ECONOMIC HISTORY READINGS

Class 18

H A N D O U T

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READINGS FOR THE FIRST PARTIAL

Allen, R. C. (2009), *The British Industrial Revolution in Global Perspective,* Chapter 1: "The Industrial Revolution and the Pre-industrial economy"

Overview

Main topic:

Why did the Industrial Revolution happen in Britain, in the eighteenth century?
Theories talk about:

- Technological change as the immediate cause of growth: steam engine, the cotton spinning machinery, and the manufacture of iron with coal and coke
  - invention on this scale was unprecedented, and it inaugurated an era of industrial expansion and further technological innovation that changed the world
  - Consequences of technology: rapid urbanization, capital accumulation, increases in agricultural productivity, the growth of income

Allen's explanation two parts:

1) Expansion of the early modern economy (1500-1750): unique structure of wages and prices in 18th century Britain.
   - Wages remarkably high
   - Energy remarkably cheap

2) Industrial revolution: Steam engine, the water frame, the spinning jenny and the coke blast furnace increased the use of coal and capital relative to labour.
   - adopted in Britain because labour was expensive and coal was cheap, and they were not used elsewhere because wages were low and energy dear
   - Invention was governed by the same considerations

➔ The Industrial Revolution, in short, was invented in Britain in the eighteenth century because it paid to invent it there, while it would not have been profitable in other times and places.

End of industrial revolution (1830/1850): railroad and steamship and then novel manufactures like Bessemer steel appeared on the scene.

- The cotton mill and the coke blast furnace were invented in Britain because they saved inputs that were scarce in Britain and increased the use of inputs that were abundant and cheap. For that reason, these techniques were not immediately adopted on the continent or anywhere else in the world
- Landes (1969) : period up to 1850 = "continental emulation" -> French, Germans and Belgians were only beginning to use British techniques and pre-industrial practices remained dominant

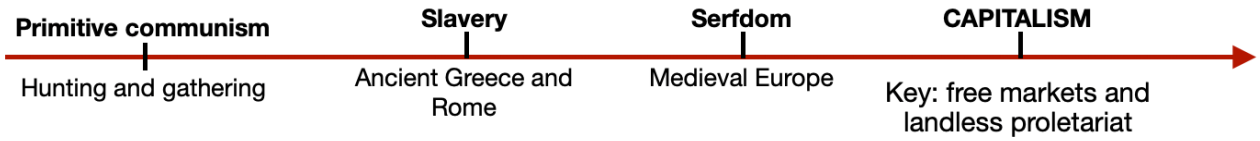
Closing gap (1850-1873): modern technology displaced traditional methods, and European industry could compete on an equal footing with British

- British engineers studied the steam engine and the blast furnace and improved them in order to lower costs -> profitable to use new technologies everywhere.
- By the middle of the nineteenth century, the genius of British engineering had improved the technologies, thereby eliminating the competitive advantage they had given Britain.
- Global diffusion marked the end of the Industrial Revolution

Explaining the Industrial Revolution

Social structure

Marx: stress the importance of social structure. Society evolved through stages :



Markets are necessary to guide economic activity, and the bulk of the population must lose its medieval property rights so that it is willing to move to the cities and for agricultural productivity to grow.

Since Marx, new discoveries about medieval world:

- Studies of grain prices show that markets were wide- spread and as efficient as they were in the eighteenth century
- Economy of cities and towns was vibrant and commercial
- Cropping patterns were responsive to environmental and commercial opportunities, and productivity was much higher than once believed

BUT:

- For most of the middle ages, a majority of the English were serfs and held land in villeinage (could only litigate in the manorial courts presided over by their lords)
- no secure public protection against violence by their lords
- subject to a variety of assessments that reduced economic incentives
- Labour mobility was inhibited, since a serf could not leave the estate without permission
- Tallage: assessment initially to random the lord, but convenient and elastic revenue source that became routine.

-> The emergence of capitalist institutions was a necessary, if not a sufficient, condition for modern economic growth.

Constitution and property rights

Liberals -> favour "minimal government" -> parliamentary checks on the executive, the security of property rights, the flexibility of the legal system.
Glorious Revolution of 1688 : consolidated parliamentary ascendancy, limited royal prerogatives and secured private property.
-> favourable climate for investment -> Industrial revolution
Critiques:

- No banking and interest structural break -> ↑investments was not manifest in finance
- UK property rights were at least as secure in France (almost too secure: some projects only undertaken after French Revolution -> power to national assembly)
- Taxes were higher in Britain than across the Channel

The Scientific Revolution (17th Century)

- Started in Italy with Galileo and ended in England with Newton
- 'Naturalists 'could benefit the economy by inventing new products and solving production problems
- Boyle (1671): possibility of inventing engines to mechanize production
- While a lot of historian don't believe it, scientific discoveries underpinned important technology in the Industrial Revolution

Critique:

- Scientific discoveries that mattered for the Industrial Revolution were made before 1700 and not after 1760.
- Most important: atmospheric pressure related (weight, possibility to condense it to form a vacuum)
- Culmination: Thomas Savery's steam pump invented in 1698 and Thomas Newcomen's steam engine of 1712.
- Discoveries of seventeenth-century physics were necessary conditions for the invention of the steam engine, but they were not sufficient
- Turning the scientific knowledge into working technology was expensive -> worthwhile investment only in Britain where high demand for drainage thanks to coal.

Superior rationality?

Max Weber :

- Modern people are characterized by their superior rationality, *The Protestant Ethic and the Spirit of Capitalism* (1904–5) -> Reformation let to Western rationality -> Great Divergence
- Low agricultural productivity in less developed countries because of farmers' irrationality.
- Response to changes in agricultural prices and their willingness to adopt new techniques -> same rationality level in developed and non countries.

Science as culture

Max Weber:

- A scientific attitude had to replace superstition for technological progress to occur
- Pre-modern people attributed events in the natural world to the interventions of supernatural beings
- Influence of spirituality stood in the way of the empirical, scientific outlook necessary for technological and social progress.
- Need for "the disenchantment of the world" -> world as a material realm -> focus on discovering its empirical regularities and natural laws -> Technological development

Why did the West give up superstition?
Jacob (1997): Scientific Revolution transformed popular culture. -> widespread interest in science -> change of human nature.

- New person: generally a male entrepreneur who approached the productive process mechanically -> mechanization of production
- Britain's lead over France was due to 'the marked differences in the scientific cultures found in Britain in comparison to France or the Netherlands'.

Why? Brits first smelted iron with coke, invented the steam engine, and discovered how to spin with machines.
Mokyr: Enlightenment connects the Scientific to Industrial Revolution. -> "Industrial Enlightenment":

- application of the scientific and experimental methods to the study of technology
- belief in an orderly universe governed by natural laws that could be apprehended by the scientific method
- expectation that the scientific study of the natural world and technology would improve human life
- Industrial Enlightenment was more fully realized in Britain than on the continent.
- Easier and more fruitful communication between savants and fabricants
- Britain was more abundantly supplied with skilled mechanical artisans than France, so it was easier for engineers to realize their inventions

Scientific worldview influenced the second and third tiers of inventors critical for the elaborating and applying breakthrough technologies.

Jacob (1997): even factory operatives had to become Newtonians -> mechanical knowledge needed for invention and effective exploitation of mechanical devices.

- Knowledge spread though provincial 'scientific societies, academies, Masonic lodges, coffee house lectures 'etc.

Between 1500-1800: two gradual but important changes in popular attitudes -> secularization and politicization.

- Growing concern of creating a better life in this world
- Pursue of Wealth and status as sign of salvation (Weber)

Culture and the economy: cause or effect?
Three cultural evolutions thanks to economic changes:

- spread of literacy and numeracy (with urbanization) : cities, rural industry and commerce required more skills + printing reduced price of books -> more reading for pleasure. Arithmetic studied for its utility (ship commerce)
- Emergence of consumerism (for work)
- Postponement or deferral of marriages when it was economically convenient

➔ big steps in the emergence of modern men and women.

18th century level of human capital is an important reason why Industrial Revolution didn't happen before.

Consumerism and hard work

- evolution of the economy also increased the incentive to work hard -> availability of new consumer goods -> people want income.

Mathias and De Vries: 'industrious revolution '-> Steuart's "Men are […] slaves of their own wants"

- New consumerism: necessary but not sufficient to explain economic progress. -> pursuit of income to buy novel consumer goods (often coming from abroad thanks to globalization) = cultural basis for industrial revolution.

Marriage and Children

North-western Europe developed a distinctive pattern of marriage that contributed to high living standards and a broader sphere of personal independence.
Hajnal (1965): line from St Petersburg to Trieste -> on the East and South all women married, most in their teens. On the West and North 1/5 never married and most who did waited until their twenties.
S-E pattern: high fertility and low living standards
N-W -> European marriage pattern: low fertility and high standard of living -> facilitates savings and economic growth.
Malthus: standard of living of most people was higher in England than in China because the English deferred marriage when incomes were low.
Why EMP?

- high wage economy after the black death.
- strong demand for labour -> young women could support themselves apart from their parents and control their lives and marriages

The emergence of modern culture

- Culture possibly became more secular and more concerned with economic success
- Chase after new products
- Rise of modern attitudes

An economic approach to the Industrial Revolution

- Focus on demand for new technologies

- Britain's high wages and cheap energy increased the demand for technology by giving British businesses an exceptional incentive to invent techniques that substituted capital and energy for labour.
- Population at large was better placed to buy education and training than their counterparts
- High rates of literacy and numeracy contributed to invention and innovation

Habakkuk's (1962): American inventions had a labour-saving bias that accelerated the growth in output per worker -> attributed high wages -> economize on labour
Abundance of land and natural resources -> high wages

The transformation of the European economy, 1500–1750

Middle-Age:

- European manufacturing and commercial centre was the Mediterranean (+Belgium)
- Most of British population lived in countryside -> agriculture. Low productivity and income.

16th - 18th century:

- By the 18th, the economic centre of gravity shifted to the North Sea.
- In the 16th and 17th century: Dutch Republic pulled ahead
- By the 17th century: British incomes pushed past France and the Habsburg Empire.
- By the 18th century: Britain overtook the Dutch

➔ Reconfiguration of European economy was precipitated by increase in international Trade

- 16th-17th: shift in location of cloth production -> North Sea
- 17th-18th: intercontinental trade expansion -> English and Dutch established world empires (manufacturing and commerce)
- Spanish -> acquired Latin American Silver -> inflation -> uncompetitive production

Table 1.1 ***Percentage distribution of the population, 1500–1800***

	1500			1800		
	Urban	Rural non-agriculture	Agriculture	Urban	Rural non-agriculture	Agriculture
Most successful over the period						
England	7%	18%	74%	29%	36%	35%
Moderately successful over the period						
Netherlands	30%	14%	56%	34%	25%	41%
Belgium	28%	14%	58%	22%	29%	49%
Small advance over the period						
Germany	8%	18%	73%	9%	29%	62%
France	9%	18%	73%	13%	28%	59%
Austria/ Hungary	5%	19%	76%	8%	35%	57%
Poland	6%	19%	75%	5%	39%	56%
Little change over the period						
Italy	22%	16%	62%	22%	20%	58%
Spain	19%	16%	65%	20%	16%	64%

1500: share of agriculture was for many about 75% (similar to the one of less developed in 20th century)
1500-1800: agriculture shares decreased. (England biggest drop, Spain least). Poland and England had biggest urban revolution.

Note: because of data availability countries are defined in terms of modern economy, but artificial since many of the countries were fragmented.

1500: Europe was a backward economy (3/4 of people in agriculture in England, Austria-Hungary, Germany, France and Poland). Small cities (<10% of population): 50000 people in London. Limited non-agricultural employment. Leading economies: Italy, Spain and Belgium (with a 19-30% urban fraction)

➔ Agricultural revolution in England -> rise in both urban and non-rural -> Protoindustrialization

- In many parts of Europe, manufacturing industries developed in the countryside (production in workshops or at home)
- Merchants signed up rural residents as piece rate workers, brought them raw materials and collected the finished products -> sold to other merchants who shipped them to the rest of Europe.
- Regions were intensely specialized (Woollen Cloth: Norwich and West Riding Yorkshire, metal buttons fitting and implements: Birmingham, stockings: Leicestershire, blankets: Oxford.

- The expansion of rural industry in north western Europe was associated with the emergence of new economic leaders because it came at the expense of established producers
- Dutch and English's clothes became the "new draperies"
- England successful: Black Death -> fall in population -> reversion of much good farmland to pasture -> feed supply for sheep -> their wool was longer and better suited
- Refugees from the continent brought skills that improved the quality and variety of English products

Early Modern England:

- Improvement of agriculture -> tax countryside income and spent it on urban and naval areas -> Rapid urbanization
- Some of the urban growth was due to manufacturing; London centre of English publishing and furniture-making
- Most of the growth of cities was due to trade and commerce (intra-European trade was the basis of London's expansion)

16th century: Portugal most successful European Power in South Asia: spice trade and colonies.
Early 17th: Netherlands took "spice islands" from Portugal establishing Indonesian Empire-> Amsterdam = wholesaling centre for tropical produce. Trade with India -> + tea + cotton

Early modern Low Countries:

- Second most successful economy
- Less than 1/2 of population was engaged in agriculture and urban and non-agricultural shares were high
- Flanders (Belgium) had been highly urbanized and a leading manufacturing centre in the middle ages.

Dutch Economy:

- Most advanced in the 17th: agricultural revolution -> growth of urban and manufacturing economies.
- New draperies, manufacture of light cloth
- Manufacturing and rural industry were also formidable
- English only overtook Dutch in late 18th

Rest of continental Europe (North of Alps and Pyrenees):

- France and Austria were major military powers
- Poland was united in 1500 but dismembered in the next three centuries
- Germany remained divided into many states throughout the period
- Prussia: international actor
- Modest development in early modern period
- Agriculture shares dropped to 60% (similar to Italy and Spain in 1500)
- Rise in proto-industry share
- Important rural manufacturing industries
- Urban shares scarcely increased -> sets them a part from England and Low Countries.
- For a time, the French had some valuable colonies, but they were lost in the Seven Years War and the Revolution.

Spain and Italy:

- Absence of structural change between 1500 and 1800.

- No movement in the end of middle-age lager urban and small agricultural shares.
- Absence of growth in rural manufacturing -> no proto-industrialization
- Italy no foreign possession, Spain yes but only brought inflation.

From early modern expansion to Industrial Revolution

- Industrial revolution = result of long process of social and economic evolution running back to the late middle ages.
- Commercial and imperial expansion of Britain was a fundamental feature of this evolution, but not its totality.

- Black Death: population fall increased labour mobility by generating many vacant farms, and that mobility undermined serfdom.
- High wage economy: benefits of high consumption were not confined to people: sheep ate better as well -> better wool -> "new draperies" -> exports
- London growth: rapid growth in the city's population and the rise of the coal industry to provide the capital with fuel.
- Trade boom: extended to the Americas and Asia in the 17th and 18th centuries by England's mercantilist expansion of trade and acquisition of colonies.
- Larger cities: advances in agricultural productivity, division of labour, greater efficiency and higher wages.

The expansion of the early modern economy was underpinned by favourable institutional and cultural developments.

- End of serfdom + establishment of a stable legal environment -> capitalist enterprise -> growth
- Gradual decline in superstition and medieval religion -> rise of a scientific attitude -> research for practical solutions
- Demand for trade and drop in book prices -> spread of numeracy and literacy.
- New products (from abroad) -> ↑ aspiration to consume -> ↑ incentive to work and earn higher incomes

Upshot of the commercial expansion : unique wage and price structure in England in the 18th
High wages and cheap energy -> incentives to invent technologies that substituted capital and coal for labour -> inventions -> Industrial revolution
Evolution of law and culture -> favourable supply response -> international expansion -> Industrial revolution.

Allen (2009), Chapter 2: "The high-wage economy of pre-industrial Britain"

One of the most distinctive features of British economy in the 18th was the high level of wages.
British workers were more prosperous than their counterparts in most of continental Europe and Asia during the 18th century -> High income position in international terms.

Subsistence:

Classical views: physiological minimum that barely kept a family alive or 'socially determined' higher standard of comfort.

1. Idea of wage latter on which workers in north western Europe had the highest standard of living and workers in Asia had the lowest
2. Adam Smith (1776):

- Great Britain: wages of labour seem (in the present times) more than what is precisely necessary to enable the labourer to bring up a family.
- Workers' living standards were even a bit better in the Low Countries

- Within Britain England was above Scotland -> a day of work in England would bring more food.
- Asia lagged behind : physiological minimum in the classical view
- Maritime centres of southern England and the Low Countries as having the highest real wages

19th century explanation: Demographic

- Malthus : population expanded until birth and death rates were equal

1. 'subsistence' wage: enough to allow parents to raise children, and for the population to reproduce itself without expanding
2. Positive checks: the birth rate was always at its maximum while mortality declined as wages rose. Subsistence wage had to be low enough to push mortality up to equal the high birth rate
3. Preventive checks: fertility also declined as income dropped, and this modification meant that births and deaths equalled each other at a higher 'subsistence' wage.
4. Habits: differed between Europe and Asia: England -> predomination of preventive check: deferred marriage, less children. Asia -> positive check: early and universal marriage, lower wages, more populous in proportion to its means of subsistence.

Note: Skilled workers did better everywhere, aged, disabled, ill and infirm all fared worse (depending on public welfare, private charity and church).
-> Rock-bottom: China, India, France, Italy.

Physiological minimum

- All resources spent on food
- Diet supplying just enough calories and protein to survive.
- Least expensive grain, no bread (or made with inferior grains), legumes for proteins, rare meat (sometimes fish), no alcohol and dairy products -> Quasi-vegetarian diet minimizing loss of food value in milling and cooking.
- Note: potatoes came into wide consumption only around 1800 (very cheap)

-> Engel (1845): normal diets varies according to wage. -> Meat scale

Pleasing/respectable living standards:

- Greater variety of highly processed food: meat, cheese, alcohol, tea, sugar etc.
- Not all income spent on food: clothing, education, heating
- Within the reach of many Brits (Ealing gardener example)

Life across the Channel

- Low Countries : prosperous diet. De Vries and van der Woude : orphanage diet (rye bread, meat and beer), general public consumed wheat bread.
- France: narrow range of foodstuffs: 95% cereals (not wheat), vegetable soup, milk only if family had cow, occasional egg or fish near seaside only source of animal protein -> undernourishment
- Italy: declining living standards: maize -> cheaper source of calories -> polenta but lack of niacin -> pellagra and diarrhea
- Asia: cheapest available grain (rice), monotonous diet , no meet, millet as main source of carbs, vegetables. No shoes and little clothing, little home furniture

Wolf (1986): 18th century : frontier between subsistence and poverty was shifting, in both city and countryside, to the detriment of the former.
Diets like French, Asian and Italian were consumed only by the poorest people in Britain or the Low Countries.

Wages and prices

Data from institutions -> wages of building sector workers.
Britain was a high wage economy:

- At the exchange rate, British wages were among the highest in the world
- British wages were high relative to the cost of consumer goods -> British workers could buy more with their money than workers in many other countries -> higher living standards in Britain than elsewhere.

- Wages were higher relative to the price of capital in Britain than elsewhere.
- Wages were higher relative to the price of energy in Britain than elsewhere.

3 and 4 -> incentive to invent coal-powered, mechanized technologies

Late Middle ages: wages were similar across Europe
16th: European wages and prices inflated as silver was imported from the Americas. Inflation greater in North-western Europe.
End of 17th: inflation ceased in the Low Countries but continued unabated in London
18th: London had the highest wages in the world
Asia: consistently lower wages: big gap with NW Europe, marginal with continental Europe. Asia ≅lagging Europe

Did the high wages earned in north western Europe translate into a high standard of living?
-> Depends on prices of consumer goods.
-> We specify "baskets of goods" corresponding to different lifestyles.
- must be complete and specified in terms of goods whose prices can be measured or inferred, so that its cost can be worked out around the globe

2 baskets:
- European respectability basket: meat, bread, cheese and beer, 2500 kcal + 112g/day of protein
- Subsistence basket: 1900 kcal/day

To analyse subsistence income, we need to inflate basket of goods to include the living expenses of wives and children.
-> three 'baskets' were needed to support a family with a father, a mother and some children
Note: rent = about 5 per cent of spending.
Annual cost of supporting a family= 3.15 x cost of the subsistence baskets
Balance of income and expenditure: full-time annual income/annual subsistence cost. (Time employed = 250 days)
Respectability ratio = income/cost of respectability basket
Subsistence ration = income/cost of subsistence basket
-> value > 1: possibility to buy lifestyle in question
-> value < 1: lifestyle beyond worker's reach

15th century: peak for labourers across Europe -> they earned about 50 per cent more than the cost of the respectability basket
16th century: wages sagged everywhere as population grew. -> rebound in London and Amsterdam (respectability basket).
By mid 19th: full-time annual earnings were half or less of the cost of the NW respectability lifestyle.
Asia: experience of India and Beijing looks like the pattern in Vienna and Florence. By the 18th century, not enough earnings to buy a respectable European standard of living.

Basing the diet on oats Amsterdam workers generally had greater purchasing power than London. But both very well-off earning three to four times the cost of a bare bones subsistence income.
Vienna and Florence: middle ages high standard of living but 19th century barely enough to purchase the physiological minimum.
19th century: most incomes barely enough to keep family from starving. -> "polenta economy"
India: better. 17th: India could earn three times the cost of the subsistence basket if they worked full time for the full year. By 19th: barely able to purchase the subsistence basket. (Beijing was similar)
North America: subsistence ration below London but above most English provincial towns.
-> It attracted immigrants from Europe and slaves from Africa.
- It exported agricultural goods and imported manufactures.
- 1790: 95% of population was rural, NY largest city.
- High real wages
- Little industry
- 19th: expansion, US wages overtook British

Wage convergence in Britain

Within Britain, the geographical boundary of the high wage economy shifted over time.
15th: real wages were high in all parts of the country (legacy of Black Death)
After 1550: real wages fell everywhere (attenuated in London with population explosion a century later)
-> rapid growth of the city's economy -> tight labour markets + rising wages -> migrants from adjoining counties

London's wages pulled above wages in Oxford and York after 1550.
By the early 17th: earnings of fully employed unskilled workers in rural England dropped to only 60% of the respectability budget. High wage economy was confined to London.
By the late 17th: high wage economy began to spread north as provincial wages began to close the gap with London.
18th: fully employed labourers in Oxford earned enough to buy the respectability budget. In York, they earned only 80 % of the respectability budget.
-> This gap was not closed until the Industrial Revolution when northern wages and southern provincial wages again
approached London levels.

The northern spread of the high wage economy was matched by a corresponding spread of the consumption of white bread. Early 18th predominant carb -> oat. Much of the growth took place in northern manufacturing towns where more and more workers shifted from oats to wheat bread.

Skilled workers

Skilled workers always earned more.
-> In Europe, the wage of a carpenter or a mason was about 60 per cent higher than the wage of a labourer
Ratios higher than the corresponding ratios for labourers.
Skilled workers could have respectable lifestyle with some money to spare.
London and Low Countries: real wages remained high throughout the early modern period, while living standards fell on the rest of the continent.
By 2nd half of 18th: Valencia and Florence dropped below 1. No surplus income if respectable lifestyle.
18th: Vienna and Paris: could buy the respectable lifestyle with a little left over.

High wage economy:

- Core: maritime ports, London and cities of Low Countries.
- Even unskilled workers earned enough for respectability basket
- 17th-18th century: high wage economy advanced north through England, so that unskilled workers in northern cities could buy the respectability lifestyle early in the nineteenth century
- On the continent: no evidence of geographical spread but Paris and Vienna for example had moderately high incomes (enough for respectable lifestyle).

What the high wage economy meant for the quality of life

High wages and high subsistence ratios indicate purchasing power beyond that of required basic needs.
Many ways to spend that surplus, and the choices people made had a big impact on the quality of their lives and the growth of their economies.

Food quantity

People living at bare bones subsistence were usually hungry, so the usual response to rising incomes was increased food consumption.
Highest wage: skilled tradesmen like masons or carpenters
The next highest: building labourers
The third highest: average earnings of a cotton mill operative
The lowest income: intermittently employed.
Calories consumed per adult male rose from 1,605 per day in the poorest paid job, a rate which barely sustains basal metabolism, to 3,937 calories among the skilled trades -> new 21st level of intake.

-> With more money, people ate more food -> The low consumption of meat by French and Italian workers was the result of their low wages.
Fogel 1991: average Englishman consumed 2,700 calories per day, while the average Frenchman had only 2,290. 40% of the French population received < 1,958 calories, vs 20 % of the English.

Food quality

High wage economy -> more expensive food
15th: real wages were very high -> desirable diets : bread, meat, alcohol.
17th-18th: import of sugar and tea -> added to the list of preferred + big consumption of potato by workers. (The preference for these foods is shown by the increased in their expenditure).
The poorest workers did not consume the tropical goods like tea and sugar
As food consumption -> expensive sources of nutrition (meat) -> the cost per calorie rose almost 50 %.

Physical well-being, health and stature

Higher level of food consumption in NW Europe -> better health, longer life, more productive workforce.
Stature = prime indicator:

- Military records: British recruits 172cm, French between 162-168cm, Lombardy drop from 167 to 164cm, Austria 162.
- Heights are determined by net nutritional intake during childhood -> low wages -> restricted food consumption -> height differences.

Economic performance:

- Poor nutrition -> low work intensity and less energy to work (Fogel estimates that 20% of French could not light work more than 3 hours per day).
- But many jobs entailed a full day of hard labour. -> need for well-nutrition
- Some jobs required less physical effort
- Effect on economic performance depended on distribution of job requirements

Consumer revolution

Two evidence point:
1) contemporary discussions of trade and 'luxury' consumption
2) statistical evidence of the increased consumption of 'luxuries' and novelties
Luxury and novelties: tropical foodstuffs (tea, sugar, coffee, chocolate), Asian manufactures (cotton, silk and Chinese porcelain) and British manufactures (imitations of Asian imports + cloths, books, furniture, clocks, glassware, crockery and metal products).
-> Not only a British phenomenon, also in Low Countries and extended to cosmopolitan centres (Paris)
Purchasers were mostly upper and middle classes, but workers were also an important source of demand.
1688 England Gregory King's social table

- Potential for non-subsidence spending for broad social groups.
- King assigned £2 per person per years to the poorest 18% of the population -> setting subsistence at £2 per year -> richest two groups had 43%
- Middle group: 57% of income beyond subsistence

Purchases show up in probate inventories, which list possessions at the time of death.
Weatherill (1996): ownership of manufactured goods (tables, cooking pots etc, books, pictures, etc)

- People with more money have more
- Yet English market for imported and novel consumer goods extended to working class.
- Skilled workers were the most active buyers
- Less well paid would purchase some of the British products "The poor all drink tea" - Arthur Young
- Low Countries and 18th Paris show similar pattern -> consistently with wage patterns

-> high wage economy that gave the workers, shopkeepers and proto-industrialists the cash to consume

Education and learning, skill differentials

- NW European workers could acquire learning and skills
- Sometimes for pleasure, others for gain (primary motivation -> education= human capital)

Literacy:

- proportion of people who could sign their names -> imperfect indicator
- signature information indicates that literacy increased dramatically during the early modern period especially in the high wage economies
- Middle-Ages: only in cities, 1500: still very low, by 1800: increased everywhere (50% of people could sign their name in Low Countries, the Rhine Valley in Germany, northeaster France, and England -> high wage regions or ones linked to them by migration)

Two reasons to learn how to read: economics (valuable in trade and business) and pleasure.

- More people were reading in both town and country in the 18th.
- Gutenberg's invention of printing cut price of book by 2/3.
- Books were within the reach of many more people
- Protestantism -> reading God's word (Catholics also learnt how to read)
- Transformation of agrarian world put a premium on literacy
- Economic change raised the value of reading and writing
- Many functional books

Numeracy:

1500: gentlemen could rarely add or subtract

By 18th: voluminous trade in arithmetic books, which suggests that many people were learning the skills

-> Arithmetic, indeed, had become more powerful: Arabic numerals had replaced Roman, while logarithms and slide rules sped calculation

-> Instrumental incentive: geometry necessary for navigation and surveying agricultural demand, arithmetic for trade and commerce.

Crafts skills:

- Usually acquired by apprenticeship: contracts in which the master agreed to house and feed the apprentice and to teach him the trade. The apprentice agreed to work for the master, usually without any pay. Successful completion of the apprenticeship allowed the apprentice to practice the trade and conferred social benefits (settlement under the Poor Law).
- 2/3 if boys in England in 17th-18th century would complete apprenticeships.
- The master charged the apprentice's parents a large sum at the beginning of the apprenticeship
- To become a master, a boy had to raise the capital to start a business even after he completed the apprenticeship, and that usually required saving part of his pay as a journeyman.

-> Importance of the high wage economy, which underpinned all three types of human capital accumulation

- Literacy and numeracy were everywhere highest among the wealthy.
- High wages facilitated all forms of skill acquisition
- Widespread literacy, numeracy and craft competence reflected the demand for skills in the advanced economies, and the high wages those economies generated gave workers the money to pay for schooling and apprenticeships.

High wages and economic growth

Vigorous economic growth -> High wages -> high levels of consumption and education -> further growth thanks to new technology to economize expensive labour.

Allen (2009), Chapter 3: "The agricultural revolution"

Agriculture played an important role in the expansion of north western Europe.

In the successful economies of England and the Low Countries, the share of the workforce in farming dropped from about 75 to 35–40 per cent.

