

Sustainable Development and Economic, Social and Political Structures



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Economic, Social & Political Structures

Economic Organisation

Market: free interactions between consumers and producers

State involvement needed to enforce law

Problem: 'natural monopolies'

Lock in

Hierarchy: The State steers the economy for the common good

Problem: Power is concentrated

Innovation

Networks: Free market with checks to prevent socially unacceptable outcomes of a free market

Problem: Complex, not very transparent

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The Free Market Economy

The free market economy is not a type of 'natural system.

In the middle ages 'producers' were governed by a guild system

The free market economy only developed in the 19th century.

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The Free Market Economy

Advantages of trade based on the assumption that labor is of equal value and trading costs are 2 per unit

Production cost calculated in hours of labor	England		Portugal	
	Without trade	With trade	Without trade	With trade
Wine	20	7	5	5
Pig iron	8	8	14	10

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Development of the Free Market Economy

19th century: social inequality

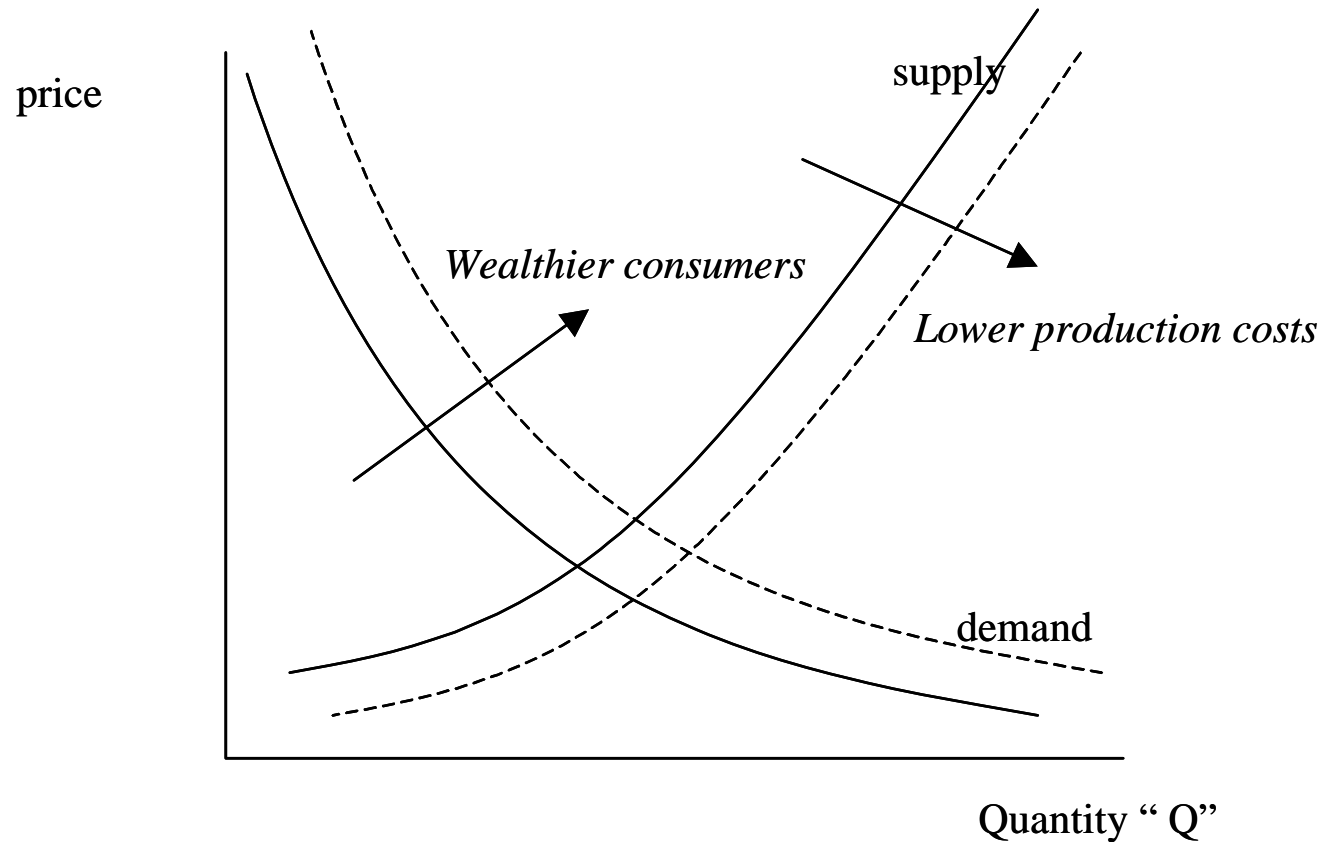
Revolutions, centralized economies in the USSR, China, Vietnam, Cuba

