities that developed from historical settlements demanded higher educational investments and, through time, shifted economic activity to skill-intensive sectors. The pattern we uncover is consistent with the idea that state-sponsored settlements brought more skilled foreigners—along educational and possibly other unobservable dimensions—to localities where initially these skills had no immediate economic return. At that point, coffee production—intensive in unskilled agricultural workers—was still the dominant and most profitable economic activity. But as soon as industrialization took hold, these skills started representing an economic advantage that ended up materializing in increased income per capita in the long run.

Which part of the human capital causes growth?

**Thus, the role of literacy during industrialization is best captured by the Mincer model (where change in schooling leads to growth), while upper-tail knowledge fits the setup in the empirical macro growth literature, which typically specifies growth as a function of initial human capital (Krueger and Lindahl 2001).**

Squicciarini and Voigtlander Human Capital and Industrialisation: Evidence from the age of enlightenment

This is actually the truly endogenous way

Squicciarini and Voigtlander focused on the top of skill distribution and argued that the ingenuity of the technical minority offered unique insights to different production methods adopted by the countries.[[7]](#footnote-7) Historical evidence was cited to demonstrate that inventors and entrepreneurs trained skilled workers themselves, implementers were a small elite. They proved that knowledge externality wasn’t horrifically important and that there was some kind of exclusivity.

Where France didn’t have high skilled workers they got them from Britain, similar to the Kelly argument of better British human capital

#### Knowledge economy

2 papers by Mokyr, relating to IR

Mokyr 2005 The intellectual origins of modern economic growth

Different to Squicciarini and Voigtlander on the externalities of knowledge – Mokyr takes the view that there was a cosmopolitan enlightenment

Assume the IR was a western phenomenon and more than just a British affair

Greater specialization, professionalization, and expertization have meant that the total amount of knowledge that society controls is vastly larger than ever before. The effective deployment of that knowledge, scientific or otherwise, in the service of production is the primary— if not the only—cause for the rapid growth of Western economies in the past centuries.

Above all was the increasingly pervasive belief in the Baconian notion that we can attain material progress (that is, economic growth) through controlling nature, and that we can only harness nature by understanding her in order, as he himself put it, to bring about “the relief of man’s estate.” Francis Bacon, indeed, is a pivotal figure in understanding the Industrial Enlightenment and its impact.

The Industrial Enlightenment, thus, had two dimensions. One was to expand the body of propositional knowledge and to steer it in those directions that might turn out to be useful, that is, both to increase research and to adjust its agenda to make it more likely for discoveries to have useful applications. The second was a deliberate effort to reduce access costs to existing knowledge. As noted, those two objectives were not independent, but rather neatly complemented one another.

De la Croix et al. Clans, Guilds, and Markets: Apprenticeship institutions and growth in the preindustrial economy

According to the accounts of de la Croix et al., under the assumption of a Malthusian economy, and innovation increases knowledge steadily without jumps, the guild system was to produce a higher income per capita equilibrium than a system with family organised labour.[[8]](#footnote-8) Although aggregate production relies on land-based technology, this technology can grow due to knowledge accumulation without needing some exogenous population shock to be used more effectively.

rate of original innovation and the speed of the dissemination of existing ideas

This “moral hazard” in the master-apprentice relationship creates a need for institutions to organize the transmission of knowledge. Guilds and the market serve as a regulating mechanism for the moral hazard-style problem wherein the master loses incentive to teach students better than immediate family members would, thereby inhibiting the operation of professionalised labour organisation.

In the nuclear family equilibrium, no dissemination of knowledge (innovation stays within the family). In clan equilibrium: can have some dissemenation of knowledge (within clan) • Guild equilibrium: coalition of all masters, provides enforcement mechanism but also regulates apprenticeship • Market: outside authority enforces contracts • In preindustrial era: China, India and Middle East characterized by clan equilibrium

Western Europe: starts with nuclear family • Transitions to guild and then market equilibrium • Guilds allow for broader knowledge dissemination • Explain Europe’s knowledge advantage

文本

描述已自动生成

* Struggle to explain why nuclear family emerged in Europe
* Differences in patterns of urbanisation: 97% of Chinese population lived outside walled cities

## Specifics on China and Islam

1. **Trade is important for economic development – Even prior to the industrial revolution**
2. O’Rourke and Williamson (2005) From Malthus to Ohlin: Trade, Industrialisation and Distribution Since 1500

Wage rent ratios: Seeks to explain: reversal in distributional trends in early 19th c Steep secular fall (1500-1850) to steep secular rise in wage-land ratios at about 1850

Land-labour ratio trending down sharply 1500-1840

* Closed economy 1500-1840: falling wage-rental ratio, pushed up relative price of food
* Open economy post 1840: wage-rental ratio rise despite declining land-labour ratio
* Stats: Chow breakpoint test: There is a slow, hardly noticeable rise in the test statistic between 1500 and 1700, followed by a significant rise from 1700 to 1750, and a larger rise from 1750 to 1800. Also ran a counterfactual: if pre-industrial relationships sustained wage-rent ratio would have declined throughout.
  + Timing: Global commodity market integration: grain was the key trade to drive down European rents in the late 19th century. Evidence from Anglo-American wheat price gaps. Benefits from Britain switching from mercantilism to trade liberalism, America’s large-scale wheat exports, global freight prices falling.

Argument: After 1840 commodity prices began to be exogenous to the British economy; and wage-rental ratios were no longer primarily driven by land-labor ratios, but rather by trade (relative price of food) and by the Industrial Revolution.

* We have argued that Britain underwent two important regime switches during the late 18th and early 19th centuries, not just one. The first was a transition to mod- ern industrial growth and the second was a transition towards a more open trading environment. These regime switches were not abrupt, but rather took place over a number of decades. Also, the two transitions were almost certainly connected
  + While the price gap evidence outlined in Section 3 certainly documents a stark contrast - no intercontinental price convergence before 1800, but substantial price convergence thereafter - it is important to note that the move to a **more open British economy had also been taking place over a long period**.
  + Most obviously, and as noted earlier, the innovations which drove down freight rates - notably the metal steamship - depended on the steam engine and developments in metallurgy which together constituted some of the most notable technological breakthroughs of the Industrial Revolution. But the **causation may also have gone the other way around, from trade to the Industrial Revolution**.

