

# THE INDUSTRIAL REVOLUTION IN BRITAIN AND AMERICA TO 1900

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SESSION 3 - WHY BRITAIN?



1. INTRODUCTION; THE LATE MIDDLE AGES; VENICE  
(JANUARY 23)

2. AN EMPIRE OF MARKETS (JANUARY 30)

3. **WHY BRITAIN? (FEBRUARY 6)**

4. CITIES, TEXTILES AND METALS (FEBRUARY 13)

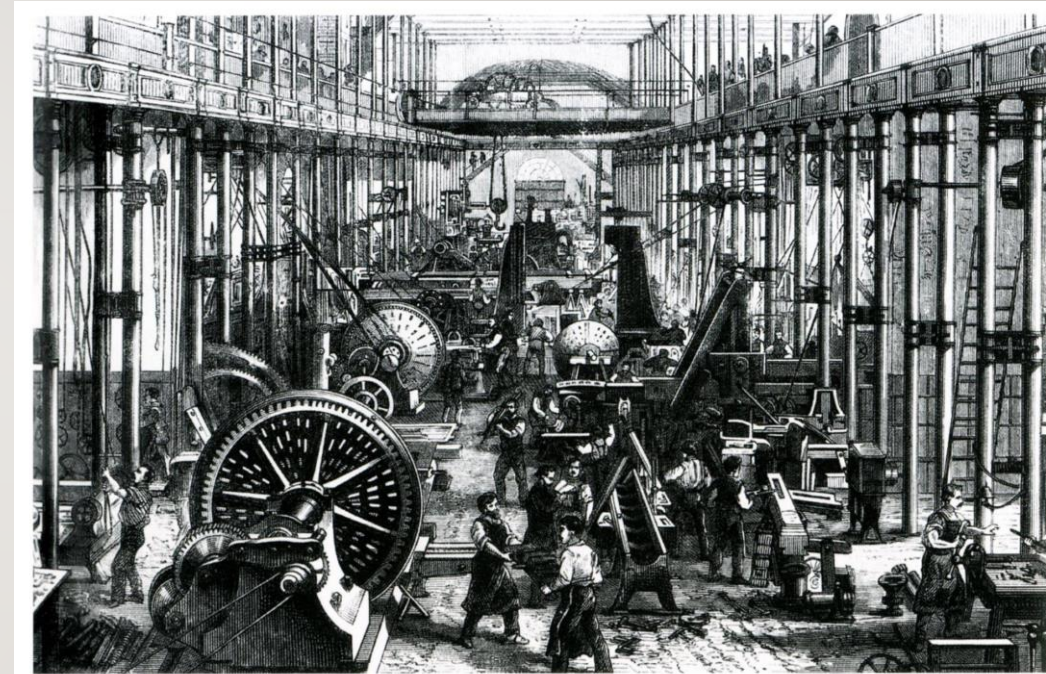
NO CLASS FEBRUARY 20

5. COAL AND STEAM (FEBRUARY 27)

6. THE BRITISH CONSUMER REVOLUTION; ADAM  
SMITH (MARCH 6)

7. THE INDUSTRIAL REVOLUTION IN AMERICA – THE  
TYRANNY OF DISTANCE (1700 TO 1850) (MARCH 13)

8. THE INDUSTRIAL REVOLUTION IN AMERICA – THE  
ROBBER BARONS AND INDUSTRIAL EXPANSION (1850  
TO 1900) (MARCH 20)



# Why did the Industrial Revolution begin in Britain?

Numerous factors.



Growth in food supply (surplus) freeing people for other work

- Since English Reformation (1532), food production had increased in England due in part to wealthy merchants purchasing RC Church lands and increasing agricultural production
  - via enclosure (consolidation) (institution)
  - by Dutch copied production techniques (imitation)
  - Increased food production led to over abundance of farmworkers who moved to London and other English cities and towns for work

## The Dutch (to be imitated)

Between 1575 and 1725 one of the greatest trading powers in the world – the Dutch Golden Age

Built a superior specialized trading fleet out of necessity that traded in Baltic, India, Africa, Mediterranean, Americas

Republican, Reformed government

Developed banks (1603) and joint investment companies for overseas businesses (1603)