Since the British and the Dutch were being fed mainly with domestically grown food, each farm worker in these countries had to raise his productivity enough to feed more mouths than before.

Widespread theory

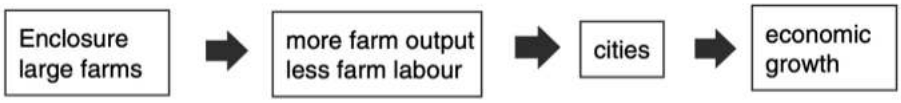


Figure 3.1 The standard model of agriculture and English economic development

3. The modernization of agrarian institutions – the enclosure of the open fields and the replacement of peasant cultivators with large-scale capitalist farms operated by wage labour – was the prime mover that drove the economy forward
4. Large-scale enclosed farms are supposed to have produced more food and – in some accounts – employed fewer people per acre than peasants
5. Greater food production and lower farm employment led to an expanded urban population
6. The result was greater manufacturing production and economic growth

The macro story: how were the people fed?

- Growth of agricultural output -> essential to support the growing population at a high standard of living

No agricultural censuses so we look at consumption

- Increase in farm output from 1750 -> enclosure had a large impact on productivity since the parliamentary enclosure movement began in the 1750s and continued into the 19th century.

BUT: per capita food consumption was not a constant -> changes in consumption must be incorporated into the projections for them to have reliability

England agriculture:

Early 16th to 1730: yeomen farmers at their apogee, output doubled.
1740 to 1800: Output ↑only 10% (puts enclosure effect in question)
1800 to 1850: Yields rose significantly, output ↑65%

1740-1800:

- Population and income ↑ rapidly -> ↑demand for food
- English demand ↑ faster than supply -> Prices in Britain ↑ quicker than in the continent

Usual assumptions in the historical literature

- income elasticity of demand = 0.5
- price elasticity = -0.6

cross price elasticity between food and manufactures = 0.1

Output per worker in agriculture

By 1800 each English farm worker produced enough to support two workers in manufacturing and services.
3 patterns:
1- Medieval Flemish agriculture -> efficient -> farmers could support a large urban population (NE Norfolk). Output per worker ↓ slowly in Belgium as the population ↑
2- Dutch and English: no impressive productivity in the middle ages. 1600-1750 agricultural revolution in which output per worker reached and exceeded Belgian levels.
3- The rest: Black Death ↓ population in mid 14th -> output per worker ↑. Next 100 years -> productivity back to pre-plague levels .

Italy: labour productivity continued to decline throughout the early modern period -> no agricultural revolution.
Major continental countries: similar drop in productivity between 1400 and 1800 as the expansion of the farm population ran into diminishing returns.

Why did output and productivity rise?

$$\frac{\text{output}}{\text{labour}} = \frac{\text{output}}{\text{improved area}} \times \frac{\text{improved area}}{\text{total area}} \times \frac{\text{total area}}{\text{labour}}$$

Output per improved area

-> acreage of arable, meadow and pasture

- Output per improved area ↑ in early modern period since the productivity of crops and livestock ↑
  (Ex: Milk per cow grew about 100 gallons per year in 1300 to 380 in 1800)
- Yields rose because of both genetic and environmental improvements.
  Controlled reproduction of plants and animals (seed and breeding animal selection)
  Enhanced productivity of genetic material -> improving growing environment. (Better pasture and cultivated beans, clover and turnips for animals)
  ↑ of stock of nitrogen in the soil -> pushed yield of wheat
  Better tillage to absorb nutrients

Improved area relative to total area

- Productivity also ↑ because land was imported
- Netherlands: much land was reclaimed from the sea. (England also undertook reclamation with Dutch supervision)
- Improvements in grazing land -> in Britain acres of "waste" land were converted to "pasture" (real improvements in quality of land)

Total area per worker

- ↑ in improved area ↑ employment since enclosed pasture was tended more intensively than common grazing
- labour per improved area fell in England during the early modern period
- Enclosure that involved the conversion of arable to grass cut farm employment
- shift from small-scale family farms to large-scale farms also reduced agricultural employment
- price of farm products relative to wages : when grain prices were very high farmers hired extra workers to get the most they could out of the land.

Did enclosure raise output and productivity?
The oldest explanation for the rise in efficiency in early modern English agriculture is the enclosure of the open fields.
The large-scale tenant farmers were supposed to have been more innovative than yeomen farmers since the former had to generate the cash to cover their wage bill and their rent, while the latter often owned their land and relied on family labour so they lacked the need for money that pushed the large-scale tenant forward.

Comparison between open and enclosed fields:

- open field farmers adopted many features of improved practice
- 18th: Open field farmers adopted the new crops, clover and turnips, enclosed farmers retained the lead, for they adopted these crops more completely than open field farmers
- Greatest difference: grazing areas: Enclosed farmers typically had most of their land under grass. Open farmers retained a higher proportion under crops

-> The differences didn't involve much loss in output or productivity.

Crop yields have been one of the most frequently used indicators of agricultural productivity

- Greatest difference between open and enclosed farming was in the heavy arable district : characterized by clay that required subsoil drainage for high yields. Enclosure facilitated draining (more efficient). (Wheat negligible difference)
- Light arable district: clover and turnips were the road to improvement. Moderate yield differences
- Ernle's judgment that open field farmers were 'impervious to new techniques' was wrong. (Not unexpected since open fields farmers were leaders in peas and beans cultivation)

Labour productivity:
- Enclosed farming to have been slightly more productive
- Heavy arable district: 11% higher output in enclosed.
- Light arable district: only 3% higher
- Pastoral areas: 6 to 12% higher in enclosed
- Only real advantage was in old enclosures because of superiority of grasslands).

-> Enclosure accounted for little of the advance -> open field farmers accomplished most of the growth in productivity that occurred in the country as a whole

Total factor productivity (TFP) = ratio of farm output to an index of all of the land, labour and capital employed in production.
- it can be inferred from land rents
- Assumptions: if land market equilibrium, rent differences indicate TFP differences (more efficient farmers generated more supply, and surplus accrue to landlords as rent).
- Enclosed farms' rent > open field farms rent -> Small TFP differences in absolute amount.

How did open field farmers modernize?

Homer: critique of open fields: necessity of universal agreement among proprietors = obstacle to improvement.
3) Adoption of new crops by open field famers puts it into question -> How was agreement achieved?
4) Agricultural innovation involves costs of research and development in each locality since the culture of new crops has to be tailored to local conditions.
5) Classic landlord English agriculture revolution: R&D was performed by owners of great estates who devoted their home farms to agricultural experiments -> methods they pioneered were then adopted by their tenants, who were free to innovate since they operated enclosed farms

But:
- Not a lot of experimental home farms
- Innovation occurred in open fields -> need for institutions

Case of Spelsbury in Oxfordshire: glimpse into the inner workings of an open field village and shows the farmers performing experiments, innovating and making decisions in ways that contradict Homer.
- Hartlib's circle: experiments on crops like clover that were being introduced from the Netherlands -> process of collective invention. -> Problems in introduction of sainfoin, turnips and clover into the open fields of Spelsbury were solved by the circle.
- Most farms were small enough to be operated by families and were held as traditional copyhold tenures. -> long-term interest in soil
- When sainfoin was found -> withdrawal of some strips of land to combine them into an improved meadow -> "inclosing". Yet features of open fields were preserved and meadows was grazed in common.
- Each copyholder was responsible for maintaining the field's boundary where it crossed his property
- Three fieldmen were chosen from among the copyholders to establish when the meadow would be planted and when the village herd would be pastured on it
- Violations of the agreement were punishable by fines paid to the lord.
- The Taston sainfoin agreement created an improved meadow
- Coercion by manorial authorities was one solution but Spelsbury made introduction of new crops voluntary
- Later: flexibility at the outset to avoid disputes
- 1751: introduction of clover and turnips -> voluntary approach
- 1758: majority agreed on obligatory cultivation -> the management of the field was more efficient if everyone's cropping was the same, and that was the motivation for this change. -> system of rotating crops.

Why did farmers improve their methods?

Classic model of the English agricultural revolution: institutional change -> innovation
But all types of farmers are improving their methods -> institutional change cannot be the cause.

Campbell (2000): lack of urban demand held back agriculture in the middle ages

If growth in the urban economy was causing agriculture to modernize, the influence must have been transmitted through markets:

- The von Hünen (1826): urban demand raises the prices of goods that are expensive to ship and leads to their cultivation near the city
- Areas near big cities, London and Paris, responded with more intensive, higher productivity agriculture
- England: low shipping costs for grain, but high for meat -> higher price of meat in London -> landowners near London to convert arable to pasture
- Expanding cities affected agriculture through the labour market as well as through product markets

London was a high wage city throughout the early modern period

- High rate of rural–urban migration that drew labour from many farming villages
- By end of 17th century: high wage economy spread to other towns and cities in southern England
- By end of 18th: North was also drawn into the high wage orbit
- Earnings of farm labourers fell behind London building labourers in the 17th century -> income gap due to so many farm workers moving to London.
- Gap because London wages were unusually high ->↑demand and wages.
- 17th century: open field farmers increased their productivity -> agricultural prices ↑ more rapidly than any others.
- London was exploding, and the wages of London labourers leaped ahead of those elsewhere in the country
- Rising farm prices meant that small farmers kept up with London living standards and moved ahead of labourers in the county towns -> no great incentive to modernize in this period
- After 1620: Agricultural prices stopped rising, and farm incomes stagnated
  yeomen found themselves falling behind London but also their neighbours in the towns
  spread of the consumer revolution -> higher standards of living for urban, workers
  Farmers wanted this standard of living, too. 2 options: sell the farm to live in London or ↑productivity.

To ↑ productivity:
1) raising the income of the farm to keep pace with London.

- Higher crop and livestock yields could, indeed, keep the small farms viable
- ↑in productivity -> income of small farmers at pace with labourers in London.

2) farming with fewer people

- amalgamating small holdings into large farms and enclosing open field arable and converting it to pasture
- labour savings of large-scale operation

Standard story: modernization of agriculture + enclosure -> ↑output and ↓farm employment -> feed larger population -> growth.
Allen view: London and manufacturing growth -> ↑ wages -> improvement of agricultural methods ->↑ in farm output and ↑ in labour productivity.

Allen (2009), Chapter 4: "The cheap energy economy"

The British price of energy was striking. The early development of the coal industry in Britain meant that it had the cheapest energy in the world. Learning to use that energy was an important incentive to technical change, and one which distinguished Britain from other high wage countries in Europe like the Netherlands.

Medieval times:

1. Medieval economy was propelled by animals, humans, water and wind.
2. Wood and charcoal were the main sources of thermal energy for heating and industrial processes.
3. Coal did not account for a significant share of the energy supply.
4. National market for coal for lime burning and blacksmithing.
5. Small markets in which coal was used to boil down sea water for salt.

-> similar situation in other countries

1560-1800:

- output increased sixty-six-fold

- 1/2 of growth in Northumberland and Durham mines -> bulk of coal was shipped to London which was growing rapidly.
- rest of the coal was mined in the coal fields of western Britain, Scotland and Wales and generally served more local markets

Note: only other place a large industry was southern Belgium

-> This abundant coal made energy very cheap. -> Extremely low price in Newcastle (1/8 of London)
We see:
1- Britain's cheap energy economy, located in the mining districts
2- two-tier structure of prices in Britain: low prices in the coal- producing counties and higher prices in the consuming counties.
However London's price was moderate by international standards (close to Amsterdam which is based on wheat)
Paris depended on wood and still prices were higher, and same for Madrid and Valencia.
Coal was critical for British industrialization because it provided an inexhaustible supply of cheap energy.
Coal was also important for its technological spin-offs steam engine and railway)
-> Coal + metals = basis of the engineering industries -> mechanization of manufacturing
The exploitation of coal had social and economic causes.

The growth of London and the rise of the coal trade

Nef's "Timber Crisis" theory

Exhaustion of wood -> shift to coal
- Most parts of Britain faced an acute short- age of wood
- England cut down its forests first, which is why it developed its coal before France or Germany.

Hammersley: surveys of Crown Forests that showed difficulty in selling timber, timber rotting for lack of buyers
We look at prices: if there was a crisis, then the prices of firewood and charcoal should have been rising

At first glance Nef's view seems supported: ↑of wood fuel prices after 1550 when coal industry took off.
BUT:
- Nef's wood series rose more rapidly than the charcoal series up to the 1630s and thus overstates the growth in wood fuel prices generally
- the period 1550–1640 was marked by inflation

The figure confirms New's view in an attenuated way:
1- real price of wood fuel was higher in the second half of the 16th century than it had been before, and it rose again after 1650.
2- little difference between the prices of coal and wood fuel before 1550
3- slump in the real price of coal in the next half-century -> not surprising because of improvement of transport facilities. Overall impression is that the real price of coal in London was trend-less for several hundred years
4- price of charcoal=2price of coal after 1550, wood fuel prices ↑ in the 1650s and premium over coal ↑-> ↑in coal consumption.

Critiques:
- Doesn't account for Western economy
- Misses significance of London's economy
- The increase in wood fuel prices in London was the result of the city's enormous growth.
- ↑ in population after the decrease due to Black Death -> in 18th it almost reached 1 million

-> exploding population + high wage economy -> extraordinary growth
- demand for fuel was geographically concentrated, the supply was necessarily dispersed
- To supply London with wood required a vast and growing acreage to be harvested
- Wood overland shift was very expensive, cheaper by water -> timber supply area surrounding London defined by the costs of river and coastal shipping
- ↑ wood delivery -> ↑ shipping distance -> ↑ costs

- ↑ supply curve of wood in London + city growth and ↑of demand -> ↑price of wood

Complicated transition:
- Coal used to be only for lime burning and blacksmithing while the rest was done with charcoal
- Charcoal and firewood were cleaner fuels -> discount on coal made its undesirable effects acceptable -> East coast coal trade took off exactly when London got big enough to drive the price of wood high enough to make it profitable to shift to coal.
- Price of coal had to be high enough to cover cost of mining and shipping -> widespread use became an actual possibility when price of wood ↑

Allen:
Success in world economy + High wage economy -> expansion of London ->↑ demand for duel -> coal
BUT: residential housing had to be redesigned to use coal.
-> High rate of house construction in London was a fertile ground for those design innovations -> coal-burning house -> spread to W and N Britain.

Learning to heat a house with coal

The technology of energy consumers had to be reinvented in order to use coal.
-> The most important use of coal in the 17th century was residential heating.
- There were complex design problems -> layout of the house
- Medieval house: large hall: fire built on a law heart at the centre, smoke exited from a hole in the roof. (Family could gather around the fire and fire was away from the flammable walls making it house fires less likely)
- Coal smoke -> inhabitable structure + fire not contained. -> for efficient combustion coal must be confined in small enclosed space

-> Burning coal required a new style of house:
- chimneys (already existing in great houses by 15th century)
  Hooded fire was a first step but not sufficient
  Need for enclosed fire place or metal chamber + narrow chimney -> increase oxygen supply and vent the smoke out the house
- "collective invention" : copying and elaborating innovation from past new designs.

-> ↑in price of wood motivating the shift + building boom (opportunity for experiments) -> innovation

The growth of coal production outside the Northeast coal field

- Half of Britain's coal was mined in Northumberland and Durham (some used by local, energy-intensive industries like salt and glass)
- Western England, Wales and Scotland = other half -> centres of the Industrial Revolution
- One reason that the Industrial Revolution occurred further west was that the coal was interspersed with metallic ores in those districts
- The difference between London and western Britain stands out in the history of fuel prices
  1. In contrast with 16th century London where coal and charcoal sold at approximately the same price, coal in Western Britain was always held as expensive as charcoal.
  2. No evidence of a change in the relative prices of coal and charcoal before the Restoration in 1660.
  3. 17th century: charcoal prices ↑ rapidly and real price of coal ↓ slowly. (Only then Britain was running short on wood)
  4. Coal was always cheap to move

-> rising wood prices were not the cause of coal expansion before the late seventeenth century
-> explanation for growth in coal output must be a shift in demand rather than in the supply of fuels

In western Britain, the population was too dispersed and too few houses were built for collective invention to be sustained. The use of coal throughout the British isles awaited the building of London, the laboratory that brought coal into the home.

Hoskin: "Great Rebuilding" to adapt housing to coal in the early 18th century (with the rise of the coal industry in western England, Scotland and Wales)

British energy in world perspective

The rise of the coal industry meant that Britain's energy situation was unique in the 18th century.

- Thermal energy was produced by burning wood, coal or peat
- Coal was already more important than wood in 1700 and almost certainly supplied over half of thermal energy including that derived from peat. By 1800, almost all thermal energy was derived from coal as well as a small amount of mechanical energy. No other country in the world was in this situation.

Highlights:

1) Price of energy in most European and Asian cities was fairly stable.
- Extremes in Europe: Spain and Central Europe
- Asia: prices on the high side, not far from Spain. Canton close to European norm
- No evidence of continental Europe timber crisis

2) Explosion of wood fuel prices in early modern London was almost unique.
- Coal provided a solution but did not give London cheap fuel, price of energy similar to any other capital.

3) Gains to Britain from the rise of the coal trade showed on the coal fields in northern and western Britain
- Transport costs were so high that Britain had a two-tiered price structure
- In British coal fields coal was the cheapest energy in the world (even energy from charcoal was cheap)

4) North America is well known for the abundance of its natural resources but it did not extend to energy.
- energy was not cheap on the east coast of the United States at the end of the eighteenth century
- about the same as in London
- Early American industrialization, unlike British, was not based on cheap coal.

Dutch urbanization and the 'timber crisis'

The low countries were the other high-wage economy.

Antwerp:

- Closer counterpart to London
- Similar increase in charcoal price starting in 16th century
- coal and charcoal were selling at about the same price per BTU
- demand for coal was very limited
- Early 17th century: rise in charcoal prices -> ↑market for coal
- Coal prices were low at the mines near Liège
- Main difference with London: demographic development -> contrary to London, population ↓
- Maybe: revolt of Netherlands and trade reorientation -> disrupted supply routes -> ↓in timber supply

Amsterdam:

- Differs both from London and Antwerp
- The growth of the cities of the Dutch Republic led to ↑ in the demand for fuel just as in London
- Dutch wood prices do not show the increases seen in the London and Antwerp series
- Peat was the backstop technology of the Dutch
- Peat was an organic fuel and was not suffused with sulphur like coal -> peat and wood equally valuable
- Vast reserves of peat in the Dutch Republic -> the fuel available in elastic supply
- Canal system meant that it could be delivered to urban customers at low cost
- Coal was available but would have had to sell at a discount to pear to compensate for its lower quality -> if the price of peat were high enough, or if the costs of mining coal low enough, it would have paid to fuel the Dutch cities with mineral fuel (what then happened in 19th century)
- But the transportation costs were too high and political divisions impeded movement

Key concepts:

- The two-tier price structure was the secret to Britain's success, and it reflected the core–periphery orientation of the economy: London was the core and grew because of international trade.
- An economic corridor running from Amsterdam up the Rhine to the Ruhr was the continental counterpart of Britain -> development was choked off by cheap peat.
- The early development of the north- east coast coal field gave England a 'first mover advantage'
- Cheap energy economy also sustained the high wage economy.

Allen (2009), Chapter 6: "Why was the Industrial Revolution British?"

The Industrial Revolution was one of the great, transformative events of world history.
But what was the Industrial Revolution?
-> A continuous wave of technological innovation.
Ashton: "About 1760 a wave of gadgets swept over England."

Macro-inventions and micro-inventions

Macro-inventions

Ex: Newcomen's steam engine and Hargreaves' spinning Jenny.

1. set in train long trajectories of advance that resulted in great increases in productivity
2. radically change factor proportions, substituting energy and capital for labour
3. macro-inventions of the Industrial Revolution were only cost-effective in Britain

Micro-inventions

1. all of the improvements in the trajectory of advance that elaborated macro-inventions and realized their possibilities
2. the stream of micro-inventions made steam engines, cotton mills and coke blast furnaces cost-effective in more and more countries and eventually spread the Industrial Revolution around the world.

Edison: "Invention was 1% inspiration and 99% perspiration"
Invention = leaps of imagination or scientific discovery (inspiration) + research and development (per- spiration)
Situation:

- Britain's success in the early modern global economy gave her expensive labour and cheap energy.
- These prices affected the demand for technology by giving British businesses an exceptional incentive to invent technology that substituted capital and energy for labour.
- The high real wage also stimulated product innovation since it meant that Britain had a broader mass market for 'luxury' consumer goods

Habakkuk (1962): 19th century American technology.

- US emerged as the world's leading economic power after 1870 -> its technology ↑ labour productivity
- abundance of land and natural resources in north America -> high wages -> labour-saving bias of American inventions.

Britain: high wage economy + cheap energy -> invention of labour-saving technologies.
-> High wages -> buy education and training -> high rates of literacy and numeracy -> innovation

- Newtonian science, the Enlightenment and genius -> provide knowledge for technologist to exploit.

Britain: a high wage, cheap energy economy

- The demand for technology depended on the price of labour relative to the prices of other inputs in production

Early 17th: trend-less wage to price of capital ratio and small difference between cities.
Mid 17th: English labour became increasingly expensive relative to capital while the ratio of the wage to the price of capital declined gradually in Strasbourg and Vienna.
-> the incentive to mechanize production was much greater in England than elsewhere.

Differences even more pronounced in the case of energy.

- Newcastle stands out as having the highest ratio of labour costs to energy costs in the world
- low cost of coal was the decisive factor
- only place outside of Britain with a similarly high ratio of labour to energy costs: coal mining district around Liège and Mons in present-day Belgium
- Opposite situation in China where labour cheap and fuel dear.

Why Britain's unique wages and prices mattered: substituting capital for labour
The British Industrial Revolution was the unfolding of a particular pattern of technical change.

Invention:

Step 1: inspiration of macro-inventions

- the idea it embodied came from the outside
- Coke as blast furnace -> malting industry
- Roller spinning -> rollers used in metallurgy and paper-making
- Exception: Hargreaves Spinning Jenny -> spinning wheel (more of a "local learning" invention)

Step 2: R&D
- turn a concept into a product or process
- Prices influenced technological development through their effect on the profitability of R&D.
- inventors spent money to develop ideas when they believed the inventions would be useful (when social benefits exceeded cost of invention)
- an inventor with an enforceable patent could recoup the development costs through royalties
- Even when private gain was not the object, social utility was still the aim
- Invention -> Adoption -> depending on factor prices -> influence R&D

A high wage might not imply high labour costs if the high wage workers were more productive than the low wage workers.
- if true, incentive to mechanize might ↓
- In the modern world, workers in poor countries may be less productive than their better fed and better educated counterparts in rich countries, so the difference in wages overstates the difference in production costs.

But limits:
- the higher productivity of manufacturing workers in rich countries has not been prevented firms from relocating factories to the developing world to take advantage of the low wage, nor has it stopped them from raising the capital–labour ratio in the developed world.
- Comparisons between rich and poor countries depend critically on the characteristics of particular workers and the requirements of the jobs at issue
- by replacing human power with machines, mechanized factories reduced the importance of nutrition in job performance.

Bentley: advancing price of manual labour in British manufacturing was offset by adopting inventions
Delaunay Deslandes: convinced that French could not compete because of Diet but how could they compete with the high wages?
-> a cheaper input or a more mechanized technology was needed to offset the high British wage if the British ever hoped to compete internationally

Note: macro-invention might have had revolutionary consequences but first models were very inefficient from a commercial point of view. `
6) scarcely turned a profit even under the most favourable circumstances
7) did not earn enough income to cover costs in most situations
8) their social savings was negligible in the beginning
-> their adoption was very sensitive to factor prices
- R&D was the process of designing a prototype that was efficient enough to cover its costs
- Then it could be operated commercially and further knowledge gained through observation and modification (local learning)

-> micro-inventions: at a given point macro-invention could be so improved that they could revolutionize the world.

Applying the model to Britain and China

Pottery Kilns
Britain: pottery was fired in round, up-draft kilns
- cheap to build
- Inefficient use of energy: loss of heat

Asia: 'down-draft climbing kiln'
- save on energy
- Much use of capital and labour

Chinese developed a fuel-efficient design because energy was expensive and British saved on capital and labour because coal was cheap.

Applying the model to Britain and France: the pin factory

L'Aigle - Normandy on which is based the *Encyclopédie* statement of production process : machines were propelled by people turning flywheels that looked like spinning wheels
First high-tech English pin factory: Warmley mill - near Bristol: driven by water power, Newcomen steam engine was used to manage the irregular water flow -> eliminated the jobs of the wheel turners
Curiosity: Geography was not a reason for the choice of factor of production because L'Aigle was on a river.

The second phase: a steam of micro-inventions

1712 Newcomen's steam engine could do little more than pump water and was grossly inefficient by later standards.
Micro-inventions differed from macro-inventions in three respects.
1) They were not generally biased technical changes (usually neutral or could even reverse the bias)
- With macro and micro-inventions Britain increased her technological lead over other countries
- Countries with lower wages and more expensive energy still did not adopt the new British technology
- In the next seventy years, British engineers reduced the use of all inputs
- So other countries jumped directly to the most advanced blast furnace technology and skipped all of the intermediate stages through which the British progressed

2) inspiration for the inventions
- ideas for micro-inventions often originated in the study of that experience
- Local learning (Watt started from Newcomen)
- the inventor was as likely to find an improvement that saved capital as one that saved labour
- any change that cut costs was an improvement, there was no selection mechanism that generated bias

3) business behaviour
- Macro-invention needed funding.
- Micro was more of a collective enterprise
- Local learning -> cheaper
- Reduced needs for external finance
- Reduced patent protection
- Information sharing to perfection ate and increase efficiency.

Macro-inventions:

1. A biased technical change saved one input disproportionally and reduced costs the most where that input was most expensive.
2. Techniques were worth inventing only if they were used.
3. A new technique was not worth using everywhere.
4. Countries with high wages found it profitable to develop a broader range of techniques with high capital–labour ratios than did low wage countries.
5. Larger markets increased the profitability of R&D and led to more invention.

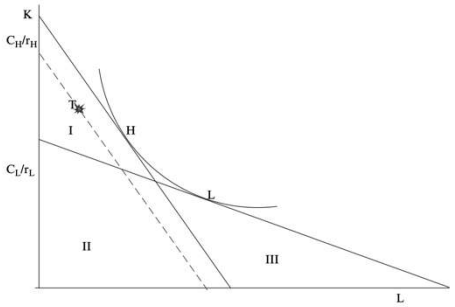


Figure 6.3 Phase 1: macro-inventions

Micro-inventions:

1. Initially, high wage country builds its lead. Invention and R&D occur and productivity is rising
2. Nothing much happens in the low wage country -> no adoption of technologies -> question about quality of entrepreneurs and engineers
3. 'tipping point' -> technology is improved to the point where it becomes suddenly profitable to adopt British technology
4. The low wage country finds that it pays to leap over many stages of technological development -> go directly to the vastest British technology

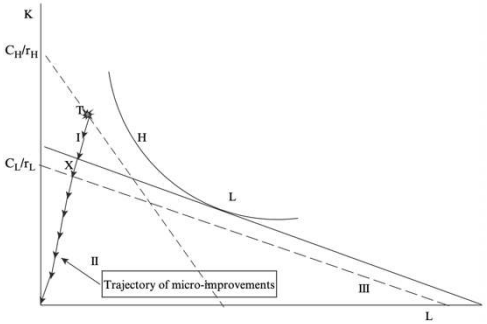


Figure 6.4 Phase 2: the trajectory of micro-improvements

Britain's competitive advantage had been based on the invention of technology that benefited it differentially. It is ironic that the success of Britain's engineers in perfecting that technology destroyed the country's competitive advantage.

Allen (2009), Chapter 11: "From Industrial Revolution to modern economic growth"

The famous inventions of the British Industrial Revolution were responses to Britain's unique economic environment and would not have been developed anywhere else
Mokyr: there were inventions before the Industrial revolution but the result was a one-shot rise in productivity that did not translate into sustained economic growth.
19th century was different: First Industrial Revolution turned into Modern Economic Growth
Mokyr underlines that scientific knowledge increased enough to allow continuous invention.
Incomes continue to grow for 100 after 1815 because Britain's pre-1815 were transformative.

Cotton:

Gerschenkron (1962): economic growth in advanced countries was based on the expansion of consumer goods, while growth in backward countries was based on producer goods.

- it grew to immense size -> consequence of global competition
    - Early 18th century: Britain produced only a tiny fraction of the world's cotton
    - Main producers were in Asia
    - price elasticity of demand for English cotton was extremely large
    - Mechanization led to enormous expansion of production -> replacing India and China
    - huge industry, widespread urbanization and a boost to the high wage economy
- cotton was a global industry with more price-responsive demand than other textiles
- The history of the cotton industry was one of relentlessly improving machine design
    - Carding and spinning then weaving
    - initial dependence of cotton manufacturers on water power gave way to steam-powered mills

Engineering:

The British Industrial Revolution the first large engineering industry that could mass-produce productivity-raising machinery.
Three developments that were the immediate explanations of the continuation of economic growth:

- the general mechanization of industry: ↑productivity in the British economy itself
- the railroad
- steam-powered iron ships

Steam technology accounted for close to half of the growth in labour productivity in Britain in the second half of the nineteenth century.

These developments depended on:

- Steam engine: invented to drain coal mines, and it burnt coal
- Cheap iron: required the substitution of coke for charcoal and was prompted by cheap coal
- More connections: railroad was a spinoff from the coal industry -> to haul coal in mines and from mines to canals or rivers -> continuous experimentation to improve road beds and rails -> locomotives

George Stephenson developed the Rocket for the Rainhill trials -> tested designs by incorporating them in locomotives he was building for coal railways
-> R&D expenses were absorbed as normal business costs

Global industrialization:
British inventors improved their machines -> rest of the world adopted them too.

