History of the World Economy

Catherine

Session 1:
Introduction

Introduction

Motivation: why are some countries rich and others poor?

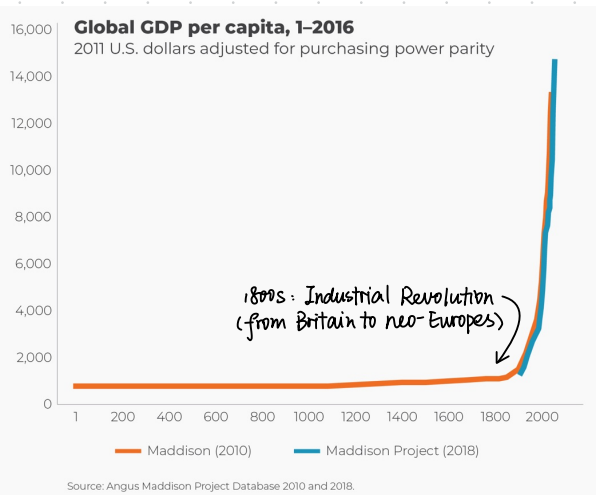
- Part I: History and Development of the Entire World
- Part II: Selected Topics in Economic History of Developed World

History informs our understanding of development process through:

1. history gives us a unique laboratory (history in the past)
2. the impact of historical events persist (history in the present)

Ancient Greece ...

Adam Smith: 'institutional' explanation { institutions, culture, knowledge and technology
Montesquieu: geography



1. Institutions
   'Humanly devised constraints that structure political, economic and social interaction'
   – the origins of 'good' institutions explains the wealth of nations

2. Culture
   Weber: the Protestant work ethic
   Mokyr: determinant of the I.R. was social norm emphasizing honesty, commitment and cooperation
   e.g. culture of corruption, culture of honor in the US south, Maghribi traders ...

3. Knowledge and Technology
   e.g. human capital as the motor of economic growth
   (could explain West Germany's astonishing growth after WWII.)
   - persistence of technology
   - downstream from institutions?

4. Geography
   Facts: Eurasia growth (distance from the Equator)
   - disease environment?
   - inequality?
   - institutions, culture, etc. through geography?

Study 1: Rafael La Porta et al., Legal Determinants of External Finance, the journal of finance, VOL. LII, NO. 3, July 1997, pp. 1131-50.

Argument: poorer investor protections → smaller and narrower capital markets

- poorer investor protections: { character of legal rules; quality of law enforcement } "Xs"
  - label: legal origin of its laws
  - survey-based quality of law enforcement
  - antidirector right index ⇒ protection
  - "one-share = one-vote"
  - creditor right index ⇒ protection
- smaller and narrower capital markets: { equity market; debt market } "Y"
  - Equity Finance: { External Cap / GNP; Domestic Firm / Pop; IPOs / Pop }
  - Debt Finance: { Σ private sector bank debt / GNP; Σ FV (corp bonds) / GNP }
  - + microdata on large firms

common law / w.r.t. civil law ⇒ protection ↑

Test 1: Correlation significant. legal origin ~ external finance

Test 2: reg External Cap / GNP, Domestic Firm / Pop, IPOs / Pop, Σ private sector bank debt / GNP on independent variables (LHS)

(control variables: GDP growth, log(GNP); GDP/capita not included)

Corr(rule of law, GDP/capita) = 0.87

⇒ significant causality between Y and Xs.

Test 3: Firm level

- countries (outsider held mkt cap ↑) ~ valuation (largest firms) ↑
- rule of law —weak→ debt finance
  large publicly traded firms → debt finance (even when aggregate ↓)
  explanation: countries with heavy state intervention in banking

1. French civil law weakest.
2. What's the origin of these poor laws?
   (Could be proxy for the environment)

Study 2: Daron Acemoglu et al., The Colonial Origins of Comparative Development: An Empirical Investigation

Argument: [settler mortality] ⇒ [settlements] ⇒ [early institutions] ⇒ [current institutions] ⇒ development

- primarily historical evidence
- institutional differences measurement: index of protection against expropriation ① constraints on the executive in 1990.

Test 1: Negative correlation between settler mortality rates and current institutions

Test 2: OLS: $\log y_i = \mu + \alpha R_i + X_i \gamma + \varepsilon_i$ (y_i: income per capita; ①: vector of other covariates; ε_i: random error term)

+ latitude (regressor), continent-specific dummies

- strong correlation between institutions and economic performance

counter-argument against causality:

① richer economies afford better institutions (reverse causality)
② omitted determinants of income differences
③ measures of institutions constructed ex post ⇒ attenuation

——— settler mortality is a plausible IV.

Test 3: IV result: $R_i = \zeta + \delta \log M_i + X_i \delta + v_i$

- measurement error in the institutions variable that creates the attenuation bias > reverse causality, OVB

Validity Test: settler mortality in the past has no direct effect on current economic performance

1. Colonial origin and colognial power matters through culture? No.
2. Legal origin matters? (add British / French dummies ⇒) No.
3. Settler mortality correlated with climate / geographic characteristics?
4. Differences in colonial experience as a source of exogenous differences in institutions.
   - Black Box: what concrete steps would lead to an improvement in these institutions

Session 2, Lecture 2
Political Obstacles to Growth

---

political equilibrium ⇒ institutions ⇒ economic growth

Can politics explain institutional forms?

Institutions ⟵ reflection of the underlying political equilibrium

Acemoglu (2003)'s framework:

Basic idea is that rent-seeking elites design 'bad' institutions (but good for them), and this institution persists

e.g. North and South Korea

$\underbrace{Y}_{\text{output}} = F(X, \underbrace{P}_{\text{policies}})$ shows strong correlations

1. Why not choose the optimal policy and then redistribute?

Commitment problems — Ex ante they can promise not to overthrow you but ex post they will renege (叛逆, 違逆)

Technological adoption — powerful interest groups block technological adoption as technological change alters balance of political power

2. Distribution of political power $\xrightarrow{\text{determines}}$ incentives

Why do institutions change?

North: evolution of political and economic institutions ⟶ create economic environment that induces increases productivity

Marx: from slavery to feudalism to capitalism ...

Acemoglu and Robinson: "Critical Junctures"

e.g. Black Death (↓ population of workers ⇒ ↑ bargaining power), Atlantic discoveries, Fall of Rome.

institutions change as the payoffs of the groups in power change (not necessarily towards the right direction)

Ottoman Empire: rich, powerful and expanding in 15th and 16th centuries (traditionally viewed as 'typical despotism, only more warlike') 專制統治

Pamuk (2004): changes ⇸ growth
agents faced different constraints ...

Which political equilibria stimulate economic growth?

Example: the Glorious Revolution of 1688.

(start of 17th century England: expropriation (没收) of wealth
ultimately led to civil war and the Glorious Revolution)

temptations to confiscate (没收): repeated game?

↓ prior to the G.R.: royal prerogative (特权), star chamber...
civil war leads to modification of these institutions
restoration in 1660

⇒ parliamentary supremacy
central role in financial matters, independence of judges
increased the control of wealth holders over the govt

TABLE 3
GROWTH OF GOVERNMENT DEBT, 1618–1740
(£ million)

Year	Governmental Expenditure[1]	Debt[2]	Prices[3] (1701 = 100)
Stuart England			
1618[4]	£0.5	£0.8	
mid-1630s[5]	1.0	1.0	
1680[6]	1.4		113
1688[6]	1.8	1.0[7]	99
Post Glorious Revolution			
1695	6.2	8.4	116
1697	7.9	16.7	122
1700	3.2	14.2	115
1710	9.8	21.4	122
1714	6.2	36.2	103
1720	6.0	54.0	102
1730	5.6	51.4	95
1740	6.2	47.4	100
1750	7.2	78.0	95

main idea: the govt could now credibly commit, thus
tapping into the economy's wealth more deeply

North and Weingast (1989): historically contingent

- Division of political power between many different competing groups key
  Magna Carta (大宪章) only occur in Europe until relatively recently.
- Growth under autocracy?
  Stationary bandit (坐匪) has an incentive to provide better institutions (v.s. roving bandit)
  key is the incentives and constraints faced by those with political power
  can have 'extractive growth' (剥削性增长), however its ultimately difficult
- Empowerment of merchants
  form economic incentives for growth
  De Long and Shleifer (1993): what happens when merchants in pre-modern Europe became more politically powerful. e.g., Venice, institutions shaped to encourage economic development
  Historically urbanization is a good proxy for economic development.

{ parasite cities (寄生城市)
[productive cities

De Long and Shleifer (1993): European cities were largely productive

typical post-Classical European city was primarily a center of commerce, and not of bureaucracy, administration, or landlord consumption

REGRESSION RESULTS FOR THE RUSSELL–DE VRIES DATA BASE

Dependent Variable	Prince Coefficient (Thousands of People or Number of Cities Lost per Century of Absolutism)	R^2	SEE*	Region Controls?	Era Controls?
Growth in population of cities over 30,000	−178.47 (48.53)	.70	156.70	Yes	Yes
Growth in population of cities over 30,000	−79.65 (40.40)	.48	185.13	No	Yes
Growth in number of cities over 30,000	−2.28 (.82)	.54	2.63	Yes	Yes
Growth in number of cities over 30,000	−1.52 (.60)	.36	2.75	No	Yes
Proportional growth in population of cities over 30,000	−.30 (.24)	.49	.76	Yes	Yes
Proportional growth in population of cities over 30,000	−.15 (.16)	.37	.76	No	Yes

* Standard error of the estimate.

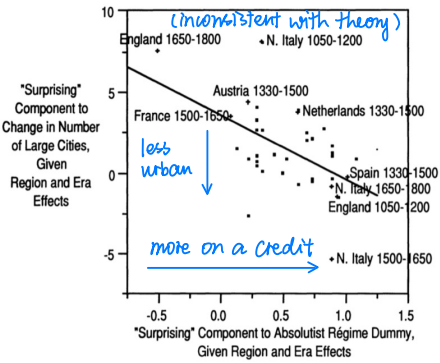


FIGURE 1.—Partial scatter of change in number of cities against absolutist regime

Conclusion:

political equilibrium ⇒ institutions ⇒ economic performance
depends on certain regions?

Session 2, Lecture 3-4
Why Eurasia?

Geography and State Formation
The Institutional Roots of Europe's Rise

paper: Voigtlander and Voth (war and diseases)

Class: Effect of Wars on economic development

Did the high propensity for European states to go to war with each other have a beneficial or harmful effect on the course of their economic development?

Agriculture and the State

Childe (1936): invention of agriculture → food surplus → state

- Does agriculture inevitably lead to state formation?
  Allen (1997) cites 5 approaches:
  1. Hydraulic (水利的) Theory, e.g., Nile
  2. Population growth: diminishing returns ...
  3. Trade
  4. Ecosystems approach: efficient adaptations to the natural environment
  5. Circumscription theory (圍地理论): harder to flee (coercion 胁迫; e.g. Egypt, Mesopotamia)
     Scarcity of land matters: more coercion when land is abundant relative to labor
- How did agriculture affect production?
  1. storability
  2. production per hectare (intensive margin)
  3. production per worker
  4. seasonality of labor
- Egypt as a case study: geography matters

Geography and Long-Run Development

1. Olsson and Hibbs (2003):
   favorable biogeographic initial conditions ⇒ hunger-gatherer (狩猎采集者) to sedentary (定居者)
2. Diamond (1997): size of Eurasia, East-West orientation
   Eurasia had many plants, animals and innovations could be shared

Table 2
Distribution of species suitable for domestication

Area[a]	Number of plants[b]	Number of animals[c]
Near East, Europe, North Africa	33	9
East Asia	6	7
Southeast Asia	6	2
Sub-Saharan Africa	4	0
North America	4	0
Central America	5	0
South America	2	1
Australia	2	0
Pacific Islands and Iceland	0	0

3. Kremer (1993): larger populations ⇒ higher rate of tech change

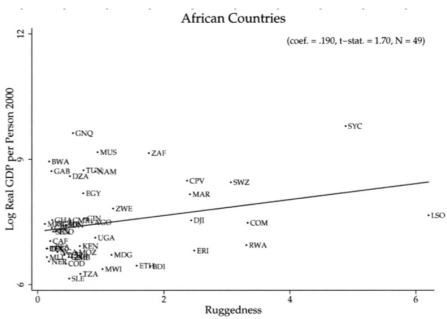
4. Sokoloff and Engerman (2000): to what extent do effects of geography go through institutions? (rather than directly)
—— focus on { factor endowments
effect on inequality

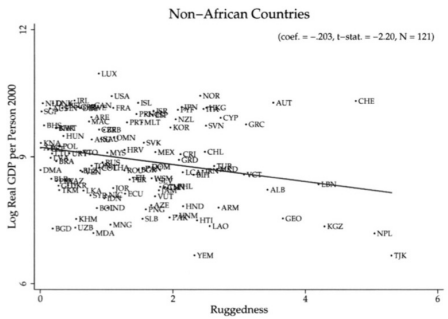
① soil quality and climate ⇒ marginal product of slaves ↑ (e.g. sugar)
So more slaves were sent to those areas

② emergence of plantations, highly extractive institutions
very unequal distribution of wealth

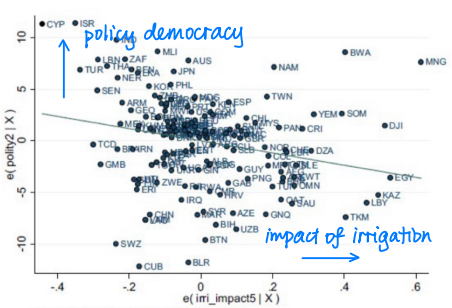
Mexico and Peru: endowment characterized by mineral resources and indigenous labor
large land grants ⇒ emergence of elites
family farms and 'good' institutions

5. Nunn and Puga (2012)
Rugged terrain (崎岖地形) generally bad, but good for Africa
Reason: history (harder for slave trade extraction)





6. Bentzen et al. (2017): endowments might have aided state formation
First states in regions surrounded by arid areas
Bentzen, however, stress the Wittfogel 'Hydraulic theory'
agriculture historically based on irrigation ⇒ more inequality in places (strong state bureaucracy, empowers elites)



Y: how democratic a country is today
X: potential of geography for irrigation

irrigation: unequal access to water resources

7. Austin (2008): Sub-Saharan Africa characterized historically by land abundance and labour scarcity

Africa: longitudinally-aligned
⇒ agricultural environment harder to import, limited capital formation

- Forest rent: one-off bounty of soil fertility after clearing
- Dead end of the extensive margin and coercive labour (强制劳动)
- Human capital investments...
- Natural environment posed severe constraints on the exploitation of the land surplus
- Could institutions have helped?

8. Michalopoulos et al. (2017): geography ⇒ spread of culture
the spread of Islam followed trade routes

- Trade story more about access to markets, monotheism
- Unequal endowments? More animal husbandry, more unequal land endowments, more Muslims
- Similar geography to the colonizer's home (think USA and Canada wrt GB)
- "Islam as an institutional package engineered to allow flourishing of long-distance trade routes"
- Muhammad and many of his companions had merchant backgrounds...

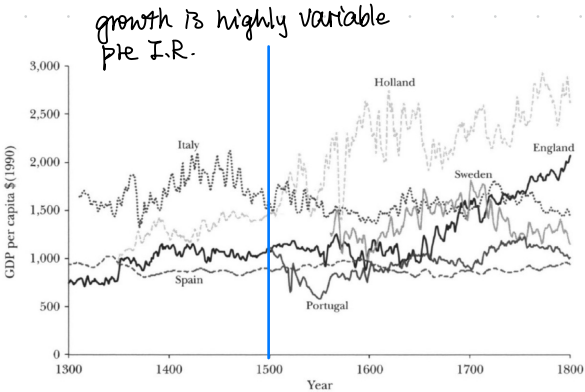
Conclusion:

Geography ⇒ { technology / institutions / culture

Geography made certain things more likely (probabilistically), but far from destiny.

Europe's Economic Rise

1. Empirical evidence: Europe pulled ahead before Industrial Revolution
   - Classical theory: no pre-industrial growth
     Economy stuck in a 'Malthusian trap'
     progress ⇒ birth rates↑ ⇒ population densities↑ ⇒ constant incomes
   - Fouquet and Broadberry (2015)

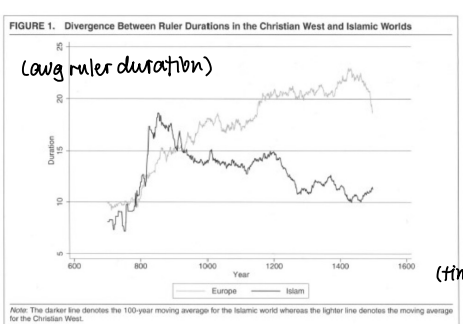


Periods of Economic Growth and Decline across Six Economies, 1300–2000
(England/Great Britain, Italy, Holland, Sweden, Spain, and Portugal)

	# of phases of 4-year consecutive 1.5% annual growth rate	% of years in 4-year consecutive 1.5% annual growth rate	# of phases of 3-year consecutive −1.5% annual growth rate	% of years in 3-year consecutive −1.5% annual growth rate
1300s	1	1.1%	2	1.6%
1400s	1	1.0%	10	8.0%
1500s	3	2.3%	14	8.7%
1600s	2	1.3%	9	4.3%
1700s	2	1.3%	12	5.8%
1800s	8	5.3%	4	2.0%
1900s	38	40.0%	4	3.2%

sustained economic growth, not until 1900

   - start: Carolingian Feudalism (Federal System in Europe)
     Evidence:



(time when rulers died)

This divergence in political stability is driven by an increase in constraints on the sovereign

Feudalism: smaller gap between rulers and their rivals (compared with autocracy)

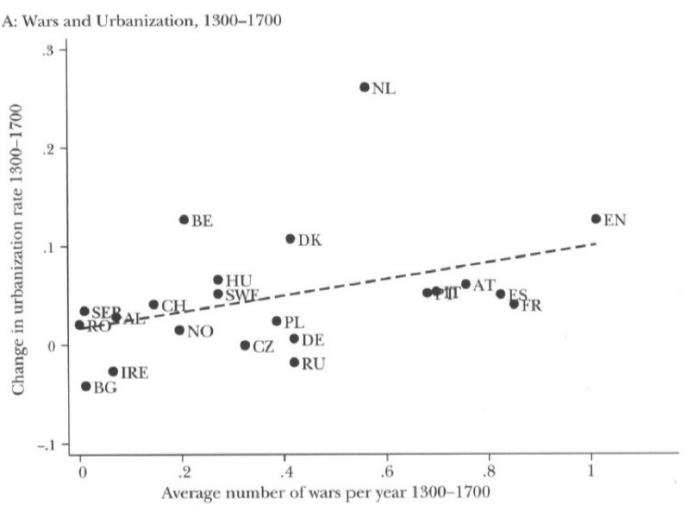
2. Colonialism: a proximate cause?
Acemoglu, Johnson and Robinson (2005)
Atlantic trade: trade, colonialism, slavery ...
colonialism strengthened merchants (give them political power)
⇒ led to institutional changes (e.g., Glorious Revolution)

3. Voigtlander and Voth (2013): warfare kept population densities ↓, income ↑
Set in motion by the Black Death: rising incomes led to higher revenue and more war

The "First Divergence"—Europe versus China

Urbanization rate (percentage of population living in cities with more than 10,000 inhabitants)			*GDP per capita (in 1990 international dollars)*		
Year	*China*	*Europe*	***Year***	*China*	*Europe*
762	3%		**1**	$450	$550
1000		0%	**960**	$450	$422
1120	3.1%		**1300**	$600	$576
1500	3.8%	5.6%			
1650	4%	8.3%	**1700**	$600	$924
1820	3.8%	10%	**1820**	$600	$1,090

Source: Maddison (2007).



geographic endowment controlled, Europe had smaller population

However, the Islamic world also had many 'states' and warfare

4. Since Max Weber: greater rationality of legal system
   - Glaeser and Shleifer (2002)
     High risks of coercion ⇒ need more protection and control of law enforcers
     ⇒ law enforcers beholden to the states, politicizes justice

     { England: common law, relatively independent juries
     { France: civil law, royally controlled professional judges (12-13 centuries)

     Basic idea: "the politicization of justice may be necessary when the state is the only institutions with enough military power to fight local bullies"
   - Cantoni and Yuchtman (2014)
     university and the legal system (were only in Europe)
     founding of universities ~ economic growth

     { trained lawyers who became administrators
     { better property rights
   - Cox (2017): political fragmentation plus parliaments led to lower transaction costs
     (more economic liberty, thus more commerce)

Conclusion
1. large shock after the fall of Rome
2. political fractionalization, make it hard for any group to dominate
3. space to innovate, grow
4. yet which institutions were 'pivital' remains a topic of debate

Class Question 6: Did the high propensity for European states to go to war with each other have a beneficial or harmful effect on the course of their economic development?