1. Shiue and Keller 2007: market performance is perhaps necessary but not sufficient for industrialization – specific to China, similar view to O’Rourke and Williamson on how improvements in market performance and growth are simultaneous events; Side-quest: was industrialization just in Britian or European? Living standards question before IR.

We find that the performance of markets in China and Western Europe overall was comparable in the late eighteenth century. Market performance in England was higher than in the Yangzi Delta, and markets in England also performed better than those in continental Western Europe. This suggests strong market performance may be necessary, but it is not sufficient for industrialization. Rather than being a key condition for subsequent growth, improvements in market performance and growth occurred simultaneously.

This paper compares markets in China and Western Europe in terms of spatial market integration, using cointegration analysis with data on grain prices from the seventeenth to the nineteenth century.

Grain trade: China had a guild based system that made sure intermediary systems in the market functioned. Laissez-faire, domestic customs and transit taxes that were lower than that of England’s. Guilds, dominated by interregional merchant networks and were not really exclusionary. Taught people skills, also regulated weights and measurements, the state relied on them. Merchant networks identified by kinship or common place of origin.

Allocative market efficiency

According to the evidence presented in this paper, as of the period right before the Industrial Revolution took place in Western Europe, grain markets did not perform uniformly better in Western Europe than in China. Over relatively short distances of 150 kilometers or less, there are indications that European markets were more integrated. This edge, however, is relatively small when we consider what occurs right after the onset of industrialization.

**Based on our research, we hypothesize that if the failure of China to industrialize had at all to do with shortcomings of the state, it was not so much that the state suppressed private economic activity, but that the state did too little to support it through the provision of public goods and formal legal institutions.**

* External validity problem: grain markets representative of all goods markets?

**The dichotomy proposed by North (1981) and examined by Acemoglu and Johnson (2005) thus appears to be too narrow to fit the Chinese case.**

1. Bosker, Buringh and van-Zanden 2013 – there’s some relationship between fall of Islam and rise of Europe?

The success of this more state-independent, water-based, trade-oriented, urban system is an important reason that the urban center of gravity shifted from the Islamic world to Europe, making London, instead of Baghdad, the largest, most important city in this part of the world.

As such, the main drivers of urban development are specific to each of the two regions. In both regions, geography and institutions played an important role in determining the character and evolution of urban development, but in very different ways. In particular, local participative institutions restricting the dominant role of the state that do develop in Europe but not in the Islamic world, in combination with the long-term consequences of their different choice of main transport mode (camel versus ship), were important drivers of their reversal of fortunes.

The first defining difference between the two regions was their different choice of main transportation mode. The Islamic world was very innovative in replacing horse and oxendrawn carts by the camel, a much more efficient means of transport in the desert-type conditions found in many parts of North Africa and the Middle East.

The difference in institutional developments is the second defining difference between the two regions. Throughout our sample period, capital cities dominated the urban landscape in the Islamic world. In Europe, this was not the case. Following the demise of the Carolingian Empire, Europe for many centuries was, fragmented in many small political entities. During this period, cities started to develop forms of local participative government and to demand representation in national policymaking. This made them less dependent on the state than the cities in the Islamic world, which never developed such forms of participative government.

Finally, and contrary to the absence of significant interaction across religious lines, we find that cities’ development does show significant signs of positive interaction within religious borders. There was a lot of interaction until the fall of the caliphates and the rise of the Ottoman Empire.

1. Living standards measurement and diversion prior to IR
2. Allen et al. 2011 Wages, prices, and living standards in China, 1738-1925: in comparison with Europe, Japan and India

**In spite of the above, a major surprise is our finding that unskilled labourers in major cities of China and Japan, poor as they were, had roughly the same standard of living as their counterparts in central and southern Europe for the greater part of the 18th century.** This calls into question the fundamental tenet of the large 'rise of the west5 literature that sees western Europe as a whole, surpassing the rest of the world in the early modern era. Our article suggests that it was only England and the Low Countries that pulled ahead of the rest. The rest, in this context, includes not only Asia but also much of Europe.

1. Pamuk, Ş. (2004). "Institutional change and the longevity of the Ottoman Empire." Journal of Interdisciplinary History 35 (2): 225-247

The Ottoman Empire enjoyed a period of recovery, stability, and economic expansion from the beginning of the eighteenth century until the 1770s. De - spite wars and internal conflicts from the 1770s through the 1830s, the Ottomans managed to regroup and survive into the modern era with a strong central state and many of their central institutions intact.

AT Landes (LMAO): The empire cursorily depicted in these accounts is a centralized, monolithic entity lacking in internal dynamism and differentiation. Landes virtually reduces the Ottoman Empire to a caricature of nomads and raiders, despotism, military conquest, corruption, and looting: “The Ottoman empire was a typical despotism, only more warlike.”

Pragmatism, flexibility, and negotiation enabled the central bureaucracy to co-opt and incorporate into the state the social groups that rebelled against it.

Under the **timar system**, the sipahis, state employees often chosen for their wartime valor, who lived in the rural areas, col - lected mostly in-kind taxes from these peasant farmers and spent the revenues locally to train and equip a predetermined number of soldiers, as well as to subsidize themselves, creating a large provincial army. The Ottoman central administration did not attempt to impose the timar regime in all of its conquered territories. In many remote areas, such as Eastern Anatolia, Iraq, Egypt, Yemen, Wallachia (Romania), Moldavia, and the Maghrib, the Ottomans collected taxes but left the existing land regimes largely or completely unaltered to avoid economic disruption and popular unrest. From the outset, the Ottomans relied on tax farming for the collection of urban taxes. Until the late sixteenth century, how - ever, agricultural taxes—the largest share of tax revenues—were collected locally and mostly in kind within the timar system. With the introduction of the **malikane system in 1695**, revenue sources began to be farmed out on a lifetime basis in return for a large initial payment and regular annual payments thereafter. In fact, the malikane system allowed the state to use tax revenues as collateral and to borrow on a longer term.

