

## Review of the Course

- ▶ We are going to use the rest of today's lecture to review
- ▶ I want you to think critically about the limitations of the theories, data, and empirical techniques we've seen
- ▶ Remember, there are no silver bullets here: we have explored a lot of seemingly necessary but not sufficient things
- ▶ Throughout the review, I'll bring in some additional material from two books to help put our class in a broader context:
  - ▶ Easterly's *The Elusive Quest for Growth* (2001)
  - ▶ Deaton's *The Great Escape* (2013)
- ▶ Let's start with an animated economic history of the world (the hockey-stick graph in motion)

# Review of the Course



<http://www.youtube.com/watch?v=jbkSRLYSojo>

<https://www.gapminder.org/tools/>

# The Roots of Modern Growth

- ▶ To know what to look for in the past, we first began by looking at growth in the present

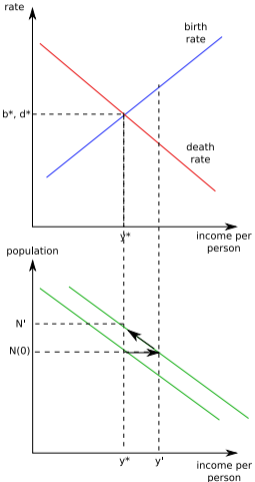
- ▶ The basics:

$$g_Y = g_A + a \cdot g_K + b \cdot g_L + c \cdot g_Z$$

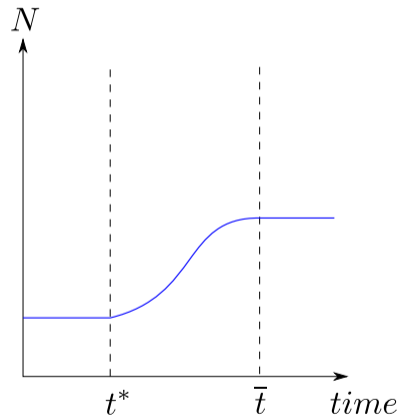
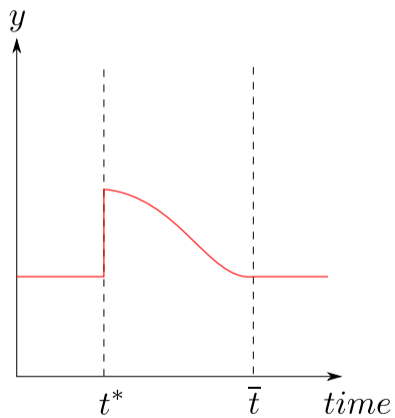
$$g_y = g_A + a \cdot g_k + c \cdot g_z$$

- ▶ In the modern world, growth in technology seems crucial to growth in output per capita
- ▶ This seems consistent with stylized facts, the (failure of) mid-century development aid, and with a basic Malthusian model

# The Malthusian World



# The Malthusian World



# Technological Change in the Preindustrial World



## Technological Change in the Preindustrial World

- ▶ So the issue was not a lack of technological change (there are gigantic changes)
- ▶ The issue was a lack of sustained technological change in the preindustrial world
- ▶ However, keep in mind Abramovitz's definition of total factor productivity:

*“...a measure of our ignorance...”*

# Technological Change in the Preindustrial World

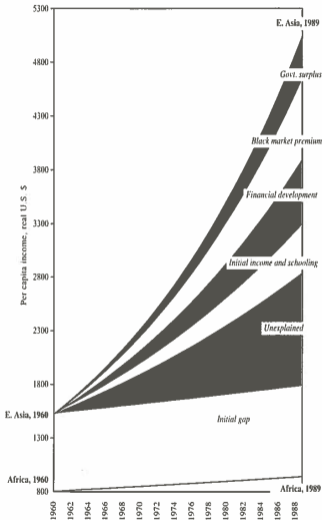


Figure 11.2 Decomposing the growth gap between East Asia and Africa. Source: Easterly and Levine 1997



## Progress in the Preindustrial World

- ▶ Income may have been fairly stagnant in the preindustrial world (how do we measure this?)
- ▶ Nonetheless, there was plenty of long run change
- ▶ Population densities were rising
- ▶ Human capital was rising
- ▶ Trade networks, financial markets, and modern states were on the rise
- ▶ Security (personal and property) was on the rise
- ▶ There are also other aspects in which standard of living may have changed substantially

# Progress in the Preindustrial World

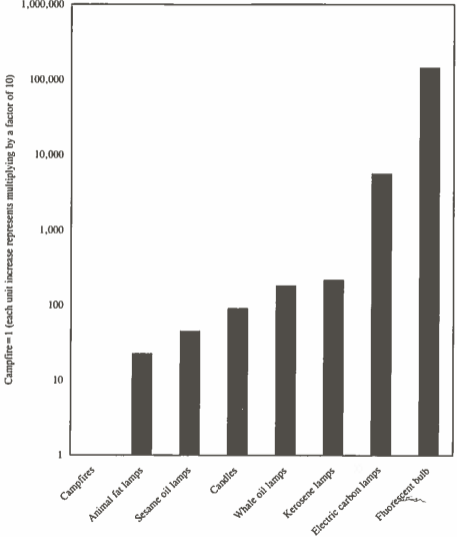
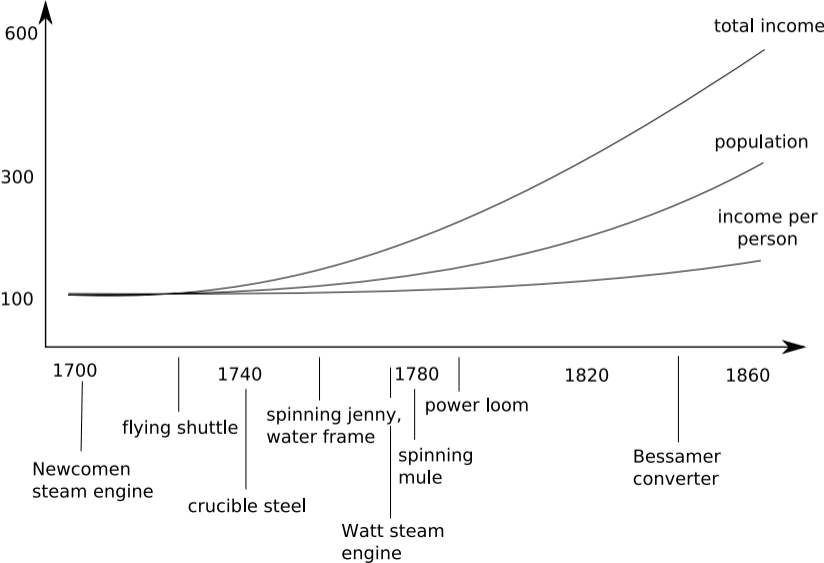