Thesis: A beneficial effect. The high propensity for European states to go to war (especially frequent and severe) reduced population via disease channel, raising per capita income. It also precipitated the decentralization of political authority from monarchs to powerful landlords, fostering the emergence of feudalism and contributing to enhanced political stability. Concurrently, advancements in firearms technology played a pivotal role.

1. [Mortality => per capita income] Europe's tumultuous politics and deadly penchant for warfare led to a sustained advantage in per capita income.[1]

   Frequent wars with severe impact
   - more deadly than World War II
   - the Religious Wars (16th century France): claimed 20 percent of the population
   - the Thirty Years War (Germany): claimed 33 percent of the population

   ⇨ raise mortality rate through fighting itself and spread of deadly diseases (main driver)
   - Geographical Fragmentation
     large mountain ranges => new germs
   - Political Fragmentation
     Religious strife and dynastic conflict provided a large number of potential flashpoints (it took very little for war to erupt).
   - Lethality of Weaponry
     (Before 1800) limited destruction on infrastructure, quick destruction on human life.

   ⇨ higher land-labour ratios in agricultural production
   ⇨ higher per capita income (surplus income)
   - Empirical evidence: more wars ~ increase in urbanization ~ per capita GDP

   ⇨ surge in tax revenues
   - Empirical evidence: government revenues in Europe exploded after 1500
   - Vast majority of early modern tax revenues were spent on wars (70-80 percent)

   ⇨ finance near-constant wars on an unprecedented scale (feedback loop)

2. [Institution] The frequent external conflicts led to an increased demand for military forces within European states, resulting in the growth of domestic elite powers that supplied the military. This, in turn, facilitated the decentralization of authority from monarchy to elites. [2]

   The high propensity of war (combined with, e.g., the collapse of the western Roman Empire)

   ⇨ Weak fiscal position of the Germanic successor
   ⇨ Charlemagne (748 – 814 CE)'s innovation: landholders contribute troops instead of funds
   ⇨ Increased the power of large landlords
   - small independent landowners pooled their lands with those of larger landowners to avoid having to offer themselves up for military services

   ⇨ Feudalism: fragmentation of political power; a landed aristocracy in Western Europe
   ⇨ The stability of European monarchs

---

[1] Nico Voigtlander and Hans-Joachim Voth, *Gifts of Mars: Warfare and Europe's Early Rise to Riches*, Journal of Economic Perspectives, Vol. 27, No. 4, Fall 2013, pp. 165-186.

[2] Lisa Blaydes and Eric Chaney, *The Feudal Revolution and Europe's Rise: Political Divergence of the Christian West and the Muslim World before 1500 CE*, American Political Science Review, Vol. 107, No.1, February 2013, pp. 16-34.

- An economic revival: higher levels of agricultural production, a revitalization of long-distance commerce; rise of towns and a nascent commercial revolution.
- Growing constraints on the executive: independent military power of the barons allowed for a degree of bargaining strength vis-à-vis the monarchy

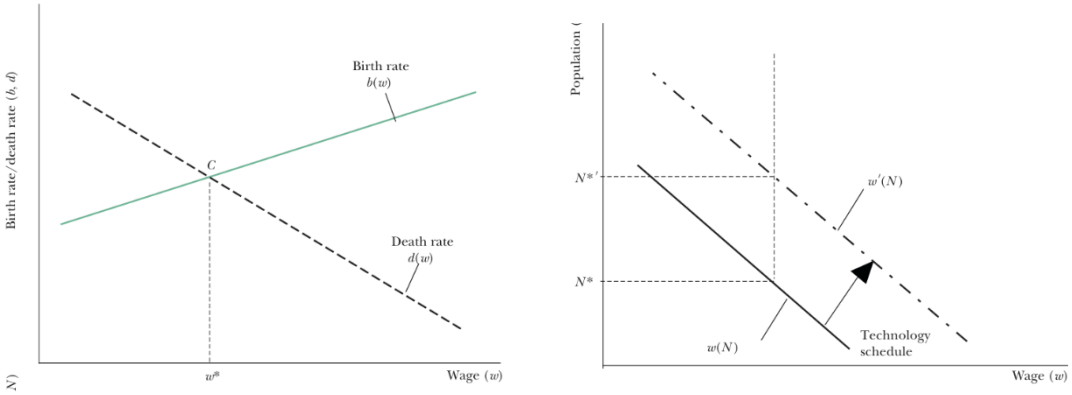
3. [Technology] The frequent wars led to the improvement in firearms and related technology, which then indirectly prompted the Industrial Revolution.
    - gunpowder weapons
      Connection between gunpowder and steam power: steam power depends on the ability to machine iron cylinders precisely and repetitively to predetermined internal dimensions; the methods for doing this were derived from cannon-boring techniques.

Nico Voigtlander and Hans-Joachim Voth, *Gifts of Mars: Warfare and Europe's Early Rise to Riches*, Journal of Economic Perspectives, Vol. 27, No. 4, Fall 2013, pp. 165-186.

Thesis: Europe's tumultuous politics and deadly penchant for warfare => a sustained advantage in per capita income.

Frequent wars with severe impact
⇨ raise mortality rate through fighting itself and spread of deadly diseases
⇨ higher land-labour ratios in agricultural production
⇨ higher per capita income (surplus income)
⇨ surge in tax revenues
⇨ finance near-constant wars on an unprecedented scale (feedback loop)

1. Timeline
   - 1350 Black Death
   - 1500 First Divergence
   - 1800 Great Divergence (Western Europe and former European colonies grew rapidly.)
2. Urbanization rate as a good substitute for per capita income.
   urbanization reflects:
   - productivity of the urban sector (creating goods that can be traded for food)
   - productivity of agriculture (which needs to generate a surplus above subsistence to feed cities)
3. Empirical evidence: One of the best predictors of an individual's income today is the level of riches attained by that person's ancestors hundreds of years ago. (persistence in economic performance)
   - the puzzling extent to which past economic performance continues to predict present economic outcomes
4. The Standard Malthusian Model
   (one-off) Technical advances (nor institutional improvements) cannot lead to greater riches:
   - Malthusian forces: additional income => population growth
     In the Malthusian worldview, fertility reacted faster to positive income shocks than technology could grow, and wages quickly returned to their previous levels.
     - Before: land, as a key factor of production in fixed supply => marginal returns to labor declines as population grows rapidly
     - After the Industrial Revolution: escape the Malthusian trap by producing output that relies less and less on nonreproducible factors of production
   - Unique Equilibrium in the Malthusian Model



5. Devastating early modern war (from about 1400 to 1700)
   - Facts
     - more deadly than World War II
     - the Religious Wars (16th century France): claimed 20 percent of the population
     - the Thirty Years War (Germany): claimed 33 percent of the population
   - Analysis
     - the lethality of weaponry
     - disease channel (the most important driver before the 19th century, Landers 2005): the frequency with which noncombatants and soldiers succumb to hunger and disease
       - ✓ the more isolated populations were => the greater mortality impact of a new disease
   - Long-term impacts on Europe: raised average death rates by ~ 1/3, no temporary spikes
     - geographical fragmentation: large mountain ranges => new germs
     - political fragmentation: Religious strife and dynastic conflict provided a large number of potential flashpoints (it took very little for war to erupt).

     => Frequent and long wars => high mortality
   - Time specific
     - Before 1800: limited destruction on infrastructure, quick destruction on human life
6. Empirical Evidence for Two Key Hypotheses
   - Rising incomes after the Black Death led to higher government revenues, with most of these spent on war
     - Government revenues in Europe exploded after 1500

Table 3

Tax Revenues in Europe

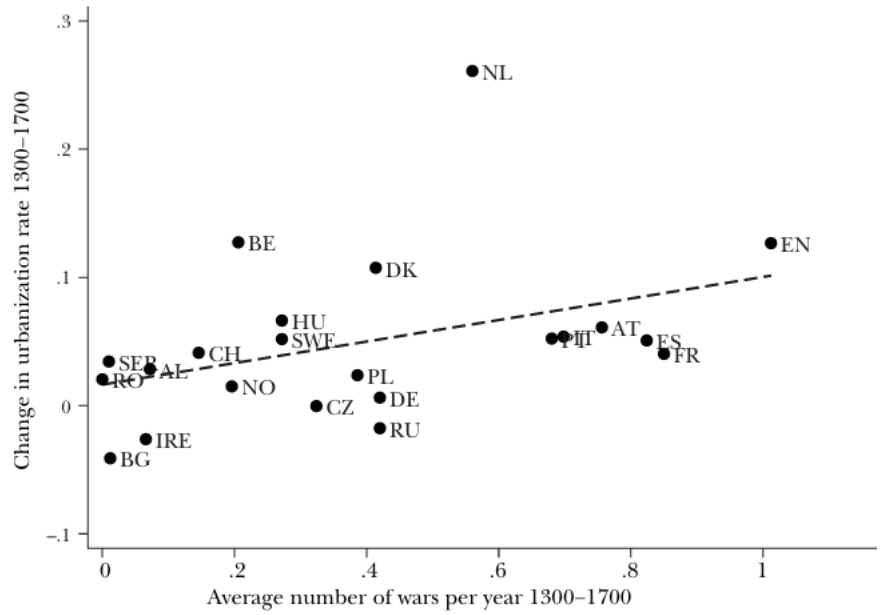
Year	*Total tax revenue (tons of silver)*	*Average tax per capita (daily urban wage equivalents)*
1509	214	3.7
1559	456	3.6
1609	1,116	4.9
1659	2,215	5.7
1709	2,667	8.1
1759	3,808	9.9
1789	6,846	12.2

Source and Notes: Data are from Karaman and Pamuk (2010), who use country-level historical compilations of revenue statistics. The main database is the European State Finance Database (ESFD), available at http://www.esfdb.org. They use silver as the measure of fiscal revenue, because all national currencies were convertible into it. The original source for the urban wage series is Allen (2001).

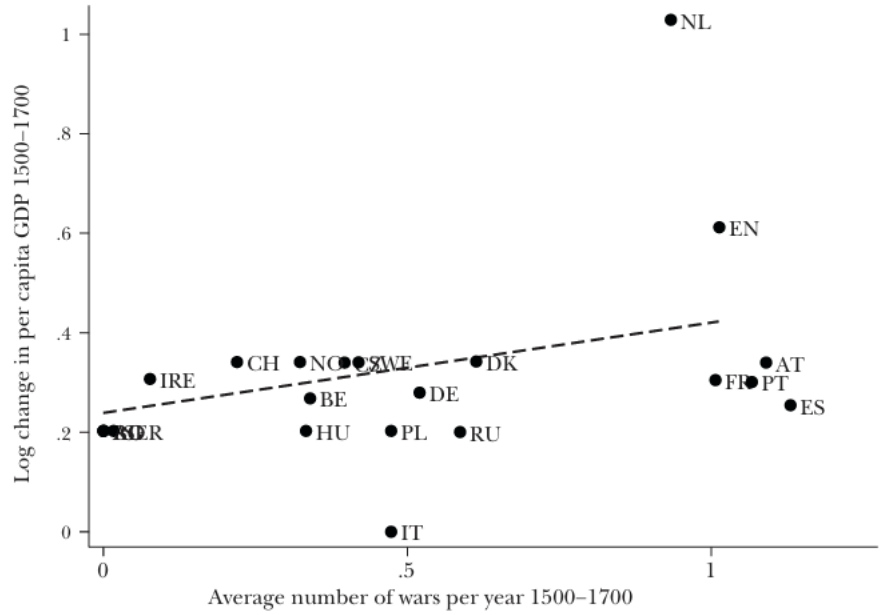
     - growing tax revenue was growth in per capita incomes
     - the vast majority of early modern tax revenues were spent on war (70-80 percent)

       the invention of cannon => financial strength mattered a great deal for military success
   - Warfare shifted death schedules upward (countries that fought more war => greater increase in their per capita incomes)
     - more wars => increase in urbanization
     - more wars => per capita GDP

A: Wars and Urbanization, 1300–1700



B: Wars and per capita GDP, 1500–1700



Session 2, Lecture 5-6
Variations within Eurasia

China and the Islamic World: Relative Decline?
Colonialism

paper: Landes (China and culture),
Blaydes and Chaney (Islamic and institution)
Bertocchi and Canova (colonization and Africa)
Acemoglu, Johnson and Robinson (colonial origins)
Nunn and Nathan (Africa's slave trades)

Essay: On China and Islamic's failure

How does Landes (2006) account of Europe's rise differ from that proposed by Blaydes and Chaney (2013)? Which account do you find more convincing?

On African colonialism

Can colonialism explain Africa's historical development path?

The Traditional View

Landes (2006):

1. critical of 'political correct orthodoxy', argue that random events aided by exploitation explain the West's rise
2. China: was in a position to match and even anticipate the European achievement
   - to generate sustained scientific and technological advances endogenously
   - to learn from Europe

   China was significantly ahead of Europe: power-driven spinning machine in 13th century, iron manufactures, wheelbarrow (独轮车), stirrup (马镫/蹬), compass ...
3. Why?
   - lacked free market and institutionalized property rights
   - values of the society (this is a cultural explanation)
   - Judeao-Christian values: 'Build thee an ark of gopher wood'

   Counter-arguments:
   - e.g. Byzantium, cultural argument is hard to distinguish from the state in Landes' formulation
   - China was a 'bad learner' talks about superiority complex
   - in the last analysis 'role of the market'

Markets and China

Shiue and Keller (2007): Western European markets supported by institutions provided incentive necessary for industrialization, however, not sufficient for industrialization.

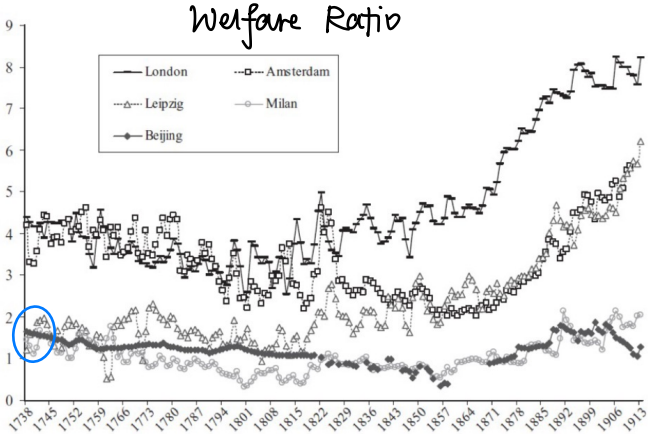
1. No large difference in terms of market integration between China and Western Europe in the late 18th century (the grain market)

   (England is important exception)

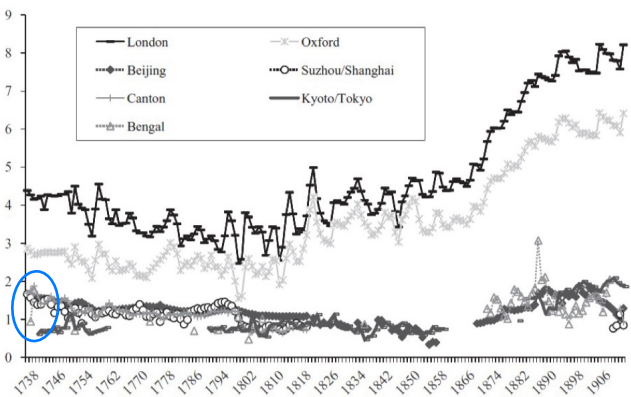
   Had Europe pulled ahead on other margins prior to Industrial Revolution?
2. Living standards

   Allen et al. (2011): compare Asian living standard with those of Europe in the 18th century.
   - welfare ratios: when equal to one, an unskilled labourer working full time could support family at subsistence (基本生活水平).

Welfare Ratio



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



China ~ Japan

Ma (2004): Japan and China are geographically and culturally close yet Japan industrialized significantly before China

Reasons: Japan had higher levels of innovation (Chinese bureaucracy and Japanese reforms)

3. Silk Divergence

- Meiji Restoration in Japan: embarked on a reform program to forge a modern nation-state modeled after the West.
- 'private sector was the mainstay of Japan's industrialization'
- China: preparation for grueling (艰苦准备) Civil Service Exam system took most of China's intellectual energies

YIELD OF SILKWORM EGGS (Kilograms of Cocoons per Gram of Silkworm Eggs Hatched)

	Italy	France	Japan (All Crops)	The Lower Yangzi as a Percentage of the Japanese Level in That Year
1878–87	1.02	.94		
1888–1902	1.48	1.43	.86 (1899)	
1903–13	1.76	1.55	.80 (1900–1909)	100% (1900)
1910–19			1.06 (3.8%)	74% (1917)
1920–29	1.74		1.75 (5.2%)	50% (1927)

sericulture (蚕桑养殖)

the few mechanized silk-reeling factories that did survive the dubious extraterritorial protection in the treaty port of SH were harassed by the local officials of traditional silk weavers who feared their source of raw silk supply

Tutorial Question 2: How does Landes (2006) account of Europe's rise differ from that proposed by Blaydes and Chaney (2013)? Which account do you find more convincing?

When comparing Landes (2006)[1] and Blaydes and Chaney (2013)[2], we notice significant differences in how they approach the subject, namely, the account of Europe's rise. Landes contrasts Europe with China, highlighting the importance of cultural and religious factors, particularly Judeao-Christian values, in Europe's rise. On the other hand, Blaydes and Chaney focus on comparing Europe with the Islamic world, with a specific emphasis on the impact of historical legacies like executive constraints (Charlemagne's requirement for landholders to contribute troops rather than funds, in particular) and its subsequent evolution into decentralized feudalism.

