ECONOMIC AND BUSINESS HISTORY 22/23

LECTURE 4 – CREATIVE DESTRUCTION

Lisbon School of Economics & Management
Universidade de Lisboa

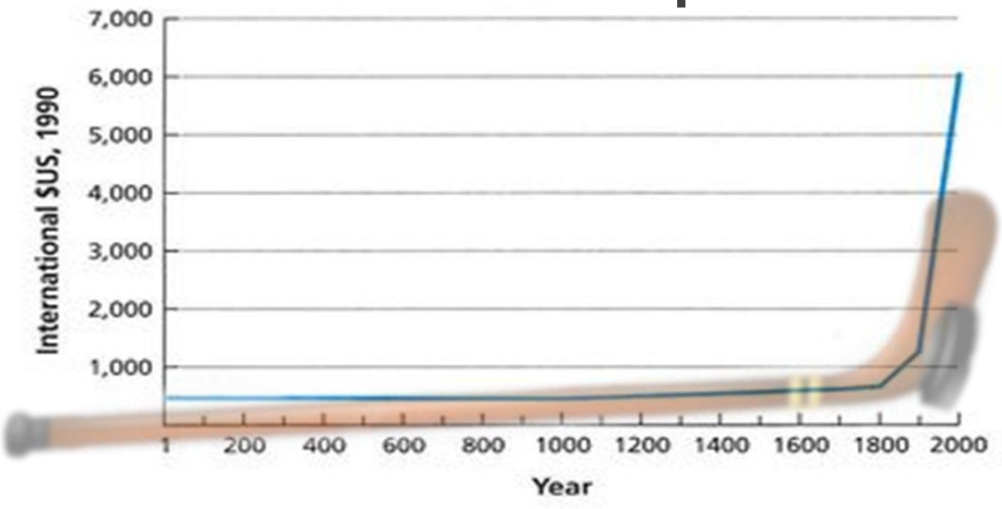
The Role of The Entrepreneur

The Schumpeterian Innovator

Cyclical Fluctuations

1. Schumpeterian Innovation

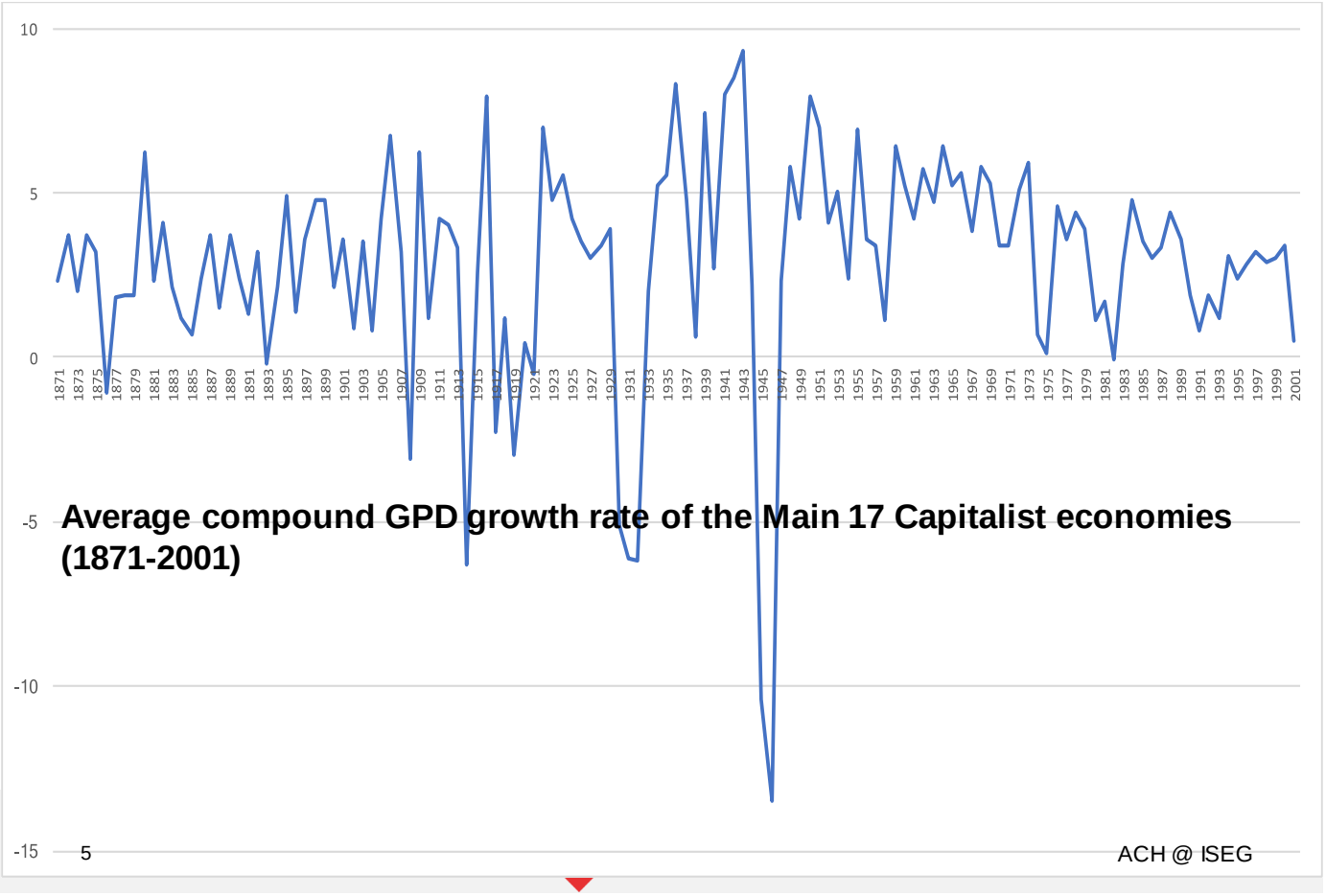
Econ Hist in 1 Graph



1.2 Gross world product per capita (1990 International Dollars)

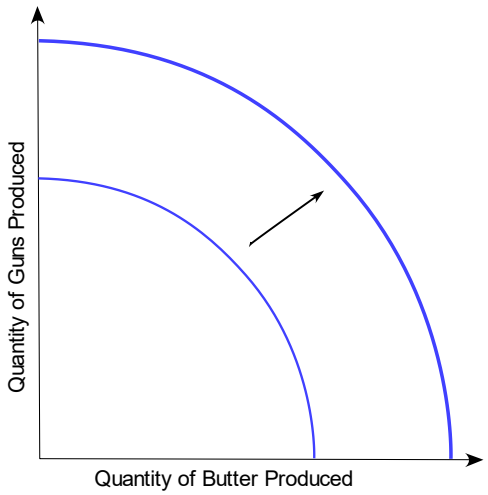
Source: Bolt, J., and J. L. van Zanden. 2013. "The First Update of the Maddison Project: Re-Estimating Growth Before 1820." Maddison Project Working Paper 4.

Post MEG

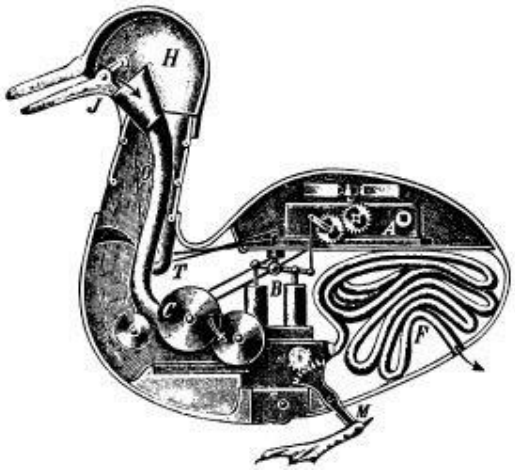


MEG: Why so irregular?

- In the long run, growth implies that technological and organzational innovations expand the PPF
- This process, however, is not constant: it depends on wages and interest rates (low wages and high interest rates discourage innovation)
- Also, it depends on the sucess of the innovators (not inventors, or cientists)