Figure 9.1  
Lighting power per unit of energy

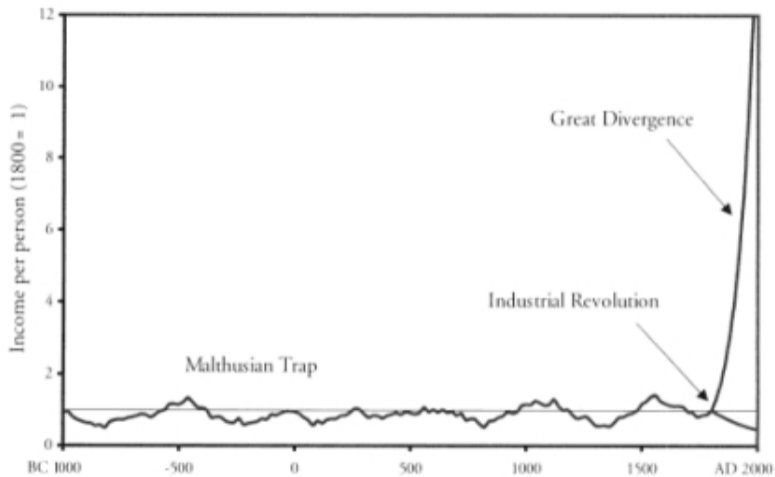
# A Revolutionary Cluster of Macroinventions

- ▶ The mechanization of tasks
- ▶ The switch from organic to inorganic/mineral energy
- ▶ The coupling of thermal and kinetic energy
- ▶ The organization of work
- ▶ Advances in metallurgy

# A Revolutionary Cluster of Macroinventions



## A Revolutionary Cluster of Macroinventions



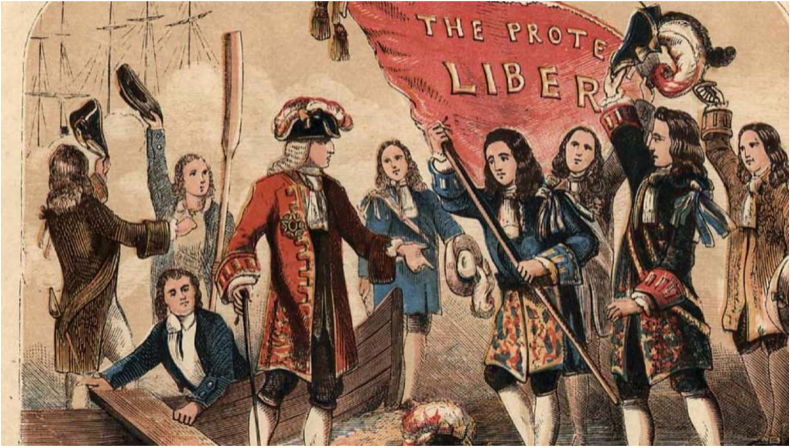
**Figure 1.1** World economic history in one picture. Incomes rose sharply in many countries after 1800 but declined in others.

# When and Where of the Industrial Revolution

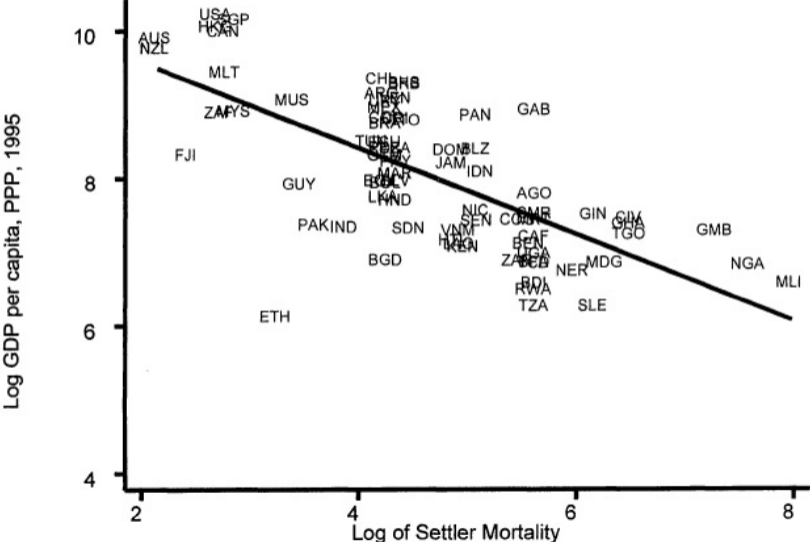
A big, big question: Without knowing what you are looking for, could you pinpoint 18th-century Britain as the break from the preindustrial world?

- ▶ How abrupt was the break from the Malthusian world?
- ▶ How revolutionary did the inventions seem?
- ▶ How different did the 1700s look than earlier centuries?
- ▶ How different did England look than China in the 1700s?