Furthermore, their methodological approaches diverge. Landes relies heavily on historical narratives to support his arguments, while Blaydes and Chaney draw more on statistical analysis to identify trends and correlations. This shift reflects a broader trend in the academic discourse on Europe's rise, transitioning from traditional reliance on cultural and anecdotal evidence to a more data-driven approach.

In conclusion, I contend that Blaydes and Chaney's proposal holds greater persuasive power for three main reasons: their statistical evidence counters Landes' cultural approach, their argumentation exhibits logical coherence, and their regression outcomes provide a robust foundation. Nevertheless, I also explore potential drawbacks and avenues for improvement within their research.

Landes (2006): European deep characteristics

Landes is somewhat critical of 'politically correct orthodoxy', which argues that random events gave Europe what began as a small edge and was then worked up into centuries of dominion and exploitation, or that Europe was merely exceptionally fortunate, seizing the lead at the pivotal juncture of the Industrial Revolution. He sees China as pursuing ineffable stillness of immobility, while Europe boasts navigational superiority, the cultural disparity of which clarifies the development gap.

Landes argues that China had had two chances to catch up with Europe. The first was to generate sustained scientific and technological advances endogenously. Landes suggests that China was in a position that matched and even anticipated the European achievement. However, it lacked a free market and institutionalized property rights, and the larger values of the society placed greater emphasis on personal and familial collaboration rather than formalized or institutional business practices.

In contrast, Landes posits that Europe possesses inherent characteristics that contributed to its success in this economic development competition. Europe *entered during these centuries into an exciting world of innovation and emulation that challenged and tempted vested interests and kept the forces of conservatism scrambling*[3]. He argues that the role of the Christian church in Europe as custodian of knowledge and school for technicians: *The desire to free clerics from time-consuming earthly tasks led to the introduction and diffusion of power machinery and, beginning with the Cistercians in the twelfth century, to the hiring of lay brothers to do the dirty work, which led in turn*

[1] David S. Landes, *Why Europe and the West? Why Not China?*, Journal of Economic Perspectives, Volume 20, Number 2, Spring 2006, Page 3-22.
[2] Lisa Blaydes and Eric Chaney, *The Feudal Revolution and Europe's Rise: Political Divergence of the Christian West and the Muslim World before 1500 CE*, American Political Science Review, Vol. 107, No.1, February 2013, Page 16-34.
[3] Landes, pp. 9

to an awareness of and attention to time and productivity.[4]

These all trace back to the origins of Judeao-Christian values:

1. Judeao-Christian respect for manual labor, which could be exemplified in the famous biblical injunction: 'Build thee an ark of gopher wood'.
2. Judeao-Christian subordination of nature to man. The departure from widespread animistic beliefs grants humanity with a sense of agency and dominion over the natural world.
3. Judeao-Christian sense of linear time (thus progressive in the attempt to always achieve advanced technology), while other societies thought of time as cyclical.
4. The role of the market: the fact that enterprise was free in Europe, that innovation worked and paid, that rulers and vested interests were narrowly constrained in what they could do to prevent or discourage innovation.

In one way Landes's work could be considered as convincing, in that the extensive use of historical facts supporting his argument and the emphasis on the role of religious values as the main differentiating factor between China and Western Europe presents a compelling argument. I would admit that it might be demanding to deny the Chinese pursuit of stability and the influence of its totalitarian control and that the rational exploration and extension of navigational possibilities demonstrated in the Portuguese success reveal the virtuous character of Europeans.

However, it could be argued that Landes's research is somewhat flawed, as it seems to prioritize a preconceived notion of European cultural superiority before gathering evidence. Historical facts and evidence are subject to multiple interpretations, and causal relationships may not be as clear-cut as Landes suggests. Many correlations that Landes presents as causative may lack conclusive evidence.

Blaydes and Chaney (2013): Executive constraints, feudalism and political stability

Unlike Landes, Blaydes and Chaney attribute Europe's rise to institutional reformation rather than culture, relying more on statistical evidence combined with historical facts to formulate their reasoning and logic. Their causal logic chain starts with forms of executive constraints that contribute to feudalism and ultimately lead to political stability thereafter. This stability provided the groundwork for an economic revival in the Middle Ages. Additionally, they employ time series analysis and regression on ruler duration in the Christian world to substantiate their causal hypothesis.

Firstly, Blaydes and Chaney meticulously trace the origins of feudalism in the Christian World, identifying several pivotal factors. Foremost among these is Charlemagne's (749 – 814 CE) strategic innovation, which mandated landholders to provide troops instead of funds. This shift in policy arose from the weak fiscal circumstances faced by the Germanic successors following the collapse of the western Roman Empire. They argue that this led to the increase in the power of large landlords. On one hand, small independent landowners pooled their lands with those of larger landowners to avoid having to offer themselves up for military services. This resulted in the consolidation of small landowners into large monopolistic landlord groups, which gradually gained the power to balance and check monarchy. On the other hand, Charlemagne required mounted troops, not just infantrymen (as a result of the introduction of the stirrup), which meant that wealthy individuals were needed to serve as the mounted military elite. All these led to a landed aristocracy in Western Europe and feudalism, which was essentially a fragmentation of political power.

Consequently, feudalism brought the stability of European monarchs, which then led to the leap

[4] Landes, pp. 9

in economic development. An economic revival followed, characterized by increased agricultural production and population growth. This surge in productivity not only provided sustenance for expanding populations but also set the stage for a revitalization of long-distance commerce (Strayer 1970). The emergence of towns and the nascent commercial revolution, particularly evident from the 12th century onward, further supported economic activity and prosperity. Meanwhile, feudalism also imposed growing constraints on the executive power of monarchs. The independent military strength of the barons endowed them with a considerable degree of bargaining power in their interactions with the monarchy. This dynamic fostered a system of checks and balances, wherein the monarch was compelled to navigate and negotiate with powerful feudal lords.

Furthermore, the above juncture slowly translated into the emergence of mature parliamentary institutions (van Zanden et al. 2012). These included the promulgation of the Magna Carta (1215), the establishment of an English parliament populated by knights and barons (1265) and a coalition of English elites who stablished credible constraints on the executive with the Glorious Revolution (1688), allowing for property rights and security from arbitrary taxation that ultimately encouraged economic growth (North and Weingast 1989).

The hypothesis was put to the test through the analysis and comparison of ruler duration data from both the Christian and Islamic worlds. Blaydes and Chaney discovered that the moving average of ruler duration in Western Europe and the Islamic world diverged starting in 700 CE, with ruler tenure in Europe surpassing that in the Islamic world sometime around 1000 CE. Furthermore, they illustrated the probability line of rulers being deposed, demonstrating that political stability, rather than demographic factors like longer life expectancy, accounted for the extended ruler duration. Notably, the broad trends in ruler duration remained robust even after accounting for various geographic control variables.

This finding could serve as a compelling rebuttal against explanations rooted in culture and geography for Europe's rise (because these factors were controlled in the regression above). For example, Landes could probably argue that Christianity fostered stable political institutions when compared to Islam. Blaydes and Chaney incorporated data on ruler duration from Easter Europe (Eastern Europeans were predominantly Christian by the 11th century but divided along Latin, or Western, and Orthodox, or Eastern (Shephard2008).), and by using Orthodox Christian data, they found evidence against claims that Christian beliefs drive the divergence in ruler duration between the Christian and Islamic world. A historical fact evidence is that the Byzantine Empire, though part of the Christian world, did not develop Western European-style feudal institutions.

Which is more convincing?

The differences between Landes and Blaydes and Chaney's account can be summarized as below:

1. Landes (culture and religious values) vs B&C (executive constraints and institutions)
2. Landes (use mainly historical facts) vs B&C (statistical analysis e.g., regression)
3. Landes (compared with China) vs B&C (compared with the Islamic world)

The first two differences have already been highlighted previously. Here, the focus is on the third disparity. The underlying message underscores the possibility that both Landes and Blaydes and Chaney may be correct in their respective analyses since they seek the pivotal factor contributing to Europe's rise in comparison to other regions. It's crucial to note that the specific regions under comparison differ between the two perspectives.

Nevertheless, I would suggest that Blaydes and Chaney's account is overall more convincing.

One key reason for this assertion lies in the regression analysis conducted in their work, which effectively ruled out the cultural and geographical factors emphasized by Landes. If this is the case, it reinforces the notion that Landes might have favored a preconceived notion of European cultural superiority over empirical evidence. For instance, historical evidence suggests that China had achieved considerable prosperity prior to the Industrial Revolution despite its lack of mobility and a free market. How would Landes reconcile this prosperity in China with his theory? (Landes admitted in his work that almost every element usually regarded by historians as a major contributory cause to the Industrial Revolution in north-western Europe was also present in China. Only Galilean-Newtonian science was missing.) The culture and characteristics of civilizations are often readily assumed to be the primary reasons for divergence, given their conspicuous nature as exogenous differences defining states or regions. However, such explanations can easily become overly deterministic, as they appear capable of rationalizing virtually any outcome. As the saying goes, ‘arguments that can be used to support both sides are essentially meaningless.’

In contrast, the arguments presented by Blaydes and Chaney appear to be more concrete and objective. However, I would also like to point out some questions that they did not address in their paper but which I find to be useful to contemplate. First, they mentioned the growing constraints on the executive empowered the barons with larger bargaining strength. It could be interesting to compare this with the period of the Spring and Autumn and Warring States in ancient China, when various feudal states vied for power under the nominal control of the Zhou dynasty. Eventually, the Zhou dynasty gradually lost control over the feudal states. The two stories share some similarities, and it could be interesting to verify the argument that decentralized feudalism promotes economic development. Secondly, one aspect that Blaydes and Chaney did not clarify is that, while they highlighted how Islamic rulers bypassed local elites and relied on mamluks for defense, which might give the impression that these mamluks were 'safe' from revolutionary actions against the monarch, sultans did find themselves imprisoned by their own praetorian guard (Lapidus, 1973, 37-38), who successfully seized power from within (Pipes, 1981, 91). Why didn't this direct challenge posed by mamlukism to the ruler result in the same system of checks and balances against monarchy as observed in Christian Europe's case? Perhaps more details in the cause-and-effect logic chain are required to complete their argument.

David S. Landes, *Why Europe and the West? Why Not China?*, Journal of Economic Perspectives, Volume 20, Number 2, Spring 2006, Pages 3-22.

- As late as the end of the first millennium of our era, the civilizations of Asia were well ahead of Europe in wealth and knowledge. The change in one tell-tale event: the Portuguese penetration into the Indian Ocean led by Vaco da Gama in 1498.
- A politically correct orthodoxy (history-as-accident): a sequence of contingent events gave Europe what began as a small edge and was then worked up into centuries of dominion and exploitation.
- Pendulum approach: Europe was just especially lucky, taking the lead at the crucial turn to the Industrial Revolution. But Asia's turn will now come.
- Landes's approach: European deep characteristics.
  - The Portuguese success: rational exploration, extension of navigational possibilities.
  - The Chinese abandonment of westward exploration: result of contingent political events; but at bottom it reflected the values and structures of Chinese society and civilization.
  - European exploitation of the breakthrough: navigational superiority.

The First Chance: Science without Development

The first chance: to generate a continuing, self-sustaining process of scientific and technological advance on the basis of its indigenous traditions and achievements.

- (Almost every element usually regarded by historians as a major contributory cause to the Industrial Revolution in north-western Europe was also present in China. Only Galilean-Newtonian science was missing.) In a number of areas of industrial technique, China long anticipated Europe: textiles, water frames and spinning mules, iron manufacture (blast furnace), wheelbarrow, stirrup, rigid horse collar, compass, paper, printing, gunpowder, porcelain.
- The failure of China to realize the potential of some of the most important of these inventions.
  1. China lacked a free market and institutionalized property rights. The Chinese state was always stepping in to interfere with private enterprise—to take over certain activities, to prohibit and inhibit others, to manipulate prices, to exact bribes.
     - motivated by a desire to reserve labor to agriculture or to control important resources
     - by an appetite for revenue
     - by fear and disapproval of self-enrichment
     - by a distaste for maritime trade

     The goal: the goal, the aim, the ideal was the **ineffable stillness of immobility**.
     (example: Hongwu emperor's moral dicta cited by Timothy Brook in the Ming dynasty.)
  2. The larger values of the society.
     - Etienne Balazs (1968 [1988]; see also Balazs, 1964): see China's abortive technology as part of a larger pattern of totalitarian control. (Omnipotence of the bureaucracy that regulates selves from cradle to grave.)
     - Elvin (1973): the reason the Chinese did not develop based on their scientific knowledge is that no one was trying. China values reliance on personal and familial collaboration in place of arbitrary or institutional practice in business
       - The great size of the Chinese Emperor.
         In a Chinese subcontinent made up of smaller independent states, like those of the Five Dynasties [907-960 C.E.] or the Ten Kingdoms, no government could have afforded to close itself off. International economic interdependence would have

removed this option; and the need for diplomatic and military alliances, and revenue from foreign trade, would have made isolationism undesirable. With smaller states, there might also have been a closer conscious identification of the governed with their countries and rulers. Prior to modern communications, the immensity of the empire precluded nationalism.

- Europe: entered during these centuries into an exciting world of innovation and emulation that challenged and tempted vested interests and kept the forces of conservatism scrambling.
  - (Religious values) The role of the Christian church in Europe as custodian of knowledge and school for technicians.
    The desire to free clerics from time-consuming earthly tasks led to the introduction and diffusion of power machinery and, beginning with the Cistercians in the twelfth century, to the hiring of lay brothers to do the dirty work, which led in turn to an awareness of and attention to time and productivity.
    1. Judeo-Christian respect for manual labor (Build thee an ark of gopher wood).
    2. Judeo-Christian subordination of nature to man (departure from widespread animistic beliefs).
    3. Judeo-Christian sense of linear time (thus progressive), while other societies thought of time as cyclical.
    4. The role of the market: the fact that enterprise was free in Europe, that innovation worked and paid, that rulers and vested interests were narrowly constrained in what they could do to prevent or discourage innovation.

The Second Chance: Learning from the Barbarians

The second chance: to learn from European science and technology once the foreign "barbarians" entered the Chinese domain in the sixteenth century.

- Such cultural triumphalism combined with petty downward tyranny made China a singularly bad learner.
  - Celestial Empire: The Chinese lived, as they thought, at the center of the universe; around them, lesser breeds basked in their glow, reached out to them for light, gained stature by doing obeisance and offering tribute.
  - Courtiers gathered from midnight on and stood about in the open air to wait for the emperor's arrival and perform their obeisance.
- Mechanical clock: the Catholic priests bring them as an argument for the superiority of the Christian religion. Most Chinese saw these pretensions for what they were: an attack on Chinese claims to moral superiority, an assault on China's self-esteem => a repudiation or depreciation of Western science and technology
- Modern guns: The enemies of China did not have them. (Europeans were maximizers and their technology was monotonic-increasing.) The European may have thought that the purpose of war was to kill the enemy and win; the Chinese thought cultural pride and no self-debasement as priority.
- Consequence 1: a prudent, almost instinctive, resistance to change
- Consequence 2: a plague of lies and misinformation: officials wrote and told their superiors what they wanted to hear; or what the subordinate thought the superior would want to hear.

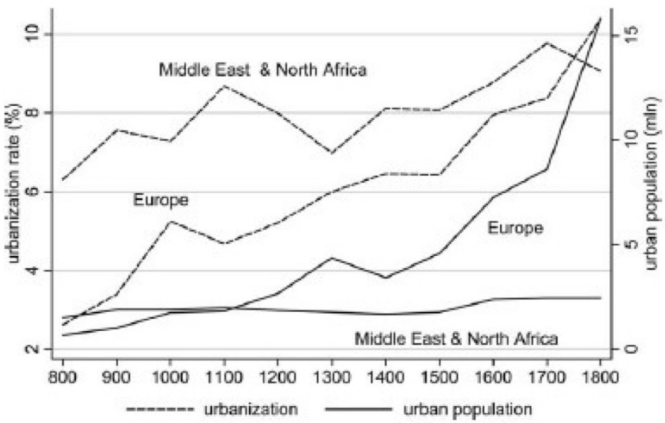
Why did China 'Fail'?

- [theory 1] Mitigate the pain by euphemism: Chinese society, though stable, was far from static and unchanging… just the pace was slower.
- [theory 2] Dismiss the question as unanswerable (impossible to explain a negative) or illegitimate (otherwise imposing non-Chinese standards and expectations on China).
- China lacked the institutions that made for a cumulative process of finding and learning.
  Confucianism's easy disdain for scientific research, which it disparaged as 'interventionist' and superficial.
  => European imports went against the Chinese mindset.

The Islamic World

Yet the Islamic world arguably was more advanced for periods, think algebra, algorithm, higher urbanization rates, technology, trade ...

1. Bosker et al. (2013): stress the importance of representative institutions in Europe in generating this divergence



2. Geography { less agriculture potential, but central location
   institutions favoring market exchange
   (*) the camel and the disappearance of the wheel
   (easier to mechanize the wheels rather than the camel)

3. Kuran (2004): institutions rooted in Islam
   { Islamic law of inheritance which fractured wealth
   lack of cooperation
   waqf system introduced as a creative response to the precariousness of private property rights, but lacked flexibility and became dysfunctional

4. Rubin (2011): union of religion and state ⇒ persistence of interest bans
   Also, early Islamic rulers were dependent upon dictates of religious leaders to a greater extent than in Christian world

5. The divergence boils down to politics
   – Military decline of Barbary Corsairs

Lisa Blaydes and Eric Chaney, *The Feudal Revolution and Europe's Rise: Political Divergence of the Christian West and the Muslim World before 1500 CE*, American Political Science Review, Vol. 107, No.1, February 2013, pp. 16-34.

Forms of executive constraint that emerged under feudal institutions in Western Europe were associated with increased political stability.

Collapse of the western Roman Empire (476 CE)

⇨ Weak fiscal position of the Germanic successor

⇨ Charlemagne (748 – 814 CE)'s innovation: landholders contribute troops instead of funds

⇨ Increased the power of large landlords

- small independent landowners pooled their lands with those of larger landowners to avoid having to offer themselves up for military services.
- Charlemagne required mounted troops, not just infantrymen (as a result of the introduction of the stirrup), which meant that wealthy individuals were needed to serve as the mounted military elite (White 1962).

⇨ A landed aristocracy in Western Europe

⇨ Feudalism: fragmentation of political power

⇨ The stability of European monarchs

- An economic revival: higher levels of agricultural production, population growth and a revitalization of long-distance commerce (Strayer 1970); rise of towns and a nascent commercial revolution (beginning in the 12th century).
- Growing constraints on the executive: independent military power of the barons allowed for a degree of bargaining strength vis-à-vis the monarchy 春秋战国

⇨ Slowly translated into the emergence of mature parliamentary institutions (van Zanden et al. 2012).