Invention Innovation



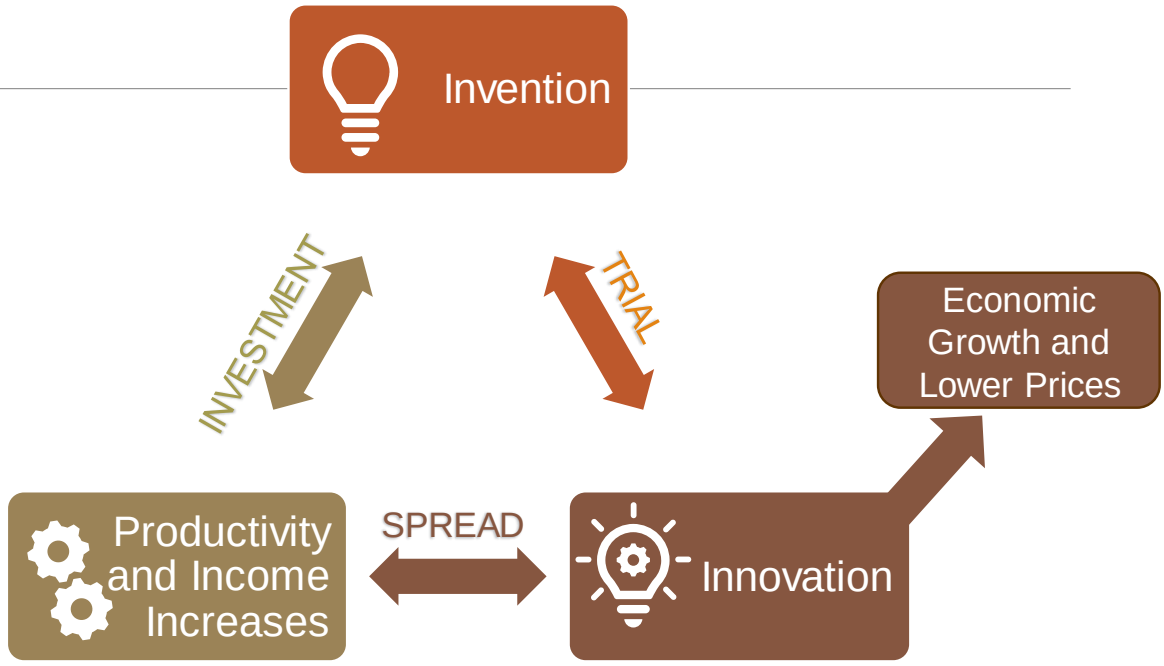
Vaucanson's duck 1740. Walked (M), ate (J), "digested" (B and F) and expelled "food" (F) by means of clockwork mechanism.

Spinning engine by Arkwright. Water powered. Research by Arkwright aand his team of clockworkers from 1767 to 1771. Patented.

Invention and Innovation

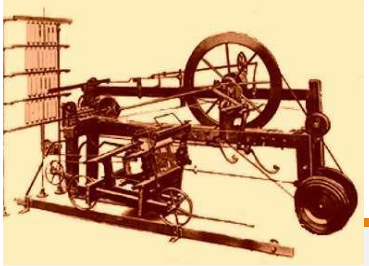
- "Inventions" (see Vaucanson's duck) did not morph into innovations
- Te technology behind an impressive mechanical duck by a gifted French inventor (Vaucanson) had no effect on the country's industry
- Yet, fame of this **invention** reached England where an illerate businessman (Arkrwright) tried to adapt the mechanism to perform a far simpler (spinning) movement
- Arkwright assembled a team of highly-paid, specialised clockmakers who for years sought the technological solution for spinning, in order to lower down wage costs
- Arkwright's successful spinning opened the path to successive improvements, which meant both increasing profitability and productivity. It was, hence, an **innovation**.