In the urban economy, manufacturing and local trade remained under the control of the **guilds.** The mostly autonomous guilds sought and obtained the support of the government when - ever merchants tried to organize alternative forms of production. Partly because of this support, commercial initiative remained weak in Ottoman lands. Moreover, even though the government had a reciprocal need of the independent guilds to preserve the traditional order, it was often wary of those, both Muslim and non-Muslim, that held heterodox religious beliefs.

**Prevention of interest.** Yet, even though a religiously inspired (both Islamic and Christian) prohibition against usury was common to the Mediterranean world during the Middle Ages, by the classical era, Islamic law had already devised several ways to circumvent the anti-usury prohibition, as had European law during the late medieval period. Various legal actions, based primarily on the model of the “double-sale,” were, if not enthusiastically endorsed by jurists, at least not declared invalid. There was no insurmountable barrier against the use of interest-bearing loans for commercial credit. Legal cases abounded with questions of debt, and cash vakifs – pious foundations established with explicit purpose of lending cash and using interest to fulfill their goals were an important source of loans in Istanbul, Balkans, Anatolia.

As a result, Ottoman governments moved away from the extreme position of interventionism espoused during the reign of Mehmed II (1444 and 1451–1481) toward more selective interventionism during the sixteenth century. Official documents only say when they intervened and can’t document a lack of action.

**Long term trends in Standard of Living.** Despite many valid objections, real wage series offer the only solid information about living standards in many parts of the world before 1800.

A recent study of the real wages of construction workers in Istanbul and other cities indicates that Ottoman **real wages were comparable to those in most parts of Europe, though about one-third lower than those in northwestern Europe during the sixteenth century**. **This pattern prevailed until after the Industrial Revolution.** After declining by 30 to 40 percent during the sixteenth century, probably due to population growth, urban real wages in the Ottoman Empire remained roughly unchanged until the **second half of the eighteenth century, when they began to rise**. Around 1800, urban wages in the Ottoman Empire were 10 to 20 percent lower than their levels around 1500.

1. The differences around Islam and Christianity were exogenous but have endogenous consequences on equilibrium outcomes, stressing exogenous roots of institutional and economic differences – very Eurocentric, would have never made a history reading list. These papers can be rebutted by Pamuk.
2. Kuran 2001

What made the Middle East fall economically behind is not only that its own legal infrastructure essentially stagnated but that in the West a similar, but not identical, institutional endowment carried within it the seeds of economic modernization.

Islamic law has no place for corporations, stagnation of Islamic Contract Law, primogeniture, not a strong civil society.

1. Rubin Institutions, the rise of commerce and the persistence of laws

AT Greif 1994: Christian ‘individualism’ versus Islamic ‘collectivism’ – led to the emergence of different institutional forms in which contract enforcement and coordination based on legal, political and economic organisations prevailed in Europe instead of the small-group sanctions seen in the Islamic world.

**Devoid of any historical context, any of these differences may have entailed that economically inhibitive laws were more likely to persist in the Islamic world than in Western Christendom.** Yet, if any of these hypotheses could be considered the driving force behind the divergence in economically inhibitive laws, they must be able to account for one of the most ubiquitous of such laws – restrictions on taking interest (usury) on loans.

**I argue that the differential persistence of economically inhibitive laws in general and interest restrictions in particular, resulted from the greater degree to which early Islamic political authorities depended on conforming to the dictates of religious authorities for legitimacy.**

e.g. For Europe, the Church should begin to relax interest restrictions **only after its legitimacy was endogenously undermined**. In fact, it was only after the importance of the legitimising relationship diminished in the mid-thirteenth century that political authorities relaxed their restrictions, and the Church followed suit over the subsequent centuries.

1. Moving Away from Macro studies – better exploration of channels

Ma Debin Sericulture paper-

Corroborates: Landes institutions needed for innovation, Shiue government not supportive enough

I argue that the Japanese success in silk export largely derived from the capacity of its sericultural sector to develop appropriate technology and institutions through a creative combination of traditional technology and modern science to overcome its resource constraints.

Isolation of the effect of innovation – diffusion of the F1 variety.TFP growth was directly related to the discovery and diffusion of the F1 variety, while intensification was achieved through the application of artificial hatching in combination with the set of complementary technologies in mulberry cultivation. These constituted the core of the induced innovation in Japanese sericulture. Had such innovation not occurred, that is if we remove the 58% contribution of the induced innovation from the 5.5% annual cocoon growth rate in 1903–27, Japanese growth would have been only 2.3%. This is roughly equivalent to the 2.8% growth rate of the raw silk exports in the Lower Yangzi in the same period.

1. **Eric Chaney!**

**Eric Chaney papers must read, course convenor, also can bullshit he makes sense (he’s actually not bad) – North Glorious revolution and parliamentary supremacy argument**

Blaydes and Chaney 2013 Feudal Revolution and Europe’s Rise

Optimising behaviour under conditions of uncertainty where the feudal lords have a good enough life so they don’t want to overthrow the rulers.

While feudal institutions served as the basis for military recruitment by European monarchs, Muslim sultans relied on mamlukism—or the use of military slaves imported from non-Muslim lands. **Dependence on mamluk armies limited the bargaining strength of local notables vis-a-vis ` the sultan, hindering the development of a productively adversarial relationship between ruler and local elites. We argue that Muslim societies’ reliance on mamluks, rather than local elites, as the basis for military leadership, may explain why the Glorious Revolution occurred in England, not Egypt.**

First, ruler duration in Western Europe statistically diverged from duration in the Islamic world during the medieval period. Second, this divergence was driven, in part, by a reduced probability of monarchical overthrow in Western Europe.

Since In Egypt the Mamluks were able to de facto achieve independence, there’s obviously bargaining power. But they don’t actually use it to form a concessionary rulership like the feudal system does in Europe. There’s no fragmentation of power.