# Institutions as an Explanation



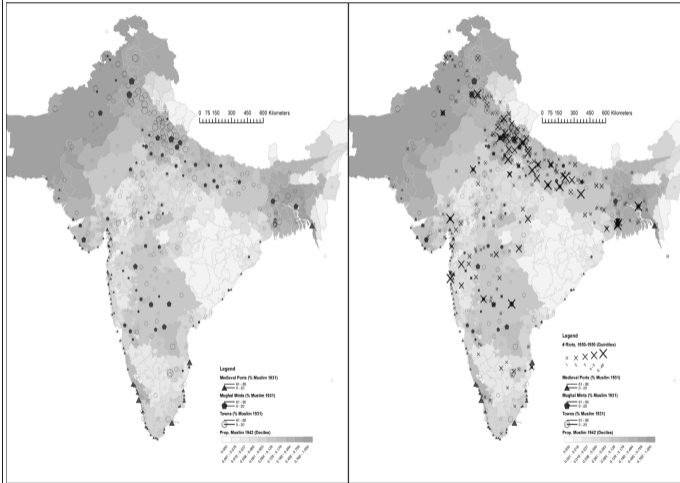
# Institutions as an Explanation





# The Persistence of Bad (or Good) Institutions

**FIGURE 2. Medieval Legacies: Religious Composition and Hindu-Muslim Riots**



(a) Religious Composition, 1931

(b) Hindu-Muslim Riots, 1850-1950

*Note:* The pattern of modern religious demography mimics patterns of Muslim rule, medieval trade, and political patronage. Medieval ports and major Muslim patronage centers (such as those that housed mints) continued to have greater Muslim populations relative to nearby areas in 1931. Medieval ports, however, experience fewer religious riots relative to towns nearby.

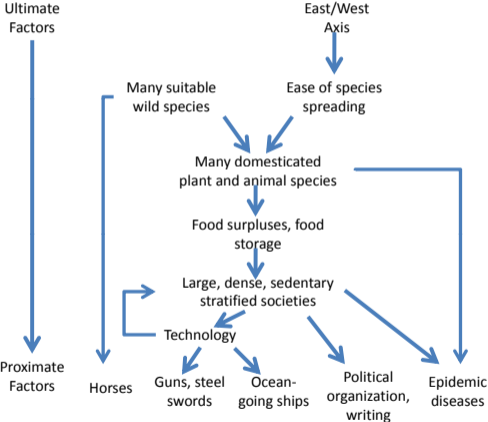
# The Persistence of Bad (or Good) Institutions

**Table 13.1**

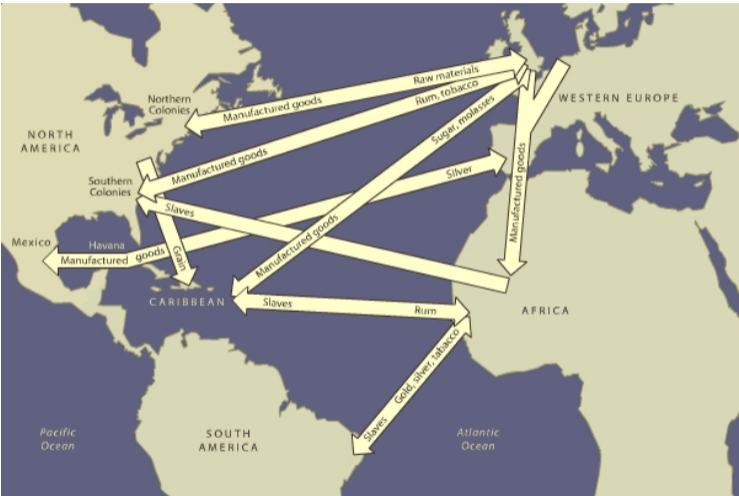
Ethnic diversity, violence, and public services, 1960–1989

	Average, quarter of sample least ethnically diverse	Average, quarter of sample most ethnically diverse
Ethnic diversity (probability of two people speaking different languages)	5%	80%
<i>Violence</i>		
Probability of civil war	7%	18%
Probability of genocide	5%	16%
<i>Public services</i>		
Average years of schooling of labor force	5.3	2.6
Percentage of roads paved	53.9	24.2
Percentage of power system losses	12.4	22.8
Telephones per 1,000 workers	92.8	7.4