Invention and Innovation



Lisbon School of Economics & Management Universidade de Lisboa

Productivity Increases

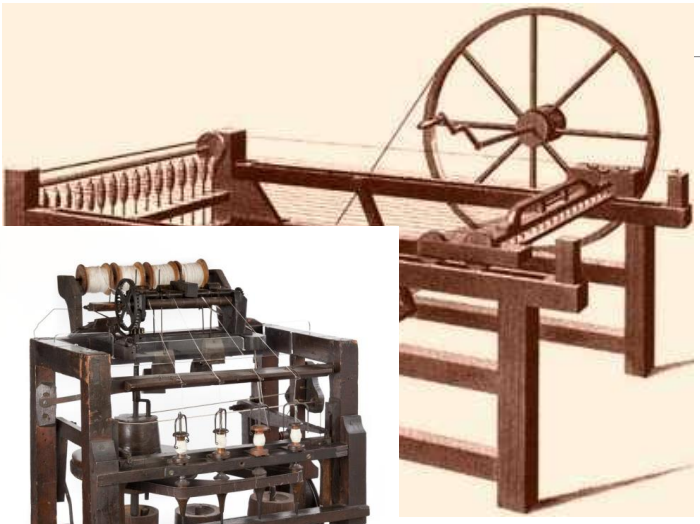


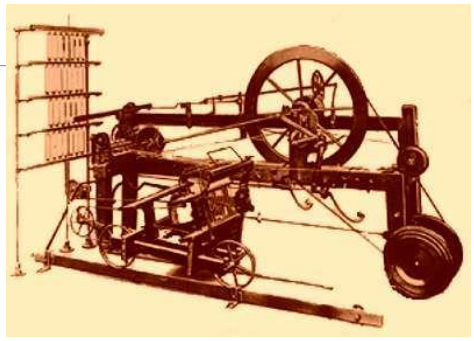
	Cost for spinning 100 lb of cotton in current GB pounds (Arkwright's water frame)	Cost for spinning 100 lb of cotton (100 = cost in 1780) (Spinning Jenny)	Hours for spinning 100 lb of cotton (100 = cost in 1780) (Crompton's mule)
1780	2.10	100	100
1795	0.57	23	15
1830	0.13	4	7

Lisbon School of Economics & Management Universidade de Lisboa

Source: Paulinyi (1989)

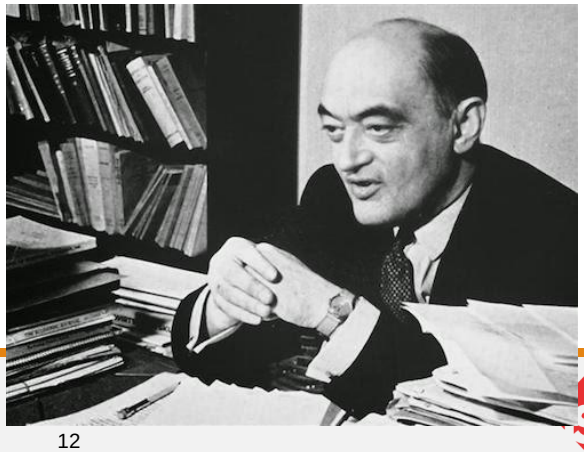
This Process is also Destructive

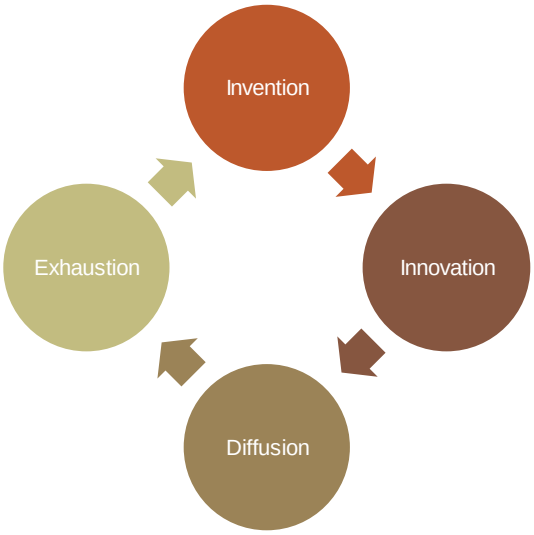




Creative Destruction

"This process of **Creative Destruction** is the essential fact about capitalism. It is what capitalism consists in and what every capitalist concern has got to live in."(Schumpeter, 1942)



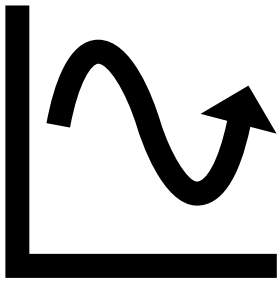


The Role of the Entrepreneur

- The innovator or entrepreneur is the key agent in the process of creative destruction
- He devises:
  1. New products
  2. New production methods and proesses
  3. New Markets
  4. New raw materials
  5. New Organizational solutions

- IF there is a market mechanism, with competition,
- The Innovative Entrepreneur and his innovations are rivalled, copied, adapted and improved
- Through other businesses the original innovation expands its simultaneous CREATIVE (for the economy as a whole and labour productivity) and DESTRUCTIVE effects (for some sectors and technologies)

2. Business Cycle



Cycles and Growth

- Since 1820, Advanced Economies underwent MEG, econ growth, higher than their past record and than their contemporaries
- This Modern Economic Growth was **substantial** and **sustained**
- But, **Constant** it was not
  - It underwent fluctuations:
    - Recessions
    - lower or higher growth periods
- How to understand these fluctuations?
  - Do recessions and higher/lower growth periods occur regularly?
  - Do they occur in cycles?