Mass unemployment in the 30's opened potential doors to communism, but instead led to social market economies:

- Social security
- Healthcare
- Safety

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Environments and Markets, changing equilibria



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Rebound effects: contributing to a better environment



People are prepared to pay a little extra for environmentally friendly products

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A Sustainable Economy?

Lock in:

Behaviour of others is copied: Windows, driving on the right/left side of the road

Better technologies are available, but it cannot be adopted.



PRISONERS

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Prisoner's Dilemma

Prisoner 1, years in jail	Cooperates with Police	No police Cooperation
Prisoner 2, years in jail		
Cooperates with Police	5 5	10 0
No police Cooperation	0 10	1 1

Optimum solution cannot be reached between two individuals unless they can reach a joint social arrangement

e.g. eco-friendly products, taking kids to school by car instead of bike

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Chicken's Dilemma

Not cooperating is an advantage if others cooperate

Cooperating is an advantage if others do not cooperate

E.g. car vs. public transport



<http://flickr.com/photos/annawiz/150998400/>

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Resource Dilemma

= Tragedy of the commons

Using common resources

e.g. depletion of the oceans

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Examples of Suboptimal Situations in a Free Market

Indirect routes in air travel

Double infrastructure

Costs to negotiate and set up a contract

Social effects: unemployment

Ownership of knowledge is difficult: minimal investments to create knowledge

Market unwanted: waste disposal, health care

National prestige set above creating a market: Concorde, NASA

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Free Markets and the Environment

Trade in emission rights

Resources: market is not sensitive to long term effects:

- Higher oil-supply at a lower price

- Resources are cheaper

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Simon-Ehrlich wager

5 metals were worth \$1000 in 1980

In 1990 they were worth only \$ 423,97 because:

- The nickel monopoly ended

- Innovations in the production of chrome

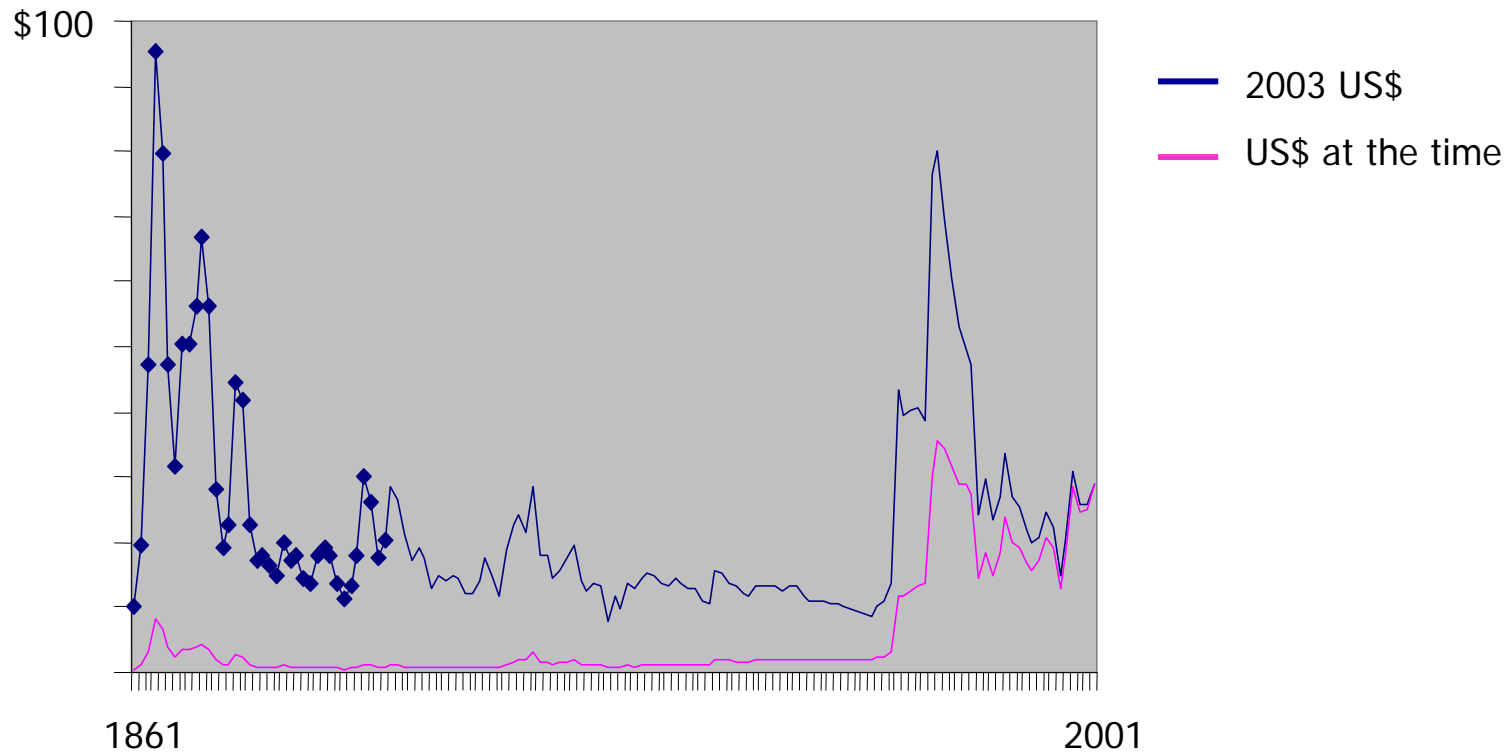
- Demand dropped due to application of polymers and composites