Ex: the steam engine became more fuel-efficient -> used in more countries even where coal expensive
In that way, the Industrial Revolution spread around the globe. The genius of British engineering undid Britain's comparative advantage.

Important:
British inventions of the 18th were so transformative, because French technologies were not.
French innovations did not lead to general mechanization or globalization.
British technologies opened to further improvement more than French.
The British were not more rational or prescient than the French in developing coal-based technologies: The British were simply luckier in their geology.

Mokyr, J. (2007), "The European Enlightenment, the Industrial Revolution, and Modern Economic Growth"

Introduction

To explain the Great Divergence scholars share 2 fundamental assumptions:

1. Modern economic growth started in the West (northern Atlantic region)
2. In this process Britain was a leader, while Continental Europe was a follower

Convergence club (countries that were industrialized, urbanized, educated, and rich) were countries that in the eighteenth century were subject to the European Enlightenment.
How the enlightenment affected the economy:

- the attitude toward technology and the role it should play in human affairs
- institutions and the degree to which rent-seeking and redistribution should be tolerated

Do beliefs and attitudes matter to economic outcomes?

Marx: argued against
Keynes: ideas had the power to affect economic outcomes
Actually: it all depends on circumstances
18th century: changes in beliefs did affect the economy.
-> The Enlightenment changed the outlook of key persons on their natural environment, and their inventions and discoveries turned what might have become another technological efflorescence into a sea change in economic history.
-> Economic transformation only occurred in nations that were exposed to the Enlightenment (convergence club)

The Industrial Revolution and Modern Growth

- The Industrial Revolution itself wasn't enough to generate sustained economic growth.
- Before the Industrial Revolution all techniques in use were supported by very narrow epistemic bases (people who invented them did not have much of a clue as to why and how they worked)
- Pre-1750 was a world of engineering without mechanics (ex: iron-making without metallurgy, farming without soil science, etc.)
  Does not preclude inventions but makes subsequent micro-inventions slower and more costly.
- If one knows why some device works, it becomes easier to optimize it.
- + One knows what will not work and thus reduce the costs of research and experimentation

How to link Industrial Revolution and Scientific Revolution (1543-1687)?

- matter of timing: main advances during the first stage of the Industrial Revolution (1760-1800) -> weakly based on science, subsequent ones -> better understanding of the knowledge underlying the invention.
- epistemic base of inventions = modern definition of science + broader definition of knowledge (ex: tables of efficiency of steam power already formulated in the 1710s)
  Lists and detailed descriptions of practices in fields as far apart as farming, geology, and the performance of water mills helped engineers and producers improve their practices.

Growth was possible through capital accumulation, increasing trade, better internal allocations, freer markets, and improved institutions
BUT: they would run in diminishing returns.
-> Technology remained at the foundation of modern economic growth

Role of the Enlightenment (1715-1789)

The European Enlightenment was a multifaceted phenomenon, much of it concerned with natural law and justice, religious and political tolerance, human rights and freedom, inequality, legal reform, etc.
-> common denominator = belief in the possibility of human progress and perfectibility through knowledge
Kant: "dare to know"
Francis Bacon: Baconian program: idea of understanding nature in order to control her

- Apply inductive and experimental model to investigate nature
- Creation of universal natural history
- Science as a human activity

"Useful knowledge" = combination of different kinds of knowledge supporting one another
18th century: acceleration of the pace of research and a growing bias toward subject matter that had some practical value
-> "the idea of research": knowledge could contribute to economic and social reform (thanks to Bacon and Newton)
-> Growth of useful knowledge -> prosperity, solve technical problems -> efficiency gains.
This belief was at the origin of the foundation of the Royal Society (1660) and the Society of Arts
Collective growth -> division of labour -> specialization and expatriation (research academies)
Over the 18th processes became more and more systematic, careful and rigorous.

The Enlightenment and Technological Progress

The Enlightenment was an intellectual process and it was primarily about persuasion.
Agenda:

- "useful" knowledge (morally, socially, increasingly, materially)
- Society is improvable trough knowledge
- Study nature and experimentation to solve practical problems (+ satisfy human curiosity)
- 3 Cs: counting, cataloguing, classifying: Knowledge only useful if organized

-> Consequences:

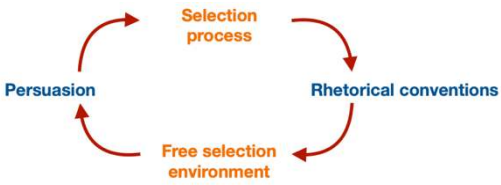
- Euler: ship design, lenses, the buckling of beams, theoretical hydraulics
- Lavoisier: chemistry of gypsum, street lighting
- Many others: calculating machines, cheaper steel, ↑agricultural productivity, etc.
- Scientists and science: chlorine bleaching technique, the lightning rod, and the mining safety lamp

-> efforts were reinforced by commercial interests, which created a literal market in knowledge (learned persons would rent out their services as consultants)
Capabilities:

- new tools (the telescope, the barometer, the air pump) allowed new observations -> experimentation
- technological advances stimulated scientific discovery -> positive feedback effect
- Ex: Volta's pile thanks to Lavoisier
- use of geodesic instruments for surveying
- Increased accuracy in time measurement
- Methodological advances for experimental engineering
- Mathematics: new tools for engineering -> problem-solving technology -> useful for ballistics, engineering, astronomy, and navigation.
  Calculus developed in the late 17th -> applied to mechanical engineering and construction -> "General Purpose Principle" (multi-purpose tool that allowed for any function to be maximized and laws of dynamics written down and solved)
  French placed mechanical and civil engineering on a formal base

Selection:

- Ideas, small and large, are selected from larger menus of ideas that are proposed to people
- Society constructs rhetorical conventions by which logic, evidence, and authority are admissible in arguments about ideas, and these conventions set the rules of the game, or the underlying institutions, in the competition between ideas to be accepted.



Problem:

- Conservative establishments: consistence with status quo -> innovation would only be admissible if it did not contradict the existing orthodoxy
- New ideas inconsistent with the intellectual or technological status quo were suppressed
- Intellectual innovation could only occur in tolerant societies

-> Enlightenment was part of this changing set of criteria

- Knowledge and beliefs were contestable at every level, and tolerance was raised to a level of a principle
- Free entry in ideas market and absence of repression
- Acceptance exclusively determined by the rhetoric of knowledge itself: logic, rigor, experimental evidence, and observation.
- Consistency with earlier theories and respect for the previous knowledge -> little impact on selection

Concept of "open science":

- Discoveries placed in open domain asap
- Peer review before and/or after publication

Diffusion:

- Knowledge requires an institutional set-up unlike any other market because the market for ideas in many ways resembles an open-source technology
- Open science was the key to the rapid changes in the market for ideas because its very purpose was to disseminate new ideas and offer them to the marketplace
- New knowledge is placed in the public realm and judged by peers (reputation is maximized -> patronage, universities)
- Knowledge is a non-rivalrous good and free to share but not for the recipient (incurs a variety of search, transfer, and verification costs)
- Inventions such as paper, printing, and the telegraph, as well as improvements in transportation and postal services were an important factor
- Institutions played a major role -> open science + knowledge sharing -> reduced access costs
  Knowledge needed specialization -> "division of knowledge" which depended on low access costs
  Vertical movements: signals between savants and fabricants
  Horizontal movements: between inventors and implementers, scientists and experimentalists signals
  invention takes the form of analogues to and combinations of existing techniques -> essential to have access to techniques of other industries and regions

We can distinguish between two types of knowledge

Codified: depended on the written word

- 18th century: explosion of books made useful knowledge accessible
- Diderot et D'Alembert's *Encyclopédie* (1751) -> search engines of 18th century
- Knowledge had to be organized so that it could be selected from (though alphabetization)
- ↑ number of scientific and learning periodicals by the end of the 18th

Tacit: passed in person

- Coffee houses, country inns, and societies and academies hosted public lectures and meetings
  Ex: Birmingham Lunar Society and the London Chapter coffee house, Royal Institution (1799)
- Industrial Enlightenment was about: diffusing the knowledge, and facilitating the general introduction, of useful mechanical inventions and improvements and teaching, by courses of philosophical lectures and experiments, the application of science to the common purposes of life

Intellectual Property Rights and the Enlightenment

- visceral opposition to monopolies and restrictions of any kind on free entry
- useful knowledge should be shared and that its accumulation was a fundamentally cooperative endeavour

-> patent was not desirable

- At the same time: *philosophes* had to confront the notion that if a society wished to promote technological change, it needed to create the economic incentives for inventive activities to take place
- + strong belief in sanctity of private property: considered a natural law, fundamental human right
- On one side, opponents identified it as a rent-seeking device
- On the other side, patent was often interpreted by investors as an official imprimatur of the quality of an invention -> attracting investors
- British patent system's (1852) -> left the decision on the merit of an invention to the market rather than to officials -> need for addition to the well-being/positive externalities (however the right to patent was costly)
- France and the Netherlands had patent systems in which innovations could yield considerable benefits to their propagators.
- The patent system also was a means for the diffusion of useful knowledge: explain the invention in such a manner than anyone familiar with the technique could understand and reproduce it

The Emergence of Modern Economic Growth

- For many decades, the Enlightenment had little palpable impact on production.
- However, belief of useful knowledge remained
- Often not enough information to solve pressing problems
- new research agenda yielded few tangible results
- Ex: electricity had to wait the first half of the 19th century to be practically applied
- The profound influence of the Enlightenment was the idea that the systematic study of nature could yield insights that would eventually enrich and improve industry and agriculture
- Although the Enlightenment is commonly considered to have ended in 1789, its effects on the economy were most pronounced in the nineteenth century.

First stage of Industrial revolution did not show very important productivity growth.
The second stage adapted ideas and techniques to be applied in new and more industries.

- perfection of mechanical weaving after 1820: self-acting mule in spinning (1825)
- Improvement in the iron industry through Neilson's hot blast (1829)
- Improvements in steel -> addition of manganese to crucible steel
- Improvement in steam power -> adapting to transportation
- More efficient water mills (turbine 1837)
- Chemicals and organic chemistry
- Gas-lighting
- Growing interest in electricity and magnetism -> telegraph

1830-1870:

- Railroad
- Telegraph
- British technology triumph at Crystal Palace exhibition in 1851
- 1870: full triumph with cheap steel, electrical power, chemicals

-> Remember the importance of Enlightenment and First Industrial Revolution that made the Second Industrial Revolution possible.

Acemoglu, D., S. Johnson, and J. A. Robinson (2005), 'Institutions as a fundamental cause of long-run growth', in P. Aghion & S. Durlauf (eds.), *Handbook of Economic Growth*, Elsevier. Sections (1-4 and 8-9 only)

Introduction

I - The question: Why are some countries poorer than others?

Traditional neoclassical growth model (Solow, Cass, Koopmans) explain differences in income per capita in terms of different paths of factor accumulation:

1. differences in saving rates
2. Preferences
3. Total factor productivity growth

-> There are institutions having well defined property rights and exchanged goods and services in markets -> differences in growth are not explained by variation in institution.

First wave of growth theory: they emphasized that externalities from physical and human capital accumulation could induce sustained steady-state growth.
Second wave: endogenized steady-state growth and technical progress, but their explanation for income differences is similar to that of the older theories
North and Thomas: innovation, economies of scale, education, capital accumulation are not causes of growth; they are growth -> the fundamental explanation of comparative growth is differences in institutions

What are institutions exactly?
North: Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction -> they structure incentives in human exchange, whether political, social, or economic

Economic institutions

- structure of property rights (without them no incentive to invest in physical or human capital or adopt more efficient technologies)
- Presence and perfection of markets
- help to allocate resources to their most efficient uses
- determine who gets profits, revenues and residual rights of control
- facilitate and encourage factor accumulation, innovation and the efficient allocation of resources

Note: economic institutions, and institutions more broadly, are endogenous; they are, at least in part, determined by society, or a segment of it
-> Why some societies have much "worse economic institutions" than others?

II- The argument

1. Economic institutions matter for economic growth because they shape the incentives of key economic actors.

- Influence investments in physical and human capital and technology and the organization of production
- Geography and culture also matter but economic institutions are the major source of cross-country differences in economic growth and prosperity
- Determine aggregate economic growth potential, the distribution of resources in the future

2. Economic institutions are endogenous

- They are determined by collective choices of society
- No guarantee that all individuals and groups will prefer the same set of economic institutions
- Typical conflict of interest among groups and individuals over the choice of economic institutions
- Economic institutions are determined by the political power of the groups -> ultimate arbiter

3. There are conflicting interests over the distribution of resources -> over the set of economic institutions

- there are commitment problems inherent in the use of political power that keep from adopting economic institutions that maximize aggregate growth
- Individuals who have political power cannot commit not to use it in their best interest -> inseparability between efficiency and distribution

4. The distribution of political power in society is endogenous.

Two components of political power:

- *De jure (institutional):* power that originates from the political institutions in society
  determine the constraints on and the incentives of the key actors of the political sphere
  Ex: government, democracy vs. dictatorship, extent of constraints on politicians and political elites
- *De facto political power.*

5. There is more to political power than political institutions.

De facto political power:

- A group of individual not allocated by political institutions can have political power.
- They can revolt, use arms, hire mercenaries, co-opt the military, or use economically costly but largely peaceful protests in order to impose their wishes on society

It has two sources:

- depends on the ability of the group in question to solve its collective action problem (ensure people act together even when incentive to free-ride)
- depends on its economic resources, which determine their ability to use existing political institutions and to hire and use force against different groups.

6. Evolution of political institutions

Political institutions and the distribution of resources are the state variables:

- they typically change relatively slowly
- they determine economic institutions and economic performance both directly and indirectly

If political institutions -> political power to a single individual or small group -> difficult to sustain economic institutions.

This framework introduces a hierarchy of institutions:

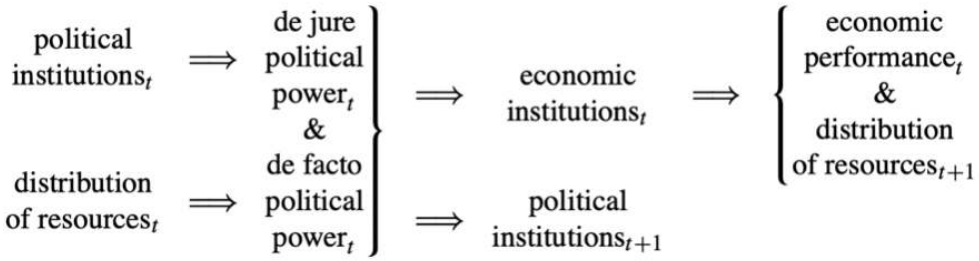
Political institutions -> equilibrium economic institutions -> economic outcomes.

7. Political institutions are endogenous.

Societies go from dictatorship to democracy-> change constitutions and the constraints on power holders

- Political institutions are collective choices -> distribution of political power determines the evolution
- Creates a tendency for persistence: political institutions allocate de jure political power, and those who hold political power influence the evolution of political institutions -> they will generally opt to maintain the political institutions that give them political power
- *De facto* political power occasionally creates changes in political institutions -> often simply influence the way existing political institutions function

All in all:



Two sources of persistence in the behaviour of the system:

- political institutions are durable -> a large change in political institution is needed to change them
- If particular group is rich relative to others -> ↑ *de facto* political power -> push for economic and political institutions favourable to its interests -> reproduce initial relative wealth disparity in the future

BUT: "shocks" (changes in technologies and the international environment) -> modify the balance of *de facto* political power -> major changes in political institutions and in economic institution and growth

Illustrating example: Development of property rights in the Middle age in Europe.

1. lack of property rights for landowners, merchants and proto-industrialists was detrimental to economic growth
2. Power was placed in the hands of kings

3. Monarchs had incentive to protect their own property rights but didn't protect others'.
4. Monarchs often used their powers to expropriate producers, impose arbitrary taxation, renege on their debts, and allocate the productive resources of society to their allies in return for economic benefits or political support

-> little incentive to invest in land, physical or human capital, or technology -> no economic growth

- economic institutions also ensured that the monarchs controlled a large fraction of the economic resources in society -> ensuring continuation of political regime

Late 17th century:
England: English Civil War of 1642, Glorious Revolution 1688
Netherlands: Dutch Revolt against the Hapsburgs

- In England, Kind also possessed a substantial amount of de facto political power -> no social group had enough de facto political power to challenge the King.
- Expansion of Atlantic trade in 16th and 17th century gave de facto power to landowners and merchants
- Conflicting interests:
  English kings: predating against society to increase their tax incomes
  Gentry and merchants: strengthening their property rights.
- Growing prosperity of the merchants and the gentry -> field military forces capable of defeating the king
- Stuart monarchs were overcome -> change in political institutions -> ↓ Kings power over policy
- Changes in distribution of political power -> changes in economic institutions, strengthening the property rights of both land and capital owners -> financial and commercial expansion -> rapid economic growth -> Industrial revolution

What were the problems in Middle Ages:

- economic institutions that ↑ the security of property rights for land and capital owners would not have been credible as long as the monarch monopolized political power
- Credible secure property rights necessitated a reduction in the political power of the monarch
- Securing property rights was not appealing to Monarchs (no more predation and expropriation)

Because de facto power is often transient, English merchants and gentry also strove to change political institutions and the future allocation of *de jure* power.

Good and bad institutions:

Good:

- provide security of property rights and relatively equal access to economic resources to a broad cross-section of society
- more likely to arise when political power is in the hands of a relatively broad group with significant investment opportunities
- more likely to arise and persist when there are only limited rents that power holders can extract from the rest of society

Bad:

- no checks on political power,
- fail to protect property rights of a broad cross-section of people
- more likely in the hand of elites

Three fundamental causes of income differences

Standard economic models of factor accumulation and endogenous technical change only provide proximate explanations of comparative growth.
-> What types of explanations would constitute fundamental ones?
3 theories + luck", some societies were just lucky; differences in luck by themselves are not believed constitute a sufficient fundamental cause of cross-country income.

I- Economic institutions

1. it is the way that humans themselves decide to organize their societies that determines whether or not they prosper
2. Some ways of organizing societies encourage people to innovate, to take risks, to save for the future, to find better ways of doing things, to learn and educate themselves, solve problems of collective action and provide public goods

-> Societies are economically successful if they have "good" economic institutions. (Cause of prosperity)

- They must enforce property rights for a broad cross-section of society -> incentive to take part in the economic activity
- A degree of equality is needed: equality before the law for example.

Other key ideas:

- Conflicts over resources and predation, as well as production, are fundamental forces in society -> emergence of stable property rights -> growth
- Perfection and spread of markets -> better resource allocation -> growth
- With bad markets or increasing returns to scale -> risk of poverty traps (Pareto inferior equilibrium)
- Political economy models such as redistributive taxation have impact on growth.

-> We expect differences in markets to be an outcome of differing systems of property rights and political institutions, not unalterable characteristics responsible for cross-country differences in economic performance

II- Geography

-> Focus on the role of "nature", the physical and geographical environment.
-> Differences in geography, climate and ecology that determine preferences and opportunity set of individual economic agents in different societies

Three version of the hypothesis:

1) Climate determinant for work effort, incentives and productivity.

- Warm countries: less strength to work, no incentive to work -> more laziness
- Cold countries: more vigorous in work

Marshall: vigor depends on race quality which depends on climate.

2) Technology available to a society (mainly agriculture)

Myrdal: climate and its impacts on soil, vegetation, animals, humans and physical assets
Sachs: temperate-zone technologies were more productive than tropical-zone technologies

3) "disease burden"

Sachs: burden of infectious disease is similarly higher in the tropics than in the temperate zones
Bloom and Sachs: prevalence of malaria, a disease which kills millions of children every year in sub-Saharan Africa, reduces the annual growth rate of sub-Saharan African economies

III- Culture

Different societies have different cultures, because of different shared experiences or different religions.
-> key determinant of the values, preferences and beliefs of individuals and societies and, the argument goes, these differences play a key role in shaping economic performance

- it influence equilibrium outcomes for a given set of institutions -> different societies will coordinate on different equilibria
- Greif: different cultures generate different sets of beliefs about how people behave and this can alter the set of equilibria for a given specification of institutions
- Weber: the origins of industrialization in western Europe could be traced to the Protestant reformation and particularly the rise of Calvinism -> crucial for development of capitalism.
  It emphasized the idea of predestination -> encourage to work actively to be "chosen"
  Work as a mean of avoiding the fear of damnation
  set of beliefs which emphasized hard work, thrift, saving
- The origins of Western economic dominance are due to a particular set of beliefs about the world and how it could be transformed by human endeavour
- There is a positive correlation between religious beliefs and economic growth but no causal effect

- Special features about particular cultural endowments, usually linked to particular nation states
  Latin America may be poor because of its Iberian heritage
  North America is prosperous because of its Anglo-Saxon heritage
- Societies may become 'dysfunctional' or 'maladapted' in the sense that they adopt a system of beliefs or ways of operating which do not promote the success or prosperity of the society
  Banfield: poverty of Southern Italy due to its "amoral familiarize" where they only trusted individuals of their own families and refused to cooperate with anyone else -> lack of "social capital"
- There is a positive correlation between measures of social capital and various economic outcomes but no evidence of causal effect.

Institutions matter

There us convincing empirical support for the hypothesis that differences in economic institutions, rather than geography or culture, cause differences in incomes per-capita.

Countries with more secure property rights, i.e., better economic institutions, have higher average incomes.
But we cannot say that one causes the other.
1) there could be reverse causation (perhaps only sufficiently wealthy countries can enforce prop. rights)
2) there might be a problem of omitted variable bias (maybe geography plays a role)

Here too the relationship is not proven to be causal.
What can we do?
Find a source of variation in economic institutions that should have no effect on economic outcomes, or depending on the context, look for a natural experiment.

The Korean Experiment

Until the end of World War II, Korea was under Japanese occupation.
Short after Emperor Hirohito surrender on August 15 1945, Korea became independent.
Soviet forces took control of North Korea and Manchuria while the US supports what was to become South Korea. In May 1948, Korea was cut at the 38th parallel. North became the Democratic People's Republic of Korea while South was the Republic of Korea. They adopted completely different sets of institutions.

1. North followed the Soviet Model and Chinese revolution -> abolished private property of land and capital. Economic decisions were mediated by the communist state
2. The South instead maintained a system of private property and the government attempted to use markets and private incentives in order to develop the economy.

Before North and South Korea:

- shared history and cultural roots
- exhibited an unparalleled degree of ethnic, linguistic, cultural, geographic and economic homogeneity
- same disease environment
- same climate
- Same geography and terrain
- Similar natural resources
- Same geographic possibilities in terms of access to market and cost of transportation
- Man-made initial economic conditions were similar (and differences advantaged the North)
- Estimation of same income per capita at separation.

The two Koreas have experienced dramatically diverging paths of economic development .

- By the late 1960s South Korea was transformed into one of the Asian "miracle" economies -> rapid economic prosperity
- North Korea stagnated

By 2000:

- South Korea income level was $16,100 and it was part of the Organization of Economic Cooperation and Development (the rich nations club)
- North Korea income was only $1,000, and per-capita income was about the same as a typical sub-Saharan African country

-> their very different institutions led to divergent economic outcomes
Yet not enough to establish the importance of economic institutions.

- A large sample is essential
- Case is too extreme -> totalitarian vs liberal

The colonial experience

The colonization of much of the world by Europeans provides the needed large scale natural experiment.
From early 15th and intensifying from 1492, Europeans colonized many other nations.
-> transformation of the original institutions in the colonies
They impose very different set of institutions in different parts of their empires (Northeast America vs Caribbean)
While geography was held constant, Europeans initiated large changes in economic institutions, in the social organization of different societies.

The reversal of fortunes

The impact of European colonialism on economic institutions is perhaps most dramatically conveyed by a single fact –> historical evidence shows that there has been a remarkable Reversal of Fortune in economic prosperity within former European colonies.
Societies like the Mughals in India, and the Aztecs and the Incas in the Americas were among the richest civilizations in 1500, yet the nation states that now coincide with the boundaries of these empires are among the poorer societies of today. In contrast, countries occupying the territories of the less-developed civilizations in North America, New Zealand and Australia are now much richer than those in the lands of the Mughals, Aztecs and Incas.

I- The reversal among former colonies

Reversal of Fortune is a much more systematic phenomenon.
Only societies with a certain level of productivity in agriculture and a relatively developed system of transport and commerce can sustain large urban centres and a dense population.
In the current era there is a significant relationship between urbanization and prosperity.

1. High rates of urbanization do not mean that the majority of the population lived in prosperity
2. Before 20th century urban areas were centres of poverty and ill health

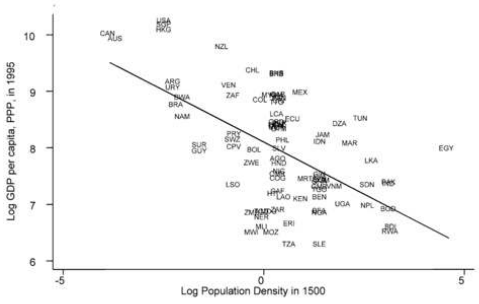


Figure 6. Log population density in 1500 and log GDP per capita in 1995, among former European colonies.

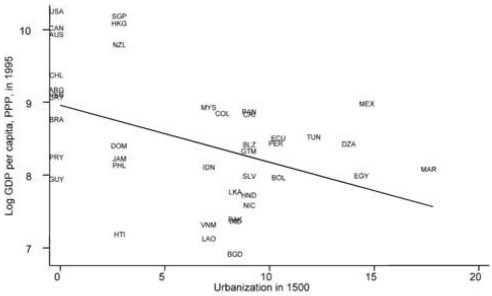


Figure 5. Urbanization in 1500 and log GDP per capita in 1995, among former European colonies.

A strong negative relationship, indicating a reversal in the rankings in terms of economic prosperity between 1500 and today, is clear in both figures.
In 1500 the temperate areas were generally less prosperous than the tropical areas, but this pattern too was reversed by the twentieth century.

There is something extraordinary about this reversal.
After the initial spread of agriculture there was remarkable persistence in urbanization and population density for all countries (including the ones subsequently colonized).

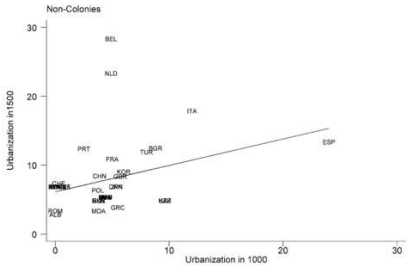


Figure 7. Urbanization in 1000 and 1500, among non-colonies.

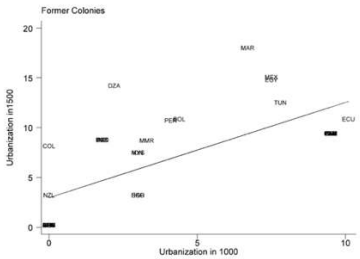


Figure 8. Urbanization in 1000 and 1500, among former European colonies.

These figures show persistence, not reversal.
Although Ancient Egypt, Athens, Rome, Carthage and other empires rose and fell, what these pictures show is that there was remarkable persistence in the prosperity of regions.
Within countries not colonized by Europeans in the early modern and modern period, there was no reversal between 1500 and 1995.

II- Timing of the reversal

When did the reversal occur?
A possibility is it arose shortly after the conquest of societies by Europeans
BUT: the previously-poor colonies surpassed the former highly-urbanized colonies starting in the late eighteenth and early nineteenth centuries, and this went hand in hand with industrialization.
The initially high-urbanization countries have higher levels of urbanization and prosperity until around 1800, then the initially low-urbanization countries start to grow much more rapidly and a prolonged period of divergence begins.
1750: more industry (per capita and total) in India than in the United State
By 1860: US and British colonies with relatively good institutions (Australia, New Zealand) moved rapidly opening up a huge gap.

III- Interpreting the reversal

Geographical:

7. Patterns are incompatible with simple geographic factors
8. "sophisticated geography hypothesis": geography matters but in a time varying way (ex: "latitude specific" technology that only worked with temperate climate)
9. when Europe conquered most of the world after 1492, they introduced specific technologies that functioned in some places but not in others
10. However, the timing of the reversal, coming as it does in the nineteenth century, is inconsistent with the most natural types of sophisticated geography hypotheses -> technologies would need to be industrial and not agricultural to be consistent in the timing, but then there would be no reason for them not to work in the tropical area.

Cultural:

- Colonialism had a radical impact changing the cultures of the colonized countries
- The destruction of indigenous populations and immigration from Europe created new or modified existing cultures.
- The culture hypothesis does not provide a natural explanation for the reversal, and has nothing to say on the timing of the reversal.

IV- Economic institutions and the reversal

The Reversal of Fortune is consistent with a dominant role for economic institutions.
European colonialism therefore led to an institutional reversal, in the sense that the previously richer and more-densely settled places ended up with worse institutions.
It is possible that European inherited some institutions from previous civilization in colonies:

- Ex: The structure of the Mughal, Aztec and Inca empires were already very hierarchical with power concentrated in the hands of narrowly based ruling elites and structured to extract resources from the majority for the benefit of a minority

- Europeans often simply took over these existing institutions
- In densely-settled and relatively-developed places it was in the interests of Europeans to have institutions facilitating the extraction of resources thus not respecting the property rights of the majority, while in the sparsely-settled areas it was in their interests to develop institutions protecting property rights. These incentives led to an institutional reversal.
- The institutions hypothesis is consistent with the timing of the reversal

V- Understanding the colonial experience

The explanation for the reversal is explained by the fact that the economic institutions in various colonies were shaped by Europeans to benefit themselves.
Different conditions and endowments in colonies -> different economic institutions.