Lisbon School of Economics & Management Universidade de Lisboa

Cyclical Theorioes

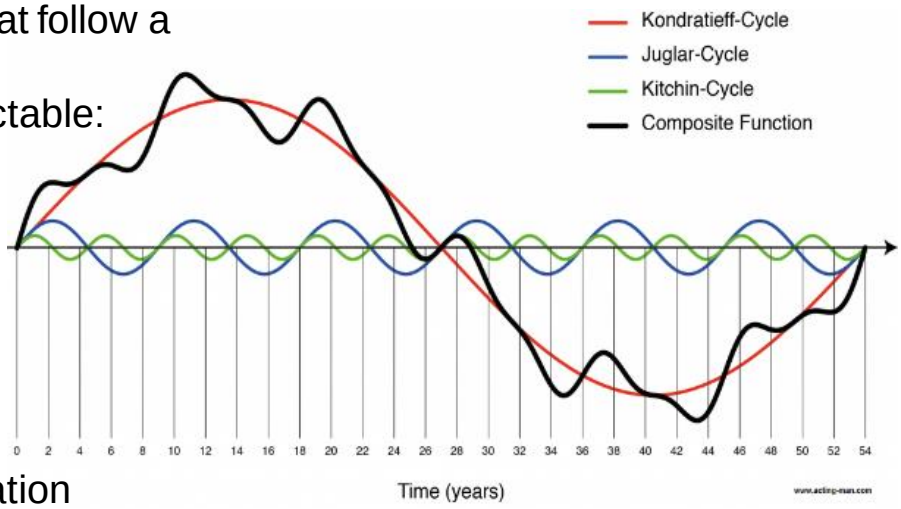
- One explanation for fluctuations is that economic activity is intrinsically cyclical
- Cycles are fluctuations that follow a regular pattern
- Ultimtaley, they are predictable:

Kitchin (3-5 yrs)

Juglar (6-11 yrs)

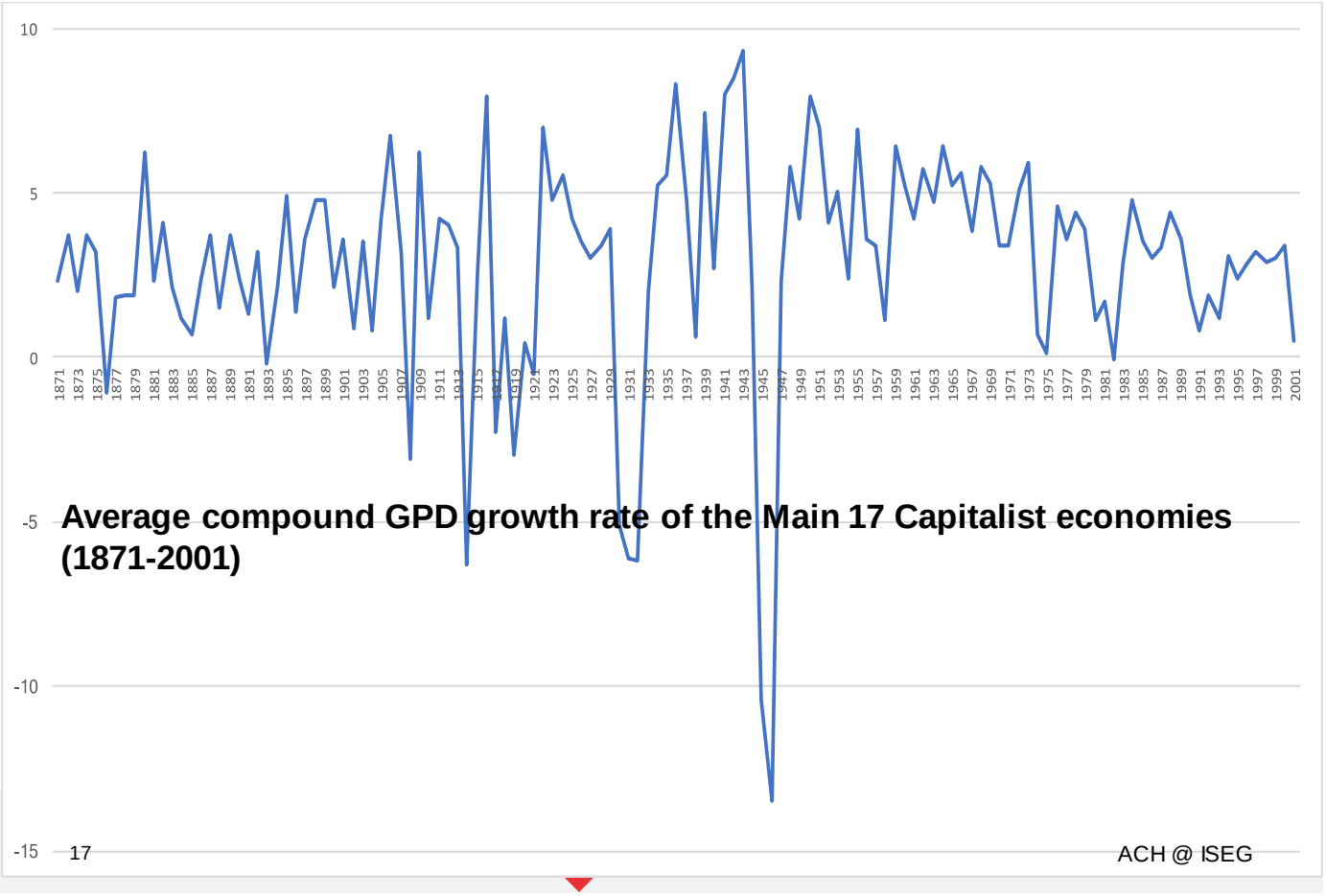
Kontratieff (45-60 yrs)