Chaney 2012 Democratic Change in the Arab World: Post and Present

Will the Arab Spring lead to long-lasting democratic change? To explore this question, I examine the determinants of the Arab world’s democratic deficit in 2010. I find that the percentage of a country’s landmass that was conquered by Arab armies following the death of the prophet Muhammad statistically accounts for this deficit. **Using history as a guide, I hypothesize that this pattern reflects the long-run influence of control structures developed under Islamic empires in the premodern era and find that the available evidence is consistent with this interpretation.** I also investigate the determinants of the recent uprisings. Taken in unison, the results cast doubt on claims that the Arab-Israeli conflict or Arab culture or Muslim theology is a systematic obstacle to democratic change in the region and point instead to the **legacy of the region’s historical institutional framework.**

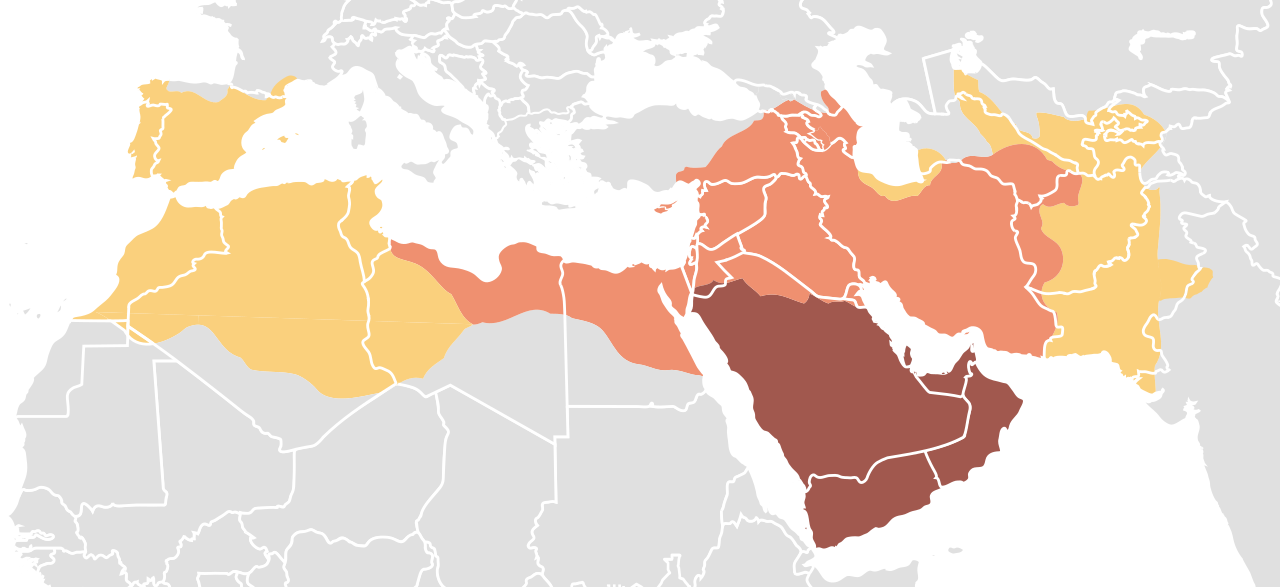
图片包含 图示

描述已自动生成

ArabConquest as the proportion of a country’s landmass that was ruled by Muslim dynasties in the year 1100 CE interacted with an indicator variable that equals 1 if at least half of the country’s landmass was under Muslim rule in 1900 CE. (I set ArabConquest equal to zero for Israel.)

He ran an IV and argued that desert terrain/rainfall are good instruments for Arab Conquest and then the results are repeated.

Arab Conquest might be correlated with many things my guy…



Institutions continuity argument might be true for up until the collapse of the Ottoman empire

The historical division of power between the military (the sovereign backed by his army of slaves) and religious leaders did not produce democratic institutions. Instead, both religious and military elites worked together to develop and perpetuate a “classical” institutional equilibrium. This institutional framework, often referred to as Islamic law, seems to have been designed with the interest of both groups of leaders in mind (Kuran 2011, Chaney 2012).

The long-lived nature of these shocks meant that military forces led by local, landowning nobles increasingly became independent of central authority. Over time they emerged as a landed aristocracy that served as an independent interest group. The emergence of this group led to a separation of powers among the landed aristocracy, the clergy, and the sovereign (Chaney 2012).

Over the next century, European colonizers and native rulers seem to have worked to perpetuate the historical concentration of political power by keeping civil societies weak and blocking the emergence of rival groups. This point is stressed by Lewis (1993b, p. 96), who notes that “modernization in the nineteenth century, and still more in the twentieth, far from reducing this [historical] autocracy, substantially increased it.”

Advancements in Education – can associate with human capital arguments

Economic downturns is linked with popular discontent with democratizations

The region’s history suggests that popular uprisings leading to a regime change do not guarantee long-lasting democratic change. Have the numerous structural changes—in particular, the rise in average educational attainment— over the past decades helped lessen the weight of history, ensuring that the ultimate outcome of the recent wave of popular protest will be more democratic than the outcomes of popular uprisings in the past?

Past 60 years: Although differences in education do not explain the democratic deficit from a statistical standpoint in these countries, their educational attainment has largely converged to the non–Arab conquest Muslim average.

For example, the widespread protests that swept across the region in 2011 have no precedent in the region’s history. However, the political equilibrium in many states in the **Arab League continues to resemble the equilibrium that has accompanied autocratic institutions for centuries, with political power concentrated in the hands of military and religious leaders.**

He was on the right track until he said… Thus, I use popular support for sharia as a measure of the extent to which political power remains concentrated in the hands of religious leaders across the Arab world today.

## Colonialism and death of economic development

Technology adoption

There are propositions where technology developments worked independent of colonisation. Comin (2010) identified the continuity of technology development since 1000BC.[[9]](#footnote-9) Comin’s mechanism was one of path dependency, where complementarity to old technology initiates the adoption of new technology.[[10]](#footnote-10) This argument works through cost minimising behaviour of people wanting to utilise new technology, where complementarity should save the cost of new inventions. But this argument ignored the even less costly channel of innovation imports. According to Easterly and Levine, Comin doesn’t take ancestry into account, and if some people lived in the same place, they should be able to come up with a complementary new technology, and instead proclaims that human capital and technology were brought to the new world by Europeans and supported economic development.[[11]](#footnote-11) Easterly and Levine examined the counterfactual of less European settlers bring about new technology and concluded that technology attributed to growth in ex-colonies today.[[12]](#footnote-12) However, even though new technology was beneficial as it pushed the production possibility frontier forward, the extractive institutions in the colonies made sure that the economies stayed within the frontier.

