

SUMMARIES OF LECTURES in ECO 303Y1:
the Economic History of Modern Europe, to 1914
for the Academic Year: 2012 - 2013

Updated: Tuesday, 2 April 2013

XXIV: Week no. 24: Lecture Topic no. 30: Wednesday, 3 April 2012 (last class)

Section VII. PROBLEMS OF THE BRITISH AND INTERNATIONAL ECONOMIES, 1870 - 1914:

Part C: Varieties of Economic and Industrial Experiences, 1870 - 1914: Living Standards and Industrial Scale

1. The Sharp Rise in British Living Standards: from the 1870s

a) The steep rise in real wages and living standards is the most significant feature of the British economy and society from the 1870s to World War I:

i) **perhaps the most significant increase to have occurred in England since the 15th century**, even if real incomes, having fallen during much of the Industrial Revolution era, were rising (for virtually everybody) from the 1840s.

ii) The evidence for this was presented in several colour graphs and many tables.

iii) **The levels of real wages and real incomes achieved in Great Britain, by the eve of World War I, were higher than anywhere else in Europe**, though not as high as had been attained, above all, in the US, or Canada, or Australia, in 1914: see the evidence in the graphs.

b) Causes of the rise in real incomes:

i) Deflation and nominal wage stickiness:

(1) In my view, the principal cause of the rise in British real incomes was the deflation experienced from 1873 to 1896: in that, while nominal money wages did not rise, or not by very much, the cost of living fell substantially.

(2) See the formula: $RWI = NWI/CPI$.

ii) causes of the deflation, 1873 - 1896:

(1) In turn the major cause of the was, despite the admitted power of monetary factors (as discussed in the previous lecture), cost-cutting and thus price-cutting technological changes.

(2) The most important was the combined impact of the steam-powered revolutions in transportation which opened up many new areas of the world to food production, for truly globalized world markets.

(3) The British, enjoying the combined advantage of Free Trade and the Gold Standard, gained from agricultural imports at world prices,

(4) while most other European countries protected their farmers with higher tariffs, thus denying the 'gains of trade' and the rise in real incomes that the British public enjoyed.

b) Medical Factors: higher living standards were also due to a veritable revolution in public health:

- i) **capital investments in water-purification** and mechanized sewage systems, from the 1880s.
- ii) **Momentous scientific discoveries of Robert Koch and Louis Pasteur:** led directly to these improvements
 - (1) of the bacterial transmissions of diseases (viruses were discovered only in the 1920s);
 - (2) and the realization that about 80% of diseases are water-borne.
- iii) No other discovery or innovation had such an enormous impact on the fall in mortality.

c) Education and Literacy:

- i) **Finally, great progress in literacy:** provided yet another significant contributor to rising living standards
- ii) **especially from public investments in mass primary-school education:** a country's social and economic progress can best be measured (in my view) by calculating the ratio of total expenditures (capital and gov't) in education to those in the country's military and police forces

2. Questions of Industrial Scale in the British Economy and British Economic Growth: 1870 - 1914:

a) The role of Free Trade and the Gold Standard:

i) **You are advised to consider here the possibly negative role of both Free Trade and Laissez Faire in preventing the British from engaging in industrial cartels**, which together, as we saw, were principal agents of a dramatic increase in industrial scale in several industries not only in Germany, but also in France and Russia.

ii) Note that in Germany, France, and Russia the state fostered the growth of cartels and large-scale industries

- not only through protective tariffs (see Russia' Mendelejev Tariff)
- but also by law and judicial institutions, which upheld the validity of cartel contracts, which were illegal in Free Trade Britain.

iii) **A free-trade anomaly:** internal free trade, as we saw last term, with the Industrial Revolution, and especially with the early transportation revolutions – canals and the early railroads – in achieving market unification did promote larger industrial scales:

iv) **in having a few large national firms serve the entire national market**, instead of dozens of small regional firms serving their own local markets, protected by 'the tariff of bad roads'

b) The role of banking institutions:

- i) the fact that British banking was still dominated by deposit banks that specialized in either short term lending or discounting for working capital rather than fixed capital needs
- ii) and the virtual absence of investment banks in the British economy, until the mid 20th century.

c) **The mainstays of the British economy from 1870 to 1914 remained those already seen:**

- i) coal mining, metallurgy, textiles, shipbuilding, international trade and finance.
- ii) British supremacy in world trade and finance was in part the product of its supremacy in shipbuilding, gained only after 1870, but lost after World War I.
- iii) Shipbuilding, shipping, and finance (banking, insurance, overseas investments) together provided the most powerful force for growth and prosperity in the British Victorian economy of this era.

Part D: Industrial and Commercial Advances: the Consumer Goods Revolution.