Schumpeter waves of innovation



Lisbon School of Economics & Management Universidade de Lisboa

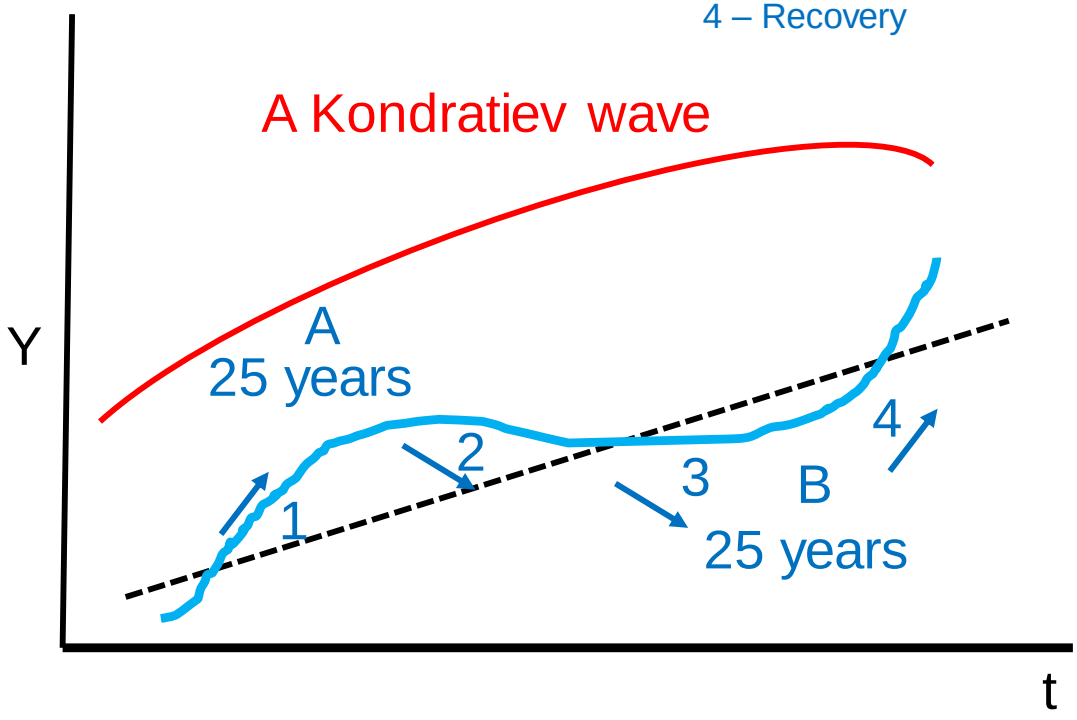
Post MEG



Average compound GPD growth rate of the Main 17 Capitalist economies (1871-2001)

