SUMMARIES OF LECTURES in ECO 303Y1:

the Economic History of Modern Europe, to 1914

for the Academic Year: 2012 - 2013

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III. Week no. 3: Lecture no. 4: on 26 September 2012

The Demographic and Industrial Revolutions: Expansion of the Market

(1) **The Demographic and Industrial Revolutions: was population growth the cause or the consequence of the Industrial Revolution? The answer is both:**

a) **the onset of population growth preceded the Industrial Revolution by about twenty years:** and certainly population growth provided changes in both aggregate demand (markets) and aggregate supply (problems that required technological solutions).

b) **at the same time,** the forces of economic growth and especially urban industrialization both spurred on and permitted a much more rapid population growth (as will be seen in later lectures) – the greatest extent of population growth occurred after the onset of industrialization

c) **population statistics:**

i) population of England and Wales doubled from about 6 to 12 million, from c. 1760 to 1820, and then tripled again, from 12 to 36 million, by 1910.
ii) that provided the major force in the growth of the domestic market, which was by far the more important market for the Industrial Revolution, up to about 1815
iii) From 1815, the foreign markets became decisive: but without a vast increase in foreign trade, from the economic forces of the Industrial Revolution, Great Britain could never – without food imports (83% of the total consumption by the 1890s) – have a population that tripled from 1810 to 1910.

d) **Major question:** was the Industrial Revolution principally a demand-induced or a supply-induced phenomenon?

i) Note: most historians are and have been demand-oriented, while most economists are supply oriented.
ii) I will supply no definitive answer to this question, though I will not hesitate to place such a question of the mid-year test or final examination.

(2) Population Growth and the English Industrial Revolution:

a) **Note that in the century preceding the Demographic and Industrial Revolutions, England & Wales had experienced both demographic decline and stagnation:** from the 1650s to the 1740s, during the so-called '17th Century General Crisis' era; and that decline was possibly a Malthusian response to excessive population growth in the 16th and early 17th centuries.

b) **But the combined Demographic and Industrial Revolutions banished forever any threat of a Malthusian Trap,** during which population growth curbed economic growth and led to subsequent decline: for Great Britain, for the first time in human history, achieved a continuously sustained growth in population,

output, and per capita incomes (rising living standards, from at least the 1840s).

c) **Great Britain was not alone in enjoying population growth after 1760:** so did most of Europe, the Americas, and Asia. But British population grew by far the fastest (in Europe): expanding by 133% from 1680 to 1820, while France's population grew by only 39% and the Netherlands, by only 8%.

d) **What factors or variables are involved in population growth?**

1. falling death (mortality) rates
2. rising birth (fertility) rates
3. increased immigration – which we will ignore here, as relatively unimportant.

e) **The debate about the role of death and birth rates:**

i) **in the past, most historians placed greater importance on death rates,** if only because death rates fluctuated far more widely than did birth rates: i.e., a DR rate from 30/1000 to 500/1000 (with the Black Death), while the BR had a biological maximum of 40/1000.
ii) **The Black Death (whose nature remains a mystery) and subsequent bubonic and pneumonic plagues:** had, in a wide variety if diseases, been the major destroyer of European populations, from 1348 to the 18th century
iii) **The Plague came to an end in England (London) in 1665:** in France, in 1720 (Marseilles); in Italy Messina, Sicily), in 1733
iv) **but plague remained endemic:** in the Russian and Ottoman Turkish empires to the 1840s
v) **Helleiner (1963) and others:** maintained the primary of the death rate in demographic changes
vi) **Deane and Cole (1968):** gave almost equal weight to changes in both the DR and BR
vii) **Wrigley, Schofield, and the Cambridge School of Population studies:** argued for the primary of the birth rate, contending that in the Demographic Revolution (from end of the 17th century), a rise in the birth rate accounted for about 70% of total population growth, based on the following suppositions.