Freyer and Sacerdote 2009 Colonialism and modern income: Islands as natural experiments

Positive effects of colonisation in Islands throughout the Atlantic, Pacific and Indian Oceans

Using a new database of islands throughout the Atlantic, Pacific, and Indian Oceans we find a robust **positive relationship between the number of years spent as a European colony and current GDP per capita**. We argue that the nature of discovery and colonization of islands provides random variation in the length and type of colonial experience. **We instrument for length of colonization using variation in prevailing wind patterns**. We argue that wind speed and direction had a significant effect on historical colonial rule but do not have a direct effect on GDP today. The data also suggest that years as a colony after 1700 are more beneficial than earlier years. We also find a discernable pecking order among the colonial powers, with **years under U.S., British, French, and Dutch rule having more beneficial effects than Spanish or Portuguese rule.** Our finding of a strong connection between modern income and years of colonization is conditional on being colonized at all since each of the islands in our data set spent some time under colonial rule.

More intensive involvement with Europeans or longer colonial rule might have left islands with a more stable or better structured government. Timing of colonialism related to institutional quality, later period representing better governmental institutions and better intentions on the part of colonisers. Later years of colonialism are associated with a much larger increase in modern GDP than years before 1700.

日程表

描述已自动生成

图表, 散点图

描述已自动生成

### Africa

1. The Slave Trade

Nunn, N. 2008. “The Long-Term Effects of Africa’s Slave Trades”. Quarterly Journal of Economics 123(1): 139–76.

Talk about this under the frameworks of infinitely repeated games: the gains from coopting with others to slave trade a neighboring tribe is too high for cooperation to be sustained forever.

I find a robust negative relationship between the number of slaves exported from a country and current economic performance. To better understand if the relationship is causal, I examine the historical evidence on selection into the slave trades and use instrumental variables. Together the evidence suggests that the slave trades had an adverse effect on economic development.

Africa’s slave trades were also unique because, unlike previous slave trades, individuals of the same or similar ethnicities enslaved one another. This had particularly detrimental consequences, including social and ethnic fragmentation, political instability and a weakening of states, and the corruption of judicial institutions. Internal conflict, collapse of preexisting forms of government. Because Africa’s slave trades were an important factor affecting political underdevelopment, they may be a central reason behind Africa’s weak states today.

I then examined the channels of causality underlying the relationship between slave exports and economic development. I showed that the data are consistent with historic accounts suggesting that the slave trades impeded the formation of broader ethnic groups, leading to ethnic fractionalization, and that the slave trades resulted in a weakening and underdevelopment of political structures.

Abad and Mauer critique:

The Ethnic boundaries that Nunn derived from Murdock 1959 was factually wrong in the eyes of anthropologists. Murdock cherrypicked work by botanists, creatively massaged demographic evidence, ignored historical work, disregarded post-war censuses, and contradicted anthropological findings. Nor did he make it easy to dispel doubts about factual errors, generalizations, and selective use of sources as his book did not provide a comprehensive discussion of his sources — or even any footnotes at all.

Nunn, N. and L. Wantchekon. 2011. “The Slave Trade and the Origins of Mistrust in Africa”. American Economic Review 101(7): 3221–52.

This is a continuity mechanism paper for the 2008 one. We have shown that within Africa low levels of trust can be traced back to the legacy of the slave trade.

Mechanism:

* the slave trade altered the cultural norms of the ethnic groups exposed to it, making them less trusting of others
* Because the slave trade resulted in a long-term deterioration of legal and political institutions, the residents of heavily affected regions may now be able to cheat others more easily

Authors answer OVB, nothing suggests the authors have reconsidered their time period of choice.

* For example, if ethnic groups that were inherently less trusting were more likely to be taken during the slave trades, and if these groups continue to be less trusting today, then this could generate a negative relationship between the slave trade and trust.

Abad and Mauer retorts:

it is far from clear that slave exports destabilized precolonial African states

the unconstrained relationship between the slave trade and income only emerges after independence and grows stronger across time

Nunn is aware that the relationship between slave exports and GDP per capita grew stronger after independence. He speculates that precolonial structures “suddenly increased in importance, as they became central determinants of the success of the newly formed state” (Nunn, 2008, p. 167) That, however, is a hypothesis rather than a mechanism. The European colonial empires were in general ramshackle affairs, with only limited control over the territory they ostensibly claimed, and European governments often ruled Africa “indirectly” through rulers at least notionally linked to precolonial traditions.

Austin 2008 Retorts:

Again, Nunn’s ingenious attempt to collate the ethnic identities of enslaved Africans with origins within the boundaries of 20th-century African states (Nunn, 2008) is likely to worry historians of ethnicity in Africa. For a generation of scholarship emphasised the relatively recent ‘invention’ (and the continuing re-invention) of ethnic identities in Africa (from Iliffe, 1979 and Ranger, 1983 onwards). Colonial policies of ‘indirect rule’ (and ‘divide and rule’), both directly and through African elites’ responses to it, have been seen as the major source of ethno-genesis. The instability of ethnic labels, coupled with the frequency of migration in African history (Kopytoff, 1987), makes it very difficult to be confident about assigning 18th-century ethnonyms to 20th-century territories. **Further, Nunn’s assertion that ‘ethnicities ... generally map cleanly into one country’ (Nunn, 2008: 150)** runs counter to the common observation that colonial boundaries frequently divided existing ethnic groups.

Nunn, without comment, fails to distinguish the pre-colonial and colonial periods. He treats slave traders as if they were colonial rulers, to whom he attributes the capacity to ‘choose’ the ‘rate of extraction’ (Nunn, 2007).

‘political fragmentation’ is evident throughout what we know of pre-colonial history

It makes sense to argue that ‘political fragmentation’ facilitated the Atlantic slave trade, contributing to its scale and durability. Most of the African rulers involved sought to protect their own subjects from enslavement while capturing, buying and selling or re-selling outsiders

Nunn –the ruggedness paper, see geography section

Seeks to answer why some regions more affected by the slave trade than others.

Michalopoulos and Papaioannou 2016 The Long-Run Effects of the Scramble for Africa

Doesn’t have the two major problems Nunn has pointed out by Austin 2008.

