

How to explain the Hockey Stick ?

EBH24, LECTURE 2



Stagnation

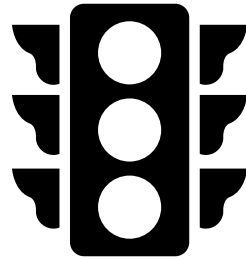


A Theory for Stagnation



A Theory for Growth

1. Stagnation



GDP (in million 1990 USD): India, China and Europe

	1	1000	1500	1600	1700	1820
India	29	34	61	74	91	111
China	34	27	62	96	83	229
Europe	14	11	44	66	81	159

Source: Maddison Homepage

GDP per capita (in 1990 USD): India, China and Europe

	1	1000	1500	1600	1700	1820
India	450	450	550	550	550	533
China	450	450	600	600	600	600
Europe	576	425	797	888	1.028	1.234

Source: Maddison Homepage;

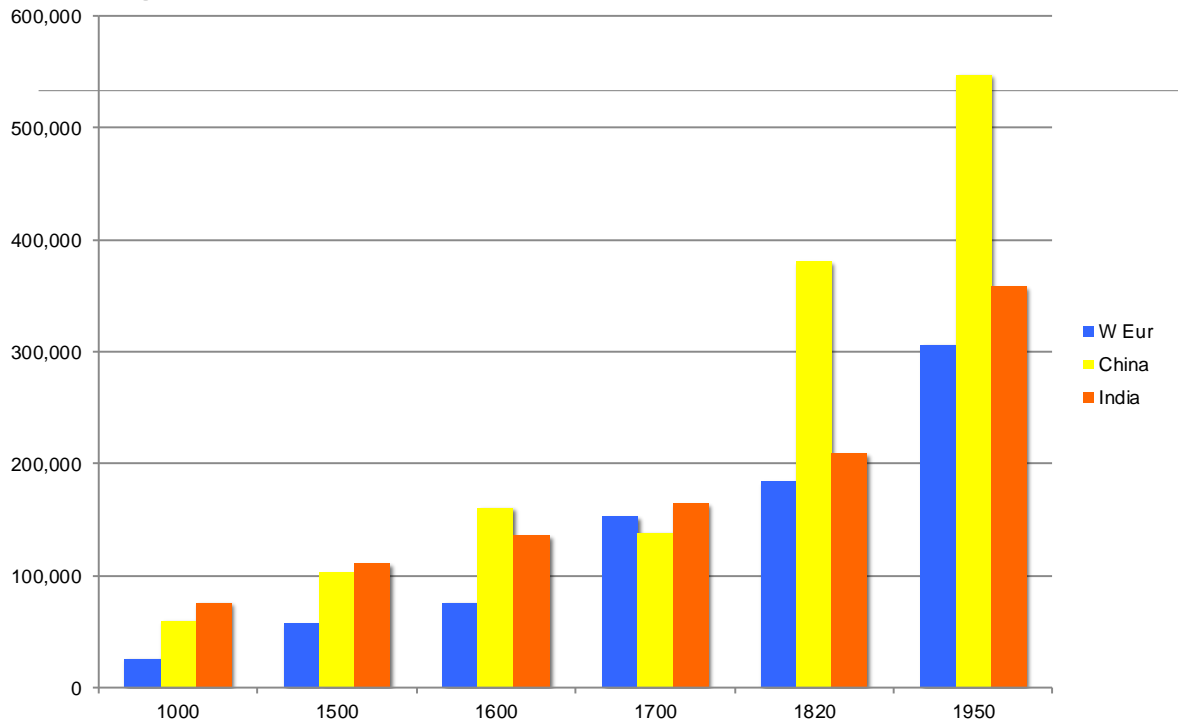
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What happened in (Econ.) History?

- The period before 1800 (or 1815 or 1820, depending on the authors) was one of overall growth
 - As measured by the real GDP (the monetary value in real terms of all goods and services produced in a given economy in a given year)
- Yet, this overall growth was not accompanied by growth in productivity, as measured by GDP per capita, which stagnated (India or China) or grew at a low pace
- Thus, GDP growth was a function of population growth
- This observation can be confirmed with alternative datasets

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Population (in millions)



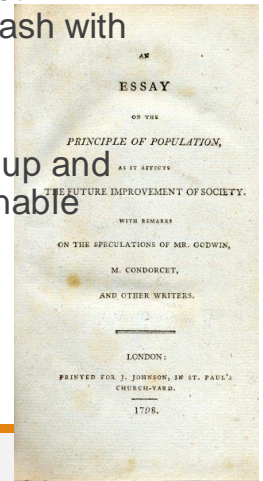
2. A Theory for Stagnation





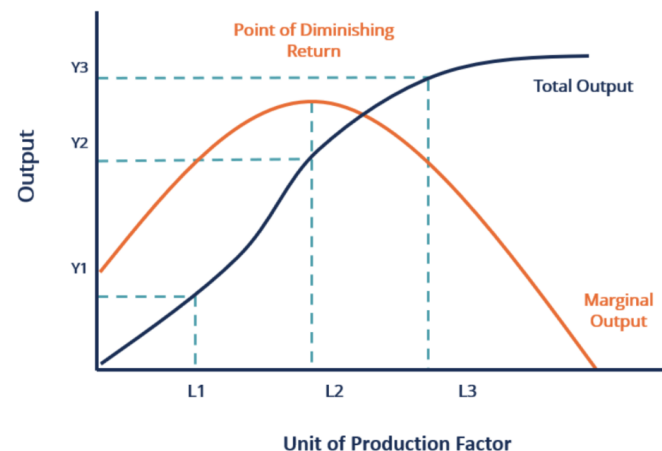
Malthusian theory: the problem is natural scarcity