Structure of a K 'wave'

1 – Prosperity
2 – Recession
3 – Depression
4 – Recovery



MEG and Innovations

- Kondratieff's cycles were later combined with the innovation theory and became 'waves' (to emphasize that there was growth)

- For a time, a set of innovations are exploited, allowing for high returns and rapid productivity (A)

- At some point, the potentials of innovation are exhausted and businesses face the "law" of diminishing returns (B)

- This is the 'creative destruction' moment

K waves and Innovations

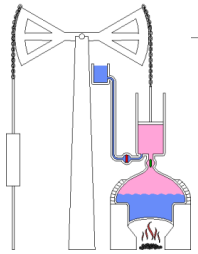
- Thus the Kondratieff's 'waves' imply that MEG depends on the emergence of useful knowledge and on finding within the firm the organizational arrangements that permit the highest efficiency (output per unit of input)

- Thus, Kondratieff waves are successions of technological 'revolutions', starting with steam engines in the mid 18th century and continuing up to the present days.

- Each of this revolutions starts with a 'general purpose technology' (like steam, computing or electricity)

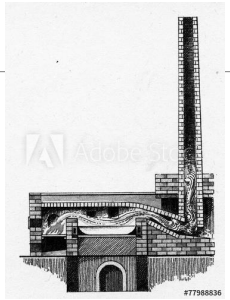
- Implicit in this theory is that innovation is the outcome of firm involved into market competition (an irony, since Kondratieff worked in the URSS) and decisions made by investors in the capital markets

Bundles of Innovations (K1)

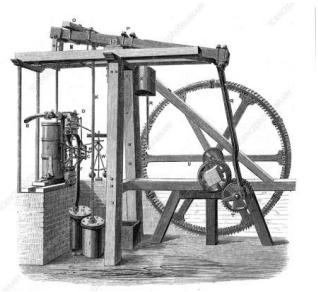


Steam Machine Thomas Newcomen (1712)

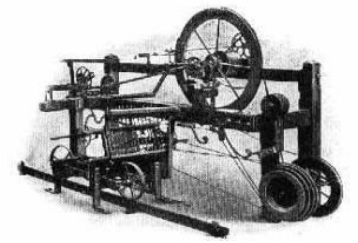
Mechanised Spinning
James Hargreaves (1764)
Richard Arkwright (1769)
Samuel Crampton (1779)



Wrought Iron
Henry Court (1784)



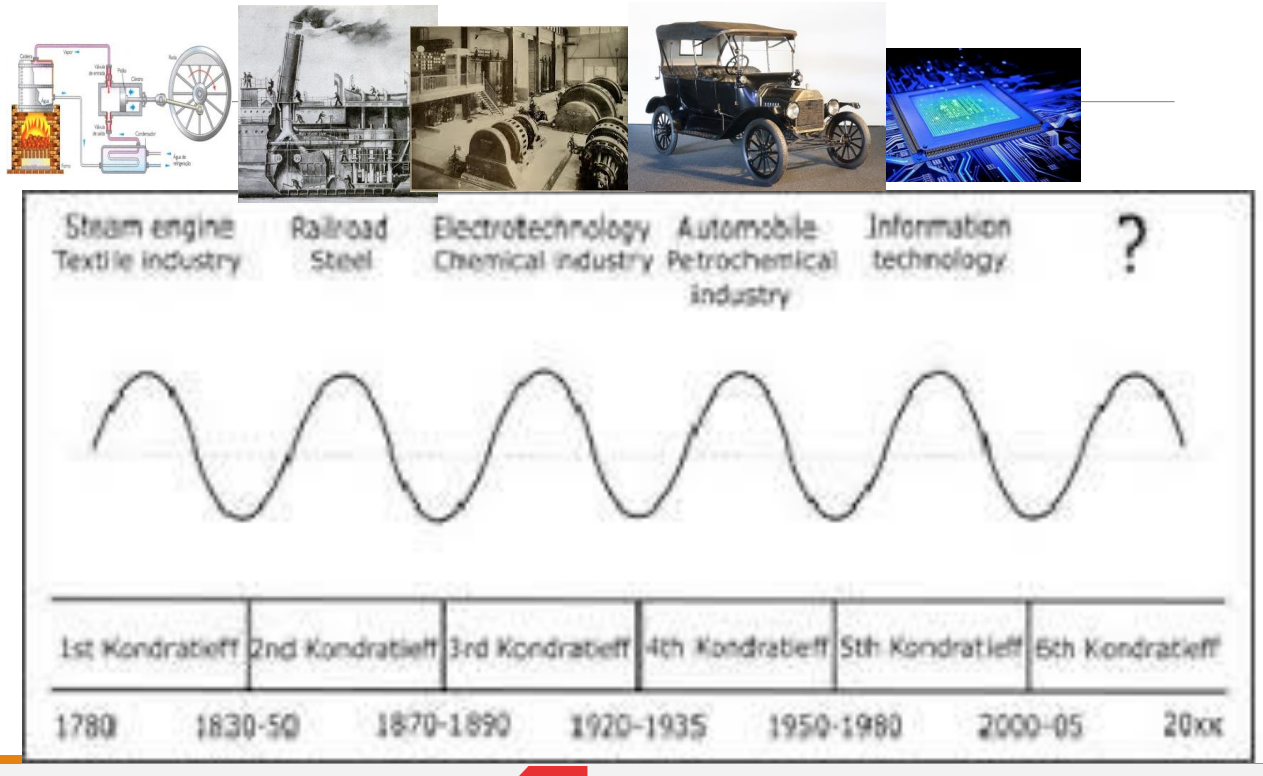
James Watt (1769)