Ethnic partitioning then is influential on civil conflict now, makes sense.

In the first part of our paper, we formally explore the nature of African political boundaries. Utilizing information on the spatial distribution of ethnicities at the time of colonization, we associate ethnic partitioning to various geographic, ecological, and natural resource measures, and ethnic-specific proxies of precolonial conflict and early development.

Second, we examine the effect of ethnic partitioning on civil conflict, as this has been conjectured to be its major consequence. We exploit a new dataset that reports precisely geocoded information for 64,650 conflict events of various types over the period 1997–2013 for all African countries.

Third, mechanism. We present evidence suggesting that neighboring countries use the homelands of partitioned groups to stage military interventions. This suggests that **ethnic partitioning is associated with a lower opportunity cost of fighting**, as neighboring countries often offer military, political, and economic support to their co-ethnics on the other side of the border.

Fourth, Partitioned ethnicities are significantly more likely to experience political discrimination and are more likely to participate in ethnic-based civil wars.

Fifth, using micro-data from the Demographic and Health Surveys, covering more than 85,000 respondents in 20 African countries, we document that individuals identifying with partitioned groups have fewer household assets, poorer access to public utilities, and lower education. This pattern is not due to a generalized decline in standards of living of all households residing in split homelands; rather it is driven by the **poorer economic circumstances of members of split ethnicities irrespective of their actual residence**.

### Public goods argument and colonialism

Banerjee and Iyer (2005) and Dell (2010) both explore the continuity mechanism of extractive institutions through case studies and point to the importance of public goods investment for economic development. They differ on the effects of colonisation on economic outcome, where the former focus on the benefits of British colonisation on parts of India and the latter on the shortcomings of Spanish colonisation on parts of Peru.

Banerjee and Iyer study India and use state level data in India after independence to demonstrate that the historical property rights contribute to the sustained difference in economic outcomes.[[13]](#footnote-13) Where the local elites had significant power, no extensive public investment was made, and the British focused more on non-landlord areas for public good investment.[[14]](#footnote-14) The British were fearing of the tragedy of the commons, where the landlord can disproportionately exploit public resources and overuse them for their private benefits. Moreover, the peasants’ rational calculations regarding the efforts exerted in production and innovation would involve high probabilities of extortion from landlords, hence disincentivising them to benefit from public resources such as railroads and education to generate more output, which the extractive British colonial office was interested in. Hence, the extractive attitude of the British selected non-landlord areas for development and left them underdeveloped.

A comparison between Banerjee and Iyer with Dell could, however, yield the conclusion that extractive institutions can function, as long as public investments were made, which does not take away from either’s conclusion although their attitudes towards colonisation’s effect on the economy are different. Dell maintains an opposite attitude with regards to the landlord class, the hacienda in Peru.[[15]](#footnote-15) The Spanish created the mita system to force migration of labour to produce elsewhere, whereas the hacienda lobbied for public good provision, and the roads built in hacienda provinces were thought to improve market access.[[16]](#footnote-16) However, tragedy of the commons and peasant incentive reduction would still both hold true for the hacienda, and it would be hard to conclude that the landowning classes were not just another extractive force alongside the Spanish colonisers, just one where the haciendas, like the British, believed that more investments could yield more extraction. Moreover, according to Abad and Maurer, the mechanism of land tenure was historically questionable, since it’s not clear that the mita persisted for very long or that the connection between haciendas and better schooling and roads was historically or econometrically proven.[[17]](#footnote-17)

## Convergence and Divergence

Exam question: What determines convergence clubs? I.e., what determines the Solow steady state? Culture and human capital have appeared already.

Absolute convergence: y star is the same, initial capital does not matter given falling MPK

Conditional convergence: countries converge to their own steady states

### The Baumol – De Long debate in 1986-88

Baumol 1986

Growth rate is inversely correlated with initial GDP levels

图片包含 图表

描述已自动生成

**Productivity growth has public good properties.**

It seems not to have mattered much whether or not a particular country had free markets, a high propensity to invest, or used policy to stimulate growth. Whatever its behaviour, that nation was apparently fated to land close to its predestined position in Figure 2

Innovation sharing help laggards more than leaders. Productivity spillover to countries that produce and trade in a similar array of goods.

**Convergence clubs are determined by the propensity to learn from others, cannot learn in industries that do not exist**

**图表

描述已自动生成**

A less developed country that produces no cars cannot benefit from the invention and adoption of a better car-producing robot in Japan (though it does benefit to a lesser degree from new textile and rice-growing technology), nor can it benefit from the factor-price equalization effect of the accompanying Japanese investments, since it cannot shift labor force out of its (nonexistent) auto industry as the theorem's logic requires.

Instead, the exchange rate and the standard of living of the country with lagging productivity will bear the brunt of the burden as it is forced, increasingly, to compete by means of relatively low wages.

**De Long 1988**

Baumol's regression uses an **ex post sample of countries that are now rich and have successfully developed**.

A fair test of convergence requires not an ex post sample of countries that have con- verged but an **ex ante sample of countries that in 1870 looked likely to converge**.

图片包含 图示

描述已自动生成

Perhaps only **industrial nations with democratic political systems converge**.

**But whether a nation is a democracy over 1950-80 is not exogenous but is partly determined by growth over the preceding century.** As of 1870 it was not at all clear which nations would become stable democracies.

**There is one striking ex ante association between growth over 1870-1979 and a pre- determined variable: a nation's dominant religious establishment.** As Table 8 shows, a religious establishment variable that is one for Protestant, one-half for mixed, and zero for Catholic nations is significantly correlated with growth as long as measurement error variance is not too high.

Extension – Pritchett 1997

Steady states are indeed determined by institutions!

表格

描述已自动生成

Column 2 has been tested – cannot reject hypothesis that the growth rate in 1870-1960 are different

The data on growth in less developed countries show a variety of experiences, but divergence is not a thing of the past. Some countries are "catching up" with very explosive but sustained bursts of growth, some countries continue to experience slower growth than the richest countries, and others have recently taken nosedives.