Reclaimed land from sea through a variety of techniques

Stocked with nearby towns, villages and cities

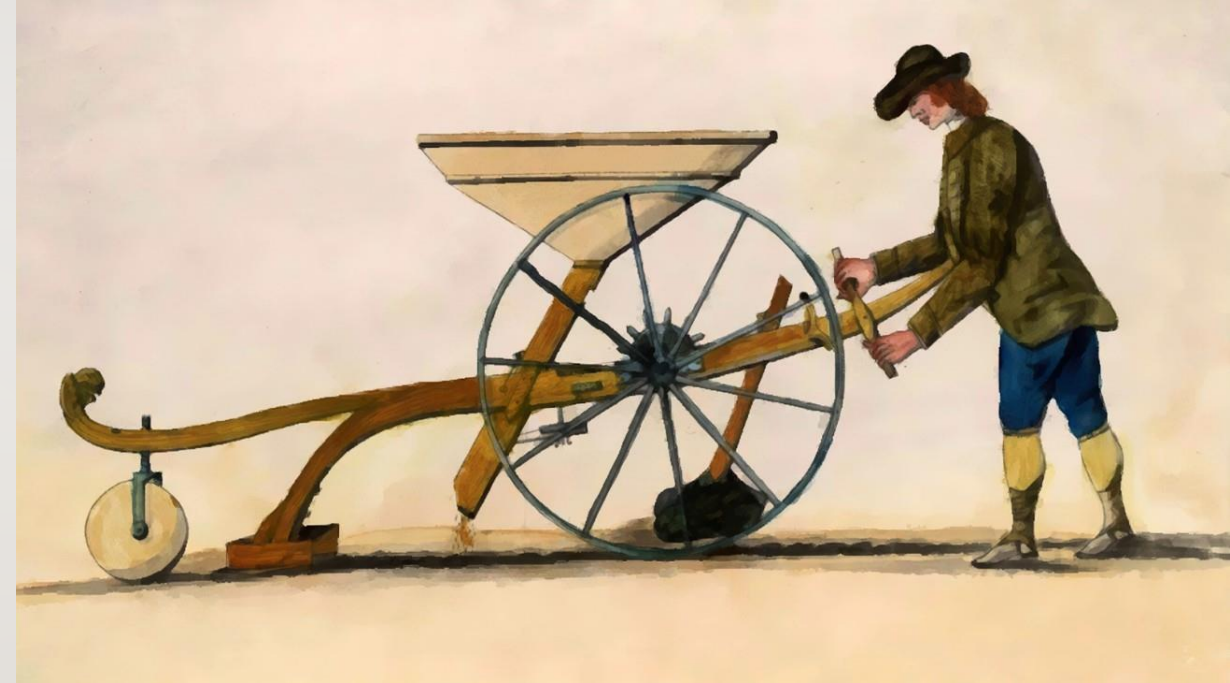
Fought against the mighty Spanish Empire for independence (1575-1648)

Formed a intercontinental “off again, on again” relationship with the English

Served as an example to the world and England on how to create a commercial empire (imitation)