- The Malthusian Model instead states that increases in output lead populations to increase their fertility
- This increased fertility, however, is not sustainable as at some point it will clash with natural resources (food)
- When this happens, mortality will go up and population descend back to a sustainable level

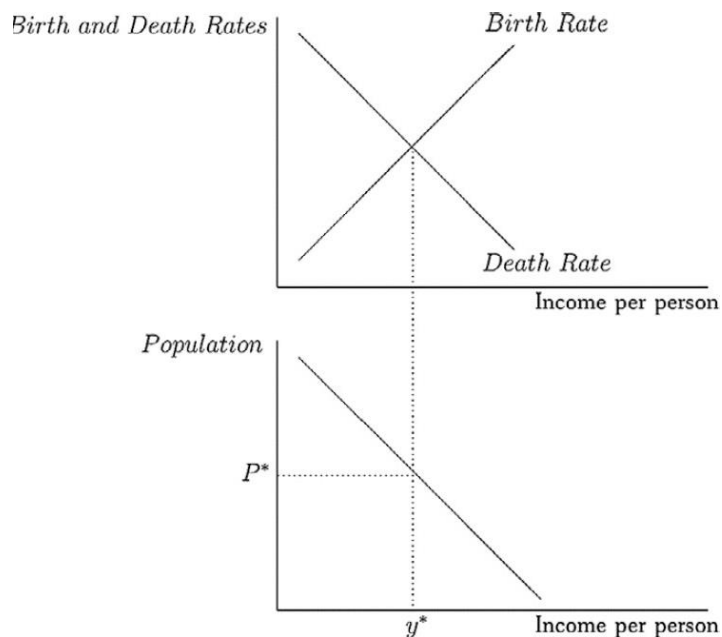


Decreasing Returns

- The key assumption of the Malthusian model is that per capita income does not increase proportionally to the increase of the Q of labour (or capital)
- In an essentially agrarian economy, the increase in labour leads to a decreasing marginal output.
- This is called the 'decreasing returns'

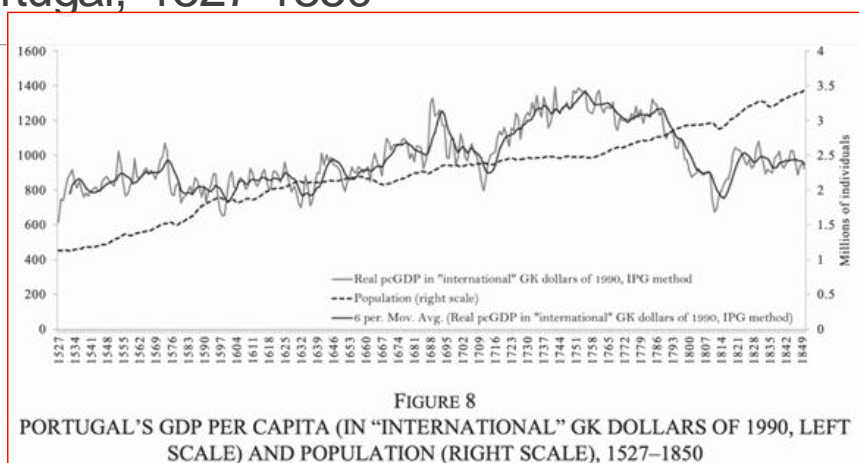


Why did per capita incomes changed little? (2)



- Alternatively, knowing the outcome of their increase in numbers, populations will diminish their fertility so that population does not grow
- The result is that population remains stagnant as birth and death rates equate (graph above)
- Likewise, given that natural resources constrain output (graph below), per person income ALSO remains static

An example of a Malthusian regime: Portugal, 1527-1850



"Portugal's favorable circumstances by the mid-eighteenth century (...) were not to last. In the very long run, the economy conformed to the predictions of the Malthusian model. Despite variation in response to shocks, income reverted back to what could be interpreted as a long-term "subsistence" level. (...) the forces of convergence to such a steady state did include endogenous fertility and mortality responses in the spirit of Malthus" (Palma and Reis, 2019).