- Europeans were more likely to introduce or maintain economic institutions facilitating the extraction of resources in areas where they would benefit from the extraction of resources (gold, silver, sugar and people.)
- In places with little to extract, and in sparsely-settled places where the Europeans themselves became the majority of the population, it was in their interests to introduce economic institutions protecting their own property rights.

VI- Settlements, morality and development

Countries such as Australia, New Zealand and the United States were very healthy with life expectancy typically greater than in Britain. On the other hand mortality was extremely high in Africa, India and South-East Asia. (Mainly due to due to tropical diseases such as malaria and yellow fever)

Difference between income per capita of high and low expropriation risk countries is mainly due to the differences in the security of property rights.
-> once the effect of economic institutions on GDP per-capita was properly controlled for, geographical variables, such as latitude, whether or not a country is land-locked and the current disease environment, have no explanatory power for current prosperity.
-> geography and illness situation was important to shape institutions but it is then institutions that explain the differences in prosperity.
Culture:

- national identity is implement in the colony: Anglo-Saxon in US/Australia vs Hispanic in Latin America.
- Europeans may have had a culture, for example a work ethic or set of beliefs, which was uniquely propitious to prosperity
- Europeans also brought different religions with different implications for prosperity

But: neither the identity of the colonial power, nor the contemporary fraction of Europeans in the population, nor the proportions of the populations of various religions, are significant determinants of income per capita.

Note: Singapore and Hong Kong now two of the richest countries in the world despite having a negligible number of Europeans.
Argentina and Uruguay have higher proportions of people of European descent than the United States and Canada, but are much less rich.

There is a reversal of fortune for countries where the fraction of those with European descent in 1975 is less than 5 percent of the population.
The evidence does not show a major role of geography or of religion or culture transmitted by the Europeans.
Differences in economic institutions seem the causal factor explaining the differences in income per caper across countries.
Institutions are therefore the fundamental cause of income differences and long-run growth.

A theory of institutions

Sources of political power

Who has political power and where does it come from?

1. An individual or group can be allocated *de jure* power by political institutions.

2. political power accrues to individuals or groups if they can solve the collective action problem, create riots, revolts, or demonstrations, own guns, etc. *de facto*

Actual political power is the joint of the two.

Example of Chile:

Early 1970's: Salvator Allende was elected President with a plurality of the popular vote.
He had the power to propose legislations, issue decrees, etc. -> great deal of *de jure* political power
Political power is not just *de jure*; it does not simply stem from political institutions.
1973: Military coup that overthrown his (despite being empowered by the Chilean Constitution).
The military under the leadership of General Pinochet, were able to use brute force and guns to over-ride the formal political institutions -> *de facto* political power
Different political institutions -> different distributions of power -> emergence or not of good financial institutions.
The differences came from political events and colonization.
US: low population density and lack of easily exploitable resources -> formation of democratic institutions + egalitarian distribution of assets and high degree of social mobility -> relatively equal distribution of resources (*de facto*) -> constitution, checks and balances and federalism
Mexico: very different initial situation: large indigenous population and silver mines to exploit.
-> much more hierarchical and authoritarian balance of political power + very different economic institutions -> centralized, unchecked, unbalanced and absolutist state
-> the source of different political institutions were different initial conditions during the colonial period
Kenya: good agricultural policies because large farmers could solve the collective action problem and had *de facto* political power.
But large farms existed because of British land expropriation during colonialism.
Previous combination of colonial institutions and *de facto* power determined economic institutions, influencing future *de facto* power even after Independence.
Political institutions -> *de jure* political power + distribution of resources (-> *de facto*) -> economic institutions -> economic performance -> future evolution of political power and prosperity and distribution of resources (and of *de facto* power) in the future.

Political power and political institutions

If the constitution can be overthrown, why bother to re-write it?
We focus on the transitory nature of de facto power.
In Chile for instance the coup was possible because times were uniquely propitious. -> worldwide economic crisis, so the opponents to the coup could be marginalized and they were encouraged by the US (to overthrown socialism) -> once Chile re-democratized (as in 1990) military would not be able to threaten a coup.
-> the important role for political institutions is that they influence the future allocation of political power

A theory of political institutions

- Individuals have preferences over economic institutions because of the allocation of resources that these institutions induce.
- People's preferences typically do not agree because efficiency and distribution cannot be separated. Different economic institutions will benefit different groups, and this will determine the preferences of these individuals and groups with respect to economic institutions.
- Economic institutions are collective choices, and they are chosen and sustained by the state. Since there is no third party to enforce the decisions of the state, problems of commitment are particularly severe in the political realm.
- The equilibrium structure of economic institutions will therefore be deter- mined by who has the power to get their way, i.e., who can create and sustain economic institutions that benefit themselves. The distribution of political power thus determines economic institutions, the allocation of resources and the rate of economic growth.
- Political power has two forms: *de jure* power determined by the political institutions (constitution and the electoral rules) and *de facto* power, which stems from the ability to solve the collective action problem, mobilize weapons, etc. *De facto* power can influence political outcomes independently of the political

institutions, and its distribution often critically determines how a given set of institutions works in practice and whether or not they are actually obeyed.

- The distribution of *de facto* political power at any date is influenced to a large degree by the distribution of resources in society, since those with greater resources can command more power both through legitimate and intimate means, and perhaps can also solve the collective action problem more efficiently. Naturally, the distribution of resources at this point is influenced by economic institutions and economic outcomes in the past.
- Political institutions are also endogenous: current balance of political power determines future political institutions. They are important because they allocate future î political power. They are often crucial to create a durable political power, making it very attractive for groups to use their *de facto* political power to change political institution, to modify them to more favourable for them in the future.

Daudin, G., M. Morys and K. H. O'Rourke (2010); 'Globalization, 1870–1914', in Broadberry, S. and K. O'Rourke, K. (eds.), *The Cambridge Economic History of Modern Europe*, Cambridge University Press, Vol. II.

Introduction

1870-1914: high-water mark of 19th century globalization (which started developing at the end of the Napoleonic Wars.
19th century globalization involved increasing transfers of modalities, people, capital and ideas between and within continent -> growing volume of international flows.
To measure globalization we the cost of moving goods or factors of production across borders which shows international price gaps.

Trade, 1870–1914

1. European international trade in current values grew at 4.1 percent a year between 1870 and 1913, as against 16.1 percent a year between 1830 and 1870.
2. Price evidence shows impressive international integration during this period.
3. There is a clear price convergence: in wheat, in industrial goods (cotton textiles, iron bars, pig iron), rice.
4. The reduction of price gaps happened between US-UK, and Europe-Asia.

International trade grew for many reasons:

- ↓ if international freight rates (transport costs) thanks to technical improvements and ↑ of use of steamships
- New routes (Suez Canal 1869 only used by steamships)

But: Water transport way cheaper than overland transport. The reduction of inland transport through development of railroads was crucial.
As a percentage of the Chicago wheat price, the cost of shipping wheat to New York declined.
Railroads were particularly important for large countries (Russia).

Peace between the main powers between 1871 and 1914 promoted trade.
Development of formal and informal empires ↑ extra-European trade:

- ↓of thread barriers
- inclusion of colonies in currency unions
- Better protection of property rights

The gradual spread of Gold Standard dampened exchange rate fluctuations and ↓ uncertainty in trade.

Falling of transport costs -> ↑ potential market integration

BUT: politic reversal though protectionism was possible.
- Beginning 1870s Continental European countries ↑ Barriers to trade in grain and other commodities.
- Federico and Persson: grain prices converged among free trade countries, there was a substantial ↑ in price dispersion between free trade and protectionist countries.

Pattern of trade:
- Europe as a whole was a net exporter of manufactures and a net importer of primary products
- UK massively dependent on imported food and row material -> exports of manufactures and services.
- Rest of NW Europe had similar specialization
- E and S Europe still exported primary products and imported manufactures.
- Overall European deficit in commodity trade was partly balanced by net exports of services.

Capital Flows, 1870-1914

International capital market integration was extremely impressive during this period.
Europe was the world's banker and regions with access to European capital and good resources (US, Canada, Argentina, Australia) prospered in the period.
There was also a small transfer of capital from W. Europe core to peripheries in S, central and E Europe.
Edelstein: 32% of net national UK wealth held overseas in 1913
Europe as a whole dominated foreign investment.
1914: England + France + Germany + Belgium + Netherlands + Switzerland = 87% of total foreign investments.
Capital market integration has traced out a U-shape over the past 150 years
International capital mobility breaks the link between domes- tic savings and domestic investment, as domestic savings can be invested abroad and domestic investment can be financed externally -> the weaker the relationship between domestic savings and domestic investment, the higher international capital mobility.

Bond spreads:
- Bond spreads between peripheral economies on average decreased from 5 to 1%.
- Demonstrating the perceived safety of investments.

1st wave of financial integration came to an end with the Baring crisis of 1891 -> capital receded dramatically before restarting again after a decade.

How to explain the 19th century capital market integration?
- absence of military conflict among the main lending countries between the Franco-Prussian War and the First World War -> atmosphere conductive to foreign lending.
- Marxists: domestic investments in a capitalist society are subject to the law of falling rate of profit so investments are made in other less developed countries.
- Benefit from colonies (UK) for example but data shows that Britain did not invest much in its colonies

Economic institutions and policies
Gold standard and sound fiscal polices:
Adherence to gold promoted global financial integration:
- eliminates exchange risk
- Signals that the government concerned would pursue conservative fiscal and monetary policy (investors reassured that returns are reasonably safe).

The gold standard and empire promoted foreign investment, supply and demand.

Economic fundamentals
- Over 50% of British capital exports went to areas with supplies of natural resources, immigrants, young and educated people and urban populations
- Railroads were needed for accessibility
- Land had to be improved
- Housing and infrastructures had to be provided for new frontier communities.

Migration, 1870–1914

At the beginning of the century, intercontinental migration was still dominated by slavery.

Return migration was significant among Italians and Greeks, but it was very low among other groups, such as the Irish or eastern European Jews.
Within Europe there was also migration from Italy to France, from Ireland to mainland Britain.

Causes of migration:

- New World was endowed with a higher land–labour ratio than Europe -> higher wages -> enormous gains from migration.
- Steam technology had lowered cost of travel, mass emigration became inevitable.
- The 19th century immigration policy was relatively liberal.

Why did emigration from relatively rich countries take off before emigration from poorer countries?
EM is a downward-sloping function relating emigration rates from a given European economy to home wage rates: as home wages rise, emigration rates should fall.

The shift:

- would-be emigrants were initially constrained by the cost of transoceanic transport, but as transport costs fell, more migrants were able to leave their homelands
- poverty traps could also be over- come by previous emigrants sending home remittances or pre-paid tickets, thus directly financing the cost of travel
- fertility rates were on the rise throughout Europe during this period, leading to an increase in the supply of young, mobile adults.
- industrialization led workers to be detached from the land increasing their mobility.

When emigration stabilized it became self-limiting: ↓labour supply at home, ↑ real wages, ↓ emigration rate

Trade in knowledge, 1870–1914

Economic globalization is not simply about the movement of goods or factors of production. It also includes technological transfers and the deepening of other intellectual exchanges.
19th century: technology circulated relatively freely

- Textile mills around the world used similar machines, often imported from Britain
- Ship building, iron and steel, telegraph and telephone technologies transferred quickly, unless slowed by adaptation issues
- Europe was internally exchanging new technologies and also receiving them from US. Japan was an especially keen learned.

Several new factors increased the speed and the reach of technological transfers.

- easy migration
- Imperialism allowed entrepreneurs to invest overseas (low wages and no feat of expropriation)
- decline in transport and communication costs helped the diffusion of ideas, new goods, and machines

To better protect their intellectual property, several firms set up production in foreign countries and transformed themselves into multinationals during this period. (Telephone American firms for example)
The diffusion of technologies was also helped by the creation of international scientific and technical organizations. -> The number of international scientific conferences and organizations ↑ dramatically

BUT:

- at the same time, science was seen as one of the weapons in the struggle between European nation
- Besides straightforward military applications, academic activity was used as a diplomatic weapon.

-> Governments increased formal technical cooperation
Another form of rising globalization was the growing number of international exchanges and competitions. -> The World Fairs were official show- cases for the technical prowess of each nation

Labour movements were increasingly globalized as well. The first International was founded in 1864 and the second in 1889. The formalization of international cultural and scientific cooperation can be seen as an attempt to counteract the rise of nationalism, but in the end it was too weak for the task.

The effects of globalization

Globalization and factor price convergence

How did booming commodity trade and mass migration influence income distribution within and between countries?
Heckscher–Ohlin: the land-abundant and labour-scarce New World should have exchanged food and raw materials for European manufactured goods, and trade should have led to the wage–rental ratio, w/r, converging internationally.

- New World: high w/r -> farmers export more, manufacture suffers from foreign competition -> w/r ↓
- Land-scarce Europe: low w/r -> workers hired by expanding manufacturing industries and land undermined by cheap food imports -> w/r ↑

-> trade should have led to absolute factor price convergence, with low European wages catching up on high New World wages, and expensive European land falling in price relative to cheap New World land.
1870-1910: real land prices ↓ in Britain, France and Sweden and ↑in the New World.

- Substantial relative factor price convergence with w/r ↑in Europe and ↓ in the New World.
- ↑ less pronounced in protectionist economies. (Ex: no change in Spain)
- There is a link between trade and factor price trends

Heckscher–Ohlin: there was a more mundane reason why declining transport costs were good for European workers.

- Large proportion of labourers' incomes was spent on food, cheaper transport -> cheer food -> higher real wages.
- Free trade in Britain particularly beneficial because ↓ price of food, and had small effect on overall market given that agriculture (most affected) was only a small share of British employment.
- In more agricultural economies the net impact of cheap grain on wages could have been negative.

Migration: dimension of globalization that had the greatest impact on European workers' living standards during this period.
1870-1910: emigration lowered labour force in Ireland, Italy and Norway.
-> their living standards ↑ more rapidly than in Britain
-> ↑ of real wages in in Ireland and Norway (not in Italy until the turn of the century when Italian emigration rates exploded)
Labour market impact of migration in seventeen Atlantic economy countries between 1870 and 1910:

- raised wages overall
- Decreased international real wage dispersion -> convergence of poorer countries on the rich
- In absence of mass migrations international real wage dispersion would have increased
- Wage gaps declined but would have risen in absence of mass migration
- More than all of the real wage convergence between 1870 and 1910 was attributable to migration.

=> emigration is of major benefit to poor economies
Capital flows, peripheral development, and core welfare
Assuming identical production functions with capital and labour as the only inputs, lower wages in the European periphery should have been due to lower capital-to-labour ratios, which in turn should have implied higher returns to capital.
Peripheries:
Sweden:

- Capital imports after 1870 made Swedish capital stock 50% higher than it would have been in their absence and increasing real wages by 25%
- European country that benefited most from capital imports before the First World War.

Austria-Hungary:

- largest peripheral economy pre-1914 (except Russia)
- enjoyed substantial capital imports
- exported rather than imported capital

Why was the European periphery not able to attract more capital from the European core?

19th century equivalent of Lucas paradox: capital usually flows to rich rather than to poor countries today, despite the fact that wages are lower in poor countries.

Three explanations:

- lower labour productivity in European periphery
- Non-adherence to gold standard (Scandinavian countries have best records of adherence)
- Countries were not as attractive as the land-abundant New World.

Core:

Superficial answer: investors preferred foreign investment opportunities to domestic ones based on their relative profitability, capital exports should have been beneficial to the core ↓output and ↑income.
BUT: some have argued that channelling funds abroad could have harmed the domestic economy
1931 Macmillan Report: City of London systematically discriminated against domestic borrowers, preferring instead to invest overseas -> British industry grew more slowly than it would have done.
Between 1870-1913: overseas portfolio investments yielded a higher realized return than domestic ones (even with adjustments for risk)
-> entrepreneurs had strong internal sources of funding and easy access to local, provincial financing but highly skilled work-force required to take full advantage of opportunities of the 2nd Industrial Revolution
Restrictions on overseas capital exports would not have been an encouragement for domestic scientific industry (maybe for publicly supported general and technical education).
The debate on the alleged trade-off between capital exports and domestic industry has also frequently neglected the positive externalities of European overseas investments benefiting European consumers.
-> much of investment in construction of railroads + social overheads -> cheaper foodstuffs and raw material -> major contribution to European core Welfare.

Imperialism and European welfare

1880-1913: colonies expanded to more than a third of the earth's land surface.

- UK, France, the Netherlands, Spain and Portugal: colonial powers for long time
- Belgium, Germany and Italy joined

Lenin (inspired by Hobson): mature European economic system can only be sustained through imperialism
-> argument has been discredited:

- capital exports to colonies were important, but not dominant.
- Europe was self-sufficient in coal and nearly self-sufficient in iron ore and other minerals
- Textile raw materials like cotton could not be produce in great quantities in Europe (but largely supplied by US)
- Colonial empires were not vital outlets for European goods

Yet: one of driving forces behind imperialism was the influence of European traders (political control to facilitate exchanges with Africa and Asia).
Some industrialists promoted creation of a reserved market to answer international competition.

It is not certain that empires represented a net benefit for the European powers.
Davis and Huttenback: private British investment in the empire after 1880 yielded higher returns than investment in the domestic economy, but smaller returns than investment in foreign countries
Direct cost of empires was limited:

- colonies paid from themself (expect for disaster relief, funds for military, shipping and cable subsidies)
- indirect military cost was more important

Benefits of empire:

- rose UK GDP but might be overestimated because redirection of race to compensate lower imperial demand is not assumed and impact of facilitated emigration is not taken into account
- The net result for smaller empires was different for each country, but on the whole, whether positive or negative, it was probably small compared to the size of domestic economies

-> the global economic effect of empires was small but they had an important redistributive role.

- benefits in UK accrued mainly to "gentlemanly capitalists" to the detriment of "modern" forces such as industrial entrepreneurs

Globalization backlash

Trade

19th century: European trade police trends reinforced the impact of falling transport costs
1870s: growing impact of intercontinental trade on factor prices.

- trade hurt European landed interests, and wherever these were powerful enough, the legislative reaction was predictable
- Germany: Bismarck to protect agriculture and industry
- France: tariffs were raised
- Sweden: reimposed agricultural protection
- Italy: tariffs that became more severe over the years
- Russia: increasing industrial tariffs -> stimulate industrialization
- Austria-Hungary and Spain: increased protectionism
- Balkans: inherited liberal tariff polices from Ottomans and then moved to higher protection
- Ottoman also raised their tariffs
- Netherlands, Belgium, Switzerland and Denmark (for which prices were already low) remained relatively liberal
- UK maintained relatively free trade (despite Joseph Chamberlain) : agriculture had already shrunk (so further decrease had little impact on economy)
- Overall switch to agricultural protectionism -> Common Agricultural Policy (today)

Immigration

- emigration benefited European workers
- mass immigration hurt their counterparts overseas
- immigration lowered US unskilled wages
- result was a political backlash: gradually tightening restrictions on immigration in the main destination countries
- US: 1888 Chinese ban, 1891 ban of "public charges" and "assisted" in passage, 1917 Literacy test
- Similar measures in Canada and Argentina
- shift away from a relatively laissez-faire immigration policy -> interwar European economies no longer had the emigration safety valve that had helped sustain living standards during the population boom

Democracy, the gold standard, and capital flows

- Global financial integration collapsed virtually overnight in the summer of 1914.
- By 1913: Gold Standard almost universal -> central pillar of pre-WWI financial system
- Commitment to external balance policy to coexist with domestic economic imbalances (unemployment)
- Eichengreen: not Gold standard reinstatement after 1918 because the war had given a boost to the extension of the franchise, and thus to workers' political power -> gold standard discipline may not be adhered. (Even in the absence of war, extended franchise and rising unemployment would have undermined the Gold Standard)

BUT:

- single largest push for universal suffrage and democratization did not come with globalization
- even if the gold standard had proved unsustainable, this would not necessarily have implied the end of global financial integration

Today: most capital circulates among rich countries no longer connected by fixed exchange rates. -> possible to pursue both independent monetary policy and commitment to open capital markets.

Domestic policy responses

There were powerful political forces undermining late 19th globalization
European government had to choose between: open and closed international markets, resisting or giving in to protectionism. + range of complementary domestic policies to shore up support fir liberal international policies.
-> extensive government intervention in European labour market, sustained rise in social transfers and beginning of welfare state.

-> new labour market regulations (prohibiting night work for women and children, child labour and factory inspections) + old-age, sickness and unemployment insurance.
"Labour compact" : unions persuaded to back free trade in return for pro-labour domestic polices (declining working hours, more in small open economies)
Franco-Italian labour accord to grant Italian workers in France the French labour benefits.
Late 19th governments successfully managed political challenges of globalization -> protectionism or giving-in.
What is sure is the1920's and 1930's would have been utterly different without the Great War.

READINGS FOR THE SECOND PARTIAL

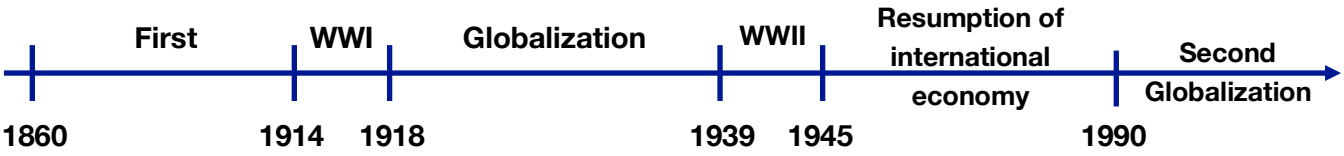
Feinstein, Temin, Toniolo (2008), *The World Economy Between the World Wars*, Chapter 1: 'The interwar economy in a secular Perspective'.

Modern Economic Growth in a Twentieth-Century Perspective

Interwar: turbulent both economically and politically.
-> Sustained growth in per capita income started 100y before interwar but affected only part of the world
First part of 19th (and even later): standard of living (diet, clothing, housing, life expectancy and literacy) of the average peasant family in the most advanced areas of western Europe and North America more similar to Middle-Ages than post WWII. Industrial workers packed in filthy cities and long working weeks in unhealthy working conditions.
-> low level of consumption allowed for bare subsistence on a diet that included meat only on rare occasions and left little for tobacco and a glass of cheap wine (only for head of household)
W. Europe: industrial revolution -> transform daily life of ordinary people -> modern economic growth
Kuznets: epochal innovation consisting of the spreading application of science to processes of production and social organization.
Countries in which modern economic growth occurs experience similar quantitative developments related to long-run growth of aggregate and sectoral production, consumption, savings, and structural changes.
-> Modern economic growth characterized by:

- high rates of increase in per capita product
- acceleration in the growth of population and consumption
- rise in savings and investment ratios
- shift in the composition of GDP away from agriculture
- Aggregate product derives increasingly from the manufacturing and service sectors

-> Tremendous increase in the international movement of goods, services, and factors of production. It was neither constant nor irreversible.



Labour mobility, however, has never again been as pronounced as it was before the First World War.

Secular trends in the world economy

Early 19th century: modern economic growth had spread from its cradle in England to Belgium, France, Switzerland, the Rhineland, and the United States.

After a few decades: it reached Prussia and the Scandinavian countries
Eventually: spread in part of Russia, central Europe, Italy, Spain and Portugal, Canada and Argentina and part of Oceania.
Japan was the only country outside the areas of European settlement where a robust process of modern economic growth took place in the nineteenth century.

Only after WWII: increasing GDP-growth and industrialization in other countries (mainly Asia).
Latin America prone to reversal of fortunes.
Sub-Saharan Africa (but Cape region) remained almost entirely cut off from the spread of modern economic growth.

Table 1.1 Average annual rates of growth, 1870–1998, world and main regions

	1870–1998	1870–1913	1913–1950	1950–1973	1973–1998
World	1.48	1.30	0.91	2.93	1.33
Western Europe[a]	1.74	1.32	0.76	4.08	1.78
Western offshoots[b]	1.87	1.81	1.55	2.44	1.94
Japan	2.63	1.48	0.89	8.05	2.34
Asia (excluding Japan)	1.33	0.38	−0.02	2.92	3.54
Latin America	1.41	1.81	1.42	2.52	0.99
Eastern Europe[c]	1.22	1.15	1.50	3.40	−1.10
Africa	0.88	0.64	1.02	2.07	0.01

Note: Estimates are weighted averages.

(a) Twenty-nine western European countries.

(b) Australia, New Zealand, Canada, and the United States.

(c) Seven eastern European countries and Russia/the Soviet Union.

Source: Maddison (2001), 126 and passim.

Features of world economy's long-term growth:

- uneven path of growth both across regions and over time
- productivity growth differs across countries and regions
-. backward areas will catch up with the more advanced ones (assumption)

BUT: Divergence towards productivity leaders, characterized the long-run growth process of the world economy, at least until the 1980s.
Rates of growth also differed over time:
-> technology, institutions, and economic policies affected the world economy in different ways.

1870-1913 and 1973–1998: real per capita GDP in western Europe (& Co.) grew at about the average secular rate
1950s and 1960s: economies of western Europe grew at a rate twice as high as the secular trend.

- tremendous increase in production
- full employment

1950 -1973: Golden age of economic growth

1913–1950: pause in the onward progress of rising per capita income

- most areas grew more slowly
- slow-down was particularly sharp in western Europe

Some Quantitative Features of the Interwar Years

Aggregate quantitative changes between 1913 and 1950:

1) while the slowdown in economic activity was a worldwide phenomenon, it affected individual areas in quite different ways
2) the overall slowdown was the result of quite satisfactory rates in the 1920s and of dismal economic performance in the 1930s
3) far from keeping pace with output trends, international trade declined in real terms
4) high and structural unemployment was the shocking new phenomenon of those years

5) labour productivity increased more rapidly than in 1890–1913

Table 1.2 Growth of real GDP per capita in Europe, the United States, Latin America, Japan, China, India, and the Soviet Union, 1913–1950 (average annual rates of growth)

	Western Europe	United States	Latin America	Japan	China	India	Soviet Union
1913–50	0.8	1.8	1.4	0.9	-0.8	-0.3	1.1
1921–38	2.0	0.8	1.4	1.8	n.a.	-0.1	n.a.
1921–29	3.5	3.3	2.6	2.0	n.a.	0.9	n.a.
1929–38	0.7	-1.3	0.4	1.7	0	-1.0	4.9

Source: Maddison (2001), 104–11, 180–87.

Slower Growth:
Dominant explanation for the severity of the European slowdown between 1913 and 1950 : war.
-> catastrophic impact of two global military conflicts, both fought with unprecedented destructive strength on European soil
1913–1921: W.European output declined while GDP per capita in the US remained roughly constant.
1921–1938: Europe's growth considerably exceeded that of the United States
1938–1950: US fastest growth on record (3.8% per annum) while W.Europe only 0.3.
Growth deceleration in Latin America in line with the other Western offshoots
Most of Asia experienced a long-term decline in output and Welfare during interwar.
Soviet Union in the 1930s: striking contrast.
-> Third International : Soviet Union = proof of superiority of socialist system.
-> Mussolini and Hitler: "third way" between socialism and capitalism.

The "Globalization Backlash" = the disruption of international trade and the sharp reduction in the cross-border movements of factors of production
International movements of goods, services, capital, and labour typically depend on:
1) technology (reduction of transport and communication costs) -> continued to improve (larger and more efficient ships, development of internal combustion engine, passenger airline industry, telephone and radio) -> increasingly favourable conditions for cross-border economic integration
2) Institutions (domestic and international, that may favour or hinder international economic integration) -> institutional environment inimical to trade and to the cross-border movement of people (tariff and non-tariff walls, limiting immigration, regulating international financial transactions) -> League of Nations and the Bank for International Settlements, were almost powerless

-> man-made obstacles outweighed the favourable impact of technology on international economic transactions.

Table 1.3 Growth of value of merchandise exports at constant prices for twenty-four countries (annual average rates)

	1870–1913	1913–1929	1929–1950	1950–1973	1973–1998
Western Europe[a]	3.23	0.21	-0.32	8.03	4.55
United States	4.86	3.33	1.68	6.27	5.98
Russia/Soviet Union	n.a.	-4.66	3.08	9.98	2.95
Latin America[b]	3.40	3.89	1.46	4.10	5.70
China	2.59	2.90	0.06	2.74	11.81
India	2.37	-1.02	-1.90	2.46	5.94
Japan	8.47	7.00	-0.97	15.54	5.30
World	3.35	0.89		7.88	5.07

(a) Twelve countries.

(b) Seven countries.

Source: Maddison (2001), 361–62.

1870–1913: income elasticity of world exports was certainly greater than 1 and probably close to 2
16 subsequent years: international trade growth slowed down everywhere
1929–1950: almost stagnated
Japan: 20s exports rapid↑, 30s ↓
US: export performance 2x better than world average in the 20s. 30s ↓ but remained above

Europe: 30s exports ↓ -> impact on Atlantic routes.
Result of the interwar trade trends:

- western Europe's share of world exports ↓ in 1950
- shift of the centre of the world economy away from western Europe.

Migration: migration flows stand out even more strikingly than trade

20th century: war and the United States Immigration Acts (introduction of immigrant quotas by national origins) -> end of age of mass migration
Depression of the 1930s: mass unemployment in the New World -> further ↓ the flow of people crossing the Atlantic
Voluntary migration sharply ↓, forced migration ↑ -> most tragic features of the European interwar history

- Persecution made Jews leave central Europe in the 1930s
- Spaniards left for Mexico during the Spanish Civil War
- Poles and Baltic people were forcibly deported to Siberia.