1. The Consumer Goods Revolution, 1870 - 1914:

a) **a veritable revolution in consumer goods** :was the associated and equally important aspect of economic and social change in the British economy from the 1870s to World War I, and thus during the so-called 'Great Depression' era,

- i) both their production and distribution.
- ii) The tertiary sector, for merchandising, and distribution is equally important.

b) Causes of the Consumer Goods Revolution:

i) the product of the two related factors just discussed:

- (1) the sharp rise in real wages and real incomes, and
- (2) increased levels of literacy with advances especially in primary education.

c) Consequences of these two factors:

i) Thus, given that the major factor in the rise of real incomes was the sharp fall in the cost of foodstuffs, for which demand is relatively inelastic,

- (1) that change permitted most of British society to spend far more of their disposable incomes on other consumer goods,
- (2) those that constituted this revolution: e.g., a wide range of new electrical goods and appliances, sewing machines, bicycles, and later, also automobiles, cameras, telephones, machine made clothing and footwear, packaged consumer goods, and a wide variety of paper publications: books, newspapers, magazine, journals.

ii) That latter aspect – the importance of the variety of print media – of course reflects as well the improvements in mass literacy, mass education.

d) The Revolution in the Tertiary Sector: mass merchandising

i) This Consumer Goods Revolution would not have been possible without a related revolution in the tertiary sector: marketing and distribution.

ii) That involved especially:

- (1) the introduction of French-style department and chain stores,

- (2) with standardized, pre-packaged goods, and
- (3) stipulated, advertized prices (no market haggling for individual items).

iii) **That mass advertizing in turn depended on the development of the paper-publishing industries:** book, journals, magazine, newspapers, flyers, etc., for such advertizing, in turn necessary for mass marketing.

iv) Both thus involved a leap-forward in scale economies for marketing and distribution.

2. The New Industries in Britain, from the 1870s:

a) **The two key new industries of the so-called Second Industrial Revolution, both of them coal-based:**

- i) the electrical industries and the chemical industries,
- ii) in which Britain was, by almost uniform agreement, a failure.

iii) **What was the source of that failure in the German-style electrical and chemical industries:?**
 - the relative lack of British skills in research sciences and engineering, and poor links between such sciences and business, as we previously found in comparing British and German businesses and industries in this era?

b) **The new electrical industries:**

i) the chief factor may not have been science and education, but natural resource endowment (or an anomalous consequence of abundance of coal).

ii) **one of path dependency:** Britain's overwhelming reliance on coal gas -- from having such abundant, cheap coal -- for urban mass lighting.

iii) **The Germans, lacking such forms of lighting, had quickly taken up electrical lighting,** which in turn had provided one of the essential foundations of mass consumption and thus of large scale mass production or generation of electrical power (which in turn had convinced investment banks to support this new industry).

iv) **Britain in fact did not even have a central grid for electrical power until the mid 1920s:** and did not switch to electrical power for household use until the 1930s.

c) **The Chemicals Industries:** failure in the coal-based industries but surprising success in an even newer wood-cellulose based chemicals industries

- i) For the coal-based chemicals industry there is not such a ready explanation;
- ii) Science and Education? But the convenient theory of British inferiority in sciences and engineering does not wash well here: because Britain in fact achieved major successes with major innovations in an entirely new branch of chemicals: wood based cellulose chemicals.

iii) **Paper products:**

(1) The most important aspect of innovations in this new industry was in the production of vastly cheaper forms of paper and newsprint:

(2) as a substitute for costly and inelastic supplies of linen-rag based paper (still the best paper in the world): produced by immersing wood chips or wood pulp in lime sulphite.

(3) Here again, the forces for industrial expansion were not just the sharp rise in real wages and urban mass consumption, but also, again, mass literacy.

iv) The other two major branches of the cellulose chemicals industries were:

(1) nitrocellulose plastics, to displace costly and inelastic supplies of bone, horn, and even metals: celluloids and bakelite, in particular

(2) rayon, originally developed to be a substitute for silk but became instead a substitute for cottons -- and thus ironically provided one of the reasons for the downfall of the British cottons industry.

(3) By the 1920s, Courtauld's was producing 50% of the world's supply of rayon.

v) Cartels in chemicals:

(1) By the 1920s, with an end to Free Trade, the British chemicals industries had become a powerful cartel in the form of Imperial Chemical Industries,

(2) which divided world markets with two other cartels in the inter-war period: Germany's I.G. Farbenindustrie and the U.S. Dupont Nemours.

d) The Automobile Industries:

i) The final topic is the emergence of the British automobile industry, which, before WWI, was no competitor to the German, French, or American industries.

ii) Its story is intriguing, an somewhat irrational:

(1) it began with the sewing-machine industry in Coventry (Midlands), which, during the slump of the 1880s, used its industrial techniques to produce bicycles, developed and popularized by the French.

(2) That promoted the demand for personal as opposed to public transport (trains, trams, etc) and led to the development there of the British automobile industry.

iii) But influenced by the industrial format of sewing machines and bicycles, it was far too small scale, with over 200 firms in this region to World War I.

iv) The decisive changes came with World War I (1914-18):

(1) It transformed this industry by adopting American-style mass production, assembly line techniques to produce tanks and armored cars.