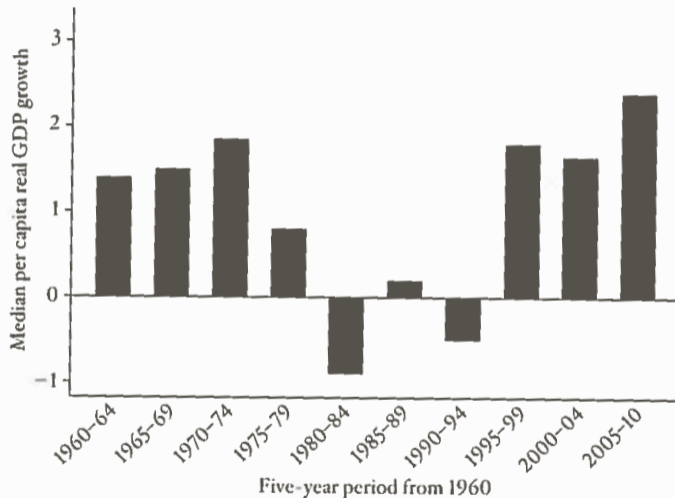
# Geography as an Explanation



# Resources and the New World as an Explanation

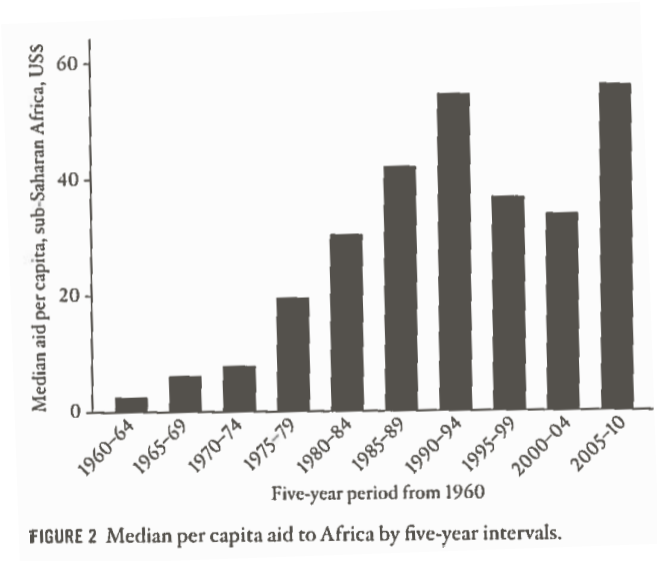


## Resources and the New World as an Explanation



**FIGURE 1** Median growth of per capita GDP (real PPP) in Africa.

# Resources and the New World as an Explanation



# Social Evolution as an Explanation



# Social Evolution as an Explanation

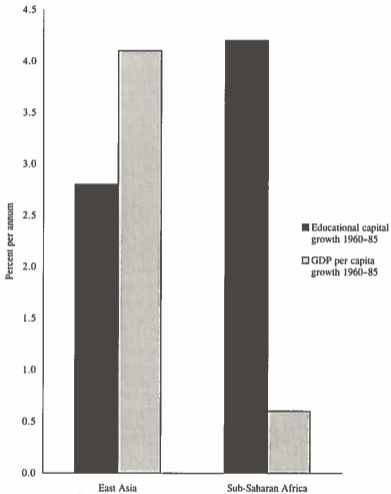


Figure 4.1  
Where has all the education gone? Source: Pritchett 1999



# Social Evolution as an Explanation

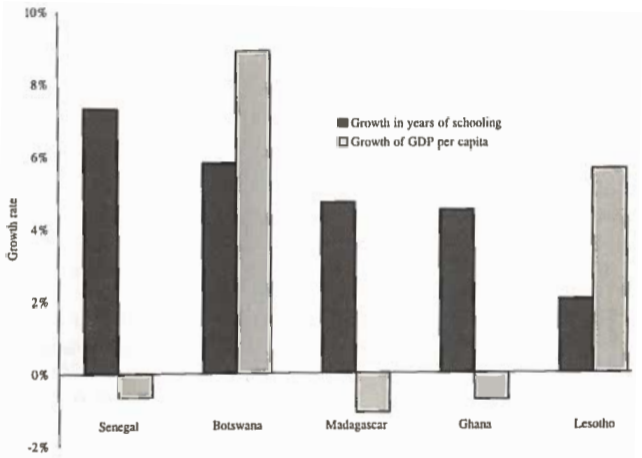


Figure 4.2 Diverse growth outcomes from educational expansion in Africa, 1965-1985. Source: Benhabib and Spiegel 1994

# The Great Divergence

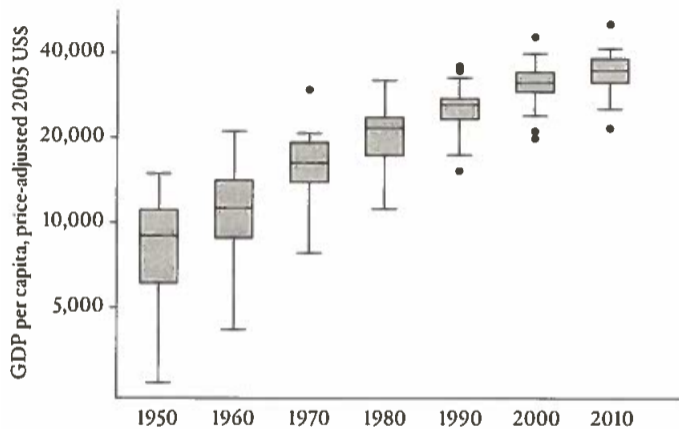


FIGURE 1 GDP per capita in twenty-four rich countries (Australia, Austria, Belgium, Britain, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, and United States).

# The Great Divergence

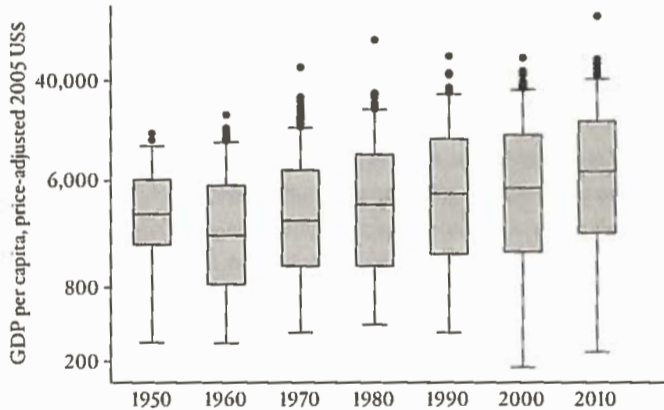
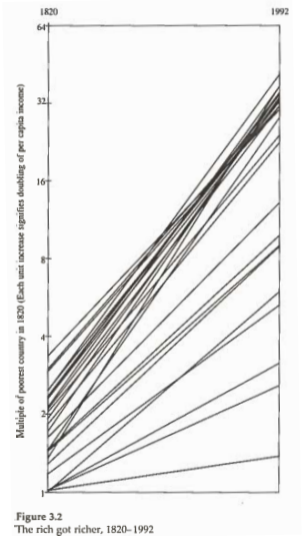
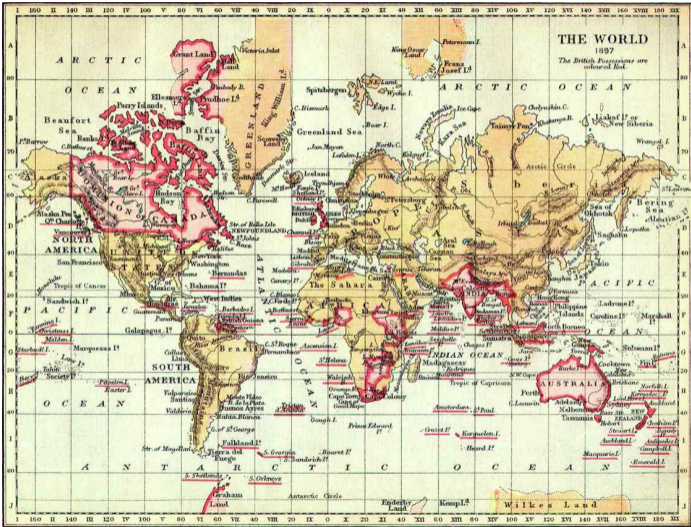


FIGURE 2 GDP per capita in all countries of the world.