Capital Flows:

- Cross-border capital flows reached an all-time peak in 1913.
- Casualty of the Great War and remained depressed in the following two decades
- characterized by administrative controls on cross-border monetary transactions (exchange controls) and uncertainty regarding future exchange rates.

The Rise in Unemployment between the Wars

- High unemployment rates stand out as the most deeply felt economic feature of the interwar period -> stories of homeless people, long queues for a free meal, workers sitting outside their humble dwellings, helpless families, discouraged long-term unemployed people.
- No big contrast between North America and Europe in the Great Depression
- But contrast in the 1920s: Europe high unemployment vs US almost full employment.

1888: first appearance of term Unemployment.

- Unemployment before WWI was of shorter average duration than that experienced after 1918.

Table 1.4 Average European unemployment rates, 1921–1993 (percent)

1921–1929	1930–1938	1950–1959	1960–1973	1974–1981	1982–1989	1990–1993
8.3	15.8	4.2	2.5	5.2	8.8	9.2

Note: Arithmetic average of average annual unemployment rates. 1921–1938 covers France, Germany, and the United Kingdom; for 1950–1993, Italy is also included.

Sources: For 1921–1938, Galenson and Zellner (1957), 455. For 1950–1993, Maddison (1991), 262, and OECD data from Crafts and Toniolo (1996), 7.

1930s: exceptionally high unemployment rates
1960s: exceptionally low
1920s: relative number of those out of work comparable with that of the 1980s and early 1990s

Productivity Continues to Improve

Product per hour worked by those who retained their jobs ↑
1913 to 1950: W.Europe pace of productivity growth similar to the previous half century.
US: productivity growth was more rapid
Japan: slowed down

Table 1.5 Growth of productivity, 1870–1998, selected areas (average annual rate of growth)

	1870–1913	1913–1950	1950–1973	1973–1990	1990–1998
Western Europe[a]	1.55	1.56	4.77	2.29	2.16
United States	1.92	2.48	2.77	1.41	1.74
Japan	1.99	1.80	7.74	2.97	2.13

Note: Productivity is defined as real GDP per hour worked.

(a) Twelve countries.

Source: Maddison (2001), 352.

Three plausible reasons why productivity continued to grow:

1) 1920s and 1930s were rich in technological innovations -> second industrial revolution inventions (Henry Ford assembly line electrical network and motor -> general purpose innovation)
2) Continuation of the pre-war trend of extending elementary and secondary education to an ever-larger number of people and of investing in higher education (lagged impact on stock of human capital but major source of king-term growth)
3) unintended consequence of unemployment itself, as layoffs tend to affect the least productive members of the workforce.

Trend in productivity growth is interesting and important for at least two reasons:
1) reinforces that slow growth and depression were man-made rather than "natural" phenomena
2) explains the extraordinary growth rates after the Second World War (removal of man-made obstacles)

Output Growth: Belligerents and Neutrals

Over the interwar period, nation-states actually reinforced their protagonist role.
1917-1919: Dissolution of large empires (Russian, Prussian, Austro-Hungarian, and Ottoman empires) added new independent states.
-> Nation- states received ideological support from the Wilsonian ideology and a full international endorsement at the Versailles Peace Conference.

- They were responsible for the policies affecting economic growth (full economic sovereignty)
- Tense relations between -> autarkic trends -> disrupt international economy

Table 1.6 Growth in real GDP, selected European countries, the United States, Canada, and Japan, 1913–1950 (average annual rate of growth)

1913–1950		1913–1929		1929–1938	
		WWI neutrals		*Off gold in 1931*	
Austria	0.2	Sweden	1.9	UK	1.9
Belgium	1.0	Finland	2.4	Denmark	2.2
Germany	1.1	Denmark	2.7	Sweden	2.6
France	1.2	Switzerland	2.8	Norway	3.1
UK	1.3	Norway	2.9	Finland	3.9
Italy	1.5	Netherlands	3.6		
Netherlands	2.4			*Gold bloc*	
Denmark	2.5	*WWI winners*		France	-0.4
Switzerland	2.6	UK	0.7	Belgium	0.0
Finland	2.7	Belgium	1.4	Netherlands	0.3
Sweden	2.7	Italy	1.7	Switzerland	0.6
Norway	2.9	France	1.9	Italy	1.6
		WWI losers		*Other*	
		Austria	0.3	Austria	-0.3
		Germany	1.2	Germany	2.5
Extra-Europe					
Japan	2.2	Canada	2.5	United States	-0.6
United States	2.8	Japan	3.7	Canada	0.0
Canada	2.9	United States	3.1	Japan	3.6

Source: Maddison (1995), 180–83.

First column:
Countries are ranked by growth order, starting from the slowest.
-> growth rates:

- the result of participation or neutrality in one or both world wars
- the speed of respective recoveries
- monetary and exchange-rate policies
- semi-planned fascist economies

Note: two of the fastest-growing countries, Sweden and Switzerland, remained neutral during both wars. Finland and Norway, were neutral in the first conflict.

Second column:
Countries are classified according to their participation in the Great War.

- neutrals outperform all winners
- the winners (except UK) do better than the losers that lost significant parts of their territories

Third column:

- considers the adherence to the gold standard until 1935–1936
- Those who left gold definitely outperform the members of the gold bloc (and Switzerland)
- Germany =“ other”, its currency remained formally anchored to gold but policy makers insulated the country from the deflationary effects of the gold-standard rules.

Two Propositions about International Economic Organization

Structural Imbalances and the End of Empires

-> “structural imbalance” within and between countries.
Origins: changes in the composition of production and demand resulting from:

- the wartime disruption of international trade
- geopolitical effects of the Treaty of Versailles
- post-war changes in technology and patterns of demand.

-> misallocation of resources -> high rate of unemployment in Europe in the 1920s + longer and more costly adjustment process
Eastern Europe: collapse of the Austro-Hungarian, Ottoman, and Russian empires -> new conditions

- Geologically unstable: sits on top of the fault that created the Great Rift Valley in Africa and oil deposits farther north
- Politically unstable: rulers of these empires tried to compete with the more industrial countries in the First World War -> agrarian mobilization stripped the country of productive resources -> food shortages in major cities -> civil disturbances and collapse of traditional governing structures.

Consequences:

- many new countries led by inexperienced leaders in the interwar years
- economic chaos in the form of hyperinflation
- countries struggled for independence and stability

Asia: Conflicts within China and between China and Japan.

- Collapse of Chinese empire not entirely linked to the war
- China : inexperienced leaders and conflict with Japan
- Japan's recovery from the Great Depression led to its invasion of China -> economic progress there

Politics and Economics

- Lack of leadership: by government, central banks, international institutions in the restoration of gold standard and in international economic policy making
- “no longer London, not yet Washington”: diminished political, military, and financial status of the UK -> that London was unable to act as sole international leader; US not yet willing to take the leader role.
- France: relative strong financial position after the stabilization of the franc in 1926 and the large accumulation of gold by the Bank of France but lack of leadership
- failure of the numerous economic conferences
- fruitless disarmament efforts
- unresolved issue of German reparations
- No country able and willing to stabilize the global monetary environment (ex: lender-of-last resort)

Absence of international cooperation and of cooperation of domestic policies:
-> 1928: Benjamin Strong’s death: governor of FED -> no necessary policy coordination

- uncooperative behaviour -> imposition of tight monetary policies

- Deflationary pressure + ↑ vulnerability of the weak currencies
- Unwillingness of central banks to operate the gold standard according to the "rules of the game" (all movements in gold must be reflected in compensating changes in domestic money supplies)
- Post-war governments were no longer willing to give unconditional support to external equilibrium and the defines of the reserves (↑political cost of the necessary measures)

1931: UK abandons Gold Standard

Democratic electorates required more focus on internal stability of prices and incomes.
BUT: greater pressure to neutralize an outflow of gold than an inflow, and this imparted a deflationary bias to the whole system.

1933 World Monetary Conference: London, shortly after the US abandoned the gold standard and allowed $ to depreciate.

- promote the coordinated stabilization of exchange rates
- BUT: Roosevelt not yet willing to stabilize the dollar
- total lack of any common ground between countries
- further disintegration of the international monetary system
- epidemic of competitive currency depreciation, resort to exchange controls, protectionism, bilateralism, import quotas and other trade barriers
- development of hostile, non-cooperating trade and currency blocs

When responsible and cooperation was tried :

- problems due to old-fashioned political and financial ideologies on policy-makers
- insistence on substantial reparations
- functioning of international payments depending on US loans
- Priority: reintroduction of the gold standard: deflation and obstructing future trade (overvalued currency)

Countries surrendered their" monetary sovereignty" and restricted their ability to accommodate balance-of-payments disturbances by any means other than retrenchment.
-> 1930s: Gold standard prevented countries from initiating policies to alleviate economic distress or pursue politics that intensified economic decline.

Feinstein, Temin, Toniolo (2008), Chapter 2: 'The Legacy of the First World War'.

The Economics of "Total War"

Long- lasting effects of a war: battlefield and economic front.
WWI: true watershed between 19th and 20th century.
Late 19th: relatively well-functioning international payment system based on the gold standard.

- London: pivotal and stabilizing role
- Cooperation for leading central banks
- Almost perfect mobility of factors of production (large-scale labour and capital movements from Europe to the New World)
- Commercial treaties ↓ the impact of tariffs on international trade stimulated by ↓ in transport costs

War: major economic revolution

- Pre-1914: peacetime economies -> limited role of state: governments provided for defense, foreign policy, domestic security, and free universal elementary education (Total revenue and expenses seldom exceeded 15 percent of GDP)

- Expectations: "short-war theorem" given the limited resources available and the disruption in economic and social life that a war would create.
- But: it disregarded flexibility of a modern economy and adaptability of mankind to almost any situation
- Revolutionary aspect of the war economy
- Rapid shift of resources from consumption to arms production
  - Attendant reorganization of the entire economic life of the belligerent nations
  - Governments ↑ spending

Table 2.1 Military expenditure as a percentage of net national product at factor cost, selected countries, 1913–1920 and 1937–1951.

	UK	USA	USSR	Germany	Japan
First World War					
1913	4	1	—	—	—
1914	9	1		14	—
1915	34	1	..	41	..
1916	38	1	—	35	—
1917	38	6	—	53	—
1918	32	13	—	32	—
1919	13	9	—	—	—
1920	4	3	..	..	..
Second World War					
1937	—	—	9	—	13
1938	7	—	—	17	—
1939	16	2	..	25	..
1940	49	2	21	44	17
1941	55	12	—	56	25
1942	54	34	75	69	36
1943	57	44	76	76	47
1944	56	45	69	—	64
1945	47	38	..	..	..
1946	19	10	—	—	—
1947	11	5	—	—	—
1948	8	5	18	—	—
1949	8	6	17	..	..
1950	8	5	16	..	..

Sources: UK, USA, USSR, Germany, 1938–1945: Harrison (1988), 184.

UK: military expenditure ↑ from 4% to 38% between 1913-1917 (total government expenditure = half of national income)
Germany: ↑ to 53% by 1917
Colossal amount of labour shifted from peacetime production to military service and expansion of armament factories, chemical industries, shipyards, etc.
-> Female labour widely used in the countryside
Capital obtained by borrowing or printing large quantities of bank notes.

"Total war":

Italy: capable industrialists and top general: also control jobs.
Germany: Walther Rathenau, the brilliant head of the AEG electrical combine -> control over military supply.

- Central planning of supply of raw materials
- Distribution to companies working for the government
- Industrial reorganization -> compulsory cartelization
- Small industry was sacrificed to the needs of industrial giants.

Britain:

- 1915: creation of Ministry of Munitions under Lloyd George.
- Most of the features of Germany's War Raw Material Office
  - supervising private business
  - supplementing their efforts with direct investment when necessary
  - At the end of the war, Britain had some 200 government-owned plants.

Many areas: colossal productive effort paired with acceleration of technical progress:

- Internal- combustion-engine vehicles

- surface ships
- submarines
- airplanes
- plants became larger and more efficient
- Scientifically organized workforce

General conscription:

- Countryside: men replaced by women, children and older workers.
- Trenches: mass propaganda: learnt ways of organizing large numbers of people for political purposes
- After war: almost impossible for the ruling classes to ignore the reality of mass movements and revert to elite politics

Political change:

- mass movements overwhelmed the government
- Germany: the Kaiser abdicated and was replaced by a republic
- Austro- Hungarian Empire: collapsed into a set of small countries
- Russian Empire: Bolsheviks took over and established a new Soviet Empire
- Ottoman Empire: only Turkey and Egypt emerged as indecent countries (rest to England and France)
- British and the French empires: enlarged by acquisition of German possession in Africa but weakened by the war (local movement for autonomy and independence more difficult to control)
- Japanese Empire: emerged stronger from the war: Tokyo's almost costless alliance with the Entente allowed it to make some territorial gains and to consolidate its colonial holdings and its commercial influence in Asia.

Causes of demise of the empires:

- Industrialized countries: mobilization -> large demand for food and led to agricultural prosperity.
- Agricultural regions: mobilization took workers from the countryside
- Reduction of trade and of domestic production of consumer goods during the war -> farmers had little to buy if they sold their output -> reluctant to sell their food -> food scarcity in the cities and abundant food in countryside with no market -> civil unrest -> revolution

International economy:

1) displacement of the agricultural sector in the belligerent countries led to the lifting of import duties in order to gain access to the cheapest overseas supplies (US, Canada, Argentina and Australia supplied European markets)
2) Financial cooperation was undertaken by the Entente powers in the form of inter-Allied loans. Britain lent to France, Italy and Belgium. Later US provided loans to countries fighting against central empires. -> the allies 'exchange rates could be pegged at politically acceptable levels, and hard currency was made available to buy overseas supplies

The Economic Consequences of the War

Social and political instability (domestic and international)

- domestic fronts: Italy -> Mussolini, Germany -> Hitler, Russia -> October Revolution, France and UK more stable but feared revolution in immediate post-war.
- International: Between 11/11/1918 and 1923_1924 crisis: "stabilization"
- cooperation much more difficult
- Balkans and in parts of the former Russian Empire, active fighting remained endemic for a long time -> dragging European powers into costly and useless interventions

- Damaging peace treaties (mainly with Germany): unnecessarily punitive reparations, military occupation of Rhineland; direct intervention in the Ruhr

Four directs effects of the War

1) Two exogenous shocks

- War caused a major disruption of the real economy, both on the demand side and on the supply side.
  - Belligerent country: changes production and consumption patterns
  - Heroic efforts were made to increase productive capacity in war-related industries such as engineering, iron and steel, and shipbuilding.
- Capacity became superfluous once the war was over.
  - exceptionally difficult to adjust to the required patterns of peacetime production
  - changes in demand created by unfulfilled wartime needs
  - consequence of the devastation of transport networks and of fields, houses, factories, and mines during the fighting
  - destruction was worst in France, Belgium, Italy, and Poland (but everywhere endured loss)
  - Difficult relocation of physical assets and labour to peacetime production
  - Ex: huge investments in shipbuilding saddled with excess capacity.

Another difficulty: changes in world markets.

- Not much war-affected competitors (USA, Japan) seized the opportunity and invaded European markets.
- Japan in particular: rapid ↑ in sales to many Asia countries (previously buying from UK)
- Huge export capacity had been built by cheap primary producers
- War stimulated domestic production in non-European countries to substitute imports. (Ex: cotton in Latin America)

End of Empires in E. Europe and Middle East further disrupted international relations:

- large markets -> tariff barriers
- Banks (draw funds and make loans) -> restricted to new political boundaries for new countries to establish and protect their own banks (Soviet government in war and no revenues to finance it)
- Hyperinflation was tried but unsuccessful
- Requisition -> too much hostility and opposition
- Bolsheviks instituted a New economic policy -> some parts (agriculture) allowed to functions as private

2) A More Rigid Economic Environment

Greatest possible degree of flexibility in prices and practices required to adjust to these devastating domestic and external shocks
But: greater rigidity.

- ↓ wage flexibility (negotiation and process of collective bargaining, growth of working-class militancy and ↑ in Trade Union membership)
- Goods market: ↓ flexibility of property income and prices -> ↑government intervention in economic life, trade associations and cartels, imposition of controls
- Larger business units: difficult 1920s -> collusion, cartels, monopoly (promoted by new legislations to reduce competition in industries)

3) A Weaker Financial Structure

Financial sector affected by war and interference in peacetime patterns.
War -> unprecedented need for revenue (cost of war = 5x worldwide national debt in 1914)

- note issues and bank credits were expanded by immense amounts
- Little attempt to ↑ taxes or public fund borrowing (needed to offset military spending)
- UK: imposed additional taxes but no sufficient to cover eve, 1/3 of expenditures.
- France and Germany: lower role of taxes

After the war -> service public debts (many short-term threatening monetary stability)

- also external demand for payment of war debts and reparation
- International financial cooperation had vanished
- Need for reconstruction + demand for social security and unemployment benefits -> Difficult reduction of budget deficit

4) A Fragile International Monetary System

The classic gold standard was an early casualty of the conflict.

- Beginning the war: suspension of Gold Standard
- Inter-Allied loan system to allow belligerent countries to sustain the level of imports required to achieve the maximum military contribution to the common cause.

End of the war: cooperation ceased

- Inter-Allied financial assistance was suspended
- Creditors clarified their expectations for reimbursement of war loans.
- Victorious powers: extract unrealistic amount of reparations from defeated.
- French retaliation after German victory in 1870: main factor preventing realistic settlement

Figure 2.1. Europe before and after the First World War. Source: Martin Gilbert (1970), *First World War Atlas* (London: Weidenfeld and Nicolson). Reprinted by permission.

The Economic Consequences of the Post-war Settlements

The Shock of Economic Restructuring and Social Unrest

War: 30-40% of belligerents GDP controlled by the state.

- Army supplies = responsibility of governments
- Rest of economy subject to various forms of state supervision -> administrative controls on prices, wages, capital, and foreign-exchange markets

Peacetime: process of reallocation of resources: long and met resistance

- Two views: economic "laissez-faire" with strong state help (social peace and financial support) vs "technocratic" and "corporatist" states supporting technology and economic growth.

Industrial restructuring -> closing of plants
Scarce capital for creation of factories to meet consumer demand
Householders frustrated by the fall in the real value of the wartime savings -> ↑demand in consumer goods
=> 1920-1921 short but deep recession

Social unrest: two factors for the universal explosion of working-class protests after the war

1) Powerful growth of the organization, strength, and solidarity of the working class
   - discipline and morale of huge armies raised through compulsory conscription
   - pressures and concessions: promise of better life for the masses
   - Life in trenches: tremendous catalyst for emerging "mass society"
   - Urgent need to ↑military supplies required recognition and concessions to trade unions
2) Russian revolution exercised considerable influence on working-class movements
   - model for militant minority
   - highly divisive factor for those who did not share this ideology

Economic impact of social developments differed according to the relative weakness of the economies and of the governments that emerged from the war.
Germany: social democratic government -> social reforms to undermine working-class support for the revolutionary movement
Mines and metal-making were "socialized," trade unions were fully recognized, and the eight-hour week was introduced.
-> deficit spending -> price spiral
Bulgaria: swept by quasi-revolutionary winds
Hungary: briefly governed by the communists
Italy: workers took over the management of some companies during the "red biennium" (1920–1921).

- working-class movement was eventually weakened by the division resulting from the creation of a Communist Party in 1921
- Reactionary forces gained sufficient strength -> seized power by the March of Rome (1922) -> Fascism

France and Britain: strikes during 1919 affected industrial output and investors 'expectations.

- 1920: governments regained control of the situation (harsh repressive measures)
- France: trade-union movement suffered a serious setback
- UK: trade unions had already developed strong roots and the victory of Lloyd George in 1918 brought in a relatively sympathetic government.

The Economic Consequences of the Peace Treaties

1919: Germany (at Versailles), Austria (at St. Germaine-en-Laye), and Bulgaria (at Neuilly)
1920: Hungary (at Trianon) and Turkey (at Sévres)
Cause of severe disturbance to post-war trade and production:

- political map of central and E. Europe was redrawn disrupted long-standing economic relations and created new barriers to trade
- attempt to hold Germany responsible for the war by imposing huge demands for reparations for the losses suffered by the victorious powers became a major cause of political antagonism and economic discord

Pre-1914: trading patterns, communications, financial relations adjusted to existing political boundaries
-> coincide with customs and monetary unions
-> disrupted with the formation of new nation-states

Most extensive territorial changes: (12 more independent nations after the war)

- Habsburg empire: loss of territory to Italy + creation of 6 nation-states
- Germany lost all overseas colonies, Alsace-Lorraine and Saar coal mines, Upper Silesia
- Russian Empire: lost Finland, Estonia, Latvia and Lithuania)
- Bulgaria ceded territory to Greece
- Ottoman Empire dissolved

Decision-making of those changes:

- victorious powers were primarily guided by the principle of national self- determination, not by economic considerations
- New nation-states: political entities encompassing people of the same language, culture, and tradition

The process failed to reconcile and satisfy all the conflicting interests and aspirations involved, leaving behind a permanent residue of social and national resentments.
Notes:

- in some cases, endemic fighting continued well into the 1920s, increasing the overall sense of instability.
- Each new state created its own currency, erected trade barriers to protect domestic industry, and inaugurated independent fiscal and monetary policies.

-> Deep effect on international economy by distorting trade and capital flows

Pre-1914 Habsburg Empire: well-functioning, efficient currency area, region specialization, functioning money and capital markets.

Danubian region: independent policy-maker regimes -> encouragement of industrial development -> Romania, Yugoslavia and Bulgaria: tall tariff walls (similar but less extreme in Hungary)

Czechoslovakia: most highly industrialized parts of the former empire but highly dependent on export markets severely affected by protectionism. Moderately protective agricultural policy -> serious effects on exports of other former members of the empires.

Poland: not heavily dependent on the Danubian markets for agriculture, industrial trade was disturbed by the new frontiers.

Bolshevik revolution and the Russian civil war continued affecting International economy.
End of 19th century: Russia increasingly integrated into European trade and capital flows
After treaties: Bolsheviks effectively severed most of the country's pre-war links with the rest of the world.

=> These developments caused widespread resource misallocation, resulting in lower output and higher prices, particularly in central and eastern Europe.
-> markets eventually adjusted trade and capital flows to the new situation but it took time
-> adjustment was made even slower by:

- uncertainty regarding the stability of the new regimes
- fear of revolution
- persistence of endemic conflicts
- lack of information in western capitals about the new leaders
- incompetence of new leaders

The End of Financial Solidarity among the Allies

System: flow of financial capital from the UK to the European members of the Entente, and from the US to the Entente as well as to Britain -> used to stabilize the belligerents 'exchange rates

- Too steep downward trend in the currencies -> expression of a pessimistic market assessment of the outcome of war
- Fluctuations around the trend were too wide and erratic -> ↑cost of supplies in neutral markets

-> support for the European exchange rates weakened the dollar on the Japanese and neutral markets

- Washington had to impose an embargo on the export of gold
- Politically acceptable as long as part of overall set of measures for victory
- After victory no need for continuation of the wartime financial policy.

War -> tremendously demanding of Europe's economic and human resources

- food emergencies (mainly in defeated countries)
- Need for reconstruction
- Need for reallocation of resources from wartime to peacetime production

-> need for financing -> proposal of "soft landing" -> continuation of US financial assistance and relaxation of wartime controls on exchange rate and international economy.
But:

- France demanded the imposition of very harsh conditions on the defeated powers: huge reparations to fund reconstruction and war pensions, but also its foreign debt
- Not compatible with soft landing request.

If the aim was international solidarity to rebuild the European economy, everyone should have been required to pay a price for the success of the cooperative effort
If aim was equitable justice then there was no reason to establish a link between debts and reparations.
US was now the world's dominant financial power but did not respond adequately:
Political reasons:

- US leaders lacked the necessary insight to understand the long-term interests of the country
- Victory Loan Act passed by Congress in March 1919: government authorized to open credit to foreign countries only for the purchase of government goods and US grains.
- Europe -> safety net against a fall in food consumption below subsistence levels but no US credit for reconstruction and industrial conversion

Turmoil in the world markets for foreign exchange
End of U.S. wartime financial support and of pegging of Entente currencies to the $ -> exchange rates were left to their own fate.
Other currencies lost value -> colossal exchange-rate devaluations ended up feeding into hyperinflation
-> retreat from wartime financial solidarity was too abrupt
-> lack of international credit for reconstruction and industrial restructuring -> markets 'unfavourable expectations for the pace of recovery

Reparations

Versailles Treaty (Art 231): Germany responsible for the war -> legal ground for reparations -> cover war-related material damages (ambiguous definition: included reconstruction but maybe also personal losses?)
Keynes: condemned reparations as economically irrational and politically unwise. -> most of pre-1914 European welfare depended on German economic growth
However, winners faced enormous budgetary problems themselves -> public opinion *("La Boche payera")*
Soon after the Armistice, Germany was stripped of its gold reserves, coal, most of its merchant navy, and whatever equipment that could be use to the victors.
March 1921: German failure to fulfil preliminary requests of reparations -> Allied troops occupations in Dusseldorf, Duisberg, and Ruhrhort on the east side of the river Rhine.
-> London Schedule of Payments for the first time formally established Germany's reparation obligations
1923: Germany was still late: occupation of the Ruhr mining district
1924, Dawes Loan: allowed private capital to flow into Germany -> possible for smooth transfer or reparations to France, Britain, Italy, Belgium and the other Allies.

Feinstein, Temin, Toniolo (2008), Chapter 6: 'The onset of the Great Depression' (until page 16)

Late 1920s: descent into the depression gathered pace in Europe and in much of the rest of the world
Bankers, politicians, industrialists, farmers -> helpless facing the currency and banking crises, growing stocks of unsold food, falling prices, collapsing export markets, abandoned factories, ↑ of unemployment and demand for work relief payment.

The Course of the Crisis

Table 6.1 World trade, 1929-1932 (index numbers, 1929 = 100)

	1929	1930	1931	1932
1. Value at current prices[a]	100	80	57	39
2. Export volume	100	93	85	74
3. Export price	100	86	67	52

(a) Index of the value of exports by seventy-five countries measured in pre-devaluation U.S. gold dollars.

Source: League of Nations (1939a), 8.

-> the collapse of international trade was extraordinarily swift and steep

Table 6.2 World production and prices, 1929-1932 (index numbers, 1929 = 100)

	1929	1930	1931	1932
1. Industrial production				
a. World[a]	100	87	75	64
b. Europe[a]	100	92	81	72
c. North America	100	81	68	54
2. Primary production—food				
a. World	100	102	100	100
b. Europe[a]	100	99	102	104
c. North America	100	102	103	100
3. Primary production—raw materials				
a. World	100	94	85	75
b. Europe[a]	100	90	82	73
c. North America	100	90	80	64
4. World prices				
a. Food	100	84	66	50
b. Raw materials	100	82	59	44
c. Manufactures	100	94	78	63

(a) Excluding the Soviet Union.

Imposition of deflationary policies in the leading gold-standard countries
-> vicious downward spiral
-> growing resort to tariffs and exchange controls
-> impoverishment of food producers due to ↓ in agricultural prices.

Restrictive monetary policies reduced output -> contraction of exports -> producers of manufactured goods naturally cut back their purchases of coal, cotton metal (raw materials).

Primary-producing countries reacted to deterioration in exports by restricting even more their manufacturing goods imports.
Depression spread rapidly in the advanced industrial countries and the producers of food and raw materials. -> falling prices and falling quantities

World trade value fell considerably between 1930-1932: the volume of goods traded ↓ by 1/4 and prices ↓ by 1/2 -> ↓ gold value of international trade to barely 40 % of what it had been three years earlier.
-> most severe contraction of demand ever

Between 1929-1932:

- output ↓ overall (slightly less severe in Europe, more in North America)
- Food production volume was no affected and remained stable
- Output of industrial raw material ↓ as industrial production ↓ (again worse in N. America than Europe)
- prices of primary products ↓ steeply
  - Raw material ↓ to 44% of 1929 levels
  - Foodstuff 50%
  - Manufacture 63%
- Primary-goods-producing countries were severely affected.

Table 6.3 The collapse of European industrial production and exports from 1929 to 1932 (1929 = 100)

	Industrial production	Value of exports[a]
Poland	58	38
Germany	61	45
Austria	62	32
Belgium	63	47
France	74	39
Czechoslovakia	75	36
Yugoslavia	76	35
Finland	84	44 (72)
Netherlands	84	42
Hungary	86	32
Italy	86	44
Romania	88	58
Spain	88	35
Sweden	89	36 (52)
United Kingdom	89	36 (50)
Denmark	90	47 (67)
Norway	94	51 (75)
Greece	101	39
Switzerland	—	38
Total Europe	72	40

-> no European country escaped the contraction in output and in world trade and prices

In general 1932 was the through year for output, but in many countries exports continued to ↓ for 2/3 more years.
For 11/19 countries, (including France and UK), value of exports ↓ by more than 60%.
In other 6 (Germany, Italy, Belgium, Netherlands...) decline was less severe (-50%). Every country faced a massive ↓ in demand.

Contraction of industrial production in individual European countries:

- Poland, Germany, Austria and Belgium most badly affected

- France: decline started in 1931 but equally precipitous.
- Almost as steep in Czechoslovakia (where production continued falling in 1933) and Yugoslavia.
- Elsewhere fall was more moderate (between 10 and 20%)
- Greece exception: output in 1932 was above the 1929 level by only 1 percent.