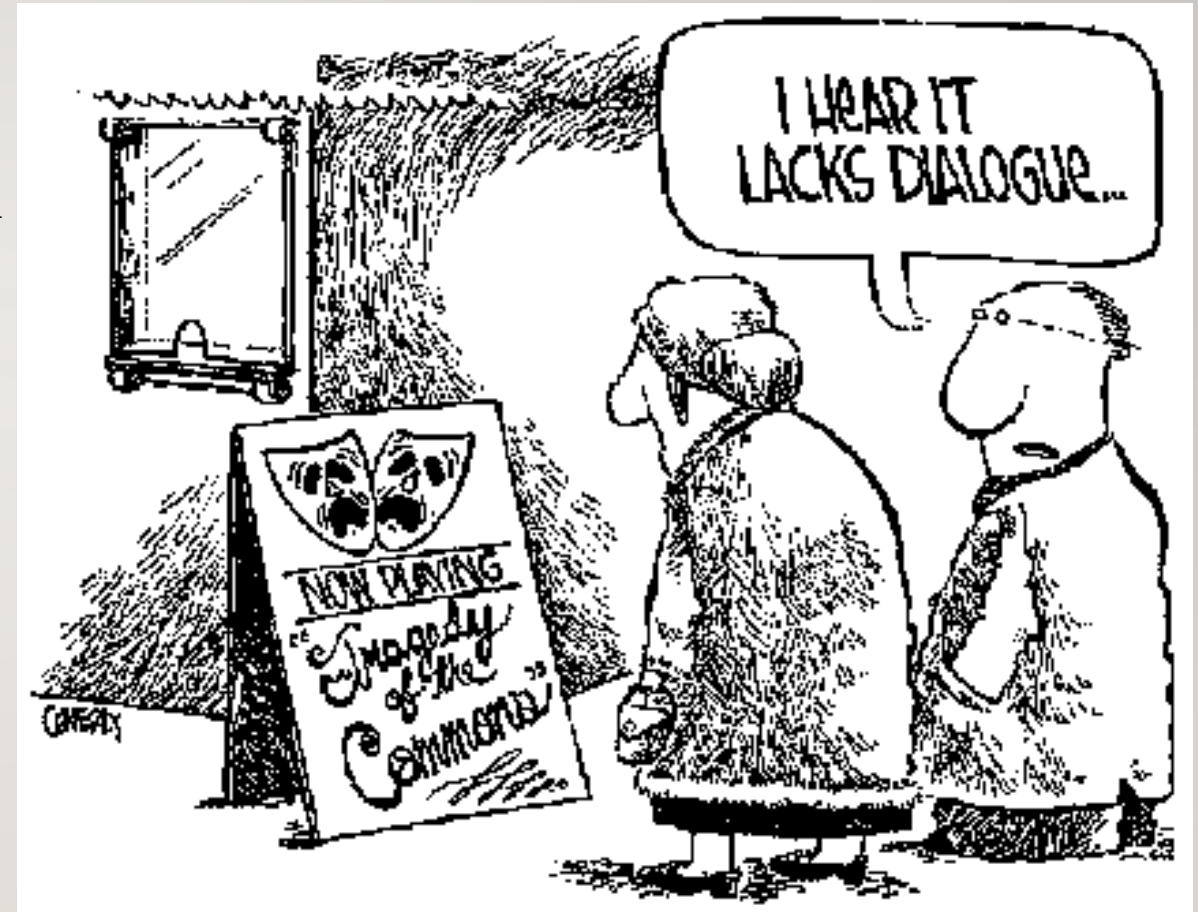


- A combination of factors increased agricultural production
  - enclosure movement beginning in 16<sup>th</sup> century
  - new forms of land tenure and use,
  - enhanced crops through better rotation and planting soil restoring plants that animals could eat,
  - better fertilization through crops and animal manure including sheep (wool trade)
  - improvements in animal breeding for more productive meat making
  - innovations in farm machinery
  - Expanding cottage industry and keeping wool home



## The last act (s) of the Tragedy of the Commons

- Under feudalism, different serf/farmers grew their own crops side by side in multiple strips.
- Diligent farmers were at the mercy of lazy ones whose land sprouted weeds.
- The unfenced common land in the village was open to all, for wood gathering and the grazing of sheep, pigs, cows, and geese. Gave rise to free rider problem
- Enclosure of commons had begun in 1500s, continued into 1800s after accelerated in the 1700s.
- 



- The enclosure and farming of previously common land increased the total volume of land under cultivation, while the average size of farms also grew.
- Average farm size increased from about 65 acres of scattered land in 1700 to 150 acres in 1800.
- The total amount of land under cultivation went up from 21 million acres in 1700 to about 29 million in 1800. Wasteland was cleared and new farmland developed.
- Marshes drained, sometimes with Dutch consultants





- New crops (e.g., American potatoes) and new forms of rotation led to increases in productivity.
  - Potatoes provide three or four times as much nutrition per acre as cereal crops, as well as vitamin C.
  - Vital to the Irish food supply (where population was growing quickly) but less so in England, where they were regarded as poor people's food.

## Growth in Urbanization (Environment)

- Brought about by movement of excess labor into cities and towns
- London will grow to largest city in Europe by 1700
  - Concentrated demand for food and goods
  - Concentrated labor for shipping
  - Increased communication of ideas (innovation and imitation)
  - Created demand for coal as wood supply shrank