- the promulgation of the Magna Carta (1215)
- the establishment of an English parliament populated by knights and barons (1265)
- a coalition of English elites stablished credible constraints on the executive with the Glorious Revolution (1688), allowing for property rights and security from arbitrary taxation that ultimately encouraged economic growth (North and Weingast 1989).

Three main effects of feudalism:

1. decreased rents flowing to the sovereign
2. increased rents flowing to the sovereign's potential rivals, the nonruling elite
3. increased the geographic decentralization of political power

+ significant costs of travel and communication before the 19th century

⇨ made revolt less enticing (more to lose from an unsuccessful rebellion and less to gain from a successful one)

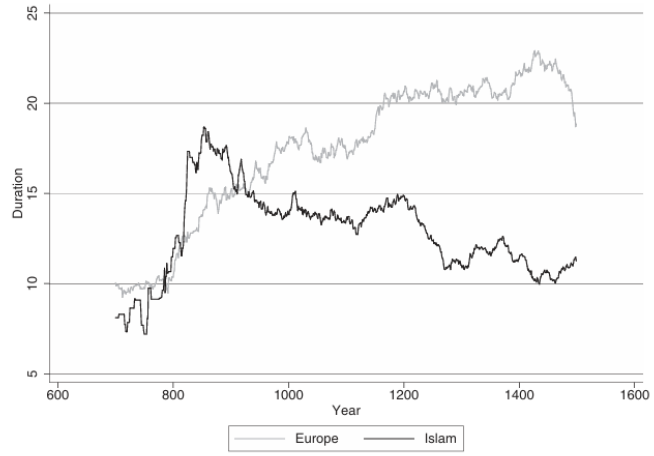
Evidence: Ruler duration in the Christian world

1. If the introduction of feudal institutions led to an increase in ruler stability, we should identify a break in European ruler tenure coinciding with the introduction of these institutions.
2. This increase should start within the Carolingian Empire (880 – 887 CE, when the Feudalism originated).
3. If longer ruler tenures were driven by forms of power sharing, we should observe a positive

correlation between constraints on the sovereign and ruler duration.

- Ruler duration data reliable and politically significant.

FIGURE 1. Divergence Between Ruler Durations in the Christian West and Islamic Worlds



Note: The darker line denotes the 100-year moving average for the Islamic world whereas the lighter line denotes the moving average for the Christian West.

- Trends in Ruler Duration
  - Moving average of ruler duration in Western Europe and Islamic worlds staring in the year 700 CE. Ruler duration in Europe overtakes leader tenure in the Islamic world sometime around 1000 CE.
  - The regression output associated with this relationship.

$$duration_{itc} = \theta_c d_c + \sum_{c=700}^{1400} \alpha_c \cdot WE_i \cdot d_c + \varepsilon_{itc}$$

  - $\widehat{\theta_c}$: the mean duration of rulers by century
  - $\widehat{\alpha_c}$: the difference in mean duration between Western Europe and the Islamic world

  Different data set: $\widehat{\alpha_c}$ significant since 1000 CE or 1100 CE.

TABLE 1. Ruler Duration and the Rise of Europe

	Islam (1)	WE-Islam (2)	Islam (3)	WE-Islam (4)	WE-Islam (5)
[700, 800)	11.52	−0.87	10.56	1.89	−0.62
	(2.81)	(3.09)	(6.25)	(6.37)	(5.89)
[800, 900)	14.89	1.63	15.55	−2.01	−2.04
	(1.89)	(2.48)	(4.13)	(4.41)	(3.80)
[900, 1000)	13.91	4.65	14.03	−0.40	1.02
	(1.07)	(1.96)	(3.02)	(3.37)	(3.60)
[1000, 1100)	12.56	3.73	14.03	0.54	2.79
	(1.11)	(1.52)	(3.08)	(3.39)	(3.54)
[1100, 1200)	14.40	5.84	10.86	6.44	10.14
	(0.84)	(1.60)	(1.33)	(2.55)	(2.91)
[1200, 1300)	10.74	9.69	11.39	6.07	8.32
	(1.08)	(1.54)	(2.71)	(3.24)	(3.68)
[1300, 1400)	11.29	10.34	8.99	9.87	11.87
	(0.93)	(1.38)	(1.26)	(1.73)	(2.69)
[1400, 1500)	11.10	8.82	7.75	10.59	11.58
	(0.88)	(1.47)	(1.34)	(1.75)	(2.96)
p value 700–900		[0.11]		[0.74]	[0.85]
p value 1000–1400		[0.00]		[0.00]	[0.00]
Data Set	BM	BM	Nüssli	Nüssli	Nüssli
Controls?	No	No	No	No	Yes
N	3047	3047	1785	1785	1730

Note: Estimates of Equation (1) presented using the duration of a ruler in power as the dependent variable. Columns (1) and (3) present the mean value of ruler duration in the Islamic world by century. Columns (2), (4), and (5) provide the difference between the averages in Western Europe and the Islamic world. The controls in column (5) include the area of the political entity at the start of the century, the proportion of the entity that was part of the Roman Empire in the year 100 CE, the latitude of the centroid of the political entity, and the average agricultural suitability of the entity. The *p* value corresponds to the test that the year coefficients denoted are jointly equal to zero. Standard errors are in parentheses and are clustered by dynasty in the Bosworth/Morby data set and by political entity in the Nüssli data set.

- The broad trends in ruler duration we report are robust to the inclusion of a variety of geographic control variables.

Comparison: The Islamic Equilibrium

Difference: Feudalism did not emerge in the Islamic world. (no landed aristocracy, no nascent parliamentary institutions)

Reason: Muslim reliance on mamluks (military slaves, highly skilled armies of foreigners who had no ties to the exiting gentry and swore allegiance directly to the sultan) => Islamic rulers bypassed local elites for matter of defense.

- Patricia Crone: [why mamluksim arose in the Islamic world] "But because the fiscal and administrative machinery survived in the east, the Abbasids could simply buy the retainers they needed, and so they lost their power not to lords and vassals but to freedmen"
- The superior economic position of the Muslim rulers allowed them to import the military support that they needed rather than to develop a system of feudalism where a king delegated land—and political power—to local lords.
- Evidence: In some cases, sultans found themselves imprisoned by their own praetorian guard.

  但是这些情况下他们发展了自己的 institution 吗?

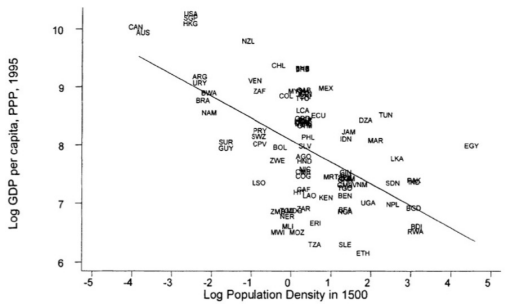
Alternative hypotheses for divergence in ruler duration

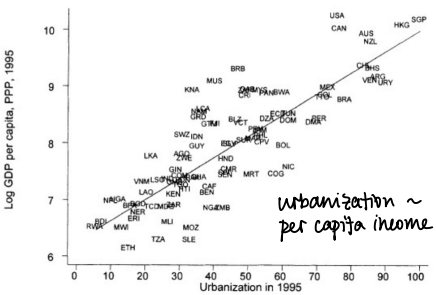
1. Culture and Geography
   - Christianity fostered stable political institutions when compared to Islam.
     - incorporate data on ruler duration data from Easter Europe (Eastern Europeans were predominantly Christian by the 11th century but divided along Latin, or Western, and Orthodox, or Eastern (Shephard2008).)
     - Evidence against claims that Christian beliefs drive the divergence in ruler duration between the Christian and Islamic worlds. (using Orthodox Christian data)
   - Differential state size (area of a policy) in Western Europe and the Islamic world.
     - Regression results: included as control variable and not significant
2. Demography and Family Practice
   - Hypothesis: Monogamy in the Christian world rather than Polygyny in Islam => more political stability
     Argument: Rule duration not uniformly diverge from that in the Islamic world.
   - Hypothesis: perceptions of the legitimacy of passing rule from father to son => increases in European ruler duration
     Argument: add in dummy variable son_{itc} (equal to 1 if a ruler was the some of the previous ruler), no significant result
   - Hypothesis: life expectancy in Europe was increasing relative to trends in Muslim polities
     Argument: increasing ruler durability in Europe was being driven by a decreased rate of ruler overthrow rather than some other factor
3. Military Technology and Vulnerability to Outside Invasion
   - Hypothesis: Muslim world's vulnerability to invaders from a less developed periphery => Muslim societies less likely to develop the types of military technologies that proved to be useful for development over the long term.
   - Argument: Geographical variables controlled

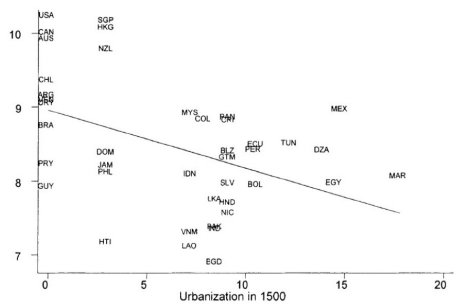
Reversals of Fortunes

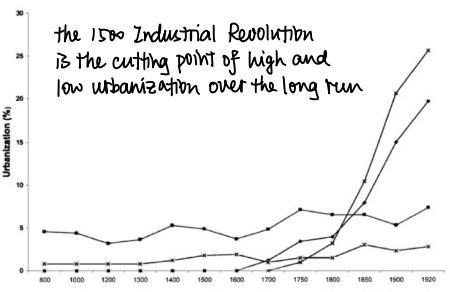
Acemoglu et al. (2002)

Facts: places that were poor before got good institutions. while rich areas got extractive institutions
- reversal in relative incomes from late 18th and early 19th centuries







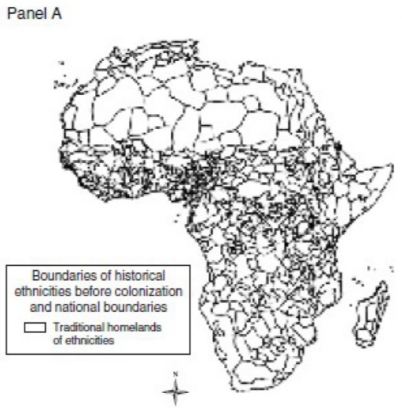


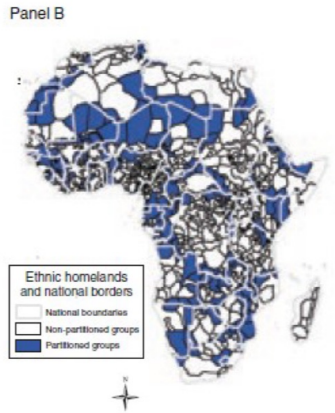
⇒ direct importance of geography
institution rule?
the long-run effects of colonialism?

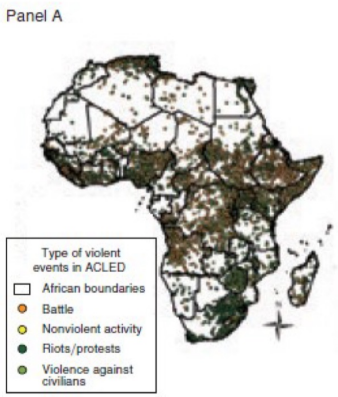
Borders

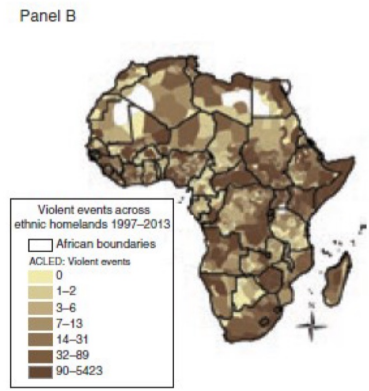
unambiguously negative channel: borders
Michalopoulos and Papaioannou (2016): conflicts more likely in ethnic groups partitioned by borders ⇒ inhabitants of these regions are also poorer

Historical Background: Scramble for Africa (非洲瓜分)









Channels: irredentist demands (領土復归要求)
greater political violence
discrimination

Trust

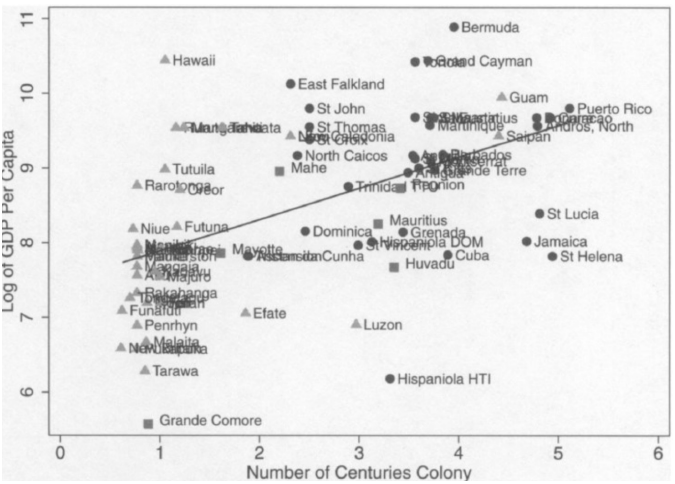
Nunn and Wantchekon (2011): colonialism have affected beliefs and values
(at least the case for the slave trade)

"Slave trade ⇒ culture of mistrust"

individuals could partially protect themselves by turning against others within their community

Positive Effects of Colonialism

Feyrer and Sacerdote (2009): use windpatterns to identify the effects of colonial rule (some islands were hard to get to because of wind patterns. colonized for less time)



100 years more
⇒ 42% increase in GDP

places colonized later
⇒ got better institutions
(US and Dutch better than Spanish and Portuguese)

Question: the only way that wind affects GDP today is through colonial rule? later colonialism better than earlier (enlightened colonizers)?

Dell (2010): long run effect of mining mita (a forced labour system in Peru and Bolivia that required 1/7 male population to work in mines)

Mechanism:

"institutional structures largely in place before the formation of the landed elite did not provide secure property rights, protection from exploitation, or a host of other guarantees to potential smallholders"

Tutorial Question 3: Can colonialism explain Africa's historical development path?

Colonialism, which peaked between 1885 and 1960, involved the direct domination of African territories by European powers, which has been identified as a primary source of economic underdevelopment and structural inequalities within the continent. As Bairoch (1993) stated, "*There is no doubt that a large number of negative structural features of the process of economic underdevelopment have historical roots going back to European colonization*."

In this essay, I argue that both the shared low growth rates of per-capita GDP in Africa and the significant heterogeneities observed across different regions can be attributed to the colonial legacy in some way. However, colonialism itself, or the pure fact of being colonized, cannot provide much explanation. Rather, it is the combination of multiple colonial variables that explains Africa's common and country-specific underdevelopment.

A key aspect of the analysis is the establishment of extractive institutions during the colonial period, particularly the emphasis on the slave trade, an extractive practice accompanying colonialism. I also examine how variations in the colonizers' origins contributed to the observed heterogeneities in development outcomes. Next, I delve into the persistence of colonialism and argue that the failures of postcolonial states are deeply rooted in the underdevelopment and instability of precolonial polities. Thus, the essay provides a comprehensive examination of colonialism's enduring impact on Africa's development path.

Extractive Institutions Leads to Underdevelopment

Colonialism could have been neutral, but it became notorious due to its extractive forms in most cases, which led to underdevelopment in Africa. The exploitation accompanying this extractive colonialism included taxes, tariffs, restrictions on trade and foreign investment, forced labor and enslavement of the indigenous population[1] which directly had a negative effect on the colonies' growth prospects.

According to Acemoglu, Johnson and Robinson[2], different institutions were built in different colonies based on the feasibility of the colonizers settling there. This feasibility was measured via European mortality rates, which significantly influenced the type of institutions established and their subsequent impact on the country.

In regions with high European mortality rates, colonizers were less likely to settle and more likely to set up extractive institutions. These institutions provided minimal protection for private property and little defence against government expropriation, leading to long-term economic stagnation and instability. The primary focus of these extractive institutions was to transfer wealth from the colony to the colonizers, with little regard for sustainable development or local welfare.

Conversely, in areas with lower European mortality rates, colonizers were more likely to settle and establish institutions that provided secure property rights and implemented less distortionary policies. These inclusive institutions promoted economic development by protecting private property, encouraging investment, and fostering a more stable and predictable environment for economic activities. The benefits of such institutions have had lasting positive effects on the development paths of these regions.

Acemoglu, Johnson and Robinson offer a compelling analysis by correlating extractive colonial practices with high mortality rates, using the latter as a well-defined proxy for regression

---

[1] Bertocchi and Canova, *Did colonization matter for growth? An empirical exploration into the historical causes of Africa's underdevelopment*, European Economic Review, 46 (2002), pp. 1851-81.

[2] Acemoglu, Johnson and Robinson, *The Colonial Origins of Comparative Development: An Empirical Investigation*, American Economic Review, 91 (2001), 1369–1401.

tests. In their later study[3], they further find out that extractive institutions were more likely to exist in regions that were previously rich.

They discovered that among countries colonized by European powers over the past 500 years, those relatively wealthy in 1500 are now relatively poor. This reversal of fortune is attributed to the Europeans' institutional strategies based on the regions' pre-colonial prosperity.

In regions that were previously prosperous and densely populated, Europeans were more likely to introduce or maintain extractive institutions. These institutions exploited local populations, forcing them to work in mines or plantations by taking over existing tribute systems or implementing taxes. In contrast, in previously sparsely populated and poorer areas, Europeans settled and established institutions that provided secure property rights to a broad cross-section of society, encouraging commerce and industry. These inclusive institutions fostered investment and economic growth, leading to more favorable long-term development outcomes.

Thus, the type of institutions introduced by European colonizers, influenced by the pre-colonial economic conditions and European mortality rates, has had a lasting impact on the economic paths of these regions. At the heart of this dynamic is the role of extractive institutions.

The Slave Trades as an Extractive Form

While colonialism often takes center stage in discussions of Africa's history, Nunn and Nathan[4] highlight another significant event: the continent's slave trades. They contend that the impact of the slave trades on Africa's development rivals, if not surpasses, that of official colonial rule in terms of duration. Spanning nearly 500 years from 1400 to 1900, the slave trades had a profound and enduring influence on Africa's societies and economies. In contrast, colonialism, in its official rule form, lasted approximately 75 years from 1885 to 1960.

Here, I would argue that the slave trades represent yet another form of extractive practice, thereby completing the causal chain from extractive institutions to underdevelopment. In fact, in some respects, colonialism can be seen as an extension or transformation of the exploitative relationships established during the slave trade. After the abolition of the slave trade, European powers sought new ways to exploit Africa’s human and material resources, leading to the establishment of colonial rule.

Nunn and Nathan estimate the number of slaves exported from each African country over nearly during the four massive slave trades. Their findings reveal a striking negative relationship between the number of slaves exported and current economic performance, indicating a detrimental impact of the slave trades on economic development. What makes this research impressive is that they cleverly prove the causal relationship from the slave trades to the adverse effects on Africa’s development, countering the alternative explanation that the most underdeveloped countries were selectively involved in the slave trades.