These facts about growth in less developed countries highlight its enormous variability and volatility. The range of annual growth rates in per capita GDP across less developed economies from 1960 to 1990 is from 2.7 percent to positive 6.9 percent. Taken together, these findings imply that almost nothing that is true about the growth rates of advanced countries is true of the developing countries, either individually or on average.

1870 – 1990 ratio of per capita incomes between richest and poorest increased by a factor of 5. • Two groups emerge: Europe + offshoots + Japan. • Everyone else: slower growth

### Woo colonialism brought technology! – Easterly

Easterly and Levine 2016 The European Origins of economic development

We find a strong, positive relation between current income per capita and colonial European settlement that is robust to controlling for the current **proportion of the population of European descent**, as well as many other country characteristics. The results suggest that any adverse effects of extractive institutions associated with small European settlements were, even at low levels of colonial European settlement, more than offset by other things that Europeans brought, such as human capital and technology.

Specifically, the estimates indicate that once European **settlement is above 4.8 %, the small colonial European settlements have a positive effect on development today** compared to no colonial European settlement. This is suggestive that any adverse effects arising from the extractive institutions created by small colonial European settlements were more than offset by other things that Europeans brought during colonization, such as human capital, technology, familiarity with global markets, and institutions, which had lasting, positive effects on economic development.

Consistent with Engerman and Sokoloff, AJR, and Glaeser et al (human capital channel)

Comin, Easterly and Gong 2010 Was the Wealth of Nations Determined in 1000BC?

Technological differences are surprisingly persistent over long periods of time. Our most interesting, strong, and robust results are for the association of 1500 AD technology with per capita income and technology adoption today. We also find robust and significant technological persistence from 1000 BC to 0 AD, and from 0 AD to 1500 AD. The evidence is consistent with a model where the cost of adopting new technologies declines sufficiently with the current level of adoption.

To illuminate these questions, we present a very simple framework in which the **new technology adoption is a function of some combination of the strength of complementarity to old technology and the return to adopting new technology. (Sounds a bit like the Baumol argument of club determination, can’t have tech improvements in an industry you don’t have)**

Guiso et al. 2016 Long Term persistence: Northern and Southern Italy

Our paper shows that shared beliefs of individual self-determination can promote civic engagement and cooperation. If self-efficacy is a measure of an individual’s perception of the impact of his effort, people with stronger self-efficacy beliefs should contribute more to the public good because they think that their impact is greater.

**Northern cities that experienced a period of independence in the Middle Ages have significantly higher levels of civic capital today as measured by all three indicators.**

History causes a feeling of self-efficacy – the belief a person holds regarding their power to affect situations positively.

Transmission Mechanism

Informal institutions: artisan’s guilds and associations survived the disappearance of free city-states

Historical experience affected the attitude of the local population and this attitude survived to this day

Educational transmissions of beliefs – even if kids get raised the same way they will be socialised into a cultural norm as well

## Industrial Revolution

Only did causes of IR, in support of essays regarding why Europe industrialised but other places didn’t

Allen 2005

At the AJR, De Long and Shleifer liberal bs

This interpretation, however, has some weaknesses. Studies of **banking and interest rates fail to detect any structural break after 1688**, so the improved investment climate was not manifest in anything financial (Clark 1996, Epstein 2000, Quinn 2001, Goldstone 2003). **Property rights were at least as secure in France – possibly also in China for that matter – as in England** (Bogart 2005a, Bogart 2005b, Hoffman, Postel-Vinay and Rosenthal 2000, Pomeranz 2000). Indeed, one could argue that France suffered because property was too secure: profitable irrigation projects were not undertaken in Provence because France had no counterpart to the private acts of the British parliament that overrode property owners opposed to the enclosure of their land or the construction of canals or turnpikes across it (Rosenthal 1990, Innes 1992, 1998, Hoppit, Innes and Styles 1994). These projects were only undertaken after the French Revolution destroyed local liberties and concentrated power in the national assembly. The English had got there first, however, for the Glorious Revolution meant that ‘despotic power was only available intermittently before 1688, but was always available thereafter’ (Hoppit 1996, p. 126). Finally, t**axes were higher in Britain than across the Channel** (Mathias and O’Brien 1976, 1978, Hoffman and Norberg 1994, Bonney 1999). In any event, it was a long stretch from the excise tax on beer or the cost of foreclosing on a defaulting mortgagor (not actually a cheap process in eighteenth-century England) to Watt’s invention of the separate condenser. **An explanation of the technological breakthroughs has to be more focused on technology** than is usual in constitutional discussions. And, what the study of steam engines and spinning jennies shows is that **it would not have been profitable to invent the Industrial Revolution in France no matter how good were French institutions**. It was the prices that were wrong in France.

Jan De Vries Industrious Revolution

Write the first order condition with regards to consumption and leisure substitutability

19th century

The breadwinner-homemaker household, sometimes known as capitalist patriarchy, emerged in the first half of the nineteenth century in the most advanced sectors but became a widespread household norm in the century after 1850. Its defining feature is the withdrawal of wives and children from the paid labor force and the ideal of an adult male wage sufficient to support the household (the ideology of the family wage).

Central to an explanation is a shift in the preference schedule that gave shape to household demand patterns and simultaneously determined the household's supply of paid labor. This gradually shifted in favor of Beckerian Z commodities, whose production required larger inputs of household time. As real earnings rose in the second half of the nineteenth century (the timing varied by social class and country), a new set of Z commodities a**ssociated with hygiene and nutrition, the health and education of children, and the achievement of new standards of domesticity and comfort in the home** came to appear superior to the available range of market-provided goods and services.

Protestant Ethic

We are on firmer ground with three other aspects of cultural evolution that also happened to have roots in the economic changes of the time. These developments included the spread of literacy and numeracy, the emergence of consumerism as a motive for work, and the postponement or deferral of marriages when it was economically inconvenient. The full ramifications of these were, of course, not fully realized before the Industrial Revolution.

European Marriage pattern, **the path to the Industrial Revolution began with the Black Death. The population fall increased labour mobility by generating many vacant farms, and that mobility undermined serfdom (Allen 1992, pp. 37–77).** Low population – high wage economy. Better food, sheep got better wool got better.