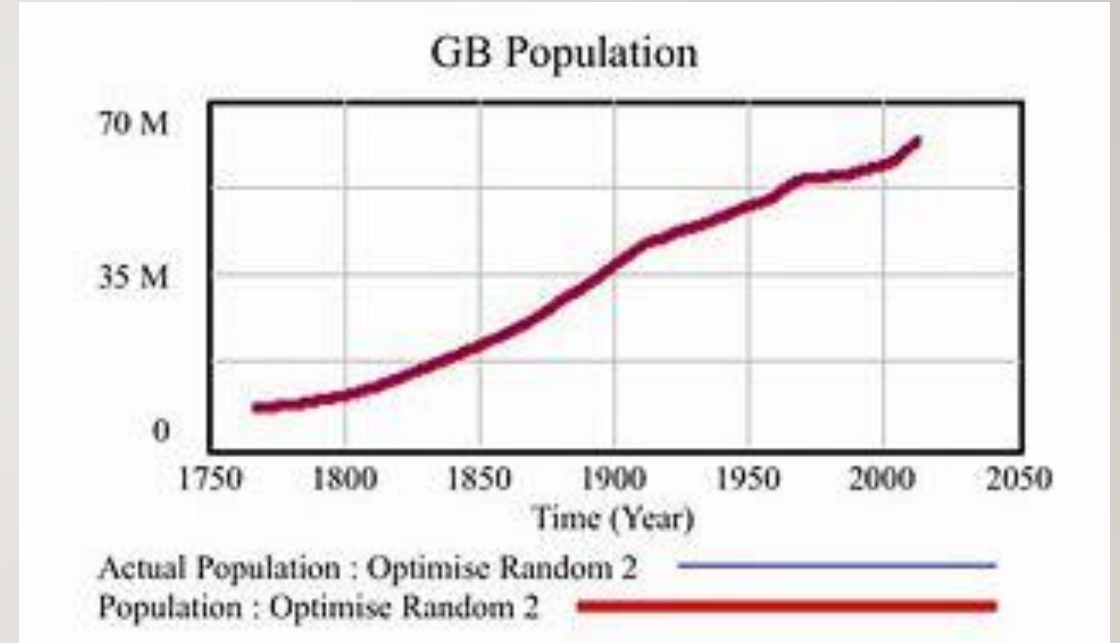
London 1800



London 1650

### Above contributed to population growth

- Industrialization would not have been possible in Britain without a surplus population able to work in mills, mines, and factories and to create a swelling domestic market for more goods.
- Population rose rapidly between the mid-18th and mid-19th centuries.
  - The population of Britain was about 5 million in 1700 and only half a million more by 1750.
- Then it took off; there were 8.3 million people by 1801 and 16.8 million by 1851.





- A common pattern by 1800 was that tenant farmers rented from large landowners and hiring landless farm laborers—a three-tiered rural population.
- Increasingly, rural laborers were men as the number of women and children doing farm work declined. They in turn worked in crude muscle powered cottage manufacturing (textiles in putting out system, small crafts).
- With resulting surplus, farming gradually shifted from subsistence to a market orientation.
- As growing numbers of British people made their living growing food for non farmers (village and city dwellers) giving rise of transportation needs.

## Geography

- ❑ Britain an island with easy access to water for transportation along coast and to continent
  - ❑ Importance of merchant marine and navy become apparent
- ❑ Had about 21 navigable rivers
- ❑ Would make canal building easier in 18<sup>th</sup> and 19<sup>th</sup> centuries



## Political Stability

- Industrialization—the building and running of factories requires the investment of large sums of money over long periods of time.
- Taxation requires a confident and stable taxpayer
- In Britain, development of political stability after 1689 made investors willing to risk their money on long term investments.



### *But after a Century of Civil War*

In the 17th century, Britain and Europe generally was riven by civil war, revolution, and regicide.

- Continental Europe suffered through the Thirty Years War and result was absolute monarchy in France and other continental countries; little democracy
- England stayed out of Thirty Years War but experienced Civil War (1642-1649)



## Why Civil War?

- In 1642, after an escalating series of confrontations related to location of ultimate political power (Parliament vs. Monarch), King Charles I declared war against English Parliament.
- Over the next seven years, the Royalist army (Royalists or Cavaliers) and the army of Parliament (the Roundheads) clashed in a succession of sieges and pitched battles.
- Outcome was a victory for Parliament and defeat for Charles I. Victory meant more power for Parliament.
- Charles I was captured, tried, and beheaded for treason (!) in January 1649. Ultimate political power



- England's land owning aristocracy formed a republic in 1649 but too many internal political divisions to be peacefully effective.
- In 1653, one of the leaders of Parliament, Oliver Cromwell, became the "lord protector" of England (almost military dictator) and governed until his death in 1658. Cromwell's son succeeded him but he proved ineffective
- In 1660, English aristocracy brought Charles son back from exile and crowned him Charles II.
- Charles II had an uneasy relationship with Parliament as it jockeyed for control and Charles II leaned toward Catholicism and an extravagant lifestyle.
- Charles II's brother and successor in 1685, James II, antagonized the people whose support he needed.