3. **John Hajnal's European Marriage Pattern and the Demographic Revolution:** pertaining only to western Europe (from a line west of one drawn from St. Petersburg, in Russia, to Trieste, in Italy); and only from early-modern times

a) **The EMP: its primary components**

4. Nuptiality: a high average age of first marriage for women: in the high 20s or even 30
5. Celibacy: consequently, a significant proportion of women who end up never marrying (if only because women tended to marry older men, not many of whom were available when they themselves reached the age of 30)
6. nuclear or single-family households: i.e., father, mother, and their own children only
7. the role of real incomes and real wealth in determining both Nuptiality and Celibacy (as above): in particular the average of first marriage
8. service in husbandry: a socio-economic institution from later medieval times to provide supplementary household labour

b) **The Universal Marriage Pattern:** which prevailed in eastern Europe, Asia, Africa, Latin America – also in western Europe before the 16th century. Its primary components were the mirror opposite

9. Nuptiality: average age of first marriage for women in the late teens or early 20s
10. Celibacy: almost non existent (except for nuns): virtually all women married (by late teens)

11. extended family households, with ample labour supplies: grandparents, father and mother, their children, and other children (cousins: children of aunts, etc).

c) **The role of servants in the EMP:**

12. Chiefly young women, hired on annual contracts, from poorer families: agreed to work in a household, usually rural (but some urban) as supplementary labour (that supplied in an extended family system), for room, board and clothing, and an annual cash payment (which could be saved)
13. lived as though they were members of the family, performing household and agricultural labour functions
14. conditions: that they not marry, nor produce (bastard) children while employed a servants
15. consequence: delayed the average age of first marriage for such women, until later 20s, while providing them with a cash dowry that made them attractive marriage partners when leaving service
16. with both the Agricultural and Industrial Revolutions, offering far more and better paid employment, many young women left service-in-husbandry earlier, or no longer entered such service ==>
17. thereby lowering the average age of first marriage for women

d) **European Demographic Systems:**

i) **Low Pressure Demographic Systems:** the European Marriage Pattern

18. with low birth rates and even lower death rates (with better health and nutrition)
19. birth rates were now the more flexible, and became the prime determinant of demographic changes
20. thus, if rising real incomes promoted earlier marriages (at least for women), while reducing celibacy, fertility and average family sizes would also rise.

ii) **High Pressure Demographic Systems:** the Universal Marriage Pattern in the rest of the world: eastern Europe, Asia, Africa, Latin America (and ancient + medieval Europe)

21. both birth rates and death rates were at or near their biological maximums
22. high birth rates contributed to high death rates (including especially infant mortality), because of reduced nutrition and living standards
23. death rates were the prime determinants of demographic change, since birth rates were stable near the biological maximum
24. note evidence (from lecture notes) that the Universal Marriage Pattern is now (early 21st century) disintegrating in many parts of East Asia: especially Japan, Korea (south), Taiwan, some large coastal cities in PR China, and Thailand (Bangkok): as well educated financially independent young women refuse to marry before turning 30 – or do not marry at all ==> downswings in birth rates

iii) **Relationship between the EMP, age of marriage, and fertility:**

25. since women are at the most fecund (fertile) in their late teens and very early 20s, a delay in first marriages for women to the late 20s (or early 30s), meant a drastic reduction in marital fertility
26. also: women in the early 30s are twice as likely to suffer miscarriages as women in their late teens and early 20s
27. furthermore: with relatively low life expectancies, marrying older reduced the time available for procreation (though a lesser factor).
28. more important: older women found it very difficult to get older men as husbands, who preferred to

marry younger women who would obviously be more likely to bear children ==> hence such women were likely to remain unmarried, thus explaining while celibacy rates were so high

29. also: since men died at earlier age, and since most surviving older men were already married, the supply of such men eligible to marry was correspondingly small
30. consequences: much smaller completed family sizes ==> necessarily meant that there were fewer women in the next generation available for subsequent procreation: a vicious circle
31. Note: there is absolutely no evidence that a later age of first marriage for women had any impact on illegitimacy, either pre-marital or extra-marital – thus to refute the contention that fertility is independent of marriage.

iv) **Importance of the EMP for the early-modern and modern eras of European society:**