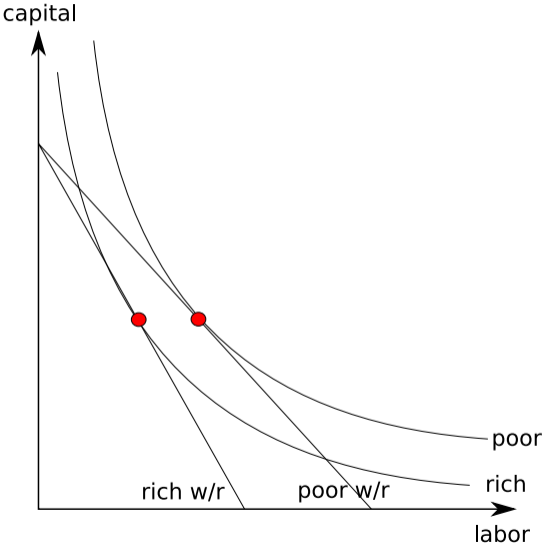
# The Great Divergence



# The Great Divergence



# The Great Divergence



# The Great Divergence



# The Great Divergence

**YOU  
MUST READ  
THIS.**

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**THE STATE OF NORTH CAROLINA AND THE COUNTY OF HALIFAX.**

Will give everybody in Halifax County for a limited time only, an opportunity to be treated free by a State Specialist for the Hook-Worm Disease or and other disease due to intestinal parasites. Examination, treatment, Medicines and all Furnished Absolutely Free. Nearly one-half the people, both old and young have this disease, that is why the State and the County is giving you this chance to be cured. Remember it is for a limited time only as at the end of Four Weeks these Free Medical Dispensaries will be moved to another County.

---

**At the Following Points and on the Following Dates you will find the Dispensaries open:**

ENFIELD, July the 21st, 28th, August the 4th and 11th, TOWN HALL.  
ROANOKE RAPIDS, July the 22nd, 29th, August the 5th and 12th, GRADED SCHOOL BUILDING.  
WELDON, July the 26th, August the 1st, 8th and 15th, GRADED SCHOOL BUILDING.  
LITTLETON, July the 26th, August the 2nd, 9th and 16th, ACADEMY BUILDING.  
SCOTLAND NECK, July the 27th, August the 3rd, 10th and 17th, OPERA HOUSE.

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Take advantage of this great opportunity. Come to the Dispensaries on the opening day. Bring your wives and children with you, be examined and see if you have any of these diseases. If you have the medicines they will give will cure every case and bring about a wonderful change in your feelings. All this without any cost to you whatever. Dr. Covington, assisted by a State Laboratory man, will be in charge at each dispensary. Come and have the Doctor show you the Hook-worms and their eggs under the microscope



# The Great Divergence

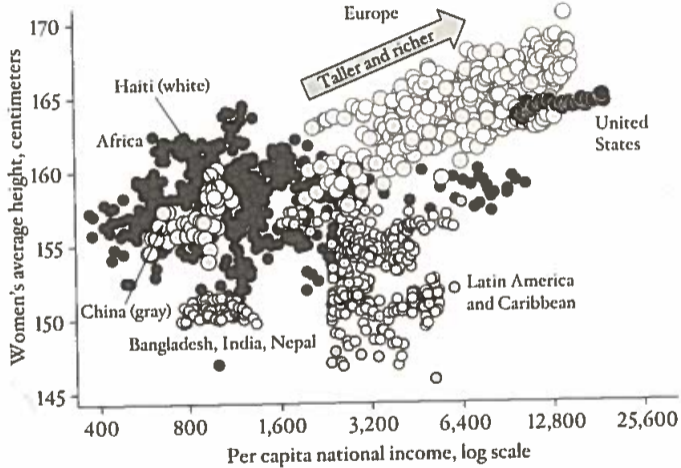


FIGURE 5 Women's heights around the world.

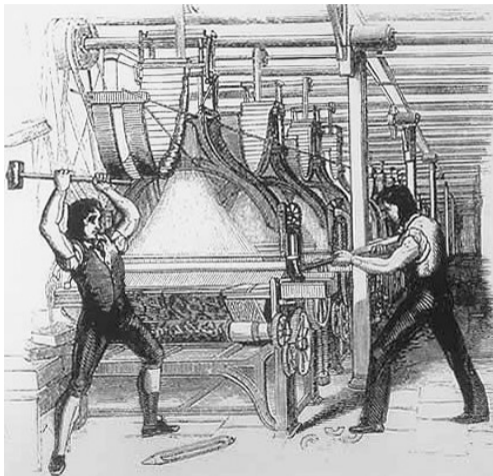
# A Pessimistic View of the Industrial Revolution



THE LEADER OF THE LUDITES

Published by W. Mitchell & Co., 15, Abchurch Lane, London, E.C. 4.

## A Pessimistic View of the Industrial Revolution



# An Optimistic View of the Industrial Revolution

THE WEATHER—  
TODAY: Partly cloudy, with showers  
and rain in the afternoon.  
TOMORROW: Partly cloudy, with  
showers and rain in the afternoon.

## THE DETROIT JOURNAL

LAST EDITION

THIRTYFIRST YEAR.

DETROIT, MICHIGAN, MONDAY, JANUARY 5, 1914.

PRICE: Five Cents.