Charles II



James II

## *The Glorious Revolution of 1688*

- James II “abandoned” the throne in 1688 after a series of political errors that led to a perceived threat to him from Parliament.
- Parliament did not repeat the mistake of attempting to govern without a king; made clear Parliament was supreme and the king ruled at its sufferance.
- These events of 1688–1689, known as the Glorious Revolution, created conditions of political stability, making a constitutional monarchy.
- Importantly, people felt more comfortable granting taxes to a stable “republican” government than to what was perceived as a wasteful monarchy. (Institution)
- Leading up to and following the Glorious Revolution, English intellectuals (e.g., John Locke) in favor of Parliamentary power (the “Whigs) wrote books and pamphlets defending the “liberal vision”: popular sovereignty (embodied in Parliament), republicanism, property rights, free trade (institutions).
- Parliament had more power after Glorious Revolution with members landed aristocracy, gentry farmers and minority of merchants
  - Limited suffrage (about 175,000 white male landowners)



## Important institutions develop

### *Navigation Acts*

- First passed by Parliament in 1652 and revised multiple times until 1849 repeal
- Initially directed against the Netherlands prohibiting import of goods from other than English colonies in other than English ships
- Required all colonies exports to come through England
- Amended in 1660 for easier enforcement during Charles II reign



## *Bank of England and Insurance Companies*

British economy facilitated by the development of sophisticated banking and insurance institutions.

- The Bank of England, established by an act of Parliament in 1694, stabilized the debt of English government. Copied Bank of the Netherlands
- Bank of England was a joint-stock venture with government and private shareholders, capitalized at £1.2 million; acted as banker to the government.
  - Able to lend at the comparatively low interest rate of eight percent.
  - Interest funded by £100,000 of tax revenue earmarked each year for interest payment on the national debt.
  - England could borrow to finance defense, shipping, ports, and transportation infrastructure improvements



BOE banknotes were introduced as the equivalent of money, and the trustworthiness of the bank enabled paper money to become serviceable in business transactions. Currency expanded (institutions)

- Economic theorists began to see the English national debt as an asset, as well as a liability.
- Britain's wealthiest merchants, by buying government bonds, were also investing in the future of England and its ability to keep paying them interest and, eventually, of returning their capital.
  - Previously government borrowing had been from private individuals (mostly merchants) who sometimes were forced to lend money for political patronage from King. Corruption reduced.
- Property insurance joint stock companies and syndicates supplemented joint-stock shipping ventures, enabling investors to hedge risks. E.g., Lloyds of London



Lloyds of London

*Use of corporate forms to investment: English East India Company (institution)*

- ❑ Corporation chartered by Kings James I in 1604 for exploiting India business opportunities purchasing India textiles and other goods
- ❑ Joint investment company
- ❑ Copied from Dutch East India Company
- ❑ Shares would be traded on London Stock Exchange
- ❑ Would become a major India institution in 18<sup>th</sup> and 19<sup>th</sup> century with its own army and right to police India investments
- ❑ Would have excess tea inventory in December 1773 and convinced government to give it an American monopoly to unload



## *London Stock Market*

- Began in the 1690s, in Jonathan's Coffee House in London.
- Colonial ventures in sugar, tobacco, slaves, spices, and other high-value commodities all generated surplus wealth that sought reinvestment.
  - Industrialization presupposes great concentrations of capital, and British colonial trade ventures generated it.
  - Trading in BOE stock and stock of chartered monopolies, such as the East India Company and the African Company
  - Provided liquidity and increased investment as result