↓ in industrial output, primary products and price -> ↑ to unprecedented heights -> major social costs and significant political consequences in some cases.

The U.S. Banking Crisis of 1930

US had the longest banking crisis in the world: 1930-1933.
-> bank crisis only in countries on the Gold Standard: mostly short, close to gold standard abandon time

Beginning: Bank of United States failed in December 1930.

- it had made many investments in NY real estate.
- Depression ↓ prices of these buildings -> problem for the bank.
- Caldwell and Company also failed
- no evidence of the credit stringency and high interest rates that normally accompany a banking crisis

Meanwhile: Americans began to shift their money holdings from bank deposits to cash -> ↓money supply
Only after UK abandoned Gold Standard (Sept 1931) enough banks failed to accelerate the fall in money stock.
Bank failures had another effect on economic activity:

- banks are credit intermediaries, bringing potential lenders and borrowers together
- With banks failures, the role of financial intermediaries was not fulfilled: fewer banks and people were suspicious. -> it raised the cost of credit intermediation (supply shock)

American banks continued to fail through 1931 and 1932 -> peak 1931 fall.

- Weak banks failed continuously, without infecting neighbour banks
- Fragmented American banking structure -> unable to weather the strains of the depression as the British and Canadian banks did
- Only country with customers withdrawing their funds -> ↑cost of credit intermediation and ↓ stock of money

Germany: banking problem came all at once and offset by government action

The Currency Crises in Austria and Germany

1929: US capital supply ceased.

- Only country with strong financial position was France (attracted ever-larger quantities of gold and foreign exchange)
- Both the American and the French authorities refused to take any steps to relieve the mounting crisis of confidence and liquidity in the rest of the world.

Vienna 1929: failure of the Bodencreditanstalt, the second-largest Austrian bank

- Rothschilds 'Creditanstalt agreed to a merger, but it was itself in a very weak position, and the enlarged institution could not provide a long-term solution.
- Creditanstalt, Austria's largest bank, had unwisely operated during the 1920s as if the Habsburg empire had not been broken up
- heavy commitment to unprofitable industries -> failure and losses

May 1931, Austrian Crisis: Creditanstalt forced to reorganize with help of international credit and partial standstill agreement.
-> run on the bank that speed to the Austrian schilling
-> vain attempt to adhere to the gold standard and belated imposition foreign-exchange controls

July 1931, German crisis: Twin crisis:

- German banks and German mark collapsed -> runs on the British pound and American dollar
- Traditional view: banking problems caused by overextended lending brought down the currency
- New view: budgetary problems of the Weimar Republic brought down the currency and the banks

The Weimar budget was severely out of balance by 1931:

- tax revenues ↓
- Unemployment expenses ↑
- Impossible to agree on a budget
- Loans from US and France covered the deceit in early 1931
- Brüning: customs union with Austria -> doubt on reparation payment -> end of loans.
- Gold reserves at the Reichsbank and deposits at the large German banks held up until Brüning's statement on reparations in early June, after which they quickly fell apart -> out of asset to monetize the banks' reserves -> no longer able to purchase Berlin banks' bills by mid-July.
- French offer of help came with political strings that were unacceptable to the Germans
- Germany abandoned the gold standard in July and August 1931

As a consequence:

- withdrawal of foreign deposits was prohibited
- huge sums in foreign short-term credits were frozen
- Other countries were compelled to restrict withdrawals of their credits

Hungary: banks were closely tied to those in Austria -> impose a partial moratorium on external obligations and to declare a three-days "bank holiday."
Swiss: a bank had to be rescued by take-over
France: avoided the crises with only mild failures.
Britain: not much damage, finding strength in their branch structure and security in their traditionally cautious policy toward involvement in industry.

Disintegration of the Gold Standard

Sterling under Pressure

The stability of the British banks did not extend to the position of sterling.
After German abandon of Gold Standard -> British pound under pressure.
-> British troubles ↑ when the standstill agreements froze £70 million of British bankers 'loans to Germany.
The extremely weak balance-of-payments position on both current and capital accounts was a more fundamental cause of Britain's inability to sustain the gold standard.

Britain's external financial position in the 1920s was undermined by several factor:

- abrupt trans war collapse of export markets for coal, cotton, and other staple products
- forced sale of a substantial fraction of Britain's overseas investments to help meet the costs of WWI
- overvaluation of sterling as a result of the decision to return to gold at the pre-war parity of $4.86

- adverse impact that the calamitous fall in primary-product prices had on Britain's traditional empire and Latin American markets in the late 1920s.

Capital account:

- Britain tried to maintain its per-1914 role as exporter of long-term capital to the developing countries
- But by 1920s: country was faced to offset the outflow by substantial borrowing from abroad
- Capital attracted to London was short-term -> Britain vulnerable to any loss of confidence is sterling
- ↑ deficits on the current accounts of Australia and other primary producers who normally held a large part of their reserves in London -> draw on those balances.

When confidence drained away in 1931: sterling's parity could no longer be sustained -> borrowing from France and US -> UK leaves Gold Standard in Sept 1931

Report of the May Committee in July 1931: expressed concern about Britain's budget deficit -> finance collapse in confidence ins sterling.

-> Suspension of the gold standard was not inevitable:

- much more aggressive policy to raise interest rates and reduce domestic activity would have been needed
- might have involved severe damage to employment and enterprise, and perhaps to political stability
- But: would have shown that UK was determined to maintain gold standard

Factors underlying Britain's departure from gold:

- undervaluation of rival currencies (but overstated)

-> the exchange rate policy was not the basis for France's prosperity: the strength was the crowding-in effect of Poincare's fiscal policies -> upsurge in domestic investment
Similarly in Belgium: export growth and a depreciated currency was not maintained after 1926 -> main sources of prosperity are to be found in the domestic economy, associated with the expansion of the banking sector.

The Bank of England, after an initial delay to rebuild its gold reserves, sharply reduced interest rates in 1932.

- As Germany, UK monetary authorities continued to advocate gold-standard policies even after quitting
- British economic policy was freed by devaluation, and monetary policy turned expansive early in 1932.
- The British did not seek international leadership
- Many smaller countries followed the British lead
- Other major financial centres protected themselves from British policy

The Dollar under pressure

Financial panic spread from Britain to the United States
Bank failures rose and the Federal Reserve banks lost gold: both internal and external drains
Poor monetary policy: Fed raised interest rates sharply in October to protect $ in the midst of a the greatest depression ever.
-> this was the standard response of central banks under the gold standard
-> ideology of the gold standard transmitted and intensified the Great Depression.

The pressure against the dollar eased, but the American economy accelerated its decline.
Fed had chosen international stability over domestic prosperity (choice Bank of England had not made).
-> intensified deflation and accelerated economic decline.
Britain stopped declining in 1932 while US had to wait.
Delay added to the deflationary forces in Europe -> delay in European recovery -> putting pressure on fragile Weimar political system

Collapse of the Gold Standard

- By the time Britain left Gold Standard, 7 other countries had done so too (Australia, New Zealand, Argentina).
- After that, other 24 followed rapidly (Sweden, Denmark, Norway, Finland, Irish Free State, Greece, Portugal).
- In others no formal suspension but made ineffective by the imposition of a range of exchange controls and restrictions (Germany, Austria, Hungary, Bulgaria, Czechoslovakia, Romania, Estonia, Latvia)

By mid-1932: Gold Standard was shattered: only US, France, Belgium, the Netherlands, Switzerland, Italy, Poland and Lithuania remained (only the first 4 were actually committed)
Inability to make the gold standard function during interwar -> symbol of failure even if economically favourable consequences.

Meanwhile: there was renewed outbreak of tariff warfare due to deterioration in economic conditions and introduction of Hawly-Smoot tariff in US (1930).
Britain abandoned free trade end of 1931.
France, Italy, Netherlands, Spain, Portugal, Greece and many others increased their tariffs to protect themselves from deepening depression and collapse of international cooperation.

Judgement of the League of Nations (1933, 193-94): never any period when trade was subject to such widespread and frequent alterations of tariff barriers. Currency instability -> protectionist regulation and private trading initiative

Currencies and Banks in Other Countries during the Depression

Spain: avoided the worst excesses of Great Depression by staying off the gold standard. -> attest to fix peseta in late 1920s as France and Italy had stabilized their currencies.

But: deflationists didn't have political power.
Run to banks too but very few failed -> Bank of Spain = Lender of last resort:

- Not bound by inflexible gold standard
- No need to increase Spanish interest rates to protect the value of peseta and continued to lend freely.
- Banks held large portfolios of government debt that could be sold for cash

Greece and Portugal: relatively mild impact of Great Depression

- Banks came out fine
- Where failure: typical due to involvement as universal banks with unsound or loss-making industries than to inherent financial difficulties
- Greece (as Britain): mixed banking -> better able to sustain liquidity and solvency

Italy and Poland: no general banking crisis despite being on gold standard.
Italy:

- Credito Italiano: illiquid in 1930 as economic downturn began. -> holding company was formed to take the industrial assets of the bank
- Then: government reached an agreement with the Credito Italiano in February 1931: bank gave up its holding company and investment activities in return for substantial grant of money from the government

-> Credito italiano became a commercial bank but wasn't allowed to fail

- Banca Commerciale: needed help later in 1931 -> similar agreement
  - In return for even larger infusion of cash, the bank restricted itself to short-term activities

-> The government became actively involved in the finance of industry

Secrecy was absolutely critical to the success of this policy.

- Depositors did not panic or move into cash -> no contagion of fear
- lira was not subjected to unusual pressure
- policy decisions were undertaken by a small group of men, and no word leaked out to the financial community
- Possible in the Fascist government

Poland:

- No secrecy and no secret agreements
- Gradual state takeover of troubled private banks
- 1925: banking policy as result of agricultural crisis
- 1929: start of economic downturn
- 1931: failure of Austrian Creditanstalt -> continued government expansion.
- Decrease of private banks holding (40 to 20%)
- Polish policy was extended to a large number of banks over a period of years
- Its effectiveness lied in the government's commitment to keeping credit markets stable.

Yet: They went though both delegation and falling production at about the rate of other countries.

Japan: went onto the gold standard in 1930 after substantial deflation in the 1920s.

- domestic economic troubles
- they abandoned the gold standard in late 1931 and depreciated the yen sharply
- Thanks to this quick shift, like Spain, Japan avoided the worst of depression

Latin America

- Argentina: leading economy: managed to re-join the gold standard in 1927
- Cessation of capital flows to Latin America at the end of the 1920s, however, produced currency strains even before the European crisis of 1931.
- Argentina: off gold in December 1929 -> regime change in monetary policy producing recovery by 1935
- rapid abandonment of the gold standard reduced the impact of the depression in Latin America
- Almost all S. American countries (not Argentina), defaulted on their international bonds in 1931

Africa and Asia:

- depression suffering topped by political upheavals
- Most people were farmers hit by fall in world agricultural prices
- Turkey and Egypt industrial plans "frustrated" by lack of foreign capital and markets

Australia: tried to alleviate the problems by depreciating currencies

The End of the Contraction

-> need for change of leadership to bring change in policy regime.

Restoration of post-war gold standard was the problem of the 1920s not the solution.
The crisis ↑ relatively small initial problems and undermined financial stability of leaders.

Gold standard: strong and difficult ideology to abandon -> ending economic contraction needed its drop
US:
Hoover administration US (1931-1932): traditional support for the gold standard and efforts to improve credit markets instead of economy directly. -> then became a strong deflationist.

Fed : passive in early stages.

- March-July 1932: expansion halted because of risk of solvency of member banks.
- Glass-Steagall Act 1932: support for gold standard (separation of commercial and investment banking)

December 1932: election of Roosevelt: end to current international finance cooperation.
- February 1933: serious devaluation discussion to raise commodity prices.
-> Run on the dollar, March "Bank holiday", NY FED gold supply running dangerously low -> Chicago FED refused to help -> shut down entire banking system to force cooperation.

- Roosevelt imposed controls over foreign-exchange trading and gold exports (end of private gold ownership)
- Took control over domestic gold production sales

-> Avoid speculative disequilibrium when he began devaluation of $.

- Thomas Amendment to the Agricultural Adjustment Act: dollar freed from official value ↓ until July.

Note: US was under no pressure to devalue

- it had 1/3 of world's gold reserve
- Chronic foreign trade surplus
- Dominated world trade in modern manufactures (automobiles, refrigerators)

-> devaluation was a strategic decision (orthodox financial opinion condemned it)

The new regime was designed to ↑ prices and economic activity and supported by professional, public, and congressional consensus
During Roosevelt's First Hundred Days, the passive deflationary policy of Hoover was replaced by an aggressive, interventionist, expansionary approach.

Feinstein, Temin, Toniolo (2008), Chapter 8: 'The fragmented world of the 1930s'.

Central themes:

1) Disintegration of the international economy
2) The more or less successful path to recovery in the main areas of the world

World Economic Conference of 1933:

- disharmony and rivalry
- cooperation was desperately needed to mitigate the effects of the slump, but it was not forthcoming
- Each country had its own: agenda, economic and political priorities, and preferred solutions.

Table 8.1 Exchange-rate policies and paths to economic recovery in the 1930s (GDP per person; 1929 = 100)

	1929	1932	1935	1938
Early devaluation and domestic expansion				
United Kingdom	100.0	93.5	105.0	113.9
Sweden	100.0	94.8	109.4	122.1
Japan	100.0	96.8	104.6	120.8
Early devaluation, protection, and import substitution				
Brazil	100.0	89.5	101.1	112.2
Colombia	100.0	100.4	111.4	122.5
Controls on capital movements and domestic expansion				
Germany	100.0	83.0	101.7	123.3
Italy	100.0	95.3	101.8	107.2
Central planning and autarky				
Soviet Union	100.0	103.8	136.3	155.1
Late devaluation				
United States	100.0	71.1	77.5	87.0
Gold bloc (continuous deflation)				
France	100.0	84.0	86.8	94.8
Belgium	100.0	91.1	96.8	95.6
Switzerland	100.0	90.2	93.3	100.9
Overvalued peg to pound and deflation				
India	100.0	97.4	93.4	91.8

Source: GDP per person Maddison (2001, passim)

-> Recovery from the depression was faster and more robust in countries that were free to put in place fiscal and monetary polices apt to stimulate domestic aggregate demand the earliest.

England: by ending gold convertibility (Sept 1931)
-> lire interest rates -> stimulate investment.
-> Depreciation of exchange rate -> ↑ exports and substitution of domestic products for foreign.
-> administrative controls on capital movement
=> devaluation of currency soon followed by Germany and Italy.

Recovery proved weak where devaluation came late

Attempts at International Cooperation

- Hoover: one-year moratorium on payments of reparations in July 1931 -> too late to stop German crisis
- August: International committee (chaired by Albert Wiggin): urge world leaders to establish political confidence before the expiration of the moratorium
- December 1931 "Special Advisory Committee": at the Bank for International Settlements recommended the adjustment of all intergovernmental debts as last step to re-establish confidence.
- British government was leading an effort to convene a conference to discuss the recommendations of the Special Advisory Committee.
- But: German Chancellor Brüning (Jan 1932) stated that Germany would seek cancellation of reparations (supported by British and Italian) -> delay in meeting and collapse of Brüning Government
- French would not cede
- US uninterested in reparations but opposed to war-debt repudiation

-> politics stood in the way of economic cooperation

The Lausanne Conference on Reparations (June 1932)

- French opposing concessions vs Italian, British and Germans for a clean slate.
- Concurrent meeting in Geneva: US informed England and France that no European default on war debts would be allowed, while sufficient funds to cover payments were being used for armament spending.
- The British and the French: clause linking reparations with an American war debt settlement.
- Germany: no link between the two obligations.
- Lausanne Convention: official end to reparations and Germany required to deposit £125 million in bonds with the Bank for International Settlements. (They were never issued and burnt in 1948)

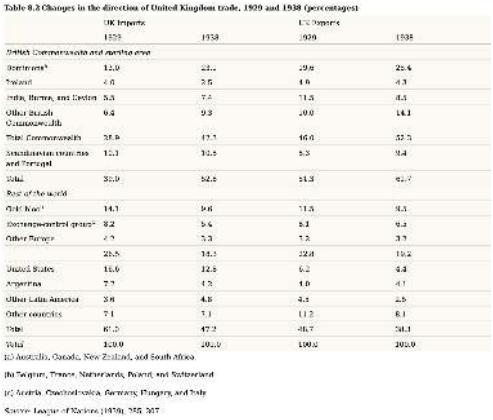
The 1933 World Economic Conference (London)

- Sterling devaluation ended pressure for gold redistribution.
- Lausanne conference: end of reparations problems
- End of wartime inter-Allied debts was still open: French and British asked Hoover to postpone December 1932 war-debt payment but he refused.
- France and other simply did not pay the 1932 and 1933 instalments
- Great Britain paid by ear-making gold in Bank of England -> ↑Roosevelt's determination to keep war debts off the agenda for the World Economic Conference.
- war debts remained an internationally divisive issue
- 1934: legislation to officially recognize and end to wartime inter-Allied debts.

As the conference approached:

- Value of dollar ↓ during May 1933, Roosevelt became less interested in exchange-rate stabilization, reversing cooperative policies
- French government believed in exchange stabilization (reintroduction to gold convertibility)
- June 1933: Central bank representatives from Britain, France and US: exchange stabilization was possible. -> agreement to buy and sell gold, keeping currencies within pre-scribed limits of 3% (agreement would have been null if details public)
- Fluctuations of dollar and sterling for length of conference -> ultimate objective: stabilize gold
- The agreement about dollar stabilization leaked to the press -> quick response of American markets -> dollar strengthened -> commodity and stock prices ↓ -> Roosevelt rejected the agreement -> intensified speculation against Dutch florin and Swiss franc but recovery of American markets.

Table 8.2 Changes in the direction of United Kingdom trade, 1929 and 1938 (percentages)



- French concentrated pressure on British to restore gold standard: British asked for a currency declaration which was approved -> US revised the document leaving a call for monetary stability, eventual return to gold standard was desirable and statement to avoid speculation.
- Roosevelt then rejected it on July 1: Keynes agreed with him on the idea that the internal economic situation of a nation was a greater factor in its well-bring than the price of its currency.

The Sterling Area

Britain's devaluation allowed to ↓ interest rates and expand the economy.

- It improved trade balance
- Freed macroeconomic policy from the gold standard

Giving up the gold standard: especially good for export-based economies for which UK was the primary market.
Denmark, Sweden, Norway, and Finland followed Britain off gold, but did not immediately peg to sterling.
By January 1932: Japan, Venezuela, and Bolivia adopted similar policies
Countries that pegged to sterling: colonial empire, India, Iraq, Egypt and dominions (excluding Canada)
Reasons:

- Compelled by Britain: India and colonies
- Retain competitiveness: Australia and New Zealand, South Africa
- Britain was a primary export market: Latin America and small European countries
- Brussels Conference 1920, Genoa Conference 1922: encouraged holding foreign currency instead of gold.

December 1931: bank of England provided credits to Finland and Denmark to maintain sterling parity.
So did Australia during the 1930s

After devaluation in Sept 1931: prices too low but feared inflation of deficit monetization; public works and deliberate credit expansion -> destabilize sterling

Trade and the 1932 Commonwealth Conference in Ottawa

1932 Ottawa: Britain advanced their policies reassuring dominions and India that monetary policy would target higher prices and recover. Principal discussions about trade agreements.

February 1932: UK had deserted its commitment to free trade.

- introduction of Import Duties Act: immediate 10% import duty on all goods except basic foodstuffs, raw materials and goods already subject to the duty
- Import Duties Advisory Committee with power to recommend higher duties for specific goods (tariff on manufactures quickly ↑ to 20%)

UK wanted to improve entry for British manufacture in the Commonwealth, but Australian Canada and other dominions didn't want to harm their emerging manufacturing industries. But they would give preferential access to British producers (↑ tariffs for non-commonwealth) in exchange for preferential access to the British food and raw material market.

-> The policies adopted in Ottawa helped to bring considerable shift in UK trade pattern.

- The share of United Kingdom imports purchased from the four dominions ↑
- ↑ in proportion acquired from India and from Britain's colonies in Africa
- only the Scandinavian countries and Portugal were able to maintain their share of the United Kingdom market.

- The rest of the world lost ground -> large absolute fall in the sales amount to Britain.
- Exports: UK to dominions, colonies and Scandinavia↑
  - Only exception: India: Japan and domestic production in competition with UK textile exports.

Cheap Money and the Sterling Area

After World Economic Conference: Chancellor of the Exchequer (UK ministry of finance) reaffirmed his commitment to cheap money and higher prices and to express that Europe would have had to abandon gold. British Commonwealth declaration signed in July 1933: ↑ prices, ease credit and money (except monetizing government deficits) , keep exchange rates stable within sterling area.

$ became more unstable and US did not nothing to encourage pegging to dollar. -> £ more attractive
1933-1938: sterling-to-dollar exchange rate reasonably stable.

- 1936: Franc devaluation
- Greece, Turkey and Latvia devaluated and pegged to sterling.

British cheap-credit policies allowed system to accommodate the chip-money policies of Scandinavia, Australia, South Africa etc.
London facilitated operations of the system supplying sterling-area nations with needed reserves.
Pound stability -> decade of holding of sterling balances + ↑ in production in S. Africa and India which ↑gold supply -> convertibility

India within the Sterling Area

-> important exception to the relatively rapid sterling-area recovery from the Great Depression

- 1893: silver standard had been replaced by a gold-exchange standard, but silver coins continued to make up the bulk of circulation
- Beginning of 1900: rupee was pegged to the pound at an exchange rate of 15 rupees per pound
- After the war, the deflationary policy was maintained
- 1927-1931: parity defended by deflationary monetary policies: melting down silver coins without ↑ paper in circulation
- 1931: Pound taken off gold: hope for adjustment of pound-rupee exchange rate -> remained pegged at 15 rupees per pound.
- devaluation of the pound sterling -> ↑ price of gold in terms of pounds -> 'distress sale 'of gold (gold possessions started flowing out the country) -> facilitated maintain of exchange rate of the rupee

-> Tight monetary policy + ↓ government expenditure (on public health, education, irrigation), little done to ↓ unemployment by way of public works.

India did not benefit from Ottawa agreements and British recovery given its overvalued currency

- imperial preferences ↓ the competition from non-Empire countries but not on Indian market.
- Indian traders complained about the way the country had been treated in setting up the Imperial preference scheme -> rising discontent -> probable beginning of "decolonization process"

Numbers:

- India's per capita GDP stagnated throughout the 1930s (↓ by 6% between 1929 and 1939)
- Value of exports ↓ (about 40%)

-> misguided macroeconomic demand management stood in the way of economic prosperity.

Latin America: Almost in the Sterling Area

- initial orthodox deflationary response to the shock of 1929–1930

- 1931: abandoned gold
- Defaults on foreign debt rapidly followed: currency depreciations made payments on both principal and interest unbearable at a time of falling export revenues.
- Expect Argentina (and a few others), by 1934 most Latin American countries had defaulted
- Devaluation and default -> room for expansionary fiscal policies -> rapid recovery thanks to inward-looking policies.
- Import quotas and tariffs were introduced in Brazil and Chile
- Argentina, traditionally linked to the British financial and product markets, remained relatively open to the sterling area -> Roca Runciman Treaty of 1933: giving UK an important tariff concession.

After initial revert -> promote import substitution and supply diversification

- Brazil: Getulio Vargas : promote growth-enhancing and inward-looking polices.
- Others engaged in expansionary fiscal policies
- Radical reforms: ↑ wage flexibility, land reform, price regulation, public works and improved financial structures.

-> idea that isolation of the subcontinent = blessing in disguise -> ↓ exports revenue, drying up of foreign lending
-> new ways to promote industrialization

- By 1932 Brazil and Columbia recovered their 1929 GDP level, even before exports had begun to recover
- 1933: export recovery -> Argentina and Mexico sped up growth, recovering pre-depression income levels by 1934 and 1935 respectively.
- import substitution + diminished dependence on a small number of export staples -> stimulation of domestic supply -> manufacturing output grew faster than GDP

The Gold Bloc

Continental Europe stayed with gold.
Gold Bloc led by France: preserved open currency exchanges at pre-depression currency values.
Nazi Area: currency controls (Germany instituted in 1931) preserving the mark value and abandoning any theoretical benefits of Gold Standard + enjoying freedom in monetary policy.

1930s gold bloc included most Latin Monetary Union (1865) countries.
Under French leadership: area of free currency circulation (France, Italy, Belgium, Switzerland)
In response to Roosevelt's message to the World Economic Conference:

- France, Belgium, Holland, Switzerland, Italy and Poland: joint declaration stating their will to maintain gold standard and stability of their currencies to create stable gold platform and to promote social progress -> ended speculations on Dutch florin and Swiss franc
- Paris meeting July 8: pledged to support each other's currencies settling their claims in gold-convertible currencies or gold.
- But: it remained symbolic: no progress in bank cooperation or government policies

Aftermath of London Economic conference:

- trading blocs emerged
- Gold bloc: only one still constrained to follow stringent deflationary policies
- The continuous effort to hold economies to gold standard made their recovery particularly slow
- Unemployment remained relatively high showing misguided ideological purity standing in the way of international cooperation.

Within gold standard constrains, 2 options to protect trade balances: exchange controls and deflation.

- German trading block and central Europe: tariffs were supplemented by exchange controls
- Most Gold Bloc: no exchange rate control, but continued deflation

French: successful at beginning of decade in keeping their current-account deficit small through trade barriers.

- 1933: decline in economic activity, lower government revenues -> budgetary deficits -> great alarm
- Political effect of expenditure cuts and new taxes -> frequent change in government
- decline in prices left the real wages of pensioners, veterans, and government employees higher than their original levels STILL attempts to reduce fiscal expenditures by reducing payments to these groups were highly unpopular.

Within the gold bloc:

- overvalued gold-standard parities of the currencies -> high prices -> discouraged trading among bloc members
- French trade with Belgium: ↓ 13% (1933-1934)
- French with Switzerland: ↓ 40%
- Geneva Meeting 1934: encourage trade and tourism within bloc
- Brussels conference (October 1934): discuss trade police.

Note: Poland couldn't participate to the meetings because of its desperate economic situation.

Brussels conference:

- Italy and Netherlands: reluctant to maintain gold standard
- French guidance: gold bloc to continue bilateral negotiation to allow for ↑ 10% in bloc trade by June 1935.
- Gold block survived but the results were not encouraging for unity.

Belgium:

- Severely hurt by its kiss of competitiveness in British market with sterling devaluation.
- Sept 1934: ask for more French assistance but no loans nor proposals to ↓ quotas on Belgian food were accepted.
- March 1935: British government limited steel imports (bad for Belgium)
- Again asked for French economic assistance but not much was given -> imposition of exchange controls
- Belgian franc devaluation repegging it 28% lower to restore British and US goods price level.

When recovery of those who left gold standard became apparent:

- Political and Journalistic French circles -> support devaluation
- Fearing the same consequences of the 1920s France kept its economic contraction and budget deficits.

Popular Front:

- Léon Blum, June 1936
- French New deal: renounce of deflationary policies but no devaluation.
- Subsequent serious gold reserves depletion
- Shortened work week of 40h
- ↑ wages to stimulate consumption
- Matignon Accords: answer to labour unrest.

By mid-1936:

- widespread support for devaluation among politicians, publicists etc

- Populace kept on believing it would cause deflation.
- But it was impossible to withstand the pressure against the franc

-> disintegration of the interwar gold standard

The Nazi trading area

Germany's Currency Controls

After the banking and currency crises of July 1931:

- Germany allowed banks to reopen only after freezing foreign deposits and limiting foreign-exchange transactions to the Reichsbank.
- Summer 1931: Germany abandoned gold standard by imposing controls on foreign-exchange transactions, but did not devalue the mark.
- Sterling devolution -> more efficient exchange control measures:
  - required owners of gold and foreign assets to sell them to the Reichsbank
  - restricted the amount of foreign exchange available to importers
  - compelled exporters to surrender their foreign-exchange proceeds to the Reichsbank
- Summer 1932: expansionary monetary policy -> positive impact on output and employment by 1933 when Adolf Hitler came to power.

Nazi government:

- policies including exchange control, work-creation projects, government intervention in banking, and the program for agriculture
- formally maintain the gold value of the mark, under the protection of administrative controls on conversion
- added terror to the government's toolkit for enforcing compliance with economic controls

Deterioration of world trade 1930s: Germany

- devaluation of $&£ relative to gold and mark
- rise of protectionism
- capital flight resulting from Jews fleeing persecution and from domestic and foreign responses to Nazi policies
- "New Plan" of Hjalmar Schacht 1933: ↑ foreign-exchange restrictions and a moratorium on interest payments on debt to foreigners.
- 1935: extend subsidies to German exports that were not competitive on world markets because of the overvalued mark -> expansion of domestic output + GDP growth.

Nazi trade policies:

- initially directed to ↑ consumption and ↓ unemployment
- Moved towards autarky: rearmament, preparing for a war economy after shortage of foreign exchange.
- German goals included military preparedness and administrative control over the domestic population

-> fewer available import goods and increased labour intensiveness

Bilateral trade agreements:

1. private-compensation procedure: agencies to balance imports and exports by matching private exporters and importers to ensure offsetting trade -> use of blocked marks, frozen funds held by foreigners, discount to buy German exports and higher prices obtained by German exporters
   -> use was limited to additional exports, those goods that were not competitive in foreign markets due to the overvalued mark.
2. bilateral-exchange clearing system: balance credits and debits on a national level
   -> German importers paid marks to the Reichsbank account of the trading partner, then used to pay German

exporters. If the accounts held insufficient funds, exporters had to wait for imports to increase, and if excess funds, importers had to wait for exports to increase.
CB of trading partners had similar clearing accounts.