# HENRY FORD GIVES \$10,000,000 IN 1914 PROFITS TO HIS EMPLOYEES

## HOUSES SWEEPED INTO ATLANTIC BY STORM; CREW OF 32 DROWNS

### SUMMER RESORT COAST IS RIVEN.

Seabright, N. J., Is Worst  
Hit Along Shore—Town  
Is Desolate With Men,  
Women and Children  
Aiding in Relief.

Acres of Land Are Sucked  
Into the Sea Along With  
Buildings—Total Loss  
\$2,000,000.—Some Re-  
pairs May Not Be Made.

NEW YORK, Jan. 5.—A  
terrible storm which  
swept over the Atlantic  
coast last night and  
today has done  
wonderful damage  
along the coast of  
New Jersey. The  
storm is believed to  
be the worst since  
1863.

The storm struck the  
coast of New Jersey  
last night and today  
has done wonderful  
damage. The storm  
is believed to be the  
worst since 1863.

## NATION-WIDE STRIKE IS BEING DISCUSSED BY LABOR LEADERS

Meyer Declares Congress Will Call Conference to Discuss  
Great Sympathetic Movement in Connection  
With Copper and Coal Miners' Strikes.

### GOV. FERRIS IS ON WAY TO CALUMET

State Executive Enters Copper Zone as Federal  
Comptroller Denounces Letters Declaring Intention  
to Bring Peace Because of Operative Attitude.

STRIKE CONDITIONS.  
Gov. Ferris is expected to  
arrive in Calumet today.  
A conference of labor leaders  
will be held in Calumet  
today to discuss the  
possibility of a general  
strike.

### Motor Kings Who Share Profits With Worker



HENRY FORD  
The automobile maker who  
has made his name as a  
great industrialist and  
philanthropist.

WALTER REUTHER  
The labor leader who has  
become a prominent figure  
in the automobile industry.

## DOUBLES PAY OF 25,000 IN AUTO WORKS

Motor King and Congress Launch World's Biggest  
Profit Sharing Scheme as "Act of Social Jus-  
tice" and for Sake of His.

### GRANT EIGHT-HOUR DAY AT \$5 WAGE

Two Shifts of Nine Hours Changed to Three of Eight,  
4,000 Unemployed to Be Taken In—Jobs as  
Farms Arranged During Slack Season.

The Ford Motor Co. will give to its employees during the  
year of 1914 the sum of \$10,000,000 in addition to their  
wages.

This will not be a wage increase, but a distribution of  
profits. It will be added, however, automatically, to the pay  
envelopes of the men. In 1913, the distribution might be  
more or less than \$10,000,000, depending on business con-  
ditions.

A minimum wage of \$7 a day will be established by the  
addition of the profit distribution to wages. The present  
minimum wage in the great motor car factory is \$3.50.  
From next Monday to the end of the year, even the lowest  
laborer and the man who merely sweeps the floor, will get  
at least \$7 a day.

## The Mixed Benefits of Industrialization

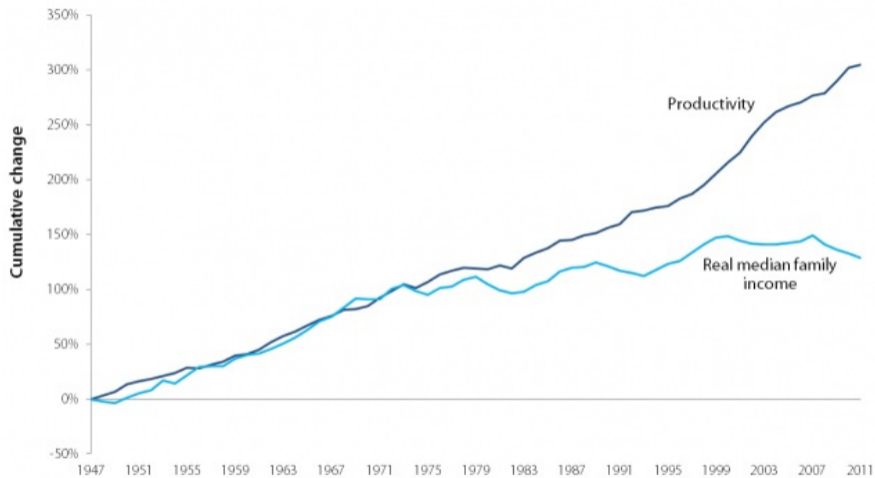


## The Mixed Benefits of Industrialization



*Michigan Central Station, opened 1913 (Yves Marchand and Romain Meffre)*

# The Mixed Benefits of Industrialization

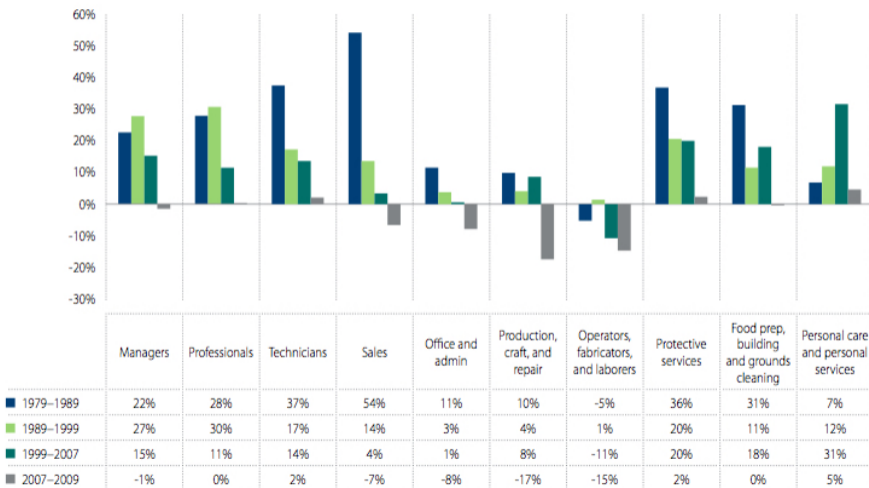


Source: Authors' analysis of Current Population Survey Annual Social and Economic Supplement *Historical Income Tables*, (Table F-5) and Bureau of Labor Statistics, *Productivity – Major Sector Productivity and Costs Database* (2012)