32. the self regulating mechanism of marital fertility ended the threat of a Malthusian Trap of overpopulation and impoverishment
33. the EMP almost fully explains how the Demographic Revolution took place: by a reduction in both the average age of first marriage (nuptiality) and in celibacy (proportion unmarried) to produce a rapid rise in the birth rate, more rapid and extensive than the fall in the death rate
34. note again: that the EMP is peculiar to and localised in western Europe, only, and strongest in north-west Europe, from early-modern times (with an unknown origin)
35. note also that the Demographic Revolution followed from a period of demographic decline and stagnation (for which the EMP was either a factor or a reflection): so that birth rates had been very low and were capable of a major rise.

e) **Malthus and the EMP:** as Hajnal clearly noted, Malthus himself virtually indicated how the EMP operated (though he did not know that it was peculiar to early modern western Europe).

i) **For Malthus, there were two sets of factors that limited an exponential increase in population, of which, for Malthus, the second set was by far the more important:**

36. Providential or Preventative measures: war, famines, plagues, etc.
37. Prudential checks: in the form of sexual abstinence, principally though delayed marriages; and thus he implicitly meant the European Marriage Pattern

ii) **Contraception, Malthus, and the EMP??**

(1) **Note that Malthus, as a Protestant clergyman,** was opposed to any form of contraception, in an era when Protestant and Catholic views were the same.

(2) **But we do know that various methods of contraception had been practised from medieval times:**

38. coitus interruptus: i.e., withdrawal (known as Onanism – see the notes): a method that priests and clergymen grudgingly accepted
39. anal intercourse: also known as sodomy or 'buggery' (see the lecture notes)
40. condoms (made from sheep membranes): only for the wealth
41. various herbs used as abortifacient: to induce abortions
42. infanticide: suffocating infants on birth

f) **Mortality, the EMP, and the Demographic Revolution?**

i) **Peter Razzell:** has been the chief opponent of Wrigley and the Cambridge School of Population Studies

(1) He begins by attacking their methodology and facts: judge for yourselves
(2) His article on the morality, and its supremacy over fertility as the most dynamic variable, is in the collection of studies for the A-List topic on Population and the Industrial Revolution
(3) I do not find his arguments on improved sanitation in the later 17th and early 18th centuries at all convincing, since his evidence is only urban (whereas most of the population was still rural), largely London-based, and anecdotal. But read it for yourself

ii) **Wrigley on mortality:** he did respond to give more attention to morality factors, especially to the issue of maternal mortality (during childbirth), while still contending that the nuptiality and the birth rate were paramount

(1) Key points: sharp decline in the incidence of still-births: so that a fall in still-births reduced the birth-intervals, leading to increased rates of effective birth rates
(2) decline also in the incidence of maternal mortality: far fewer women died in childbirth, from the later 17th to the early/mid 19th century. See the tables in the lecture notes.

iii) **Robert Koch (1843-1910), and Louis Pasteur (1822 - 1895):** biochemists who discovered the bacterial origin of (many, but not all) diseases

43. their discoveries proving the bacterial transmission of diseases proved to be the most decisive factor leading to a sharp decline in European and North American mortalities, from the 1880s – ending the centuries long belief in the 'miasma' theory: that diseases were caused by poisonous vapours carried by the winds.
44. consequence: the realization that most bacterial diseases were water-borne led to massive capital investments, in the later 19th and early 20th centuries, in water-purification systems and sewage controls, to prevent water contamination
45. the discovery that other diseases were caused by viruses had to wait until the 1920s

g) **The Demographic Transition:** the subsequent fall in fertility rates, in Great Britain, only from the 1870s: read the speculative reasons offered in the lecture notes.

h) **The Relationship between population growth and industrialization:**

46. relieving severe labour scarcities, with the previous demographic downturns (1650-1730)
47. increasing aggregate demand (provided that all such extra consumers had monetized demand)
48. disproportionate urbanization with population growth from the 16th but especially from the 18th century ==> more efficient markets, with lower transaction costs
49. growing population pressures on scarce inelastic resources ==> chief spur to technological changes in both agriculture and industries

read the lecture notes, and those for subsequent lectures.