To achieve this, they scrutinize two key aspects: evidence from African historians regarding the selection process for participation in the slave trades, and pre-slave trade population densities. Contrary to the alternative explanation, their findings indicate that it was actually the most developed areas of Africa that tended to be targeted for involvement in the slave trades. They further strengthened the causality by the incorporation of an instrumental variable, the sailing distances to the nearest locations of demand for slaves in the four slave trades.

---

[3] Acemoglu, Johnson and Robinson, Reversal of Fortune: *Geography and Institutions in the Making of the Modern World Income Distribution*, The Quarterly Journal of Economics, Vol. 117, No. 4 (Nov., 2002), pp. 1231-1294.

[4] Nunn, Nathan, *The Long-term Effects of Africa’s Slave Trades*, the Quarterly Journal of Economics, vol. 123, no. 1 (2008), pp. 139-186.

Furthermore, they unveil the adverse effects of procuring slaves through internal warfare, raiding, and kidnapping. These extractive practices resulted in subsequent state collapse and ethnic fractionalization in the affected regions.

Colonizers Differ

It is insufficient to attribute Africa's development solely to colonialism, or the pure fact of being colonized. Different legal systems and institutions transferred by various colonizers by different colonizers also played significant roles in shaping the outcomes. In fact, it is found that British, French, Dutch colonial rules are associated with larger income boosts today, while Spanish and Portuguese colonial rule had smaller positive or negative impacts.[5]

Grier[6] looked more closely into the development gap between the former British and French colonies in Africa. His main focus is on human and physical capital at the time of independence and he finds that the newly independent British colonies were significantly more educated than the French ones.

The disparity can be attributed to distinct colonial policies and practices adopted by Britain and France. Britain pursued a decentralized approach, tailoring each colony's constitution to its specific needs. This strategy aimed to avoid alienating native cultures by promoting education in vernacular languages. Additionally, Britain embraced a free trade policy from as early as 1830, liberating colonies from the obligation to grant preferential treatment to British goods by 1846.

In contrast, France adopted a centralized power structure, with authority concentrated in Paris. The colonial government operated under an autocratic system that afforded little freedom or flexibility to local governors in addressing local issues. Moreover, France imposed restrictive trade measures, limiting economic opportunities and access to education for the indigenous population. Consequently, very few Africans in French colonies received the benefits of a colonial education. The policy of enforcing the use of French language resulted in a staggering 95% illiteracy rate among the population of France's former Black African territories by the late 1960s.

Postcolonial Failure: rooted in the underdevelopment of precolonial polities

Feyrer and Sacerdote[7] argue that longer colonial rule is associated with higher incomes today. Grier[8] echoes this by noting that colonies held for longer periods of time than other countries tend to perform better, on average, after independence. This may seem confusing at first as it contradicts the view mentioned above that colonialism leads to underdevelopment in Africa. However, this could be reconciled with the observation that colonies with non-extractive institutions tend to sustain longer periods of colonial rule after independence and reap the benefits thereof. What is crucial to note is that the impact of colonialism persists and may even exacerbate after colonies gain independence.

Joseph and Herbst[9] look into Africa’s postcolonial state failure. They argue that Africa’s poor economic performance is a result of postcolonial state failure, the roots of which lie in the underdevelopment and instability of precolonial polities. These precolonial entities lacked the necessary infrastructure to extend authority over the entire country, resulting in states unable to

---

[5] Feyrer and Sacerdote (2001), *Colonialism and Modern Income: Islands as Natural Experiments*, Review of Economics and Statistics.

[6] Grier, *Colonial Legacies and Economic Growth*, Public Choice, Jan., 1999, Vol. 98, No. 3/4, pp. 317-335.

[7] Feyrer and Sacerdote (2001). Each additional century of colonial tenure associated with 40-70% higher GDP per capita in 2000 across different specifications. Results are similar when using wind patterns as an instrumental variable, supporting randomness assumption.

[8] Grier (1999).

[9] Joseph and Herbst, Responding to State Failure in Africa, International Security, Vol. 22, No. 2 (Fall, 1997), pp. 175-184.

collect taxes from citizens and unable to provide even a minimum level of public goods and services.

A corollary of Herbst's argument is that the impact of the slave trades may also have been felt most strongly after colonial independence. This period marked the sudden increase in importance of precolonial political structures, which became central determinants of the success of the newly formed states. Nunn and Nathan[10] find evidence for this showing that the slave trades had a more profound impact after independence. They argue that income gap between the low-slave-export and high-slave-export countries increased significantly after the late 1960s and early 1970s, when most countries had gained independence.

Therefore, the postcolonial period is when the various influences of colonialism truly manifested, leading to the widening underdevelopment gap in Africa.

Conclusion

In conclusion, the colonial legacy has played a pivotal role in shaping Africa's economic development, with both extractive institutions and the slave trades contributing significantly to long-term underdevelopment. Moreover, the postcolonial period exacerbated these historical influences, as precolonial underdevelopment and the disruptive effects of the slave trades became central determinants of state success. However, colonialism itself, or the pure fact of being colonized, cannot provide much explanation. Rather, it is the combination of multiple colonial variables that explains Africa's common and country-specific underdevelopment. The complex interplay of these factors underscores the lasting impact of colonialism on Africa's development path.

[10] Nunn and Nathan (2008).

Session 2, Lecture 7-8
Industrial Revolution

The Industrial Revolution
The Demographic Transition

paper: Crafts and Harley (IR growth rate)
Robert Allen (the Engels' Pause)

Class: Industrial Revolution British growth rate

Assess Crafts and Harley's explanation for why British was the first economy to industrialise? Is their explanation more plausible than rival explanations?

Essay: Engels' Pause

What was 'Engels' Pause? How does it explain changes in inequality during the 19th century?

What explains the Industrial Revolution?

Allen (2009): Industrial Revolution as a product of technological change

- I.R. boils down to prices (cheap energy + international economics led to high wages and prices), science necessary but not sufficient
  E.g. really cheap coal price (however, Clark and Jacks (2007) dispute this)
- Effect of science on culture: secularization (世俗化), politicization
  } increased incentives to work hard: men are now 'slaves to their own wants'
  | Northwestern European marriage pattern. lower levels of fertility
- Outcome: steam engine, cotton spinning machinery, manufacturing of iron with coal and coke ...
  rapid urbanization, capital accumulation,
  increase in agriculture productivity, growth of income...

O'Rourke and Williamson (2005): role of trade

- When did English commodity prices decouple from English factor endowments? Claim that by 1840 commodity prices began to be exogenous to British economy.
- trade $\xrightarrow{?}$ break with Malthusian constraints?

"The Industrious Revolution was a process of household-based resource reallocation that increased both the supply of marketed commodities and the labor and the demand for market-supplied goods"

Kelly et al. (2014): stress the importance of human capital

Against Allen they argue that high wages were a reflection of deep differences between Britain and the rest of Europe

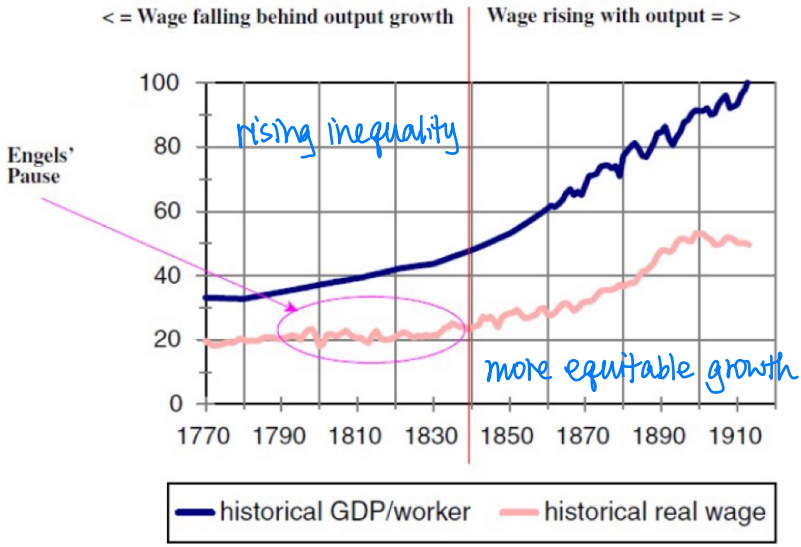
- human capability (e.g., self-control, preseverance ...)
- evidence: height and productivity

How did IR transform the economy?

Crafts and Harley (1992): not an immediate take off, growth rate ~ 0.33%

Allen's work on Engel's pause

- Engel's pause: stagnation in the real wage at the start of the 19th century



Why the lag?

Lewis (1954): initially have completely elastic supply of labour at a subsistence wage
- large profits enable industrial sector to grow, it eventually absorbs surplus labour ⇒ wages rise with productivity

Allen's view: ① technical progress was labour augmenting ⇒ so it was like a surge in the population
② inequality increased, real wage stagnated
③ ⇒ greater profits and capital accumulation, and the return to more 'balanced' growth path

Class Question 6: Assess Crafts and Harley's explanation for why British was the first economy to industrialise? Is their explanation more plausible than rival explanations?

Thesis: In their three seminal works (Harley 1982, Crafts 1983, and Crafts and Harley 1992), Crafts and Harley presented challenges to the prevailing orthodoxy regarding British growth before and during the Industrial Revolution. They proposed that industrial growth overall was considerably slower than previously believed. Furthermore, they suggested that the impact of industrial change on social structure, demographic behaviour, and saving habits could have been the primary factor contributing to the rapid surge in real growth in the 1820s.

Harley[1]:

1. Britain's industrial growth between 1770 and 1815 was about a third slower than current estimates indicate. Mid-eighteenth-century industrial output was nearly twice as high as previously assumed.
2. [view of the trends of British growth]
   Harley: steady acceleration of per capita income and total productivity
   Deane and Cole's: late-eighteenth century acceleration and a subsequent slowdown.

Crafts[2]:

1. Pointed out the problem involving Deane and Cole's approach to the measurement of the growth of industry and commerce of Britain in the 18th century.
2. [the controversy over the timing of industrial advance] The new figures do not support the idea of a general spectacular acceleration in the growth of industrial output starting in the 1780s.
   - Industrial growth in the first quarter of the nineteenth century was more than four times as fast as a century earlier; for every major sector other than beer the growth rate was at least twice as high.
     - Four stages: 1700-60, 1760-80, 1780-1801, 1801-1831
     - The high rate of growth of productivity, which ultimately overcame the Malthusian trap, was a nineteenth- (1820s, when the economy finally reached a sustained rate of growth of 2 per cent per year) and not an eighteenth- century (1780-1801, with growth rate half of that in 1820s) phenomenon.
     - The last part of the eighteenth century did see quite marked changes in the composition of industrial output, most notably the rise in the weight of cotton.
     - Living standards were little changed between 1760 and 1820.
     - Exports at no time accounted for a major part of increases in national income, since the substantial part of the economy involved in the production of non-traded goods.

Crafts-Harley Restatement[3]:

They revised growth rate estimates based on Crafts' and Harley's work and addressed the concerns raised by other scholars. New insights rather than restatement of the above study below:

1. The early nineteenth century: Malthus' equilibrium (rapid population growth no longer had catastrophic effects on real wages)
   - economy dominated by the balance of land and population => by technological change and

[1] Harley, *British Industrialization Before 1841: Evidence of Slower Growth During the Industrial Revolution*, The Journal of Economic History, Vol. 42, No. 2, June 1982, pp. 267-289
[2] Crafts, *British Economic Growth, 1700-1831: A review of the evidence*, The Economic History Review, Second Series, Vol. 36, No. 2, May 1983, pp.177-199
[3] Crafts and Harley, *Output growth and the British industrial revolution: a restatement of the Crafts-Harley view*, Economic History Review, 45, 4(1992), pp.703-730

capital accumulation
- Industrial change => alter social structure, demographic behaviour, savings habit => growth

2. Industrial growth rate
   - proper weights added to its sectoral components (fast and slow growing sectors, e.g. cotton)

Assessment: Overall, the argument is compelling, supported by the authors' rigorous quantitative and innovative work, such as utilizing improved data sources, refining indices for output growth estimates, acknowledging structural changes in industrial output, and adopting weights based on value-added rather than solely on employment figures. Though they did address the challenges, some drawbacks could still be raised against their argument, suggesting that they may underestimate the growth rate.

[Crafts and Harley: did not include female and child labour inputs / value-added weights]
Understatement of productivity changes flowing from the substitution of lower-wage female and child workers with more adaptable skills for more expensive male workers with traditional skills in newer and technologically progressive industries.[4]

- Industries at the forefront of technological and organizational innovation were mainly those employing female labour - textiles, metalware, potteries, food processing, and other new consumer goods industries.

[4] Maine Berg and Pat Hudson, *Growth and change: a comment on the Crafts-Harley view of the industrial revolution*, Economic History Review, 47, I(1994), pp. 147-149

Tutorial Question 4: What was 'Engels' Pause? How does it explain changes in inequality during the 19th century?

Engels' Pause[1], a term coined by economic historian Rober C. Allen[2], describes the period from 1790 to 1840, when real wages remained stagnant although per capita income surged. Consequently, the benefits of economic progress disproportionately favoured capitalists, encapsulating the essence of the 19th-century inequality. However, this phenomenon did not last long. After the middle of the 19th century, real wages began to grow in line with productivity, and the profit rate and factor shares stabilized.

The following graph showing the empirical comparison between the growth of output per worker and the real wage illustrates the term Engels' Pause clearly.

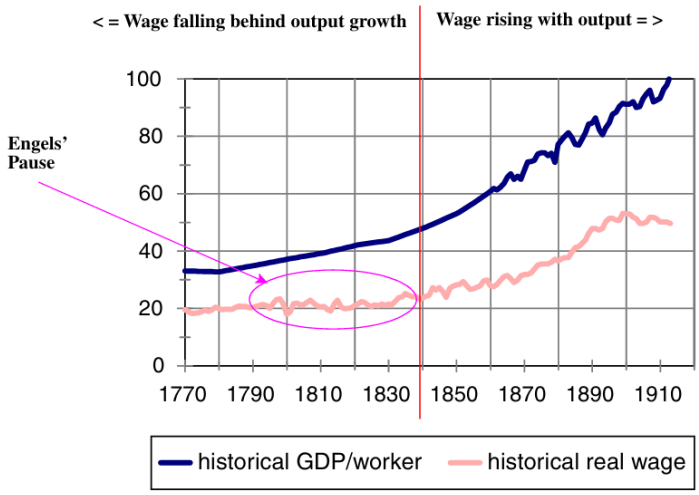


Fig. 1. The two phases of the British industrial revolution.

The concept of Engels' Pause helps to explain changes in inequality during the 19th century by highlighting how economic growth and industrialization did not necessarily lead to improvements in the living standards of the working class. Instead, it suggests that the benefits of economic development were disproportionately captured by capital owners and business elites, leading to widening income and wealth disparities.

We will dive deep into the explanations for Engels' Pause and see how they explain changes in inequality.

Explanations for Engels' Pause and their Assessments

1. Clark (2001, 2005, 2007a,b)

   Not everyone agrees with the Engels' Pause. Clark believed that the average real wage grew faster than Feinstein contended and thought that GDP grew less rapidly than Crafts and Harley calculated. Putting all these together, he suggested that *manual worker's real incomes in the*

[1] Friedrich Engels (1892), *The Condition of the Working Class in England in 1844 with preface written in 1892*, London: Swan Sonnenschein and Co.
[2] Robert C. Allen (2009), *Engels' pause: Technical change, capital accumulation, and inequality in the British industrial revolution*, Explorations in Economic History, 46 (4), pp. 418-435.

industrial revolution period rose much more than did real output per capita[3]. If that were so, workers, rather than capitalists, were the winners in the Industrial Revolution, and there was little to none inequality issue during the 19th century.

However, in their paper, Crafts and Harley suggested that industrial growth, overall, was significantly slower than previously assumed, with their estimates facing challenges from other economists who believed they underestimated the figures. Their estimates are already pessimistic. Also, in his paper, Clark was arguing that the Industrial Revolution became so narrow that it was just another isolated technological advances that European economies had been witnessing. They argued that nearly two thirds of the productivity growth rate could be explained by essentially the rapid productivity growth in the cotton textile industry and that other sectors saw very little productivity increase.

While Clark's perspective does offer a counter-narrative to traditional interpretations, his assertions appear exaggerated and may oversimplify the complexities of industrialization. Allen (2009) argued that his real wage series nor his GDP series were not convincing on the exiting literature and gave concrete explanation.

2. Malthus and Marx

Besides Engels' view of British industrialization, Malthus and Marx both believed that real wages would remain constant during capitalist development. Their theories may be candidate for explaining the changes in inequality during the 19th century, as the returns to capital rose rapidly compared with the nearly-constant real wages growth. However, it is argued here that there are limitations to both.

The standard Malthusian Model[4] predicts that (one-off) technical advances (nor institutional improvements) cannot lead to greater riches (real wages). This assertion stems from the notion that fertility reacts more swiftly to positive income shocks than technology can advance, thus causing wages to swiftly revert to previous levels. However, this argument hinges on the premise that land was a pivotal factor of production with a fixed supply prior to the Industrial Revolution. Under such conditions, the marginal returns to labour diminish as the population expands rapidly.

During and after the Industrial Revolution, the economy broke free from the Malthusian trap by increasingly relying on reproducible factors of production. This transition is loosely reflected in the two-stage evolution, encompassing Engels' pause followed by sustained growth. Malthus's model may possess some explaining power for the inequality in the first stage, i.e., Engels' pause, however, a detailed and comprehensive explanation of this transition, especially the second stage equilibrium, is lacking.

Marx, on the other hand, believed that technological progress had a 'labour-saving bias' (the overall long-term effect of saving labour time in producing commodities with the aid of more and more machinery) that would eliminate any upward demand pressure on wages even as output per worker surged. However, technological change could have many different and contradictory

[3] Clark and Gregory, *The secret history of the industrial revolution*, pp. 6.
[4] O'Rourke and Williamson (2005), *From Malthus to Ohlin: Trade, Industrialisation and Distribution since 1500*, Journal of Economic Growth, 10(1), pp. 5-34.

effects. For example, Brown (1946) argued that technical innovations were becoming increasingly 'capital-saving'[5]. There is a lack of evidence to show that "labour-saving" has the dominant effect in explaining all technological growth.

3. Lewis

Lewis[6] categorized the economy into two distinct sectors: peasant agriculture characterized by peasant agriculture, marked by a surplus population, scarcity of capital, zero marginal product of labour, and the modern industrial sector, characterized by capital-intensive production and high labour productivity.

A formula could be used to describe the process: $real\ Wage = MPL = MPK$, where MPL represents the marginal product per labour, and MPK represents the marginal product per capital. Growth occurred as the modern sector expanded through capital accumulation, leading to an increase in MPK. However, since there was available labour to man the new capacity for capital from the agricultural sector in infinitely elastic supply at the subsistence wage, the real wages did not rise initially. When the modern sector became large enough to absorb all the labour surplus, further accumulation meant that wages rose along with productivity.

His reasoning effectively explains what Allen later termed the Engels' Pause. However, his essay primarily serves as a theoretical framework rather than empirical research supported by concrete evidence. Consequently, it may only serve as a reference for delving further into understanding the occurrence of Engels' Pause during the 19th century.