# The Mixed Benefits of Industrialization

Percentage point change in employment by occupation, 1979–2009

Percentage change in employment

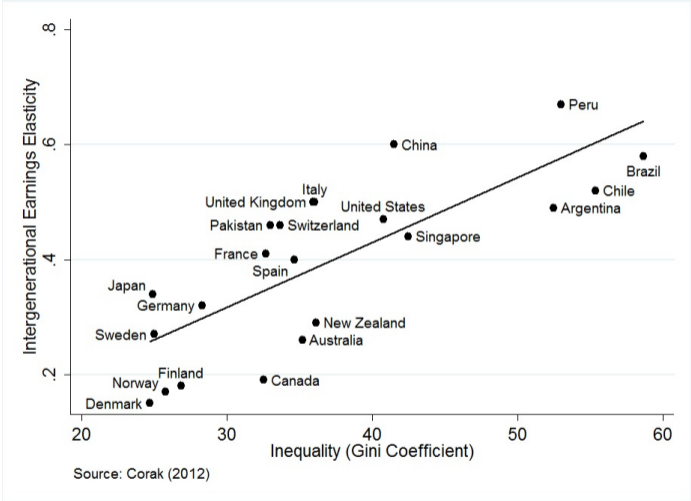




# The Mixed Benefits of Industrialization

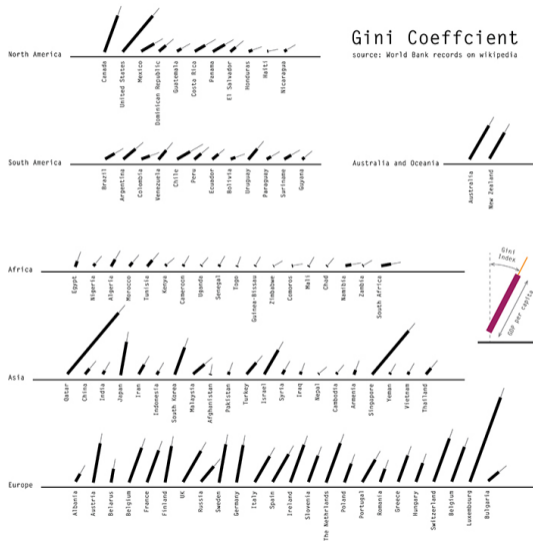


# A Mixed View of the Industrial Revolution



*The Great Gatsby Curve*

# The Mixed Benefits of Industrialization



# The Mixed Benefits of Industrialization

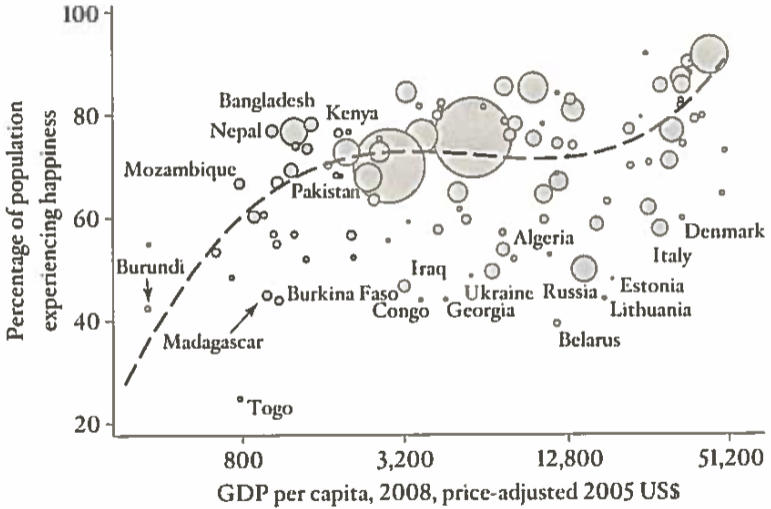
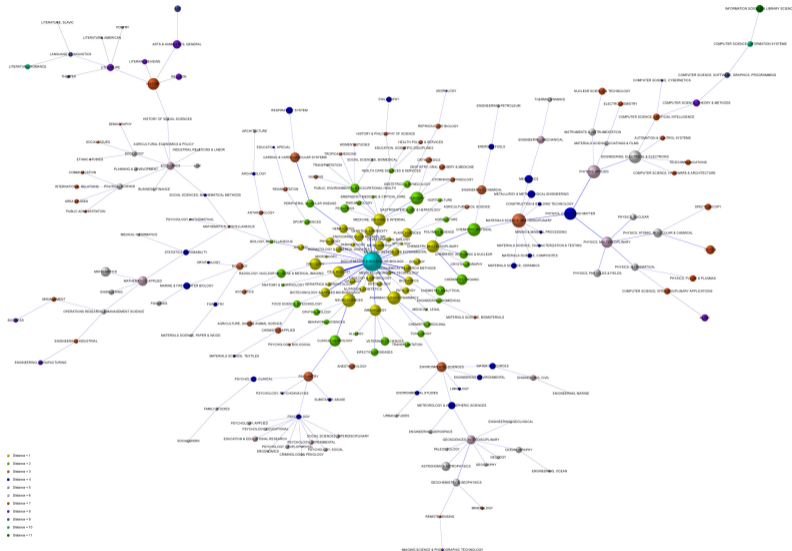


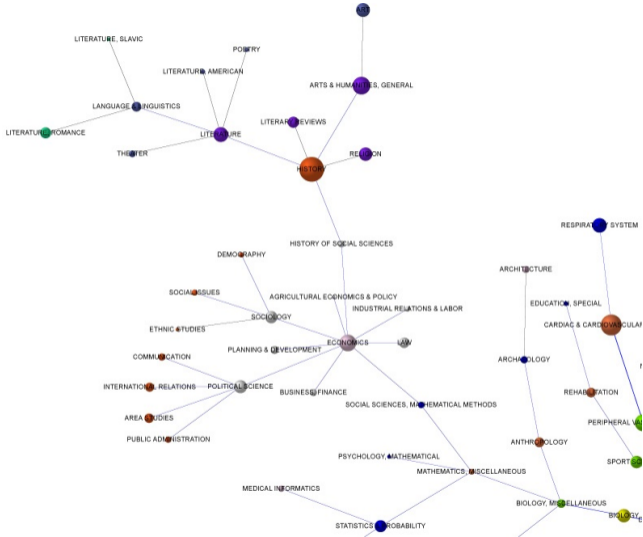
FIGURE 7 Happiness around the world.