(2) That in turn created a new inter-war industry -- in the 1920s and 1930s -- that rapidly surpassed the French and German to be second only to the US in world trade.

v) Of course the backward and forward linkages of automobiles, buses, and trucks gave it the impact on the 20th century world economy that steam-powered railroads had on the 19th century economy.

e) W. Arthur Lewis (1978) on the importance of the Consumer Goods Revolution:

i) 'The essence of the industrial and agricultural revolutions in the first three-quarters of the nineteenth century was in new ways of doing old things: of making iron, textiles, and clothes, of growing cereals, and of transporting goods and services..... [But] In the last quarter of the nineteenth century the revolution added a new twist -- that of making new commodities: telephones, gramophones, typewriters, cameras, automobiles, and so on, a seemingly endless process whose latest twentieth-century additions include airplanes, radios,

refrigerators, washing machines, television sets and pleasure boats’.

ii) We added several more, from the 1970s (when the book was written): above all computers, printers, scanners, internet, etc., micro-wave ovens, mobile and cellular telephones, I-pods, I-phones, I-pads, PDAs and ‘smart phones’ (blackberries, etc), digital cameras, the wide variety of stereo musical devices, etc., and advanced HD TVs (now including 3D TV and movies).

3. The Economic, Social, and Cultural Consequences of Modern Industrialization:

a) the positive consequences are overwhelming:

i) **a totally unprecedented exponential rise in real incomes**, throughout societies, and in living standards, so that even the poorer strata of our societies are immeasurably so much better off than were their and our ancestors

ii) **an enormously wide range of new consumer goods**: undreamt of by our ancestors

iii) **consider this quotation from Adam Smith’s *Wealth of Nations* (1776), in illustrating his principal purpose – in attaching the tenets of Mercantilism (or the Mercantile System, as he called it):**

Consumption is the sole end and purpose of all production; and the interest of the producer ought to be attended to, only so far as it may be necessary for promoting that of the consumer. The maxim is so perfectly self-evident, that it would be absurd to attempt to prove it. But in the mercantile system [Mercantilism], the interest of the consumer is almost constantly sacrificed to that of the producer; and it [Mercantilism] seems to consider production, not consumption, as the ultimate and object of all industry and commerce.

iv) **In other words, we economists and economic historians must always ask this fundamental question about the processes of modern economic growth, and industrialization in particular:** do they lead to human betterment, to increased human welfare, especially from the vantage point of the average consumer, not the average producer

v) **Equally important the enormous increases in public health**, well-being, and the extension of longevity (reduction in birth rates), also unparalleled in human history

b) the negative consequences:

i) **income and wealth inequalities**: both within modern societies and between countries in the world today

(1) In recent times, over the past few decades, income inequalities have increased in North America, not diminished as predicted.

(2) The significance of the Kuznets curve (with which this course was introduced:

- that the early stages of economic growth and industrialization require some transfers of income and wealth from the lower strata (working classes) to the entrepreneurs (upper income strata, usually, those who innovate and create the mechanisms of economic growth
- but the fruits of economic growth are ultimately more widely distributed so that all income strata of society benefit from the rising real incomes and living standards

(3) Question: are such disparities greater than or lesser than those that prevailed in the pre-industrial World?

(4) Certainly it may be argued that such disparities are greater in the underdeveloped non-Western worlds than in the contemporary Western societies.

ii) **European Imperialism:**

(1) did European industrialization give such western nations the economic power and military means to impose their will upon and control other parts of the World?

(2) But European imperialism began long before industrialization, with 15th-century Portugal, soon followed by Spain, England, France, and the Dutch in the 16th centuries

(3) Europeans did not invent imperialism – which seems to be a condition of human societies

(4) Nevertheless, many European and North American nations, from the mid 19th century in particular, did gain the power, from industrialization, to achieve more powerful, effective forms of imperialism

iii) **Global Warming:**

(1) note that coal was and remained the essential ingredient of modern industrialization, everywhere in the world

(2) that coal-burning produces not just noxious pollution but Carbon Dioxide that traps the sun's heat and leads to global warming, through the 'green house' effect

(3) But methane gases from livestock agriculture also contribute to the 'green house' effect

(4) As one former student sagely commented: modern industrialization has not necessarily allowed us all to escape the Malthusian Trap -- just to delay for some time its inevitable and deleterious consequences.

(5) See the online graph accompanying this lecture (on the lectures website).

iv) **But again, to conclude:** modern industrialization, despite all its negative attributes, has brought about an unprecedented and previously unimaginable rise in living standards for the vast masses of the population, and not just the wealthy, at least in advanced first and second world countries.

This was the last lecture for the course: ECO 303Y: The Economic History of Modern Europe, to 1914, given in the academic year 2012 - 2013 (possibly for the last time, though I certainly hope to be able to give this course again)