4. Allen

Unlike Lewis, Allen accounts Engels' Pause for the dynamics between the accumulation of capital and the growth of productivity.

The first stage of rising inequality began with the acceleration of technical progress after 1800 in conjunction with the low elasticity of substitution between capital and labour in the aggregate production function. With technical progress specified as labour augmenting, a higher rate of technical progress reduced the ratio of capital to augmented labour, which implied a higher marginal product of capital. This then translated into a higher share of capital in national income. Inequality increased and the real wage stagnated.

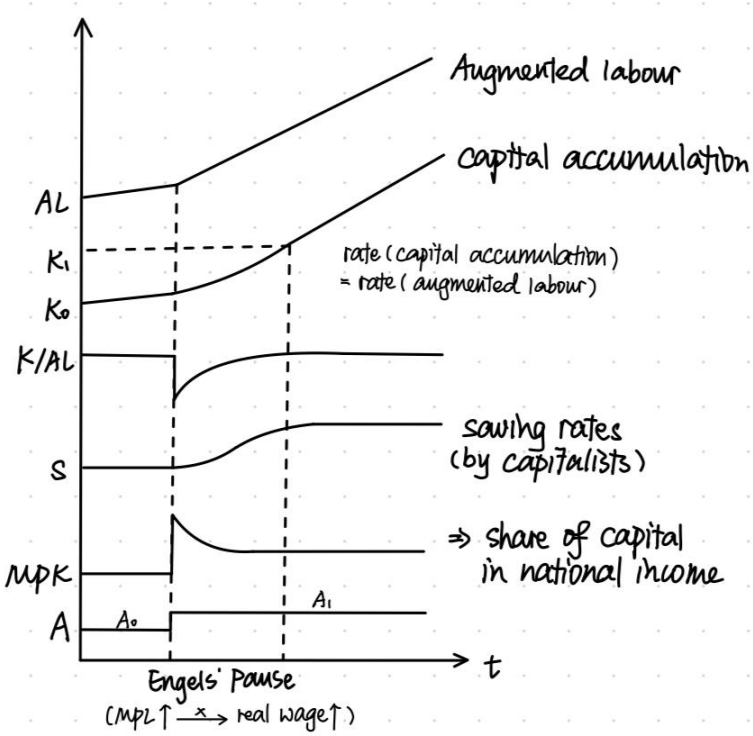
As the share of profits increased, the overall savings rate rose (since capitalists saved a constant share of their income) and capital accumulation accelerated. Eventually, enough capital was accumulated to correspond to the requirements of higher productivity. Then, capital grew as rapidly as augmented labour, productivity growth boosted the real wage as well as product per worker.

---

[5] Weir M. Brown, *"Labor-Saving" and "Capital-Saving" Innovations, Southern Economic Journal*, Vol. 13, No. 2 (Oct., 1946), pp. 101-114.

[6] W. Arthur Lewis, *Economic Development with Unlimited Supplies of Labour*, The Manchester School, Volume 22, Issue 2, pp. 139-191.

All can be concluded in the following graph.



Several details worth mentioning here:

1. Allen used the translog production function, a natural generalization of the Cobb-Douglas model, recognizing the limitations of the latter in grasping the complexities of inequality, particularly concerning the constancy of shares. The estimated parameters revealed a near-zero elasticity of substitution between labour and capital. This is attributable to the necessity of substantial investments in housing and infrastructure accompanying each new job created during the onset of the Industrial Revolution's urbanization phase. Consequently, a significant portion of retained profits had to be allocated to capital investment until it matched the requirements of the enhanced productivity levels. It happened until sufficient capital accumulated with the increase in the elasticity of substitution. This aspect could serve as a compelling argument in favour of Allen's explanation, provided that the historical facts presented convincingly support the sub-point.
2. The production factors included labour, capital, land, and the labour-augmenting parameter measuring productivity. However, potential issues arise from omitted variables, such as human capital and institutional factors. For instance, Berg and Hudson[7] highlighted the oversight in accounting for the rise in female and child labour inputs. As lower-wage female and child workers, possessing more adaptable skills, substituted for expensive male workers with traditional skills in emerging and technologically progressive industries, it exerted downward pressure on average real wages.
3. The calibration of the savings function relies on regressing investment to output on the percentage of land and capital, using the same data employed to assess the effectiveness of

[7] Maine Berg and Pat Hudson, *Growth and change: a comment on the Crafts-Harley view of the industrial revolution*, Economic History Review, 47, I(1994), pp. 147-149.

the model as parameter determinants. This approach may exacerbate the problem of overfitting. The same issue arises in determining the parameters of the production function. Thus, the accurate replication of observed phenomena predicted by the model does not necessarily constitute concrete evidence of its correctness. Allen addressed this problem by claiming that *GDP, of course, is tracked very closely since the rates of technical progress and the production function parameters were chosen to ensure that. The history of the other endogenous variables provide a better test of the model*[8]. However, in his paper, Allen primarily relied on the simulated results of output per worker and real wages. Given that output, or GDP, was closely monitored ex ante, the output per worker could also suffer from overfitting. As for the real wage, it is calculated as a proportion of the average products of the inputs, i.e., $w = \phi_L \cdot Y/L$, which is still derived from the output per worker. The strength of validating the model lies solely in its ability to accurately predict ϕ_L, or the share of labour. Indeed, it accurately predicted the two-phase pattern, but this depends on the equation, i.e., $\phi_L = \alpha_L + \beta_{KK} lnK + \beta_{KL} \ln(AL) + \beta_{KT} lnT$, whose parameters were determined by the regression on the historical data. Therefore, there arises doubt as to whether these issues of overfitting could be justified.

Conclusion

This essay mainly focuses on the topic of Engels' Pause and its role in explaining inequality in the 19th century through the interpretation provided by several historian economists. I would suggest that Allen's approach may be the best among all as it offers the most logical explanation. However, it suffers from a lack of thorough empirical validation.

[8] Allen (2009), pp. 426-27.

The Malthusian World

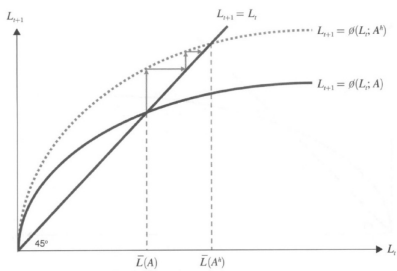
Malthusian Regime: income per capita constant and technological progress was slow

Modern Growth Regime: steady growth in income per capita and technology

land = fixed factor ⇒ decreasing returns to scale (other factors)

richer ⇒ more children ⇒ income per se unchanged

Ashraf and Galor (2011):



Chaney and Hornbeck (2016):

sharp drops in population ⇒ increases in output per worker

The Demographic Transition

The Demographic Transition leads to the escape of the Malthusian Trap

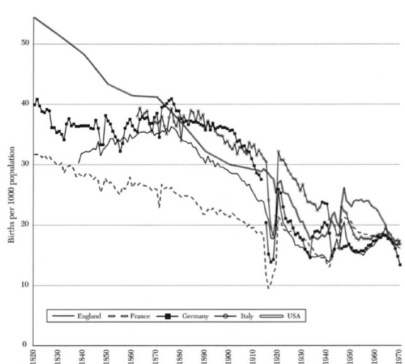


Figure 1. Crude Birth Rates, Selected Countries, 1820–1970

1. a different fertility regime

e.g., Voigtlander and Voth (2013): Black Death shifts WE into a different regime.

female employment opportunities improved

land abundance favored animal husbandry (land-intensive sector)

⇒ higher marriage age and fewer children

2. Six economic explanations for fertility transition

(1) exogenous decline in infant and child mortality (spares)

However: fertility declines lead mortality in the US
Child mortality is partly endogenous

(2) innovations in technology of contraception (避孕)

Guinnane (2011): unlikely 'played a strong role in the fertility transition'

(3) increases in cost of childbearing

urbanization could be a reason
endogeneity of child-labor restrictions?

(4) changes in opportunity cost of childbearing

industrialization raised a woman's outside option

(5) increase in returns to child quality

Becker et al. (2010): provide some evidence in support of this
Higher levels of education ⇒ predictors of strength of fertility transition

(6) social insurance

parents invest in children so they take care of them in old age

3. Still relevant today in the developing world?

Weil and Wilde (2009): for some countries, halving the population would lead to a 26% increase in population

Conclusion:

Without the demographic transition, the I.R. would have faced additional headwinds

Session 2, Lecture 9-10
Culture and Human Capital

Does Culture Matter?
Human Capital and Economic Development

Class: Migration Policy

Explain how international movement of migrants and refugees is currently regulated. Are these arrangements adequate? If, in your view, they are not, what changes would you propose?

Definition

Alesina and Giuliano:

> those customary beliefs and values that ethnic, religious and social groups transmit fairly unchanged from generation to generation

Gorodnichenko and Roland (2017):

> set of values and beliefs people have about how the world (both nature and society) works, as well as the norms of behavior derived from that set of values

Greif (1994):

> ideas and thoughts common to several individuals that govern interaction — between these people, and between them, their gods, and other groups — and differ from knowledge in that they are not empirically discovered or analytically proved.

Temin (1997):

> the distinctive attitudes and actions that differentiate groups of people. culture in this sense is the result of and expressed through religion, language, institutions and history.

Why Culture Matters?

1. Trust

   Arrow (1972): "Virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time. It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence."

2. Alesina and Giuliano (2015): trust $\rightleftharpoons$ institution
3. Gorodnichenko and Roland (2017): individualism vs. collectivism
   individualism better than collectivism for growth
4. Greif (1994): culture shaping institutions
   compares merchant organization in Italy and North Africa in the medieval period

• North Africa: collectivist cultural beliefs: led to institutions based on group's ability to use economic, social and moral sanctions against deviants
• Italy: individualist cultural beliefs: societal organization based on legal, political and second party economic organizations for enforcement and coordination

Bazzi et al. (2020): American frontier ⇒ "rugged individualism"
~ preference for less social spending and transfer
higher Republican vote share

Human Capital

Consensus among economists: human capital is a central ingredient for growth
{ a proximate cause: as downstream from institutions
{ the fundamental cause: perhaps with culture

1. Glaeser et al. (2004)
human and physical capital ↑ ⇒ institutional accumulation
e.g., North and South Korea

2. Rocha et al. (2017), Squicciarini and Voigtlander (2015):
- variation in settlement policies in Brazil ⇒ long-run effects
(places with high human capital migrants remain better educated)
- upper tail human capital mattered for French industrialization

3. Hornung (2014)
the Huguenots: technological transfers by immigrants
find positive long-term effects of immigration on productivity

4. Mokyr et al. (2018): trace Europe's human capital advantages to medieval institutions (importance of apprenticeships)

This "moral hazard" in the master-apprentice relationship creates a need for institutions to organize the transmission of knowledge

guild (行会): allow for broader knowledge dissemination
the Enlightenment. { expansion of useful knowledge
{ more open access to this than before

Class Questions 6: Explain how international movement of migrants and refugees is currently regulated. Are these arrangements adequate? If, in your view, they are not, what changes would you propose?

Reference:

[1] McAuliffe, M. and L.A. Oucho (eds.), 2024. World Migration Report 2024. International Organization for Migration (IOM), Geneva, https://worldmigrationreport.iom.int/msite/wmr-2024-interactive/.

Definition

- Migrant: a person living for more than 12 months outside their country of birth[1]

Abstract

- hardening geopolitics, intensified global shifts => unthinkable conflict (scale and nature)
  - the full-scale invasion of Ukraine by the Russian Federation in early 2022
    "marked an abrupt end to 30 years of globalization and all the international cooperation that made that possible"
  - the Hamas attack on 7 October and the conflict in Gaza
  - other devasting conflicts in the last two years: such as in Afghanistan, Ethiopia, the Sudan, the Syrian Arab Republic, Yemen
  - climate- and weather-related disasters: Pakistan, the Philippines, China, India, Bangladesh, Brazil and Colombia
  - February 2023 earthquakes: south-east Türkiye and northern Syrian Arab Republic
- the use of artificial intelligence (AI) technologies in migration systems
  - heighten the risk of exacerbation of digital divides (e.g., prerequisite includes ICT digital capability which least developed countries lack) => "asymmetry of power" in AI
- the intensification of migration as a political tool in democratic systems around the world
  - Europe election: outcomes turning on the issues of anti-immigration
  - the anti-immigrant sentiment: North and Southern Africa, South-East Asia, the Middle East

Key data and information on migration and migrants

- international migrants in 2020: 281 million (3.6 per cent of the world's population)
  females (135m), males (146m), children (28m), labour migrants (169m)
  top migration corridors: Mexico – US, Syrian Arab Republic – Türkiye*, Ukraine – Russia
  international students: 6.39 million (>1m from China, 0.5m from India)
- international remittances in 2022: USD 831 billion
  USD 647 billion received by low- and middle-income countries
  top countries receiving remittances: India, Mexico, China
  top countries sending remittances: US, Saudi Arabia, Switzerland
- displacement at the end of 2022: 117 million
  refugees (35.3m), asylum-seekers (5.4m), others in need of international protection (mainly Venezuelans, 5.2m), IDPs (Internally Displaced Persons mainly due to conflict and violence, 71.2m)

[1] definition set out in UN DESA's 1998 Recommendations on Statistics of International Migration

1. Migration: relatively uncommon, mostly safe, orderly and regular

   In the face of negatively skewed discussions by media, it can be easy to lose sight of the fact that international migration remains relatively uncommon, with a mere 3.6 per cent (or 281 million) of the world being international migrants. The vast majority of people do not move across borders to live. Most international migration is safe, orderly and regular.

2. Migration: part of the solution for many economies, societies and families
   - driver of human development
   - higher abroad wages for migrants

     The wages that migrants earn abroad can be many multiples of what they could earn doing similar jobs at home.
   - important skills boost, fill labour supply gap especially in destination countries experiencing population declines

     Migration can also provide an important skills boost, which can be critically important for destination countries experiencing population declines.
   - global dynamism, representation in innovation and patens, arts and sciences awards

Policy regulation and migration patterns

Migration policies are developed and administered predominantly at national level and are often influenced by the geopolitical relations between countries at the bilateral level and can result in visa-free arrangements agreed between two (or more) countries, e.g., Trans-Tasman Travel Arrangement between Australia and New Zealand.

- visa policies: control measures for mobility

  allowing each individual country to exercise its exterritorial control over potential entrants (e.g. business travellers, tourists, students and migrant workers)

  key visa policies evolved between 1995 and 2019:
  - border control, entry and exit policies that were more restrictive over time
  - destination countries formulating agreements that grant free visa access to their allies, while imposing restrictions on poorer countries or those they deem unfriendly.

  ⇨ inequality

  On a long-term basis, this could lead to systemic inequality between countries and further deepen mobility inequality between countries and regions
- Regional agreements facilitate mobility
  - ECOWAS (the Economic Community of West African States)
  - the Schengen area challenges: 2015-16, COVID-19 pandemic => considerable pressure of EU border, entry and asylum/refugee policies

    However, the agreement has remained intact, providing mobility opportunities for 400 million European citizens
  - ECOWAS: free movement since 1979, 16 million migrants in 2020
- COVID-19
  - travel restrictions => stranded migrants
  - digital transformation => technology supports migrant populations
- Trend: narrowing international migration pathways, especially for low-income countries
  - between 1995 and 2020, migration from low and medium HDI (Human Development Index) countries increased only slightly
  - polarizing effect: the scale and proportion of outward migration from high and very high HDI countries has increased significantly

There has been a "polarizing" effect, with migration activity increasingly being associated with highly developed countries. This correlation raises the key issue of visa access and related migration policies, especially in the context of migration aspirations held by potential migrants around the world who may wish to realize opportunities through international migration, but are unable to do so.

⇨ New research shows that citizens of wealthy countries are much more able to access regulated mobility regimes than those from poor countries.[2]

- How? Towards a global governance of migration.
  Unlike other areas of globalization – such as trade, for instance – there is no single regime governing human mobility at the global level. In facts, the global governance of migration has been described as unstable, flexible, changing, fragmented and weak.
  - current status / Global Forum on Migration and Development: flexibility and non-binding legal nature of global migration governance regime

Why?

- the linking of migration and security through misinformed 'threat' narratives that seek to paint international migrants as endangering countries and communities
  - amplified through tech platforms, often fuelled by far-right groups operating transnationally, including nationalist and xenophobic ideologies.
  - e.g., discourses that remove agency from migrants and leverage potential fear of migration to justify climate action and food security interventions
- challenges towards global governance: different priorities among Member States, directions of migration flow are inequal for each region / state

[2] Mau et al., 2015. This is also consistent with the prediction of Zelinsky (1971) in his theory of mobility transitions.

Session 2, Lecture 11
Convergence, Divergence, Persistence

paper: Guiso, Sapienza and Zingales (persistence in Italy)

Class: Italy cultural persistence

Can cultural persistence explain economic differences within Italy?

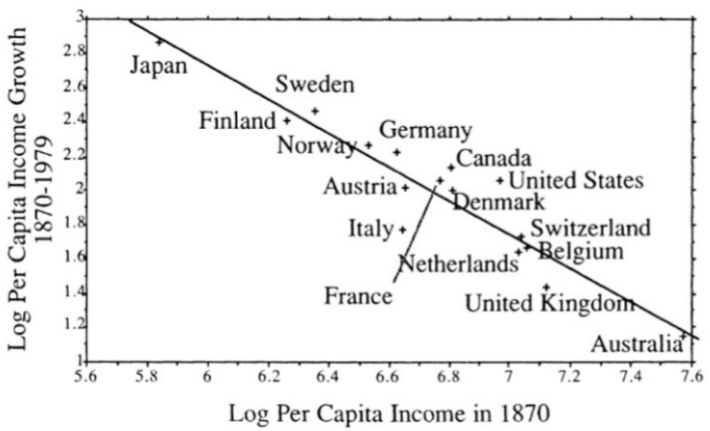
Convergence and Persistence

Solow model: convergence happens if countries have same saving rates, population growth rates and efficiency of labour, whatever the initial capital stock

Abramovitz (1996): growth rates of productivity in any long period tend to be inversely related to the initial levels

Baumol (1986): convergence among industrial nations

De Long (1988): criticize that Baumol used ex post sample



Pritchett (1997): significant divergence
from 1870 to 1990, ratio of per capita incomes between richest and poorest increased by a factor of five

Easterly and Levine (2016): places that had more Europeans during colonization are richer today

- Europeans brought growth-promoting characteristics: institutions, human capital, technology, norms etc.; not genetics etc.
- Estimate that 40% of current development outside Europe is associated with share of Europeans in colonial era.

Guiso et al. (2016): places that had more freedom in medieval period have better outcomes today (culture)

- more organ donations, lower levels of cheating

Class Question 6: Can cultural persistence explain economic differences within Italy?

Reference: Guiso, Sapienza and Zingales (2016), *Long-Term Persistence*, Journal of the European Economic Association 14(6), pp. 1401-36.

Key Issue: Whether a positive historical shock can generate long-term persistence in development. If so, does the persistence function via institutions or culture?