# The Position of Economic History in Academia



From Moya-Anegon, et al “Visualizing the marrow of science.” *Journal of the American Society for Information Science and Technology*, Vol. 58, No. 14 (2007)

# The Position of Economic History in Academia



From Moya-Anegon, et al “Visualizing the marrow of science.” *Journal of the American Society for Information Science and Technology*, Vol. 58, No. 14 (2007)

# The (Changing) Position of Economic History in Academia

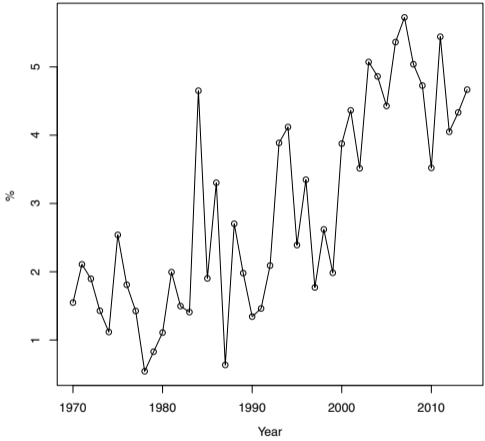
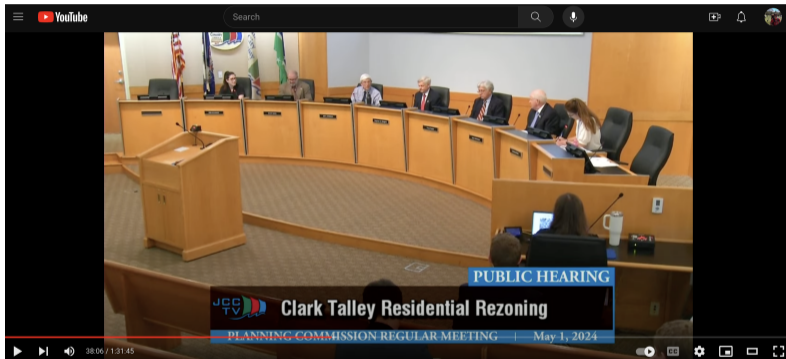


FIGURE 1  
PERCENTAGE OF ECONOMIC HISTORY PUBLICATIONS IN THE TOP FIVE  
ECONOMICS JOURNALS

And the winners are...



The selection committee hard at work.



And the winners are...



*“So far as the influence of the newspaper upon the mind and morals of the people is concerned, there can be no rational doubt that the telegraph has caused vast injury. Superficial, sudden, unsifted, too fast for the truth, must be all telegraphic intelligence. Does it not render the popular mind too fast for the truth? Ten days bring us the mails from Europe. What need is there for the scraps of news in ten minutes? How trivial and paltry is the telegraphic column? It snowed here, it rained there, one man killed, another hanged. Even the Washington letter has deteriorated since the innovation, and I can conscientiously recommend my own epistles prior to 1844, in preference to those of later years.” – New York Times, 1858 (Thomas G.)*

And the winners are...



*“The machine has more muscle than we have. Soon—very, very soon—it will have greater and more precise brainpower than the ordinary man has to meet and make the judgments necessary in a mechanical age. What has the man left to defeat the machine? Nothing but his heart, the only thing a machine lacks. But man hasn’t lived by his heart in the sad history of this warring world. Only by using his heart more can he avoid the doom of becoming a hired hand of his own gadgets. Otherwise the machine will laugh... and laugh... and laugh... until its gears creak.” – The Evening Independent, 1949 (Mia M.)*

And the winners are...



*“In May, more than 350 technology executives, researchers and academics signed a statement warning of the existential dangers of artificial intelligence. “Mitigating the risk of extinction from A.I. should be a global priority alongside other societal-scale risks such as pandemics and nuclear war,” the signatories warned...Imagine Roombas, no longer condemned to vacuuming the floors, that evolve into all-purpose robots, happy to brew morning coffee or fold laundry — without ever being programmed to do these things. Sounds appealing. But should these A.I. Roombas get too powerful, their mission to create a spotless utopia might get messy for their dust-spreading human masters. At least we’ve had a good run.” – New York Times, 2023 (William L.)*

## Final Exam Details

- ▶ The final exam is in this room on Thursday, May 9th from 2pm to 5pm
- ▶ I will have office hours next week on Tuesday and Wednesday from noon to 2pm
- ▶ The exam will be similar in length to the midterm but you will have the full three hours to take it
- ▶ Same policy as the midterm, you can bring any printed materials or notes you want but you cannot use any electronic devices
- ▶ Same warning as the midterm, think about what materials/notes would be useful to have

## Final Exam Details

- ▶ The exam is not cumulative, it covers everything from the 2/27 lecture to the end of the semester
- ▶ The required readings that will be covered are:
  - ▶ North and Thomas (1970)
  - ▶ Acemoglu, Johnson and Robinson (2001)
  - ▶ Diamond (2004)
  - ▶ Clark (2008) (Chapter 13 excerpt)
  - ▶ Bleakley (2007)
  - ▶ Goldin and Katz (1998)
- ▶ There may be questions where you can focus on an earlier paper but you won't be required to
- ▶ General questions about the assignments are fair game (I won't be asking you to recall specific details)