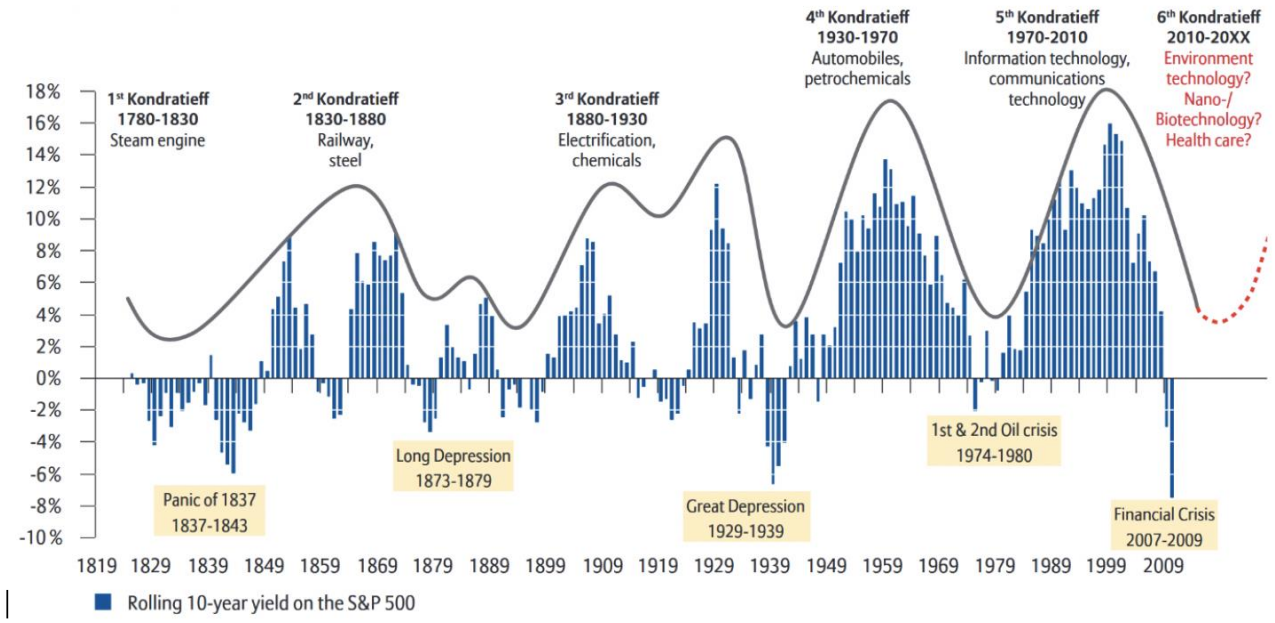
Mechanised Weaving
Edmund Cartwright (1785)
William Radcliffe (1804)

Cannals – Francis Egerton and James Brindley (1760s)
Steam boats
Robert Foulton (1807)
Henry Bell (1812)

Kondratieff, 'stylized'



Kondratieff, empirical perspective



Source: Allianz Global Investors "The sixth Kondratieff – long waves of prosperity" (January 2010)