- The same goes for copper and fibre glass

- Ceramics replaced tungsten in e.g. tools.

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Prices of Crude Oil in 2003



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Sustainable Economic Development

Internalizing external costs

- Emissions, CO₂

- Social: victims

- Compensation in nature

Problem: time

- Subsidies or taxes to stimulate innovation in early stages

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Social Hierarchy, what does it mean?

More than a set of decoded rules

Roles

Expectations

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Authority

How are authorities established?

Legal

Merits

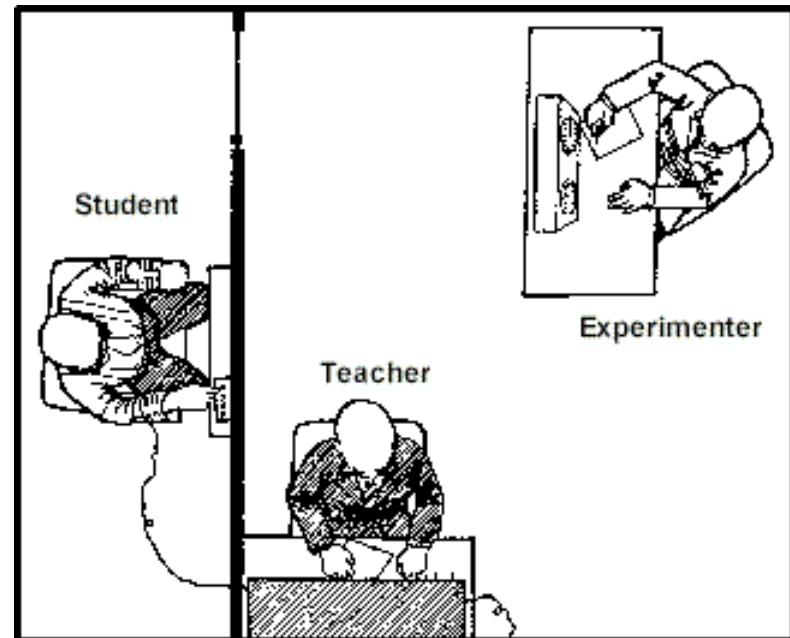
Scientific authority

Merits

Authority having the advantage

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Milgram Experiment



<http://www3.niu.edu/acad/psych/Millis/History/2004/milgram2.gif>

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Does changing social order inevitably lead to conflict?

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How to influence behaviour?

Group Identity

Communication

Expectation with respect to behavior of others

Force

Individual compensation

Economic stimulus

Leadership

Privatization of resources or marking territories

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New Technologies and Change

What are the effects of new technologies?

How are they realized?

What can we do?

TECHNOLOGY ASSESSMENT