Germany had made agreement with Hungary, Estonia, Latvia, Bulgaria, Greece, Yugoslavia, Romania, Czechoslovakia, and Turkey.

Trade with Western Europe

- area of exports surpluses; limited by ↓ of international trade and ↑ of exchange controls
- Sonder mark Agreements: with Gold bloc to preserve valuable export markets -> partial clearing systems, clearing accounts for additional trade. Levels of trade in accordance with foreign-exchange quotas.

1934, ASKI (Auslander Sonderkonten fur Inlandszahlung) procedure:

- Replaced private-compensation
- German accounts where foreign exporters' proceeds were held.
- Foreign exporters needed permission from German exchange-control authorities to trade with Germany
- German imports limited to the necessary defined by the commodity-control boards

2 types of ASKI accounts:
1) accounts for individual foreign exporters
2) accounts for foreign commercial banks that represented a group of foreign traders

New plan 1933

- created a system of payment agreements with Great Britain, Belgium-Luxembourg, Canada, France, and New Zealand
- release of free foreign exchange to pay for imports and to transfer payment on old German debts
- Germany agreed to import goods equal to a specified fraction of its exports to each country

Exchange control system after the New plan:

- ASKI agreements: stringent
- Clearing agreements: moderate
- Payment agreements: Lax

-> Germany free trade limited to small group (US for example)

The Reorientation of Germany's Trade

- Bilateral agreement: 50% of Germany's trade by 1938
- Germany incurred trade deficit with most of the Balkans
- Largest German trade: Western Europe, Latin America and Middle East

Kitson (1992): Germany sacrificed terms-of-trade advantages coming from its position as monopolist in export markets and monopsonist in import markets.
-> new objectives: reorientation of trade to safe, adjacent countries took precedence

Neal (1970): relatively costless and politically rewarding to bypass advantages of monopoly exploitation

Trade reoriented in favour of S and E Europe -> ASKI policy and clearing agreement.
As German/S.E Europe ↑: they became more dependent on German exports for basic foodstuffs and raw material -> isolated in the post- Depression trade world and in Germany -> paid 20-40% higher prices for agricultural commodities than the rest of the world.

Table 8.3 Changes in the direction of Germany's trade, 1929 and 1938 (percentages)

	German Imports		German Exports	
	1929	1938	1929	1938
Europe				
Southern and eastern Europe[a]	9.8	18.7	11.2	20.8
Scandinavian countries	7.4	11.3	10.2	12.9
Austria[b]	1.5	—	3.3	—
Gold bloc and Czechoslovakia	23.6	16.1	35.2	26.0
United Kingdom	6.4	5.2	9.7	6.7
	48.7	51.3	69.6	66.4
Rest of the world				
British dominions and colonies	12.5	10.3	4.3	6.1
United States	13.3	7.4	7.4	2.8
Latin America	12.1	16.8	7.8	12.1
Other countries	13.4	14.2	10.9	12.6
Total	100.0	100.0	100.0	100.0

1929 -1938: German exports in S.E. Europe, Spain and Italy ↑ sharply and so did the imports from these regions.

German trading share with Scandinavia and Latin America also ↑. While the trade with gold-bloc countries became less important.
However: Nazi policies never made southeaster Europe one of Germany's major trading partners

Italy between Germany and the Gold Bloc

- member of gold bloc buys followed a similar economic recovery path to Germany.
While the pound was fluctuating the lira (having previously stabilized at a high rate) was overvalued with respect not only to sterling but to the other gold-bloc currencies.
As in 1927, Mussolini tried to curb wages and salaries by decree to compensate for revaluation of currency. But less successful this time.
1929-1932: real wages remained stable and then ↑.
- introduction of controls on capital: to stem the outflow of gold reavers.
Mussolini wanted to stay in the gold bloc -> stability and strength of the lira.
July 1935: speculation during African Campaign -> Italian government prohibited gold exports?
- introduction of clearing agreements with Germany.
- trade with colonies never had a major role
- Argentina and Great Britain signed clearing agreements with Italy
-> like the mark, the lira became on gold only formally.

Early 1935: economic recovery through Mussolini's decision to invade Abyssinia.

- Deficit spending on armament -> ↑ in total emolument and hours worked in manufacturing
- Sanctions imposed by the League of Nations -> launch of an autarky program that brought Italy closer to Germany

Japan as a Different Mixed Case

Created its own trading area, which expanded with the Japanese military expansion
External: sterling area economic policies -> devaluation of currency and expansive domestic policies.
Internal: emphasizing military expenditures and expansion

1920s: Japanese governments committed to a return to gold at a relatively high parity

- BUT: easy money and government spending were needed after the Kanto earthquake of 1923 and after 1927 spree of banks
- Deflation was postponed to allow for whatever monetary expansion was needed to provide lending of last resort
- Macroeconomic view: tragedies were good because no deflation and focus on output and employment growth.
- Only in 1929: austerity fiscal budget -> reintroduction of Gold Standard at pre-war parity in January 1930
- January1932: gold convertibility was suspended again (with Takaha-shi) -> yen depreciated by 20%

Recovery:

- came from military expenditure
- Depressing was mild and short-lived
- By Sept 1931: armed forces had a prominent political role in Japan -> Military operations in Manchuria.
- By early 1932: Manchuria was entirely occupied -> enlargement of overseas Japanese Empire (including Korea and Taiwan)
- Boundaries coincided with inner circle of the yen trade area: manufacturing centre and development primary-producing periphery.

- devaluation of the yen stimulated exports, while domestic demand for military purposes resulted in an impressive industrial growth
- BUT: growth increased the dual character of the economy: rapidly expanding heavy industry and mining concerns vs low-wage consumer industry and agriculture.

The United States and Russia as Polar Opposites

They both achieved economic growth:

- US by opening up the economy
- Russia by closing economy

Russia and the United States were at very different stages of economic growth as the depression began, and some differences may have come from the enormous potential for catch-up existing in the backward Soviet economy.
-> More discrepancy came from the ideology

March 1933: President Roosevelt took office (a month after Hitler)
-> "new men" to rescue the world from the Great Depression

The New Deal in the United States

Macroeconomics:

- April 1933: Roosevelt abandons Gold Standard in context of agricultural reform?
- New Head of Federal Reserve System: allow money stock to expand as gold flowed into US.
- Support banking reform: Bank holiday + clean-up required to end it: Glass-Steagall Act (1933)
  - Separation of Investment and commercial banks
  - Formation of Federal Deposit Insurance corporation to avoid further bank runs

Agricultural reform:

- Agricultural Adjustment Act (AAA): allowed government to control agricultural production.
- Aim was to ↑ agricultural prices to provide the same purchasing power in 1933 as in 1914
- Devaluation also ↑ prices: wheat mostly (jumped to 30%)

Industrial reform:

- National Industrial Recovery Act (NIRA): incentives for employers and employees, negotiate agreements on house of work, wages and other conditions
- If in accord with government codes, then they were exempt from antitrust laws
- it delegated authority to industry groups
- shortened working hours in an attempt to spread the work over more people
- ↑ wages agreed by employers who in turn were allowed to ↑ prices

-> both prices and production ↑rapidly in later 1930s. (Even if 1937 recession -> unemployment remained high)

Reciprocal Trade Agreement Act

- reformed UK tariff policy
- Foreign trade agreements that didn't require direct congressional approval

Unemployment:
Recovery wasn't rapid enough to eliminate massive unemployment:

- Many reforms sometimes got in the way of each other

- ↑ in prices engineered by the AAA and the NIRA absorbed much of the ↑ in the money stock that resulted from capital inflows

- High wages continued even after the NIRA was declared unconstitutional in 1935, discouraging employment of more workers
- Unemployment in the depression was so large that even a rapid increase in production was not enough to eliminate it quickly

Collectivization in the Soviet Union

They developed their economy in almost extreme isolation from the rest of the world.
-> One of the features of the post-1914 "globalization backlash" was the subtraction from world trade of the enormous wealth in agriculture and natural resources contained in the former Russian Empire.
-> Stalin set out to overcome Russia's economic and technical backwardness by building "socialism in one country."

State's task to modernize and develop the economy

- 1927–1928: Major industrialization five
- in 1929 the first Five-Year Plan: goal of more than doubling industrial output by 1932
- Stalin's "second revolution" spread terror throughout the country -> Economic growth became the only idol

Farmers and agriculture:
Farmers had nothing to buy with their earnings so they didn't sell grain therefore:

- Collectivization of agriculture
- "Kulaks" (prosperous farmers whose lives were at risk as the grain shortages were blamed on them) were particularly unhappy
- They responded to government coercion by slaughtering and eating their farm animals
- no animals to work the land in the early 1930s -> massive famine (5 million deaths) -> no economic growth and facilitate government control over peasants.

Forced transfer of labour and capital:

- From agricultural to manufacturing
- from consumer-goods production to investment-goods production

-> accomplish through central planning accelerating the Soviet Union transformation from agrarian to industrial economy (astonishing GDP growth)

Foreign trade:

- increased considerably
- 1929–1959: +3% annual growth rate
- the Soviet Union increased both its output and its exports faster than any of the other trading areas.

Third International (communist international):

- astonishing success of socialism against the visible failure of capitalism
- Few outside the Soviet Union knew of the purges, concentration camps, and police brutality within its borders, which explains why "the world admired what happened there"

Eichengreen (2007), *The European Economy Since 1945: Coordinated Capitalism and Beyond*, Chapter 3: 'The post-war situation' (only pp. 52-70).

WWII: immensely destructive but limited impact in productive capacity.

- Substantial destruction of transportation infrastructure, housing, power-generating capacity, and industrial equipment.
- BUT: quick reparations and quick industrial capacity and power generation
- Europe's productive capital stock was roughly the same in 1947 as ten years earlier
- Yet there were wartime setbacks: capital stock would probably have continued to grow at 2% a year
- Strategic bombing discouraged the adoption of mass-production methods that were already relatively far advanced in the United States: mass producing aircraft and ships -> ability to deliver continuous flow of inputs BUT not possible due to bombing of bridges and rail lines -> raids and factories had to be dispersed to smaller, camouflaged premises.

-> increased divergence between US mass-production and European batch methods

Damage to economic and social system:

- price mechanism for allocating resources suspended: government relied on rationing and price control
- Collaboration with enemy (Louis Renault) = asset seized and company nationalization
- European trade stopped
- Inert capital markets
- Depletion of reserves of dollars and gold -> no means to finance US imports
- Banks forced to invest heavily in government bonds -> no resources for normal peacetime lending
- Price, financial, trading, and private property rights systems in doubt

Question: How and with what to replace pre-war arrangements? -> with continuity: foundations of Europe's earlier economic and political achievements remained in place.
-> politicians adapted the inherited institutions to the new circumstances to prevent the outbreak of another war.

Reconstruction

Superficially, wartime destruction was extensive.
France: 1.8 million damaged buildings, damaged railroads and locomotives, unavoidable canals, river ways and ports, 9/10 motor vehicles out of commission, productive farmlands transformed in minefields.
Netherlands: all metal items were seized and exported to Germany
Italy: merchant marine, railroads, industrial plant and equipment destroyed
Germany: 20%-50% of residential builds, damaged rail network

The destruction was uneven:

- North Italy: most capacity was intact: hydroelectric, engineering even grew.
  - Destroyed factories could be rebuilt quickly
  - Housing tool longer
- Belgium, France and Netherlands were worse off but it was possible to boost output by putting people back to work
- Trade unionists and left, even Communist party: post-war reconstruction as a national effort
- "Produce, produce", "Work hard first, then ask for concessions" were the slogans of Confederation Générale du Travail.
- Maurice Thorez of the French Communist Party: production -> highest duty of France

- Italy: Stakhanov squad of model workers to encourage intense effort
- Herbert Morrison (Left-dominated labour government) UK: battle for socialism = battle for production
- Absence of strike activity
- Radical unions made it more difficult for labour movements to achieve political goals -> governing required formation of coalitions

TABLE 3.1
Production in Western Europe (1938 = 100)

	1947	1949	1951	Percentage increase 1951 over 1947
Turkey	153	162	163	7
Sweden	142	157	172	21
Ireland	120	154	176	46
Denmark	119	143	160	35
Norway	115	135	153	33
United Kingdom	110	129	145	32
Belgium	106	122	143	33
Luxembourg	—	132	168	—
France	99	122	138	39
Netherlands	94	127	147	56
Italy	93	109	143	54
Greece	69	90	130	88
Austria	55	114	148	269
Germany (Federal Republic)	34	72	106	312
All countries participating in the Marshall Plan	87	112	135	55
All participating countries exclusive of Germany (Federal Republic)	105	130	145	37

Repair of transportation and communication and labour commitment to production -> rapid revival.
Already in 1947: industrial production exceeded 1938 levels (except Western zones of occupied Germany)
Fields had to be plowed and planted. Despite climate constraints Europe reached 80% of pre-war levels.
-> workers and left-wing parties began questioning the need to subordinate their economic and political goals to the national recovery effort -> strikes

Conditions were most difficult in Germany:

- no rail, telephone or mail service
- Months before restoration of basic utilities
- Little factory production
- Country divided in 4 zones
- Difficult internal trade -> Allies' reluctance to rebuild railway
- Industrial heartland was occupied by Soviet who dismantled factories and equipment as reparations
- French plan called for permanent Allied occupation, detaching the Ruhr (industrial) and placing it under international control + transferring Saar (steel) to France.
- US: no economic rehabilitation of Germany expect to prevent spread of disease and unrest
- March 1946: Level of Industry Plan -> restrict German industrial output to 1/2 of pre-war level.

-> Discouraged investments to industrial activity.

- 1947: German industrial production barely 1/3 of pre-war levels
- Agricultural production ↓from 70% pre-war to 58% 1947/8: fertility of soil was maintained during the war, but transfer pf livestock now went the other way -> shortage in fertilizers.
- Spring 1947: food rationing ↓ to less than 800kcal/day -> little energy used to forage for food and barter for coal. People sold whatever they could get. Physical survival depended on food aid from UK and UK.

Dilemma for Allies:

- Germany was European economic centre, supplier of capital goods needed for recovery and growth.
- Level industry plan limited production of machine tools to 10% of pre-war levees.
- US vision of an agricultural-focused Germany was not compatible with the needs of European economy
- Cold War 1946: US thinking shift: Allies could not afford to dismantle Germany

The Transition to Sustained Growth

Key to restoration = repairing industrial capacity
-> Growth and higher living standard were also a shared goal

- US -> insist on open trading system -> European needed to ↑ productivity to remain competitive

- "The psychology of 1945" : priority to growth (mostly industrial)

Recovery in the post-war early years was driven by industrial spending. (Priority to heavy industries)
The Monnet Plan (1947): French modernization program to emphasize investment in transportation, energy, iron and steel.
-> Implemented through privations of public funds on favourable terms: Modernization and Equipment fund
-> Assumed an ability to import large amounts of coal, intermediate inputs and machinery.

Feasibility constraints:

- Europe produced limited amounts of capital goods because of restriction on occupied Germany
- Machinery and other inputs could be purchased from US for hard currency
- BUT: European balance-of-payment position was weak.
- Countries had used foreign assets to pay for defense
- By 1947: rest of gold and dollar reserves to food imports, and exports could be used to finance imported inputs only to limited extent.
- Borrowing abroad was infeasible -> political uncertainty and memory of disastrous interwar loans

1947: poor harvest + incompatibility of governments' investment plans = 5% of GDP deficit
-> sustainability and growth problems

Finance for imbalances remained uncertain:

- exports still depressed
- No internal financing generation
- Worrying current-amount deficit -> imports exceeded exports by 65%

a. Trade was the slowest-growing component:

- little scope for Europe to respond to curtailment of external financing
- Eliminating deficit required reducing demand for imports
- Private consumption could have to be reduced further -> threat to social stability
- OR: cut of investments -> threat for growth

b. Price controls: an obstacle to growth

- Environment of shortages: war controls remained
- Used to direct labour and raw materials to painting production of key commodities
- Wages were fixed to insure competition for labour would not draw manpower away from priority
- Workers could only take listed hobs on government employment exchanges.
- To prevent price cut out and minimize unrest -> authorities froze prices of food, fuel, clothing.
- Prevent profiteers from exporting scarce goods -> embargoed foreign sales.
- Regulation of lending and investment of banks -> absorb public sector's debt by investing in government bond
- Prevent excess liquidity -> limited movement of prices

So long as prices were frozen below equilibrium levels, producers had little incentive to bring their goods to market.

- Unable to purchase consumer goods, workers spent time not at the factory but cultivating their garden plots and foraging in the countryside

- Unable to purchase supplies, firms were reduced to producing their own inputs, at considerable cost.
- Most severe in Germany: fixed wages and prices continued to form basis for administered price structure. Firms only produced goods that could be exchanged with others, that were demanded by workers to supplement their wages or required to qualify for additional allotments of raw materials.
- Black markets existed but very high prices to compensate for risks of elect transactions.
- Absenteeism was widespread.
- Activity peaked on weekends when city dwellers took their household to the country side to barter for grain or potatoes.
- Shortages and price distortions new worse the longer government continued running deficits and printing money -> widening of black-market - controlled prices gap.

-> Decontrolling prices and allowing the market to operate, meant accepting that the war was finally over and the economy could again be entrusted to market forces.

- reluctance: market system had not been used for most of the decade, only used in 1930s ending up disastrously with the Great Depression
- Communists and socialists did not accept legitimacy of market outcome: backbone of wartime resistance movement (strong political position following armistice)
- As long as budget deficit and money printing to bridge the gap: decontrol -> inflation

c. Policy uncertainty

- communists occupied important positions in French and Italian governments.
- Denmark: communist popular in elections but social democrats refused to share power
- Few instances where Communist Parties made strong bids for state power, but their presence in or support for post-war coalitions heightened policy uncertainty
- Britain: labour government coming to power in 1945: ambitious industrial nationalization program.
- Germany: Social Democratic Party: nationalization of industry + retention of price controls.
- British appointed Viktor Agartz in their occupation zone to support f planning, state control, and centralization.
- Socialization of industry was advocated even by the main opposition to the SPD
- Ahlen Program: condemned "the capitalist economic system" and called for nationalization of heavy industry, planning and workers participation in management

Normalization and the Political Economy of the Marshall Plan

- Restocking the shelves required removing price controls
- To avoid inflation budgets had to be balanced and excess of money and credit reduced.
- Reducing pressure of demand would:
  - strengthen balance of payment -> private enterprise allowed to import raw materials and intermediate inputs
  - Slow the rate of growth and weaken support for market system unless private invested to offset reduction in public ones (requiring elimination of fears of confiscatory taxation and nationalization)
- All of this required political consolidation

Basis of the normalization were in Europe

- political extremism weakened by experience of the 1930s and by absence of large-scale reparations
- Costs of taking instruction from Moscow became clear when Soviet actions were revealed
- US Marshall plan

Marshall plan:

Financial:

- provided 13 billion $ in US government grants over 4 years relaxing external constraint
- Solved the problem of having to export in order to pay for imports but being unable to produce for exports without importing
- Sustained European strategy of investment-let growth and reconciled it with higher living standards.
- Incentive to embrace market: bilateral pacts with US to decontrol prices, stabilize exchange rates and balance budgets -> prerequisite for a functioning market economy -> ↓ uncertainty on property rights
- Helped restoring operation of price mechanism by reducing inflation pressure
- Germany: possibility to offer concessions and avoid to roll back in liberalization measures
- France: funds used to pay for public enterprises and public debt

Political:

- It also tipped the balance of political power towards centrist parties -> opposition to socialism.
- France: Mouvement Républicain Populaire: US was a more reliable supported than USSR
- Belgium, Luxembourg and Italy: dismissal of communist ministers.
- Denmark: major setback of communism

-> it created a split between Socialist and Communist parties with Socialist accepting the Marshall aid and Communists receiving Moscow orders to refuse it. -> Marginalization of Communism

Definition of conflict:

- between central planning and markets
- Hennings: Marshal plan = private ownership economy -> end to debate on other economic organization forms
- Europe created its own form of market capitalism: "mixed economy", social welfare state, social market economy in which state regulated and ran industries, involved in wage negotiation and investment decisions -> special safety net.

-> Soviet Union was invite in the Marshall Plan

- June 1947 Paris: Russians walked out when asked to discoed their economy and accept preconditions for extension of the aid.
- Czechoslovakia and Poland tried to join US but were overruled by Stalin.

The response to price liberalization was immediate

- stores flooded of foods
- Absenteeism fell
- Expansion of production
- Budget deficits fell and money printed slowed.
- Possible to lift import restrictions and to fully exploit comparative advantage in international markets.
- Marshall plan also helped importing scarce production imputes

Encourage European integration:

- "United States of Europe" : close economical and political relations making war unthinkable (+ Front against soviet union)
- Conference for European Economic cooperation -> Organization for European Economic Cooperation (OEEC) -> legislature for Europe -> other complementary institutions (interstate commerce commission and Central bank)

- Reconcile European countries to higher level of German industrial production -> drop claims on German reparations and drop of France insistence on Ruhr and Rhineland
- Six-Power Conference 1948 London: negotiation of creation of a West German state
- US and UK backed away from German enterprises nationalization.
- Beginning of 1947: fusion of UK and US administrative areas to offer more scope for rebuilding internal trade and production: limited resumption of commercial exports, mainly raw material and semi-finished products.
- By summer: modification of Level of Industry Plan to allow industrial to rise to 1936 levels.

-> "A Europe which includes Germany" was the solution of General Marshall and the US administration - George Marshall

Eichengreen (2007), Chapter 2: 'Mainsprings of growth'.

TABLE 2.1
Growth of gross domestic product, 1820–2000 (Average annual compound growth rate)

	1820–1870	1870–1913	1913–1950	1950–1973	1973–2000	1820–2000
Western Europe	1.7	2.1	1.1	4.5	2.1	**2.1**
Peripheral Europe	0.9	1.5	1.2	6.0	3.4	**2.1**
Eastern Europe	1.6	2.3	1.7	4.7	−0.2[a]	**2.2**[b]
World	0.9	2.1	1.8	4.8	3.0	**2.2**

Europe's economic growth from 1820 to 2000.
Western Europe grew more than twice as fast from 1950 through 1973 as it did over the 19th and 20th.
The exceptional nature of the golden age is clear
From 1973 to 2000: nothing major, 2.1 just as before golden age.

TABLE 2.2
Growth of real gross domestic product per capita, 1820–2000
(Average annual compound growth rate)

	1820–1870	1870–1913	1913–1950	1950–1973	1973–2000
Twelve Western European Countries					
Austria	0.7	1.5	0.2	4.9	2.2
Belgium	1.4	1.0	0.7	3.5	2.0
Denmark	0.9	1.6	1.6	3.1	1.9
Finland	0.8	1.4	1.9	4.3	2.2
France	0.8	1.5	1.1	4.0	1.7
Germany	1.1	1.6	0.3	5.0	1.6
Italy	0.6	1.3	0.8	5.0	2.1
Netherlands	1.1	0.9	1.1	3.4	1.9
Norway	0.5	1.3	2.1	3.2	2.9
Sweden	0.7	1.5	2.1	3.1	1.5
Switzerland	NA	1.5	2.1	3.1	0.7
United Kingdom	1.2	1.0	0.8	2.5	1.9
Regional average[a]	1.0	1.3	0.8	4.0	1.8
Five Countries of European Periphery					
Greece	NA	NA	0.5	6.2	1.7
Ireland	1.2	1.0	0.7	3.1	4.3
Portugal	NA	0.5	1.2	5.7	2.5
Spain	0.5	1.2	0.2	5.8	2.6
Turkey	NA	NA	0.8	3.3	2.4
Regional average[a]	0.7	1.1	0.5	5.1	2.5
Seven East European Countries					
Bulgaria	NA	NA	0.3	5.2	0.7[b]
Czechoslovakia	0.6	1.4	1.4	3.1	1.0[b]
Hungary	NA	1.2	0.5	3.6	0.9[b]
Poland	NA	NA	NA	3.4	0.3[b]
Romania	NA	NA	NA	4.8	0.6[b]
USSR	0.6	0.9	1.8	3.4	0.7[b]
Yugoslavia	NA	NA	1.0	4.4	1.6[b]
Regional average[a]	0.6	1.0	1.6	3.5	0.7[b]

Similar patterns are evident in Peripheral Europe:
- acceleration of growth in GDP between 1950-1973
- Subsequent fall back
- relatively high rates of growth in both 3re and 4th quarters of the 20th -> tendency to catch up with the Western European leaders
- no such tendency in Eastern Europe: fallen behind both the core and periphery. Disastrous post-1973

Performance of individual countries:
Germany, Austria and Italy: Fastest growth in Golden Age
Wirtschaftswunder, Austria's economic links to Germany, and Italy shift from agriculture to industry
UK: slowest -> rise of literature on country's failure
Greece, Spain, Portugal: bright golden age
Ireland: delay in inaugurating convergence process
Eastern Europe: little change in per capita output in the golden age -> strict regimentation of Soviet block and heavy central planning: lowest in countries with initial highest levels of output per person. Strong uniformity and stagnation even post-1973.

TABLE 2.3
Gross domestic product per capita and per hour, 1913–2003

	1913	1929	1938	1950	1973	2003
	GDP per capita as percentage of U.S. levels					
France	66	68	73	55	79	73
Germany	69	59	82	41	72	64
Italy	48	45	54	37	64	66
United Kingdom	93	80	102	73	72	72
EU-15 average	57	55	66	47	65	72
	GDP per hour as percentage of U.S. levels					
France	56	NA	NA	46	74	111
Germany[a]	59	NA	NA	32	79	98
Italy	42	NA	NA	35	78	100
United Kingdom	84	NA	NA	63	60	83
EU-15 average[b]	61	NA	NA	44	71	94

Europe and US:
Western European output and living standards ↓ significantly below those of the US in the first half of the 20th
1950: WWII disruption Europe had fallen far behind
acceleration between 1950 and 1973 was faster in Western Europe than in the US -> elimination of 40% of the post-WWII gap

Different impressions for different parameters:

- Output and productivity: stagnation in last quarter of the 20th
- GDP per hour worked: shortening of the work year in Europe -> European and US productivity continued to converge but European worked only 90-95% of the US levels

TABLE 2.4
Average annual growth rate of output per worker and its determinants, 1950–2000

Country	*y*	*k*	*h*	*tfp*
Austria	3.58	4.50	0.71	1.62
Belgium	2.66	3.25	0.69	1.12
Denmark	2.15	3.47	0.34	0.77
Finland	3.16	4.68	0.97	0.97
France	2.86	4.06	0.77	1.00
Germany	2.92	4.05	0.71	1.11
Greece	3.32	3.95	0.94	1.39
Ireland	3.77	3.17	0.62	2.31
Italy	3.52	3.34	0.86	1.85
Netherlands	2.19	2.92	0.76	0.71
Norway	2.50	3.05	0.44	1.19
Portugal	3.74	3.73	0.72	2.03
Spain	3.58	2.99	0.88	2.00
Sweden	1.93	3.36	0.67	0.37
United Kingdom	2.02	4.03	0.59	0.29
Memo item: United States	1.90	1.88	0.67	0.83

Note: *y* = output per worker; *k* = physical capital per worker; *h* = human capital per worker; *tfp* = total factor productivity per worker.

Relatively to the US, 1950 technological leader:
All European countries converged in the 2nd half of the 20th
Physical capital stock per worker grew faster than in the United States -> importance of investment for economic growth
Human capital (from average years of schooling) ↑ faster in 2/3 of European countries
Technical change: faster too
Outsider is the UK whose recovery only started with Tatcher, and Ireland whose boost came later

Probing Deeper

What deeper economic factors explain these patterns?

Catch-up: rapid growth achieved by reversing the loss of output and destruction of WWII.

- End of 1940S: capital stocks below long-run equilibrium levers
- High unemployment sure to general disorganization

-> Wartime disruptions could grow fast by rebuilding capital stock and expanding employment

1947: industrial production across Europe exceeded 1938 levels (except Germany)
1948: Germany had completed its monetary reform and matched the levels of 10 years earlier.

Capital stocks had not fallen significantly -> The lesson of strategic bombing: as fast as air power destroyed productive capacity, the target country could repair and replace it

There was still scope for catch-up:

- Had Europe continued to grow between 1938 and 1946 output and the capital stock would have been roughly 20 % above prewar levels at the end of the 1940s.

But:

- Investment had been depressed by difficult 1920s and 30s
- larger capital stock would have meant a higher capital–labor ratio and higher aggregate output
- Unemployment was also high -> scope for rapid growth: putting unemployed back to work

Catch-up requirements:

- higher than customary levels of investment: striking feature of 50s and 60s
- Most European countries experienced a rise in investment shares of GDP (including in housing)

Convergence: additional growth achieved by closing the efficiency gap vis-à-vis the US.

- By end of 19th: US -> significant lead in GDP per capita by controlling endowments of land and resources and pioneering mass-production methods
- Creation of unmatched unified internal market -> develop multidivisional corporations exploiting economies of scale ensuring producers had reliable supplies of raw materials and economical access to dispersed local markets.
- Economies of scale: cut production cost -> emergence as world-class exporters + develop mass production.