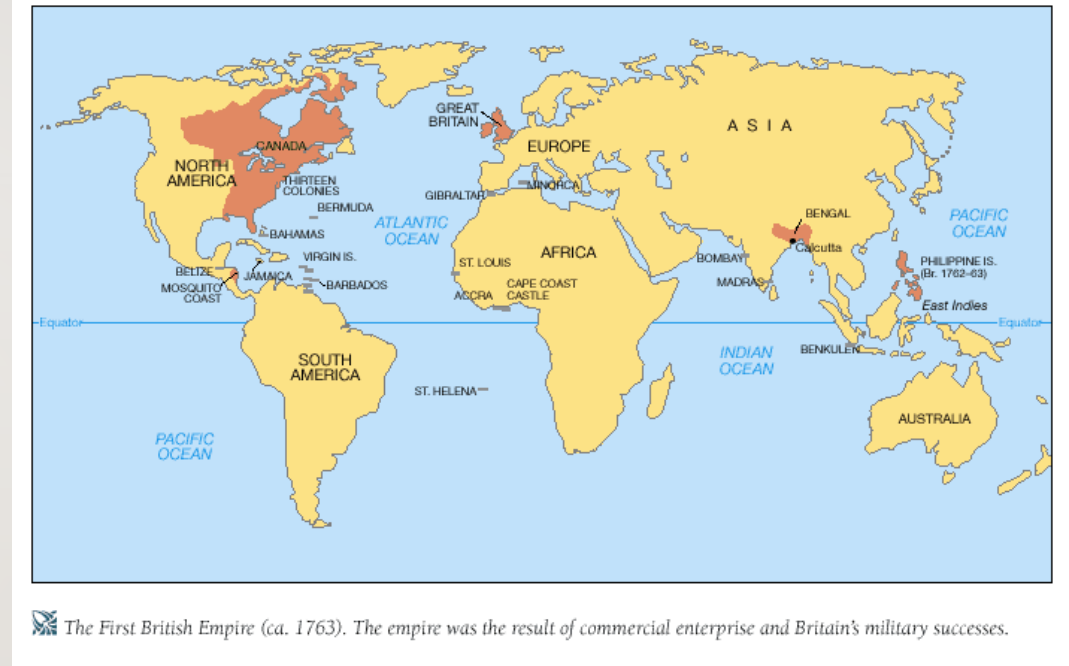


### *Decline of disease*

- In the 1790s, Edward Jenner developed the smallpox inoculation. (environment; innovation)
- Bubonic plague, one of the great killers in the 14th to 17th centuries, began to disappear.

## *Growth in Colonization* (markets and sources of raw materials)

- Following its success against Spain and its 1604 Treaty, England got involved in colonizing the Americas (West Indies, Newfoundland and American colonies).
- Following establishment of the colonies, Britain began to participate in the slave trade—a high-risk, high-return business.
  - Slave trade brought British ships around the world and to Americas
  - Britain obtained a monopoly on supplying Spain with slaves in 1713.



1<sup>st</sup> British Empire 1763



- In the 18th century, the British government also supported an aggressive military policy and a strong war fleet; during this period fought five wars and emerged on the winning side in four of them, losing only the American Revolutionary War. War expenses and manpower did not curtail growth but contributed to it.
- British fleet the largest and best in the world, one result of the Navigation Acts
- British success led to overwhelming naval dominance now referred to as the Second British Empire (the first ending in 1783 with the Treaty of Paris ending the American Revolution). Trade protected.

- The Royal Navy actively supported merchant navy and colonial trade ventures.
  - Created support for British manufacturers, especially of textiles, to sell abroad, capturing foreign markets and expanding them rapidly.
  - British mercantile policy (e.g., the Navigation Acts) also made sure that Britain's colonies serve British interests.
  - The Navigation Acts later a grievance to American merchants as all American goods had to be shipped in British or colonial ships and that high demand colonial imports and exports must pass through Britain enroute to their ultimate destinations.



## *Changes in economic attitudes among elites*

- Flexibility among the 18<sup>th</sup> century land owning aristocracy and political sympathy for economic growth were also essential to the rise of industrialism.
- By 1600s, members of the aristocracy were already interested in surface coal mining on their lands and in agricultural improvement to increase production.
- By contrast, many of the European aristocracies (e.g., France) still regarded physical labor as dishonorable; far more preoccupied with war and cultivation of society
- Although British aristocrats tended to look down on commercial activities, when they saw a great opportunity or when the burden of their debts embarrassed them, they did, in fact, seize the opportunity to restore their estates.



Why Britain?

Improved agriculture (surplus)

English East India Company, Bank of England, Navigation Acts, London Stock Exchange (institutions)

Population growth from food and healthful measures

Growth in cities, esp. London

But also from improved clothing (wool to cotton), heating (coal) and technology. That's next week when we look at:

## Cities, Textiles and Metals