3. A Theory for Growth

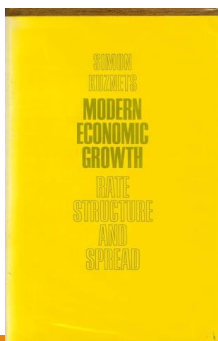


Modern Economic Growth: the Theory

GROWTH CHARACTERISTICS



Simon Kuznets,
1901-85



A. Aggregate growth

1. *High rates of increase in per capita product, accompanied by substantial rates of population growth*
2. *High rates of increase in output per unit of all inputs*

B. Structural transformation

3. *A high degree of structural transformation, encompassing a shift from agriculture to industry and services*
4. *Changes in the structure of society and its ideology, including urbanisation and secularisation*

C. International spread

5. *Opening up of international communications*
6. *A growing gap between developed and under-developed nations*

Modern Economic Growth: the Theory



Simon Kuznets,
1901-85

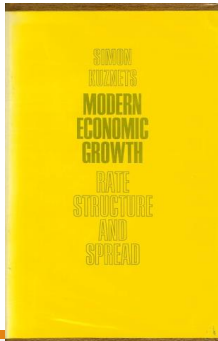
The most important growth characteristics are A1 and A2:

A1. High rates of increase in per capita product, accompanied by substantial rates of population growth

A2. High rates of increase in output per unit of all inputs

Structural transformations were a consequence of these

Ultimately, this theory derives from Classical Theory and Adam Smith's *The Wealth of Nations*



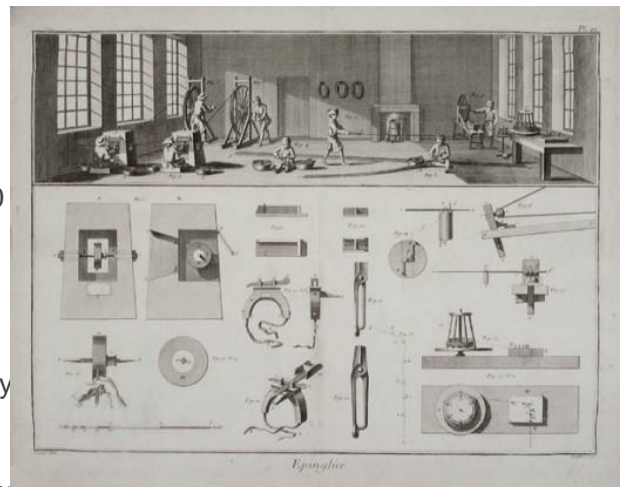
Classical Theory: Rise Labour Productivity

For Adam Smith, growth was essentially per capita output (roughly equivalent to labour productivity)

The key factor in increasing labour productivity was the Division of Labour.

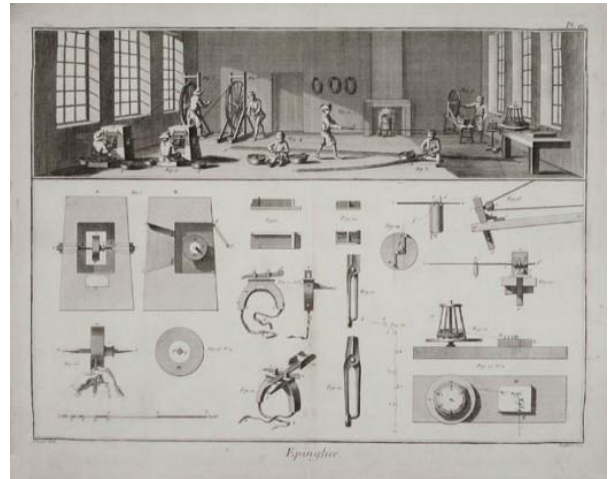
His example of the Pin factory replacing the isolated pin maker is the bedrock of his reasoning:

- The productivity of 1 pin-maker working solo is inferior to 20 pins/day
- In contrast, 10 specialized laborers working coordinately have a productivity of 480 pins/day
- Capital invested is integral to the argument: the investment of a given capitalist has a multiplier effect on the productivity of the laborer (the Capitalist organizes the productive process and supplies the adequate machinery)
- Increases in productivity also benefit workers, who get better wages and also (while consumers) lower prices



Growth = Growth in Labour Productivity

- Economic growth implies the increase of output per worker (or hour worked)
- The increase in labour productivity is typically the result of more (physical or human) capital per worker)
- Thus, growth is a consequence of rapidly-improving technology
- Adam Smith remarks that the scope for the specialization of labour is stronger in the industry than in the other sectors
- As such, growth brings about industrialisation (or the shift from agriculture to industry)



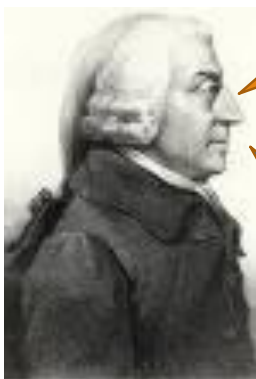
A 18th-cent. pin factory, Adam Smith's example of how the division of labour multiplied productivity by a very large factor ... in the industrial sector

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If so, why Stagnation?

It's the politicians' fault

I mean, let me rephrase it: the problem is **bad institutions**. Human nature is always trying to improve productivity, regardless of natural scarcity. Let me quote now the real Adam Smith:



The natural effort of every individual to better his own condition [faces] a hundred impertinent obstructions with which the folly of human laws too often incumbers its operations; though the effect of these obstructions is always more or less either to encroach upon its freedom, or to diminish its security. (The Wealth of Nations, IV, cap. 5)

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