-> It is evident in the gap in GDP per capita between Europe and US

- It widened during the 20s with the adoption of assembly-line methods and commercialization of new technologies.
- Then narrowed in the 30s because of exceptional severity of Depression on US
- Then widened again in the 40s with expansion of wartime capacity in the US
- By 1950: technological gap had grown to unprecedented side

-> Three decades of low investment -> no European assimilation of mass-production -> no technology

Scope for rapid productivity growth if the technological backlog accumulated was exploited successfully:

- it required freeing up exports and investment
- It required trade

TABLE 2.5
Growth of intraregional and total exports, 1950–2002
(Average annual percentage growth rates)

	Intraregional exports		*Total exports*	
	1950–1973	*1974–2002*	*1950–1973*	*1974–2002*
Austria	14.2	10.8	13.2	10.4
Belgium-Luxembourg	13.5	8.5	12.1	8.8
Denmark	9.3	8.5	10.1	8.3
Finland	12.9	9.2	11.4	9.6
France	15.0	8.5	12.6	8.4
Germany	18.6	8.3	19.8	8.5
Greece	12.5	6.9	12.3	8.0
Ireland	9.6	13.4	10.5	14.1
Italy	15.9	9.1	13.8	9.3
Netherlands	14.5	8.8	13.4	8.8
Portugal	13.2	11.7	11.6	10.5
Spain	14.0	13.2	12.5	12.0
Sweden	11.8	7.2	11.2	7.5
United Kingdom	9.3	9.7	6.9	8.4
EU-15	13.2	9.6	12.2	9.5

Source: International Monetary Fund, *Direction of Trade Statistics* (1948–1980 and 1980–2003 versions).

In the 1950s-60s: growth of intra- and extra-European trade stands out from the past.

- Trade integration removed market size as a constraint on the adoption of new technologies.
- Code of Liberalization of the Organisation for European Economic Cooperation (OEEC), the General Agreement on Tariffs and Trade (GATT), and the Common Market -> powerful motors for trade.

Technology transfer

- Science: a growing share of technical progress -> spread of news knowledge.
- Generic knowledge was increasingly written down -> speeding diffusion (journals, conferences, papers)
- New communications technologies eased the transmission
- Internalization of commercial contracts for multinationals (Ford MotorCompany operating in several countries)

TABLE 2.6
Research and development indicators

	Number of qualified engineers and scientists in R&D (1967)	*R&D expenditure as a percentage of GNP (1963)*	*Average annual growth of R&D at current prices (1963–1967)*
Austria	2,401	0.3	28.0
Belgium	7,945	1.0	6.5
Germany	61,559	1.4	13.2[c]
France	49,224	1.6	17.9
Italy	27,755	0.6	11.3
Netherlands	20,500	1.9	15.9[c]
Spain	3,842[a]	0.2	19.2
Sweden	6,566[f]	1.4	9.3[c]
United Kingdom	53,865[g]	2.3	6.9[c]
United States	537,273	3.5	3.9[h]

- US encouraged Europe to visit their factories (Marshall Plan) to learn from their production

Technology transfers required the capacity to assimilate foreign knowledge.
Post-WWII showed similar levels of literacy and numeracy in Europe and US and Europe had an adequate number of engineers and technicians.
-> there was a "fit" between the knowledge to be transferred and the European system of technology transfer

- Continental Europe: vocational education and training.
- Majority of upper secondary students passed through vocational programs or apprenticeship training: learn use of tools and equipment.

-> Educational system was tailored on assimilating existing techniques rather than to create new ones

- prepared to understand manuals of machinery and equipments

Exception: UK: more general higher education -> convergence to US productivity level was slower.

Technological advance also occurred in Europe itself:

- R&D labs of large European companies: advances in fundamental science
- Incremental innovation from observations and suggestions of skilled workers
- This progress did not entail ↓ in competitiveness or heavy investments

BUT: when sustaining the rate of technical change required more radical innovation, a more fluid economic environment was needed.

Growth of labor force

- 1947-1950: migration from Eastern to Western Europe of extensive trained and skilled workers
- Mass labor migration in most productive zones: France, Britain, Switzerland…
- 1960s: first members of post-war baby boom started entering the labor market.

Modern Industrial sector

- consolidation of small firms + adoption of new agricultural technologies -> workers moved from Southern to Northern Europe and from farm to city without depressing food supplies
- Industrial and service sector ↑ more rapidly -> significant growth
- Elastic labor supply minimized the threat of sharply rising wages choking off investment
- Much additional labor was unskilled -> no constraint on growth

Breakdown of wage discipline

-> With very low levels of unemployment + ↓ workers supply from the East (Berlin War) and from agriculture (France) + no more memories of the 1930s high unemployment -> strikes and political demonstrations of the hot summer of 1968.

TABLE 2.7
Output and inflation stability, 1961–2000

	1951–1960	1961–1970	1971–1980	1981–1990	1992–2000
	United States				
Real GDP growth					
Average of annual rates	3.4	4.2	3.3	3.2	3.6
Standard deviation	2.9	2.0	2.5	2.2	0.6
Inflation					
Average inflation	2.1	2.8	7.9	4.7	2.6
Standard deviation of inflation	2.3	1.7	3.1	2.2	0.5
	EU-15				
Real GDP growth					
Average of annual rates	4.8	4.8	3.0	2.4	2.1
Standard deviation	1.4	0.9	1.7	1.2	1.1
Inflation					
Average inflation	3.6	3.9	10.8	6.7	2.4
Standard deviation of inflation	3.0	0.8	2.8	2.9	0.9

-> The share of profits in GNP fell -> declining investment -> reduction in rate of return on new capital

However: Standard deviation of real GDP was <1%.
No economy-wide crisis, no serious recession.

- little use of monetary policy: profound stability to attributable to the Keynesian revolution
- fiscal policy (difficult to tailor public spending to the cycle even if politics prompted pro-cyclical fiscal actions). Fiscal policy worked better when autonomous.

In 1973: the business cycle returned.
Boltho believed that macroeconomic policy worked to stabilize demand and out- put before the 1970s simply because households and firms believed that it would.
Indeed cyclical instability resurfaced.

Why?

The growing incidence and severity of shocks:

- Bretton Woods System (pegged but adjustable exchange rates) broke down in 1973 -> threat to trade -> dollar unpegged from gold -> fear of inflation
- Europe's replacement: Snake in the Tunnel, Snake in the Lake and then European Monetary System organized by German Deutschmark but they stabilized currency only in the 80s
- 1973: first oil shock resulting from ↑in prices by the Organization of Petroleum Exporting Countries -> period of commodity price inflation.

Note: there had been some disturbances in the third quarter of the 20th but not as big as the above-mentioned.
Ex: commodity price boom Korean War (1950-1953), Suez Crisis (1956), run to US gold reserve (1960), Vietnam War (1955-1975)

- Interwar marked by disruptive stiles and disputes over wage and work conditions
- Excessive wage demand -> stifled profitability, ↓incentives to invest.

-> development of neocorporatist structures: tripartite institutions involving government, management and labor to restrain wage growth and invest profits

- Wage increases did not squeeze profitability
- Less labor unrest
- Neocorporatist bargain: asked unions to limit wage demands in order to make profits available for modernization and capacity expansion and assuring that labor income would also ↑

Institutional bargains

1) Parties could monitor one another's compliance with the agreement:

- worker representative in boards in Germany, -> "co-determination"
- Work councils: information-disseminating role in firms

-> this German model expanded: representatives of labor worked with management and government -> understandings on employment and investment policies.

- Norway: promote worker participation in management decisions
- Sweden 1949: Cooperative Body for Increasing Exports and Production or "Thursday Club"

2) Rewards and penalties to encourage cooperation:

- Austria: manufacturers were sold intermediate input at submarket prices in return for investment
- Sweden: regulation on payment of dividends by public companies
- Germany: tac breaks for investment but not for firms paying out profits as dividends.
- Central Banks supported bargain with low-interest-rate policies

3) Public programs bonded labor:

- Belgium: social security scheme in return for labor's adherence to a 1944 social pact limiting wage increases
- Norway: unions' promise of wage restraint in turn for legislation mandating paid vacation and reduced workweek
- Netherlands: unemployment insurance and old-age pension + extension of social security coverage
- Sweden: compulsory health insurance, expansion of disability insurance
- Denmark: expanded sick pay

- Germany: indexed retirement incomes to living standard
- Austria: tax and social insurance concession
- Italy: mandatory social security contribution by employers

To avoid defect from agreements:
- Follow-the-leader approach
- Centralized bargain in trade union federations and employers association
- Sweden: LO/SAF agreements and negotiations between, branch unions and employers

Institutions of regional integration

- 1947: UK restored current-account convertibility
  - Reserves out of the country
  - Reimposed controls on merchandise transaction

-> need for European cooperation

- European Payments Union 1950: response coordination: members accepted the OEEV Code of liberalization -> remove import controls at predetermined pace.
  - Members had credits from EPU partners to finance temporary deficits
  - US provided both political and financial support
- European Coal and Steel Community 1951: capacity of these industries committed to peaceful use
  - French Leadership (Robert Schuman and Jean Monnet)
  - US Truman administration gave critical support.
  - Joint High Authority to monitor production and investment for the 6 founding members (Belgium, France, Italy, Luxembourg, the Netherlands and West Germany)
  - Common Assembly, Council of Ministers and High court -> Predecessor of European Commission, Parliament, Council ad Court of Law of 1958

European Union (Maastricht 1992-3)

- Beginning: sustaining the growth of Europe's trade
- Second half of 20th: Intra-European trade ↑ faster than with the world -> allowed reconstruction along export-oriented lines.

-> facilitated adoption of US mass-production methods, encouraged productivity growth

TABLE 2.8
Cost competitiveness after exchange-rate changes, 1947–1955 (1938 = 100)

	1947	*1948*	*1949*	*1950*	*1951*	*1955*
Austria	137	113	118	67	75	70
Belgium	143	138	132	115	117	115
Denmark	106	104	97	78	80	86
France	176	119	111	97	107	122
Germany	52	56	65	52	52	52
Italy	98	88	85	82	82	86
Netherlands	87	87	81	66	68	68
Norway	88	84	79	63	71	75
Sweden	104	104	94	72	83	86
Switzerland	100	96	96	94	91	91
United Kingdom	87	88	81	62	63	69
OEEC Europe	96	91	87	71	73	78

Wholesale prices expressed in dollars were lower than the US's in contrast with 1920s where countries had attempted to push both prices and exchange rate down t -o prewar levels.

Post WWII: undervaluation was the rule (except France and Belgium who then showed poor growth)
Competitive labor costs:
- shift resources into manufacturing (strong learning effects and productivity spillovers)
- exploit economies of scale and scope
- Encourage US investment -> technology transfers

Limitation of consumption and saving promotion -> stronger current account and more relaxed balance-of-payment constraint.
Stability of exchange rates also kept interest rates low -> important for investment

European growth was both investment-led and export-led and needed institutions to facilitate removal of trade barriers.
Domestically: postwar political settlement: strengthened the hand of center-left and center-right parties.

- Electoral reforms to ↓ danger of extremists groups.
- Ensure policy stability, which sustained investment
- Easier to sustain neocorporatist bargain when low risk of it being reneged

Internationally: GATT system of trade liberalization and the Bretton Woods System of pegged but adjustable exchange rates encouraged the expansion of Europe's trade.

- International Monetary Fund to lend support and money in eventual dislocations
- Increase in intraeuropean trade thanks to institutions ensuring regional liberalization

Institutions and History

Growth requires:

- Markets
- Institutions capable of dressing coordination problems

Why did Europe develop a set of arrangements so well suited to these tasks?

Examples in History:

- Pierre Dubois 1306: proposed permanent assemblage of European Princes to promote lasting peace
- William Penn 1693: European Parliament proposal
- Jeremy Bentham: European Assembly
- Jean-Jacques Rousseau: European Federation

-> predisposition for new postwar solution for European integration.

US attitude:

- US troops still in Europe + Marshall Plan -> Leverage
- Truman Doctrine: encouraged European integration for exports and to build a defensive wall against USSR

-> analogical reasoning to convergence of US North/South resolving and avoiding conflicts

- Financed EPU with 350 million $ and encouraged ECSC.

European Continent:

- late industrialization
- Key role of government in surmounting obstacles to economic growth and preventing falling behind competitors
  - Encouraged development of banks to meet demanding capital requirements of late industrialization and substitute undeveloped financial markets
  - Pioneered social insurance
- Roman Catholic and Christian democratic theology encouraged institution to free citizens from "tyranny of the market"
- 1914-1918: precedent for gathering of unions
- Russian revolution encouraged Western Europe to incorporate labor movements into their overseeing processes to discourage extreme radical solutions.
- 2 symbols of this effort: treaty of Versailles and International Labour Office

- Postwar recession undermined labor's bargaining power, still it was better organized than before WWI
- Continued ↑ of government spending on basic social services, ↑ in social transfers
- Basic Agreement (Norway 1935), the Peace Agreement (Switzerland 1937), and the Main Agreement (Sweden 1938) -> social role and contribution to decision-making of civic representative groups

-> response wouldn't have been the same without the perception that the Depression was a crisis equivalent to war.

The smaller countries developed the most successful corporatist pacts:

- Social affinity: easier to achieve compromises when everyone knows someone seriously affected
- Greater vulnerability to security challenges: external threat helps compromise

French illustration that history matters:
Unsatisfactory nature of the Popular Front experience -> neocorporatist response was less systematic in France than elsewhere after WWII.

Explanation of state corporatism (use of centralized negotiations under government control regulating labor and product market - Franco, Mussolini, Hitler)

- corporatist arrangements: way to bypass Parliament decision making and suppress democracy
- centralization of wage negotiations in order to strengthen their control over the economy
- Allies chose to use them rather than dismantle them
  - American occupation in Germany authorized renewal of union activity already in Sept 1945
  - June 1946: permission to establish trade union associations

Given the 1930s experience:

- socialist and working-class parties aimed at protecting from market instability
- Marshall plan -> American economy take a temporary corporatist turn under the National Industrial Recovery act.
- General lesson: need for government to supplement and stabilize the market

Communist Unions opted for pragmatism and shared growth over ideology and revolution:

- encouraged by Moscow authoritarianism -> conflictual with Western Democracy -> political marginalization of communism with Marshall Plan
- Communist parties and unions subordinated their revolutionary aspirations to national recovery effort

Mancur Olson views

- periods of rapid growth typically follow major disruptions that clear away the inheritance of vested interests and restrictive institutional arrangements
- The absence of historical legacy, not its existence is the precondition for rapid growth

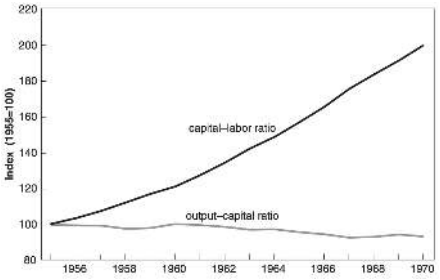
Critiques:

- War did not removed French or German influence
- An elaborate set of institution development out of inherited arrangements and continued to shape interactions of interest groups
- institutional continuity more than institutional disruption provides the backdrop to economic re- covery and growth

The End of the Golden Age

End of the 1960s: output and productivity growth slowed down and macroeconomic instability appeared
Why?

1) Europe's success in building up its capital stock after a long period of subpar investment + exhaustion of elastic supplies of labor and hence to the disappearance of super- normal returns -> Rise of capital-labor ratio toward steady-state levels
2) Comfortable fit between the continent's institutions and its technological circumstances. The more efficiently the technological backlog was exploited, the less scope remained for fast growth through the old system of technology transfer -> more difficult to grow by building more factories along the lines of existing factories and by purchasing blueprints, licenses, and operator's manuals from the US



Institutions became obstacles to growth

- Sustaining growth now involved investing in new products and unproven technologies
- More difficult for government holding companies, planning commissions, and bureaucrats to identify high-return uses for funds
- The bluntness of their incentives compared to those of private entrepreneurs became a liability
- Need for innovation -> new educational style was needed
- Industry-wide unions discouraged wage differentiation between enterprises operating under different conditions, erecting a barrier to new-firm formation.
- Compression of wage differentials between skilled and unskilled workers discouraged acquisition of the specialized knowledge essential for an innovation- based economy
- High taxes on top incomes blunted the rewards for entrepreneurship and risk taking.

At the same time: wage restraint began to weaken

- entry of a new generation of workers into the labor force, fading of 30s unemployment memories
- 60s: strikes, wage inflation -> lower investment rates after 1973
- European countries were committed to defending their exchange rates against the dollar -> inflation halted quickly -> no incentive for workers to demand compensatory wage increase
- Bretton Woods System: anchored expectations moderated the impact of demand stimulus on inflation and wages.
- With the rise of capital mobility, the anchor began to drag
- Unions worries about persistent inflation + no credible exchange-rate commitment
- Keynesian demand stimulus increased wage demands and inflation, not employment and growth
- Monetary and fiscal policies now stimulating inflation lost their capacity to stabilize the economy

-> Slowdown in growth -> ↓incentive to adhere to postwar bargain (no future reward for current sacrifice)

European countries' response

- deepened governmental involvement in the economy
- Extension of welfare state
- Acceleration of Euronpean integration

To: Reinforce wage moderation, subdue inflation and stimulate exports and growth

- Extension of bone system, sanction and rewards

-> In return for a renewed commitment to wage restraint, unions were promised ↑in health and unemployment payments and larger social security stipends.
-> quickly entered diminishing returns: growing public spending and bloated state sector -> evident debt problems (high tax rates and welfare-states policies blocking innovation incentives and slowing the pace of labor reallocation)

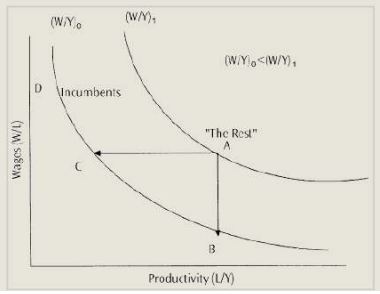
-> Policy consolidation: Thatcher's disinflation in Britain, Mitterrand's turn away from state-led expansion in France, and fiscal retrenchment in Denmark and Ireland.
-> 1986 Single Market Program: intensity product market competition and monetary unification
-> 1990s: halting progress in the direction of fiscal consolidation and labor market reform.

Amsden, A., The Rise of the Rest: Challenges to the West from Late Industrializing Economies, Chapter 1: 'Industrializing Late', (until p. 23)

In 1965, the rest (China, India, Indonesia, South Korea, Malaysia, Taiwan, Thailand, Argentina, brazil, chile and Mexico and turkey) supplied less than one twentieth of world manufacturing output while in 1995 it supplied nearly one fifth of it. Excluding the north America and Europe, we can divide the remaining countries in two sets: "the rest" as abovementioned, including those countries that during the war had developed some kind of manufacturing experience and "the remainder", comprising those countries which had not been exposed to economic and industrial modernization and failed to achieve industrial diversification.
The rise of the rest is a process that occurred in the second half of the 20th century, and it was based on industrialization without proprietary innovations, with only pure learning and total dependence on commercialized technologies in modern countries.

Knowledge-based assets

Economic development consists in moving assets based on primary product to assets based on knowledge (from unskilled to skilled workers), and therefore from primary sector to manufacturing. Manufacturing industry is the main knowledge-based assets one, since it allows the owners to produce and distribute products at a higher price than the market cost. Knowledge-based assets are characterized by three capabilities: production management and engineering, project execution and innovation.
There is then a great reluctance by a firm to sell or lease its intangible assets, since their value may be maximized if kept secret and exploited inside the firm. Even if the technological assets of a firm were to be sold, they remain highly dependent from skilled labor force who know the production process. Given imperfect knowledge, productivity and quality tend to vary sharply across firms in the same industry, and further when in different countries. The model of comparative advantage no longer works for latecomers, because latecomers cannot necessarily industrialize simply by specializing in a low-technology industry. Latecomers governments then have two choices:
Do nothing and wait for their exchange rate to realign, cutting real wages, even though there is no guarantee that skills will rise or that total costs will fall sufficiently (A → B)
Subsidize learning to give a sustainable jump to industrialization (A→ C)



Subsidizing learning or cutting real wages. L = labor; Y = output; W/L = real wage per worker; W/Y = unit labor costs. Unit labor cost loci are rectangular hyperbolas, the product of real wage and labor-output ratio. They, therefore, are constants.

The emulators of England during the second industrial revolution never faced such drastic choices because they industrialized together with technological change. American investors had "three-pronged" investments: in manufacturing plants, in managerial and technological capabilities and in marketing. France competition in the textile industry was possible thanks to a well-developed science-based chemical sector (for colored fabrics). Sweden accelerated industrialization with inventions such as the telephone, the separator, several electrical equipment and bearings. Japan entered the orbit of modern industry by innovating new ways to produce traditional products. Japan's lead in textiles and low-tech sectors was sustained by labor-market imperfections, with a smaller wage gap between the informal (labor intensive industries) and the formal sector (capital and skill intensive industries), with respect to its neighbors. In mid and high technology industries of north America entry barriers remained and the same happened for other multinational companies that succeeded in increasing their market power through innovation during the 19th century (Bayer, General motors, Pirelli, Fiat, Mercedes, DEMAG, Olivetti…). Latecomers governments, being

unable to compete with western and developed economies, applied downward pressure on wages, even though in some countries governments also opted for a strong institutional solution to prevent the formation of trade unions (Korea and Taiwan).

A new control mechanism

The rest then rose with a new, alternative economic model, governed by a control mechanism in which institutions impose discipline on economic behavior. The control mechanism of the rest was based on reciprocity, with subsidies allocated into manufacturing and with recipients of these intermediate assets subjected to monitorable performance standards, redistributive in nature and result oriented. This mechanism transformed the inefficiency of government interventions in the market into collective goods, minimizing government failure. The control mechanism involved a sensor, an assessor, an effector and a communication network. Industrial policy makers were price takers.

The first engineering experiment by the rest was to fix prices as is there was a free market, to allow manufacturers to buy and sell at world prices. Free trade zones were created to better exploit the low wage economy and to be competitive worldwide. But this policy proved to be effective only in few industries, since others were not competitive at all, neither in prices nor in production.

Economic engineering went a step further: greater subsidies were offered to textile and mid-technology industries to make manufacturing industries profitable. Reciprocity remained ad subsidies were to be tied to a performance standard (for example, meeting exports requirements). Several measures were undertaken to boost the manufacturing industry, including banks giving credit to borrowers only when they directly contributed with their own capital

Since the late 1950s, the allocation of subsidies in all countries of the rest was systematized: governments did not allow national industries leaders to fail, but allow their owners to go bankrupt, leaving production capacity intact. Another rising problem was corruption, which became endemic. The rest rose getting the control mechanism right, rather than the prices right. They were eventually able to increase exports and GDP per capita during the golden age and later.

China, India, Korea and Taiwan succeeded in become knowledge-based economies though heavy investments in their own proprietary skills to sustain national ownership of businesses and enterprises in mid technology industries and invade high technology sectors. In contrast, Argentina, Brazil, Mexico and Turkey continued to depend on foreign know-how

Overall, in step with globalization, foreign investment remained in every country, either to buy technology or to adapt it. In the rest, a division between integrationists and independents emerges: countries like Mexico sought to clone themselves to foreign investors, while other countries sought to create nationalist innovation systems to champion national leaders with their own proprietary knowledge-based skills. The different approach depended on the type of manufacturing experience a country had acquired (history) and on income distribution

Manufacturing experience

Manufacturing experiences create expectations on investors on the success of future manufacturing activities and created the qualified managers and engineers to implement investment plans

Prewar manufacturing experience fell into three main categories:

- Premodern: from artisan handicraft (china, India, Mexico and ottoman empire
- Émigré: from the know-how transferred by permanent emigrants
- Colonial: from colonial ties coming from north Atlantic (India) or to Manchuria, Korea, Taiwan from japan

Manufacturing experience is a stock of knowledge passing a specific historical and institutional filter. The depth of prewar manufacturing experience distinguished the rest and the remained. The type of prewar manufacturing experience distinguished the countries between "the rest". The greater the continuity in the transmission of knowledge before and after the war and the greater the discontinuity in the ownership of foreign firms, the greater the rise of national leaders and national skill formation.

The policy paradox of Income distribution

The primary sectors of "the rest" were highly diverse in terms of production, organization and resources distribution. The most unequal land distribution was measured in Argentina, Brazil, Malaysia, Chile, while Korea, Taiwan, Thailand, China and India had heavily invested in land distribution reforms. Counties that invested most in national firms and national skills also had a better land distribution.

- The flow of resources from agriculture to manufacturing was more sustainable in case of economies with equal land or income distribution, since subsidies could be lower and it was easier for manufacturing activities to succeed

- Intermediate assets (subsidies) may be allocated from the government either to a large number of firms (diffusion) or just to the national leaders firms (concentration), through industrial licensing, performance standards and profit distribution. Paradoxically, countries in the rest with relatively equal income distribution followed the concentration approach, while the ones with income inequality followed a diffusion approach (but the greater the inequality, the more diffusionist the policies and hence the greater the difficulty of creating national leaders with proprietary skills)

Institution building

Reciprocal control mechanism began to develop in the 1950s/1960s in all "the rest" countries, except for Argentina. The synchronization of institution-building in different countries represented and historic moment, defined by decolonization and by the rise in the ideology of development planning. Moreover, when a country adopted a new technology, its neighbor followed it right after (as it happened in Malaysia, Indonesia and Thailand).

Eichengreen, The European Economy Since 1945: Coordinated Capitalism and Beyond, Chapter. 12: 'Europe at the Turn of the Twenty-First Century' (until page 405).

A global divergence in labour expansion happened, particularly between U.S.A. and Europe, with a sharp decline in labour input in the latter, while there has been labour expansion in the U.S. and especially in Asia.
Firstly, it is important to start from the assumption that GDP is not a perfect measure of welfare in a society and that Europe enjoys lower level of infant mortality, earnings inequality, poverty rates and rates of violent crime.

Europe's GDP per capita has being from more than 30 years and is still today two thirds of the U.S. level. However, Europe's output per hour worked is just slightly lower or – in some countries, like France – even higher than U.S. level.

Unemployment is one of the major European problems nowadays, being twice the American level, and usually seen as the cause of its rigid labour market. However, this is not preventing Europe from dominating the international export market. Bureaucracy, which constitute often an obstacle to the creation of new start-ups, is considered in the meantime the cause of better product standards.

Difference in per capita GDP between Europe and U.S. is determined by three causes, happened after 1975:

1. European lower output per hour worked (although it is converging with U.S. level);
2. Fewer hours worked per employed (1500 hours in Europe against 1800 in U.S.);
3. Lower employment rates.

Despite this, employed labour force in Europe is very productive, mostly marginal workers are unemployed and European workers had a stronger desire to take some of their increased in income in leisure time, than their American counterparts.

There are different arguments trying to explain Europe's shorter hours:

1. The MIT School links them to a cultural preference of leisure over extra pay and states that this preference is accepted by political establishment. However, this is not supported by convincing experimental evidence and does not explain the lower participation rates among women and older men (factors that seem to be determined by differences in social security provision and similar policies);
2. The Minnesota School links them to different tax system (taxes increasing in income), since in U.S. lower taxes imply higher incentives to work. The overall gap in taxes between Europe and U.S.A. is 10% and an excessive tax burden makes people prefer leisure time over work. However, in some countries – such as Ireland – despite the lower level of taxes, hours worked are in line with European trends;
3. Alesina, Glaser and Sacerdote (2005) argue that one reason can be the presence in Europe of powerful unions and a rigid labour market that prevented in the mid-1970s a reallocation of labour (when productivity was declining in certain sectors). Unions in declining sectors encouraged shorter hours and work sharing and, due to coordination externalities (difficult to work if other are not working at the same time), this affected the whole economy.
4. Empirical evidence highlights that correlation is weak within European countries (e.g. Scandinavia has the highest tax rates, but low unemployment and high labour participation). Moreover, income taxes were very high during the Golden Age and this does not explain long term unemployment.

High unemployment is mostly structural, dominantly in declining sectors, there was limited occupational mobility relatively to United States.

Long term unemployment was characterized by workers that were out of employment for years and usually stayed unemployed. There was depreciation of human capital and consequent 'de learning by doing' (working skills, discipline). Youth unemployment was instead a new phenomenon with large differences within the Europe.

But even if unemployment was a problem for the whole continent, three countries can be deemed virtuous examples:

1. Netherlands. Unions, employers and the government decided to freeze wage increase and minimum wage while at the same time reducing labour taxes, thus keeping real wages stable. The government also implemented structural reforms of the unemployment insurance system and of disability insurance system (tightening qualification requirements), introducing for example part time work for women. This produced an increase in labour participation and therefore broader tax base and, in the end, fall in unemployment rate;
2. Ireland: Government supported the bargaining between trade unions and employers to limit wage increase in exchange for a decrease in labour taxes with the Program of National Recovery (1988). The balance between labour cost and productivity improved and employment rate increased. Moreover, labour supply was augmented by reduction in emigration and return flows from abroad that – with the reform of the educational system – made Ireland an attractive production platform. By 2000, unemployment decreased and GDP per capita rose.
3. Germany and Austria. Dual track educational system (combines apprenticeships in a company and vocational education at a vocational school in one course) and subsidies for low-cost employment and regional mobility.

A lot of favourable factors, such as demographic change in Ireland or currency depreciation (decline of European currency against dollar in the middle 1980s), in both Ireland and Netherlands are nowadays not available, but reducing unemployment is not impossible. In the European Union reforms as to be made, labour costs can be reduced through a limitation in wage growth accompanied by a decrease in taxes, there is the need for expansionary monetary policy, for a more flexible labour market and an action of the government to solve the problem of coordination due to the existence of several different unions, in this process the integration of eastern European countries will be an incentive for labour market reforms (to ensure that domestic producers don't relocate production in low wage countries).

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