**The end of serfdom and the establishment of a stable legal environment favourable to capitalist enterprise undoubtedly promoted growth.**

The upshot of the commercial expansion of the early modern economy was the unique wage and price structure that Britain enjoyed in the eighteenth century. **Wages were high and energy was cheap. These prices led directly to the Industrial Revolution by giving firms strong incentives to invent technologies that substituted capital and coal for labour.**

The economics of collective invention highlights another way in which the growth of London was critical to the shift to coal. The first way, of course, was the rising price of wood, which motivated the shift. The second was the building boom, which was underpinning collective invention and which solved the problem. In the sixteenth and seventeenth centuries, London was growing very rapidly, and a very large number of new houses were being built in a small area.

**Clark and Jacks Coal and the Industrial Revolution**

On the other hand, it was proven by Clark and Jacks that coal mining mattered little to the Industrial Revolution.[[18]](#footnote-18) It was argued that the low cost of coal production was a result of the industrial revolution, where extraction, the majority of the cost of production, was lowered by steam power.[[19]](#footnote-19) Moreover, the presence of cheap coal could not explain the uniqueness of the industrial revolution, since coal was a tradeable commodity and other European countries had access to coal at similar prices. Given coal’s supply elastic nature, a small increase in price would have induced production of coal enough to be internationally traded. In Allen’s own data table, the nominal costs of coal in London, Amsterdam, and Antwerp were similar, at around 8 grams of silver per million BTUs, whereas only Southern Europe had higher prices possibly because of transportation costs.[[20]](#footnote-20) Therefore, the presence of coal in Britain didn’t create a unique advantage for itself.

But, if you look at the O’Rourke paper, Britain uniquely had an open economy. Even if the international exchange market follows law of one price, with significant protectionist measures such as in France, the actual coal price on the ground might not be as low as we would think.

Human capital view – Kelly et al.

Kelly et al. argued that higher wages paid in 18th century Britain was reflective of labour quality, which was caused by a higher level of nutrition and better apprenticeship systems.[[21]](#footnote-21) To prove that higher wages was not simply reflective of high demand and low supply of workers in certain sectors, the authors provided evidence of migration in the direction of England to France instead of the other way around. With wage-maximising individuals, if England indeed had higher wages for the same set of skills, French workers would have moved to England. Human capital was important to the industrial revolution stemming from scientific and engineering ingenuity, as knowledge of production could be accumulated through the apprenticeship system and passed on throughout generations, and the growth in productivity is a function of past productivity and added level of knowledge in the economy. As demonstrated by de la Croix et al., the apprenticeship system that allowed the accumulation of knowledge was more effective than family-based production.[[22]](#footnote-22) Moreover, knowledge was not a public good but instead passed on through entrepreneur and inventors to skilled workers, making it so that British ingenuity led to improvements in British production, hence adding to the uniqueness of why the industrial revolution only happened in Britian.

1. Guiso, L., P. Sapienza and L. Zingales (2016). "Long-term persistence." Journal of the European Economic Association 14 (6): 1401-1436, pp1402 [↑](#footnote-ref-1)
2. De Long, B. “Productivity Growth, Convergence, and Welfare: Comment.” [↑](#footnote-ref-2)
3. Greif, A. (1994). "Cultural beliefs and the organization of society: A historical and theoretical reflection on collectivist and individualist societies." Journal of Political Economy 102 (5) [↑](#footnote-ref-3)
4. Acemoglu, D., S. Johnson and J. A. Robinson (2005). "The rise Europe: Atlantic trade, institutional change, and economic growth." American Economic Review 95 (3): pp 557 [↑](#footnote-ref-4)
5. Voigtländer, N. and H.-J. Voth (2013b). "How the west 'invented' fertility restriction." American Economic Review 103 (6): 2227-2264 [↑](#footnote-ref-5)
6. Ibid. [↑](#footnote-ref-6)
7. Squicciarnini, M. P. and N. Voigtländer (2015). "Human capital and industrialization: Evidence from the Age of Enlightenment." Quarterly Journal of Economics 130 (4): 1825-1883 [↑](#footnote-ref-7)
8. de la Croix, D., M. Doepke and J. Mokyr (2018). "Clans, Guilds, and markets: Apprenticeship institutions and growth in the preindustrial economy." Quarterly Journal of Economics 133 (1): 1-70 [↑](#footnote-ref-8)
9. Comin, D., W. Easterly and E. Gong (2010). "Was the wealth of nations determined in 1000 BC?" American Economic Journal: Macroeconomics 2: 65-97 [↑](#footnote-ref-9)
10. Ibid. [↑](#footnote-ref-10)
11. Easterly, W. and R. Levine (2016). "The European origins of economic development." Journal of Economic Growth 21: 225-257 [↑](#footnote-ref-11)
12. Ibid. [↑](#footnote-ref-12)
13. Banerjee, A. and L. Iyer (2005). "History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India." The American Economic Review 95 (4): 1190-1213 [↑](#footnote-ref-13)
14. Ibid. [↑](#footnote-ref-14)
15. Dell, M. (2010). "The persistent effects of Peru's mining mita." Econometrica 78 (6): 1863-1903 [↑](#footnote-ref-15)
16. Ibid. [↑](#footnote-ref-16)
17. Abad, L. A. and N. Maurer (2021). "History never really says goodbye: A critical review of the persistence literature." Journal of Historical Political Economy 1, pp 48 [↑](#footnote-ref-17)
18. Clark and Jacks (2007). “Coal and the Industrial Revolution, 1700-1869” European Review of Economic History 11 (1), pp.39-72 [↑](#footnote-ref-18)
19. Ibid. [↑](#footnote-ref-19)
20. Allen, R. C. (2009). The British industrial revolution in global perspective. Chapter 4 [↑](#footnote-ref-20)
21. Kelly, M., J. Mokyr and C. Ó Gráda (2014). "Precocious Albion: A new interpretation of the British Industrial Revolution." Annual Review of Economics 6: 363-389 [↑](#footnote-ref-21)
22. de la Croix, D., M. Doepke and J. Mokyr (2018). "Clans, Guilds, and markets: Apprenticeship institutions and growth in the preindustrial economy." Quarterly Journal of Economics 133 (1): 1-70 [↑](#footnote-ref-22)