Views:

[Evidence]	Italian cities that achieved self-government in the Middle Ages have a higher level of civic capital today than similar cities in the same area that did not. The size of this effect increases with the length of the period of independence and its intensity. (free city-states in the Middle Ages => civic capital today)
[Argument]	the Middle-Age experience of self-government fostered self-efficacy beliefs – beliefs in one's own ability to complete tasks and reach goals (through culture, not institutions, since intensity and length matters)

1. persistence in economic development
   - The per capita income of European countries at the end of the 20th century had a 0.56 correlation with their per capita income at the beginning of the century. Even over the 300-year span from the 18th to the 21st century the correlation is 0.23.[1]
   - Countries inhospitable to white men still suffer of low property rights protection and excessive executive power because the European colonizers, who did not intend to stay, designed legal institutions aimed at extracting rather than creating value.[2]
2. persistence because of culture (Putnam et al. 1993, Williamson 2000)
3. persistence => economic differences within Italy
   - period studied: when formal institutions have long disappeared => only cultural effect
   - region tested: within the North, across North and South => length and intensity matters
4. Results
   - indicators of civic capital: number of nonprofit organizations per capita[3], organ donation organization[4], frequency of cheating in a national exam taken by children[5]
   - Northen cities (free city-states in the Middle Ages) => higher civic capital today
5. ? => the creation of free city-states
   - North: bishops in towns => formation of a free city-state (correlation exists before 1400)
   - South: strong central power exerted by the Normans => no free city-states
     - South was more developed and prosperous than North at the start of 2nd millennium[6]
6. free city-states => ? => economic development
   - Banfield (1958): South => a feeling of lack of self-efficacy
   - Guiso et al. (2016): collective positive historical shock shapes self-efficacy

[1] Maddison (2001).
[2] Acemoglu et al. (2001).
[3] Putnal et al. (1993).
[4] Guiso et al. (2011).
[5] Fisman and Miguel (2007).
[6] De Long and Shleifer (1993).

measurement: the way people explain to themselves why a particular event happens (which is transmitted through education and socialization[7]) among young children in similar geographical areas that have had different histories

- a feeling of self-efficacy => today's civic capital
  stronger self-efficacy beliefs => expect efforts higher payoff => willingness to contribute => cooperative behavior

7. persistence?
   - informal institutions during free city-state survived and kept civic engagement spirit alive
   - historical experience affected the attitude of the local population and this attitude survived intergenerational[8] transmission and socialization, self-fulling nature of the beliefs
8. Shortcomings
   - Omitted geographical characteristics that are correlated to the emergence of free city-states in the Middle Ages and to a higher level of civic capital today not controlled for.
   - Culture is shaped by important historical events? Who decides historical events?

Appendix: Italy specific background

- North Italy: Holy Roman Empire (~ 1000) => city states, inhabitants established mutual collaboration for common interest
- South Italy: Normans invaded (1061-1091), Communes made rules and laws => Signoria (15^{th}) as continuation of the Communes

[7] Dweck et al. (1978); Seligman et al. (1984).
[8] Educational transmissions: Dweck et al. (1978); Parental transmissions : Seligman et al. (1984).

Session 3, Lecture 12
the Gold Standard

paper: Lawrence Broz (self-regulating gold standard)
Barry Eichengreen (Hegemonic Stability Theory)
Charles Wyplosz (EMU and euro)

Class: Hegemon in International Monetary System

Assess the view that a fixed exchange-rate system requires a hegemonic country to manage it: without a hegemon fixed exchange-rate systems eventually collapse. Discuss with reference to the Gold Standard, the Bretton Woods system and the Euro.

The Gold Standard

Bordo: The gold standard was a commitment by participating countries to fix the prices of their domestic currencies in terms of a specified amount of gold
⇒ exchange rates between countries on the gold standard fixed

Basic logic: mine gold ⇒ money supply ↑ ⇒ price level ↑

1. price levels around the world to move together
"balance-of-payments" process: the price-specie-flow mechanism
suppose US growing faster than UK ⇒ price in US ↓ (money supply fixed in short run)
⇒ US exports cheaper than imports
⇒ US current account surplus, gold flows to the US
⇒ increase money supply in US (reverse fall in prices)
reduce money supply in UK (price level is lower)
—— US exports its deflation, self-stabilizing world economy

2. Monetary shocks were transmitted via flows of gold and capital
Example: 1848 discovery of gold in California
⇒ increase in the price level, US exports more expensive
⇒ deficit in US current account
⇒ raise money supply in other countries (US gold outflow)
⇒ US price level goes down

3. Central banks behavior: raise interest rates when needed gold

Advantage: long-term price stability
only way to increase total money supply (in aggregate) was to mine gold
money supply was large fixed ⇒ so was the price level

Disadvantage: short-term price instability was high
- Governments have little discretion (自由裁量权) over monetary policy
- Resources cost of producing gold

The Emergence

Flandreau (1996): the making of the gold standard was an accident of history
—— Trade led to greater pressures for 'currency uniformization'

Meissner (2005): adoption related to trade: "depended heavily on the degree of trade and financial links with gold standard countries"

Bordo and Rockoff (1996), Obstfeld and Taylor (2003): mitigate exchange rate uncertainty

Lopez-Cordova and Meissner (2003): gold standard ⇒ higher trade

"trade flows may have been nearly 30 percent higher when two countries adopted the gold standard"

Year in which countries adopted the gold standard

Country	Year of adoption of gold convertibility and previous regime	Country	Year of adoption of gold convertibility and previous regime
Australia	1852	Japan	1897 (silver)
Canada	1853	India	1899 (silver)
Portugal	1854	Costa Rica	1900 (silver)
Argentina	1863, 1883, 1903	Ecuador	1900
Uruguay	1863, 1885	Philippines	1903 (silver)
Colombia	1871	Straits Settlements	1903 (silver)
Germany	1872 (silver)	Siam	1903
Sweden	1873 (silver)	Mexico	1905 (silver)
Denmark	1873 (silver)	Brazil	1906 (fiat)
Norway	1873 (silver)	Bolivia	1908
Netherlands	1875 (silver)	Greece	1910 (fiat)
Finland	1877 (silver)	Nicaragua	1912
Indonesia	1877 (silver)	Austria-Hungary	— (fiat)
Belgium	1878 (bimetallism)	Santo Domingo	—
France	1878 (bimetallism)	Haiti	—
Switzerland	1878 (bimetallism)	Bulgaria	—
United States	1879 (fiat)	China	— (silver)
Turkey	1880	Guatemala	—
Italy	1884 (fiat)	Honduras	—
Egypt	1885	Paraguay	—
Chile	1887 (fiat) and 1895 (fiat)	Persia	—
Romania	1890	Peru	—
Salvador	1892	Spain	— (fiat)
Russia	1897 (fiat)	Venezuela	—

Country	Monetary Union (MU)	Year 1870	1875	1880	1885	1890	1895	1900	1905	1910
U.K.	Sterling union	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold
Australia	Sterling union	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold
New Zealand	Sterling union	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold
Canada	Sterling, U.S./Canada	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold
U.S.	U.S./Canada	Paper	Paper	Gold	Gold	Gold	Gold	Gold	Gold	Gold
France	Latin MU	Bimetal	Bimetal	Gold	Gold	Gold	Gold	Gold	Gold	Gold
Belgium	Latin MU	Bimetal	Bimetal	Gold	Gold	Gold	Gold	Gold	Gold	Gold
Switzerland	Latin MU	—	—	—	—	—	—	Gold	Gold	Gold
Italy	Latin MU	Paper	Paper	Paper	Gold	Gold	Paper	Paper	Paper	Paper
Denmark	Scandinavian MU	Silver	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold
Norway	Scandinavian MU	Silver	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold
Sweden	Scandinavian MU	Silver	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold
Germany		Silver	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold
Netherlands		Silver	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold
Finland		Silver	Silver	Gold	—	—	—	—	Gold	Gold
Austria		Paper	—	—	—	—	—	Paper	—	—
Russia		Paper	—	—	—	Paper	—	Gold	—	—
Spain		Bimetal	—	—	—	Paper	—	Paper	Paper	Paper
Portugal		Gold	—	—	—	Gold	—	Paper	—	—
Japan		Silver	—	—	Paper	Silver	Silver	Gold	Gold	Gold
Brazil		Paper	—	—	—	Paper	—	Paper	Paper	Gold
Mexico		Silver	—	—	—	Silver	—	Silver	Gold	Gold
Chile		—	—	—	—	—	—	Paper	Paper	Paper
Argentina		—	—	—	—	Paper	—	Paper	Gold	Gold
Egypt		—	—	—	—	—	—	Gold	—	—
India		Silver	—	—	—	Silver	—	Gold	Gold	Gold
China		Silver	—	—	—	—	—	Silver	—	—
Indonesia		—	—	—	—	Silver	—	Silver	Silver	Silver
Philippines		—	—	—	—	—	—	Silver	—	—

1. the Gold Standard facilitate capital market integration

- Bordo and Rockoff (1996): ⇒ lower cost of loans from metropolitan Europe
- prevent governments from surprise printing of money
- avoid high inflation

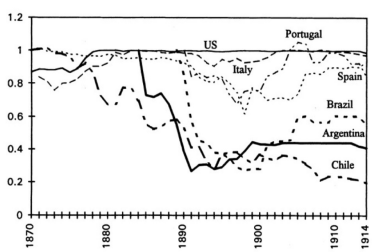


FIGURE 1

NORMALIZED EXCHANGE RATES FOR SEVEN COUNTRIES

Con: causality not sure

could be that rather responsible governments selected in

- Obstfeld and Taylor (2003): prior to WWI, gold standard countries borrowed at up to 30 basis points less than non gold standard

2. Interwar gold standard

obstacles: { working class dominated parties: employment
{ international dispute over war debts and reparations

Chernyshoff et al. (2009): nominal rigidities increased after WWI

- trade unions made it more difficult for prices to fall
- Gold standard: the flexibility assumed by the classical economists gave way to the stickiness emphasized by the Keynesians

Class Question 6: Assess the view that a fixed exchange-rate system requires a hegemonic country to manage it: without a hegemon fixed exchange-rate systems eventually collapse. Discuss with reference to the Gold Standard, the Bretton Woods system and the Euro.

Challenge: design a multilateral and stable international monetary regime (exchange-rate regime)

Background: four well-functioning International Monetary Systems
- 1820 – WWI: the classical gold standard
- 1925 – 1931: gold exchange standard
- WWII – 1971: the Bretton Woods system
- 1975 – : floating-rate system

Hegemonic Stability Theory: A hegemon is necessary to maintain a fixed exchange-rate system.
- classical gold standard: stable because of Britain's dominance
- interwar gold exchange standard: instability because of the absence of a hegemonic power
- Bretton Woods system: stable because of the singular power of the United States

Lawrence Broz[1]: the existence of hegemon NOT necessary
NO implicit or explicit agreement among member stated about the characteristics and requirements of memberships needed. The focus should be on domestic social order (the pursuit of national interests) rather than international one.
- Challenges: heterogeneous (even conflicting) national policy preferences
  - ⇨ members of different preference and power perform different regime-stabilizing functions (asymmetries of interest among states => a division of responsibility)
- Solution - division of labor: all driven by domestic imperatives
  - a large state that prefers stable currency => strong commitment to sound money => its national currency is well positioned to serve internationally as a medium of exchange and a reliable store of value
  - small states inclined toward domestic monetary independence: disruptions to the flow of capital in the international economy could threaten its domestically oriented macroeconomic agenda => take on a system-sustaining role
    - ⇨ such diverse international systems have existed naturally and functioned relatively smoothly for long periods
- Evidence: the gold standard was self-regulating (England, France, Germany)

Barry Eichengreen[2]: Hegemonic Stability Theories of the International Monetary System
Three monetary systems examined: the classical gold standard, the interwar gold-exchange system, and the Bretton Woods system
View: while hegemons may contribute to the smooth operation of international monetary regimes, much of the evidence is difficult to reconcile with the hegemonic stability view, and the

[1] Lawrence Broz (1995), *National Goals and Positive International Externalities: The Domestic Politics of International Monetary Order: The Gold Standard*, Working Paper 95-06, Weatherhead Center for International Affairs, Harvard University, 1995.
[2] Barry Eichengreen (1987), *Hegemonic Stability Theories of the International Monetary System*, in Elusive Stability: Essays in the History of International Finance, 1919-1939, Cambridge: Cambridge University Press, pp. 271-311.

international cooperation[3] seems to be the key. Overall, an international monetary system based on hegemony is transient.

- Hegemonic Stability Theory: the carrot and stick variants
- The operation of monetary systems: adjustment, liquidity, hegemonic stability
  - [the Gold Standard]: not the British hegemony, but the collective hegemony of the European center (the stability of the classical gold standard was enjoyed exclusively by the countries of the center / the powerful)
  - Charles Kindleberger: The lender of last resort is needed to discount in time of crises, provide countercyclical long-term lending, and maintain an open market for distress goods. Only a hegemonic power can carry this out.
  - Eichengreen: the existence of a hegemon could only affect the timing but not the fact of collapse (British sterling crisis)
- the Dynamics of Hegemonic Decline
  - confidence in maintenance of dollar convertibility
    Robert Triffin (1947): the Bretton Woods system was dynamically unstable
    system's viability => foreigners accumulate dollars => confidence in dollar convertibility
    share of dollars in reserves increase (unlike gold) => US: ever-growing foreign dollar liabilities with relatively small amount of gold reserve
  - different relative rates of growth of the US and foreign economies
    foreign economies devaluations => depress the relative rate of growth of the US
  - Britain's hegemonic position => fall in the domestic capital formation (export capital)

Charles Wyplosz[4]: Economic and Monetary Union (EMU)

The EMU is more a result of cooperation across Europe than a product of hegemony.

- Maastricht Treaty: European Economic Community => European Union, single currency
  Europe is generally an optimal currency area:
  - openness to mutual trade => price determined at the area level => reduce the ability of the exchange rate to alter significant relative prices
  - diversification of individual economies => less likely to suffer country-specific shocks
  - mobility of inputs across the area (especially labor) => deal with asymmetric shock through migration, lessen the need for adjustment through exchange rate changes [not so well]

[3] Keohane's notion of "hegemonic cooperation"—that cooperation is required for systemic stability even in periods of hegemonic dominance, although the presence of a hegemon may encourage cooperative behavior—seems directly applicable to international monetary relations.

[4] Charles Wyplosz (1997), *EMU: Why and How It Might Happen*, Journal of Economic Perspectives, Vol. 11, No. 4, pp. 3-21.

Session 3, Lecture 13-14
the Great Depression

Causes of the Great Depression
Transmission of the Great Depression

paper: Accominotti (1931 British Sterling Crisis)

Essay: British Sterling Shock

How does Accominotti (2012) explain the transmission of the Central European panic of 1931 to British Banks? How convincing is his analysis?

Characteristics of the Great Depression

Ohanian (2009): defining characteristic of the Great Depression is a substantial and chronic excess supply of labor, with employment well below normal, and real wages in key industrial sectors well above normal.

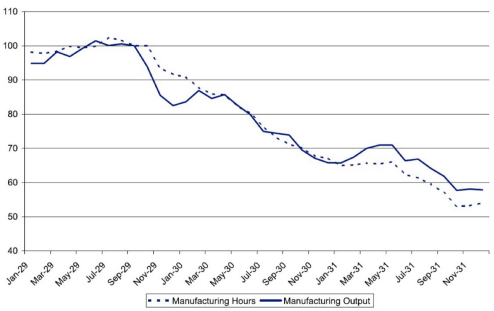
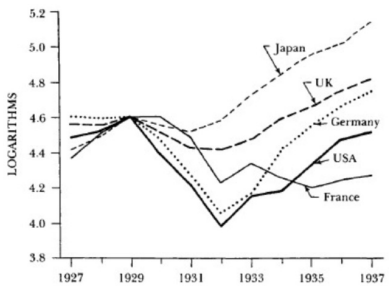


Figure 1
Annual Industrial Production in Five Countries, 1927–1937



- initial slowdown began in the summer of 1929 (stock market)
- autonomous drop in consumption, increase in tariffs, debt deflation, banking panics

Causes of the Great Depression

Friedman and Schwartz (1963): monetary policy failed to offset bank-panic-induced drops in the money supply

- monetary contraction ⇒ deflation
  low nominal spending ⇒ depression
- wage rigidity ⇒ markets don't clear ⇒ unemployment

  Bordo et al. (2000):

  > monetary shocks account for between 50 and 70% of the decline in GNP through 1933. 1933 policies aimed at keep wages high ⇒ slow recovery after gold standard abandoned

  Ohanian (2009):

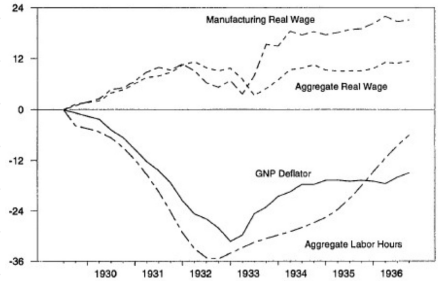
  > the role Herbert Hoover played: in November 1929, Hoover met with leaders of major industrial firms and told them to not cut wages; in return, Hoover would keep unions at bay. (确保大规)

  ⇒ manufacturing wages 10% ↑, hours 40% ↓, average work week 20% ↓
  ⇒ Ohanian: Hoover's program reduced aggregate output and hours worked by roughly 20%. He turned a recession into depression.
  (increased market power of workers)

Support for Chanian's view:

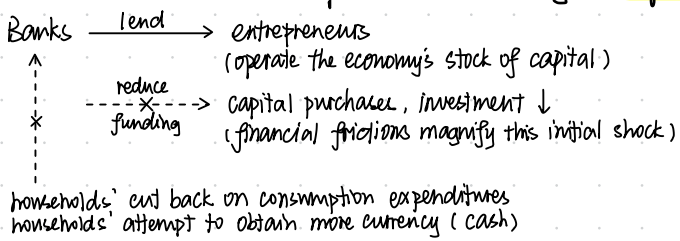
1. agriculture behaves differently than industry. (Hoover's policies only affected industry)
2. Gap between market clearing and actual wage was large.
3. Firms were afraid of unionization thus went along with Hoover.

"Exogenous deflationary shock + wage rigidities"



- **Gold Standard** was to blame
  initial downturn exacerbated by policies necessitated by Gold Standard
  US Federal Reserve less able to respond to financial panics in 1931 because expansionary monetary policy would have led to a gold outflow.
  (*) Countries that left the gold standard early (e.g., UK) did better than those stayed on it for longer
  ⇒ explain why central banks didn't intervene

- **Banks Channel**
  Christiano et al. (2003): Depression caused by a **liquidity preference** shock

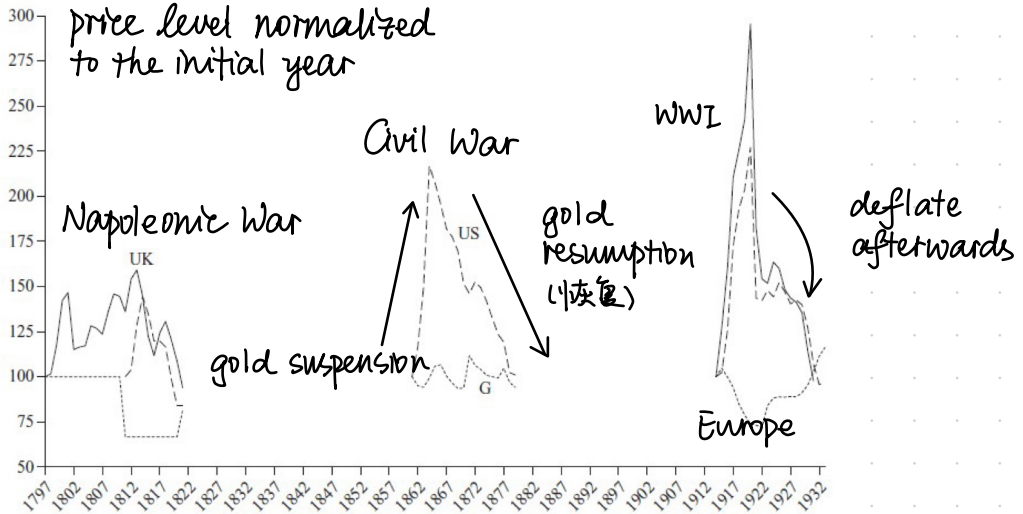


  Calomiris and Mason (2003): **weakened banks**
  cite Bernanke (1983), who stressed the effect of deflation on borrowers' balance sheets
  { Debt deflation: debt set in nominal terms becomes higher in real terms
  { borrowers had less to invest and couldn't qualify for credit
  Bernanke: a rise in the 'cost of credit intermediation'
  Calomiris and Mason (2003): a standard deviation decrease in loan-supply growth is associated with a 7% decline in income.

Why Deflation?

Countries went off gold standard during wars, returned to pre-war parities.
⇒ required a drop in prices: deflation

Mazumder and Wood (2013): The Great Depression was caused by 'the resumption of gold convertibility of currencies at prewar parities'.



– cast doubt on other explanations (collapse of aggregate demand...)

Conclusions

1. Policies to keep wages high seem to have exacerbated depression
2. the Gold Standard magnified bank and labour market shocks

Transmission of the Great Depression

Temin: fixed exchange rates under the gold standard transmitted negative demand shocks

countries running a trade deficit (price-specific-flow mechanism)
⇒ reduce imports and increase exports
⇒ export gold, decrease monetary stock
⇒ deflation

1. USA, UK and German economies contracted: fewer imports, less exports
2. prices fell due to a lack of demand in other countries, also force prices to fall to maintain value of currency.

⇒ deflation led to unemployment (with wage rigidity) and may have weakened banks as well

3. Spain avoided Depression by never being on gold standard
Japan: massive devaluation in 1932

Dimand (2003): highlight Irving Fisher's view

"the virus of depression is carried from one country to another via a common monetary standard as a conduit. That is, one gold standard country infects another until they all come down with the disease, while those countries not on the gold standard are relatively immune"

Some similar mechanisms:
1. unanticipated deflation ⇒ increase debt burden and bankruptcies
2. transfer of wealth from borrowers to lenders ⇒ depress spending

- UK left the Gold Standard in 1931

Accominotti (2012): provides evidence that the UK leaving the Gold Standard was related to events in central Europe.
- Financial troubles in Central Europe ⇒ liquidity crisis in British banking system
- Bankers' Acceptances: easy money in good times
- Central Banks limited as lenders of last resort by reserve requirements

- US Fed. raised interest rates to incentivize gold inflow

Bernanke and James (1991): Depression banking panics were largely limited to countries on the Gold Standard

these seem to cluster chronologically in 1931
(suggesting banking sector might be a channel of transmission)

Date	Country	Crises
June 1921	SWEDEN	Beginning of deposit contraction of 1921–22, leading to bank restructurings. Government assistance administered through Credit Bank of 1922.
1921–22	NETHERLANDS	Bank failures (notably Marx & Co.) and amalgamations.
1922	DENMARK	Heavy losses of one of the largest banks, Danske Landmandsbank, and liquidation of smaller banks. Landmandsbank continues to operate until a restructing in April 1928 under a government guarantee.
April 1923	NORWAY	Failure of Centralbanken for Norge.
May 1923	AUSTRIA	Difficulties of a major bank, Allgemeine Depositenbank; liquidation in July.
September 1923	JAPAN	In wake of the Tokyo earthquake, bad debts threaten Bank of Taiwan and Bank of Chosen, which are restructured with government help.
September 1925	SPAIN	Failure of Banco de la Union Mineira and Banco Vasca.
July–September 1926	POLAND	Bank runs cause three large banks to stop payments. The shakeout of banks continues through 1927.
1927	NORWAY, ITALY	Numerous smaller banks in difficulties, but no major failures.
April 1927	JAPAN	Thirty-two banks unable to make payments. Restructuring of 15th Bank and Bank of Taiwan.
August 1929	GERMANY	Collapse of Frankfurter Allgemeine Versicherungs AG, followed by failures of smaller banks, and runs on Berlin and Frankfurt savings banks.
November 1929	AUSTRIA	Bodencreditanstalt, second largest bank, fails and is merged with Creditanstalt.
November 1930	FRANCE	Failure of Banque Adam, Boulogne-sur-Mer, and Oustric Group. Runs on provincial banks.
	ESTONIA	Failure of two medium-sized banks, Estonia Government Bank Tallin and Reval Credit Bank; crisis lasts until January.
December 1930	U.S.	Failure of Bank of the United States.
	ITALY	Withdrawals from three largest banks begin. A panic ensues in April 1931, followed by a government reorganization and takeover of frozen industrial assets.
April 1931	ARGENTINA	Government deals with banking panic by allowing Banco de Nacion to rediscount commercial paper from other banks at government-owned Caja de Conversión.
May 1931	AUSTRIA	Failure of Creditanstalt and run of foreign depositors.
	BELGIUM	Rumors about imminent failure of Banque de Bruxelles, the country's second largest bank, induce withdrawals from all banks. Later in the year, expectations of devaluation lead to withdrawals of foreign deposits.
June 1931	POLAND	Run on banks, especially on Warsaw Discount Bank, associated with Creditanstalt; a spread of the Austrian crisis.
April–July 1931	GERMANY	Bank runs, extending difficulties plaguing the banking system since the summer of 1930. After large loss of deposits in June and increasing strain on foreign exchanges, many banks are unable to make payments and Darmstädter Bank closes. Bank holiday.
July 1931	HUNGARY	Run on Budapest banks (especially General Credit Bank). Foreign withdrawals followed by a foreign creditors' standstill agreement. Bank holiday.
	LATVIA	Run on banks with German connections. Bank of Libau and International Bank of Riga particularly hard hit.
	AUSTRIA	Failure of Vienna Mercur-Bank.
	CZECHOSLOVAKIA	Withdrawal of foreign deposits sparks domestic withdrawals but no general banking panic.
	TURKEY	Run on branches of Deutsche Bank and collapse of Banque Turque pour le Commerce et l'Industrie, in wake of German crisis.
	EGYPT	Run on Cairo and Alexandria branches of Deutsche Orientbank.
	SWITZERLAND	Union Financière de Genève rescued by takeover by Comptoir d'Escompte de Geneve.
	RUMANIA	Collapse of German-controlled Banca Generala a Tarii Românesti. Run on Banca de Credit Roman and Banca Romaneasca.
	MEXICO	Suspension of payments after run on Credito Espanol de Mexico. Run on Banco Nacional de Mexico.
August 1931	U.S.	Series of banking panics, with October 1931 the worst month. Between August 1931 and January 1932, 1,860 banks fail.
September 1931	U.K.	External drain, combined with rumors of threat to London merchant banks with heavy European (particularly Hungarian and German) involvements.
	ESTONIA	General bank run following sterling crisis; second wave of runs in November.
October 1931	RUMANIA	Failure of Banca Marmerosch, Blank & Co. Heavy bank runs.
	FRANCE	Collapse of major deposit bank Banque Nationale de Crédit (restructured as Banque Nationale pour le Commerce et l'Industrie). Other bank failures and bank runs.
March 1932	SWEDEN	Weakness of one large bank (Skandinaviska Kreditaktiebolaget) as result of collapse of Kreuger industrial and financial empire, but no general panic.
May 1932	FRANCE	Losses of large investment bank Banque de l'Union Parisienne forces merger with Crédit Mobilier Français.
June 1932	U.S.	Series of bank failures in Chicago.
October 1932	U.S.	New wave of bank failures, especially in the Midwest and Far West.
February 1933	U.S.	General banking panic, leading to state holidays and a nationwide bank holiday in March.
November 1933	SWITZERLAND	Restructuring of large bank (Banque Populaire Suisse) after heavy losses.
March 1934	BELGIUM	Failure of Banque Belge de Travail develops into general banking and exchange crisis.
September 1934	ARGENTINA	Bank problems throughout the fall induce government-sponsored merger of four weak banks (Banco Espanol del Rio de la Plata, Banco el Hogar Argentina, Banco Argentina-Uruguayo, Ernesto Tornquist & Co.).
October 1935	ITALY	Deposits fall after Italian invasion of Abyssinia.
January 1936	NORWAY	After years of deposit stability, legislation introducing a tax on bank deposits leads to withdrawals (until fall).
October 1936	CZECHOSLOVAKIA	Anticipation of second devaluation of the crown leads to deposit withdrawals.

Banking system as a transmission channel

Bernanke and James (1991):
falling prices lowered the nominal value of bank assets, but not the nominal value of bank liabilities
⇒ weakened the financial position of banks

– Banking crises often coincided with exchange rate crises so CBs typically raised interest rates during panics

Significant proportion of deposits foreign owned
⇒ withdraw from bank and then convert into another currency (so banking crises and exchange rate crises would go together)
⇒ often led to 'standstill agreements': froze withdrawals by foreigners

Schnabel (2004): the role of banks that were 'too big to fail' in transmitting shocks across the economy
⇒ banks engaged in risky behaviour (moral hazard)
during the crisis of 1931, these banks absorbed all CB's liquidity
⇒ insolvency

Ritschl and Sarferaz (2014): banking distress deepened recession
US a major financier of German reparations
⇒ losses from Germany's debt crisis: ~ 13-16% of US GDP

Cole and Ohanian (2001): the spread of misguided industrial policies contributed to the depression
policies that reduced incentives to work ⇒ the UK's 20-year Great Depression
large increases in unemployment benefits and housing subsideds raised the cost to workers of relocating from depressed regions

Mathy and Meissner (2011): trade helps transmit shocks
Schularick and Taylor (2012): the money and credit stocks collapsed
Rise of credit and leverage after WWII: during crises central banks support money growth (lesson learned?)

* Bernanke as head of the Fed during the Great Recession
He acted like he did: flood the economy with liquidity

Tutorial Question 2: How does Accominotti (2012) explain the transmission of the Central European panic of 1931 to British Banks? How convincing is his analysis?

Abstract: Although Forrest Capie, Terence Mills and Geoffrey Wood[1] argued that the banking stability remained intact during the 1930s and denied the occurrence of a significant financial crisis in Britain in 1931, Accominotti[2] challenged their view. In his paper, Accominotti explains how the Central European panic in the spring of 1931 transmitted to the sterling crisis of September and affected Britain's banking system. He identifies an important financial intermediary, the merchant banks, and a specific credit instrument, the bankers' acceptance, as key element in this transmission. By examining the consistency in the impact on British banks and the presence of liquidity crises in their balance sheets, he provides evidence supporting this transmission channel. Accominotti suggests that the crisis prompted the Bank of England to intervene in the market, which subsequently led to speculative attacks and the abandonment of the gold standard.

Transmission Channel through the Bankers' Acceptance

Merchant banks in London emerged during the 18th and 19th centuries and played a crucial role in the development of international trade by offering services such as trade finance, foreign exchange, and investment banking. One of their most important roles was as guarantors of short-term commercial debts for German and other Central European merchants with bankers' acceptances. A bankers' acceptance is a time draft drawn on and accepted by a bank. In a typical transaction, an exporter sells goods to an importer and agrees to receive payment at a future date. The exporter then draws a draft on the importer's bank, demanding payment at the specified future date. The accepting bank reviews the transaction, and if everything is in order, it accepts the draft, effectively guaranteeing payment. The exporter can either hold the accepted draft until maturity or sell (discount) it in the financial markets to obtain immediate cash. Bankers' acceptances, which represent only contingent liabilities for British banks, add equal assets and liabilities to the bank's balance sheet. This mechanism was popular and attractive because banks could earn significant profits through commission fees.

However, things went wrong when nearly all debtors/importers from the region defaulted simultaneously. This was precisely the case during the Central European panic of 1931. A wave of financial instability swept through Austria, Hungary, and Germany, exerting severe pressure on their local currencies. Governments responded by introducing exchange controls, preventing merchants and banks from converting their local currencies into pounds. Consequently, a Central European debtor/importer indebted to a London accepting bank, even if solvent, was unable to transfer funds to the UK and pay their sterling debt on time unless they had other claims in foreign currency. The Standstill Agreement directly transformed the merchant banks' contingent liabilities into real ones, leading to a liquidity strain.

The liquidity strain stemmed from the great exposure of merchant banks to this kind of trade credit. At the end of 1928, around 20 percent of world exports were financed through the London discount market.[3] This was because the quantity of acceptances depended solely on internal, self-

[1] Capie, Mills, and Wood (1986), *What Happened in 1931?*, Economic Affairs, 7(1), pp. 57-58.

[2] Accominotti (2012), *London Merchant Banks, the Central European Panic, and the Sterling Crisis of 1931*, Journal of Economic History, 72(1), pp. 1-43.

[3] Accominotti (2012), pp. 24. According to Maddison, *World Economy*, the total value of world exports amounted to 6,669 million pounds in 1928. The value of outstanding sterling acceptances was estimated at 328 million pounds at the end of 1928 (Truptil, *British Banks*, p. 261). Since the great majority of these bills were of three-month maturity, this value should be multiplied by four in order to obtain the approximate amount of bills accepted yearly by British banks. This gives an amount of 1,312 million pounds, corresponding to 19.7 percent of the volume of world trade.

imposed prudential rules. Kindersley[4] suggested that bankers' acceptances should not exceed three or four times the value of the bank's capital and reserves, thereby ensuring the bill brokers of the merchant banks' solvency. However, at the end of 1928, six banks in the sample had contingent liabilities exceeding four times their capital, and for three others, the ratio was between three and four. According to standards of the time, these banks were therefore highly exposed.[5]

Accominotti then found that the banks' deposit losses between 1930 and 1931 could be represented as a function of their initial Standstill exposure. The regression analysis showed significant results both statistically and in magnitude, with the exposure factor being 37.38, a t-statistic of 5.52, and a p-value less than or equal to 0.00. In comparison, there was no correlation between banks' deposit losses in 1931 and their 1930 debt-to-equity ratio (with exposure=-1.36, t-stat=-0.65, p-value<0.53).

Other evidence provided by Accominotti includes the difference in acceptance commissions. It was showed that Germany-exposed bank (Schroders) had commissions approximately 30 basis points higher than the bank (Morgan Grenfell) exposed mainly to the US.[6]

BoE's Reaction and the Currency Crises

The subsequent currency crises directly stemmed from the expectation that the Bank of England would support troubled merchant banks, since its loosened monetary policy was anticipated to be accompanied by a depreciation of sterling, creating opportunities for arbitrage since the world's currencies were pegged to gold.

Firstly, the Standstill acceptances were large in quantity. Acceptances drawn on account of German customers 'unable to remit' (1931) represented around 38 percent of all bills accepted by the London clearing banks and accepting houses. Even though the clearing banks themselves did not directly issue bankers' acceptance, they had invested around 88 percent of their capital in acceptances. Second, BoE might consider the acceptance market crucial to preserving the position of the British financial services. Finally, there was a close connection between the senior management of the acceptance houses and the government.[7]

The market expectation turned out to be true. BoE did carry out market intervention after the German moratorium on July 15. Banks were allowed to borrow at the BoE at the official bank rate by discounting German Standstill bills (i.e., bills backed by frozen acceptance debts in Germany), where the German bills amounted to approximately 40 percent of the BoE's gold reserves in 1931. Meanwhile, BoE's issuance of additional notes violated contemporary monetary law, which stipulated that the amount of the 'fiduciary issue' should be under 250 million pounds, further weakening sterling's credibility of the gold parity.

Finally, the speculative attack came with the French franc to pound sterling spot and forward rates dropped significantly in mid-July 1931. Sterling devaluated by 25 percent in 1931 and there was no surprised that the BoE announced the abandonment of the gold standard officially on 21 September 1931.

How Convincing?

There are other hypotheses accounting for the international propagation of the 1931 financial crisis. On one account, the German crisis was regarded as a wake-up call inducing investors and

[4] Accominotti (2012), pp. 15.
[5] Accominotti (2012), pp. 15.
[6] Accominotti (2012), pp. 19.
[7] Accominotti (2012), pp. 28.

depositors to reassess other countries' fundamentals and leading to contagion.[8] On the other, scholars have noted that the fixed exchange rates gold standard system was a powerful channel of crisis transmission.[9] Following the suspension of gold convertibility in central European countries, speculative pressure mounted on other gold standard currencies.

Meanwhile, there are criticism towards how important the merchant banks really were in their impact on the action taken by the BoE. Harvey, the deputy governor of BoE during the crisis, decided to raise interest rates 1.5 percent, which revealed that he recognized that Bank rate increases would bolster sterling's value. This could demonstrate that Bank policy was not driven primarily by a concern for the tottering merchant banks.[10]

Moreover, even the international contagion during the Central Europe panic of 1931 may have been a catalyst for the subsequent British currency crises, it was nether the fundamental nor the sole reason. The gold standard had been under strain since the end of World War I. By studying the bond market, Obstfeld and Taylor[11] found that the interwar global capital market was very different from its antecedent, the classical gold-standard regime of 1870-1914. The bond markets could have adopted a longer perspective under which protracted adherence to unchanging gold parities seemed less probable than short-term adherence. Chernyshoff, Jacks and Taylor[12] also pointed out that the interwar gold standard did not absorb shocks and was a poor regime choice.

[8] Accominotti (2018), *International banking and transmission of the 1931 financial crisis, Economic History Review*, 72(1), pp. 260-285. Friedman and Schwartz, *A monetary history*, pp. 314; Temin, *Transmission*, pp.93.
[9] Accominotti (2018), pp.3.
[10] James Ashley Morrison (2016), *Shocking Intellectual Austerity: The Role of Ideas in the Demise of the Gold Standard in Britain*, International Organization, Vol. 70, No. 1, pp. 175-207.
[11] Obstfeld and Taylor (2003), *Sovereign Risk, Credibility and the Gold Standard: 1870-1913 versus 1925-1931*, Economic Journal, 113(487), pp. 241-275.
[12] Chernyshoff, Jacks and Taylor (2009), *Stuck on gold: Real exchange rate volatility and the rise and fall of the gold standard, 1875-1939*, Journal of International Economics, 77(2), pp.195-205.

Session 3, Lecture 15-16
Inequality. Economies after WWII

Inequality
European Economies: WWII to present