



# Law and Economics

## From Lighthouses to Software

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Wintersemester 2005/2006

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# The Ideal World





No transaction costs

Perfect information

Full rationality



# Excursus: Coase Theorem

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“In a world of zero transaction costs an efficient allocation of resource will ensue regardless of the initial distribution of resources.”



The formalisation of the Coase Theorem owes largely to George J. Stigler (1966). The Theory of Price, 3<sup>rd</sup> edition, New York: Macmillan



# The Unfortunate Reality






Transaction costs  
Imperfect information  
Bounded rationality





# Externalities





„[O]ne person A, in the course of rendering some service, for which payment is made, to a second person B, incidentally also renders services or disservices to other persons [...], of such a sort that payment cannot be exacted from the benefited parties or compensation enforced on behalf of the injured parties.“

(Pigou 1932)



# The Lighthouse

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„A businessman could not build it for a profit, since he cannot claim a price from each user.“

(Samuelson 1964)



# The Solution

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„It is possible for the State [...] to remove the divergence [between private and social net product through] bounties and taxes.“

(Pigou 1932)



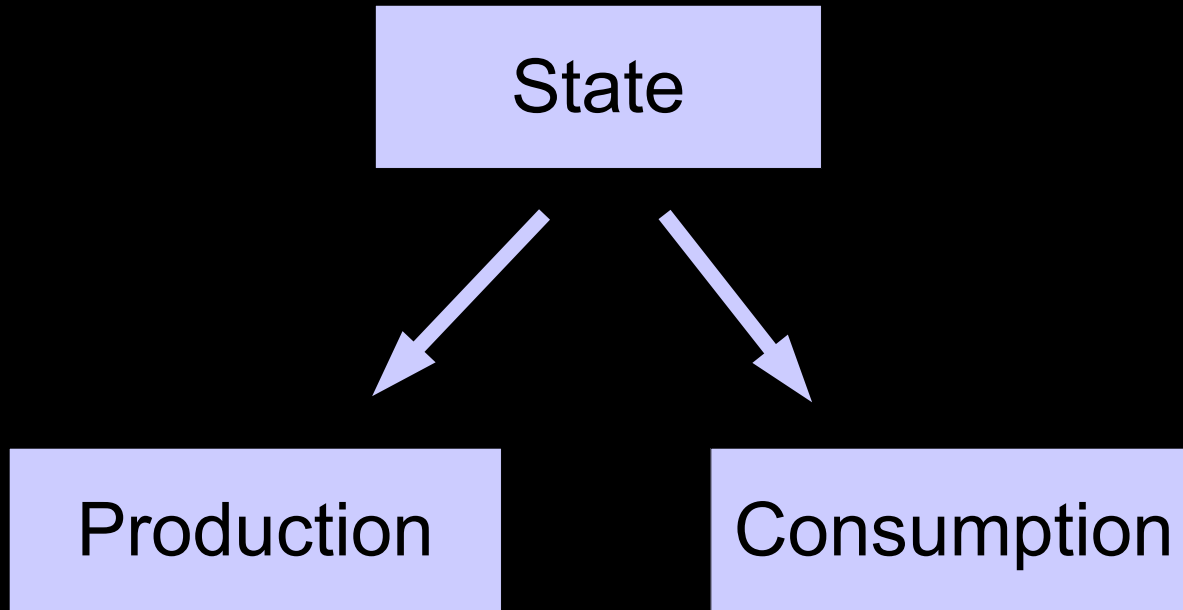


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# The Problem

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# The State as a „Super-Firm“

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„The government is [...] a super-firm. [...]

But the ordinary firm is subject to [relatively efficient] checks in its operation [which the government is not].“

(Coase 1960)



# Public Choice

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Politicians are selfish

Bureaucrats are selfish

Voters are selfish

Lobby groups have a disproportionate influence



# Firm instead of Market

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“A firm [may emerge] to deal with the problem of harmful effects [...] whenever the administrative costs of the firm were less than the market transactions that it supersedes.”

(Coase 1960)



R. A. Coase (1960). The problem of social cost, *Journal of Law and Economics* 3, 1-44. [Reprinted 1990 in *The Firm, the Market and the Law*, Chicago: University of Chicago Press.]

# Market, Firm, or Nothing At All

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“A further alternative [...] is to do nothing about the problem at all.”

(Coase 1960)



R. A. Coase (1960). The problem of social cost, *Journal of Law and Economics* 3, 1-44. [Reprinted 1990 in *The Firm, the Market and the Law*, Chicago: University of Chicago Press.]

# The Lighthouse Revised

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“[T]he building of lighthouses had been taken over by private individuals.

[They presented] a petition from shipowners and shippers in which they said that they would greatly benefit from the lighthouse and were willing to pay the toll.”

(Coase 1974)



# The Lighthouse Revised

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“The tolls were collected at ports by agents [...] who [...] were commonly custom officials.”

(Coase 1974)



# The Lesson

“Look twice!”





# How to aid bringing about market results?



# The Courts

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“[T]he courts have often recognized the economic implications of their decisions and are aware (as many economists are not) of the reciprocal nature of the problem.”

(Coase 1960)



# The Courts

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“It seems probable that in the interpretation of words and phrases like 'reasonable' [begründet, zumutbar] or 'common or ordinary use' [ortsüblich] there is some recognition [...] of the economic aspects of the question at issue.”

(Coase 1960)



# The Common Law Efficiency Thesis

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“In settings where the cost of allocating resources by voluntary transactions is prohibitively high [...] the common law prices behavior in such a way as to mimic the market.”

(Posner 1992)



# Principal Limitations

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Common Law

v

Civil Law



# Principal Limitations

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Efficiency

v

Redistribution and Justice



# Courts Merely Reduce Uncertainty

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„[What parties demand of the courts is not] the imposition of an efficient rule, but [...] the imposition of any rule that will reduce uncertainty. For such a rule facilitates rational contracting, the long term consequences of which will be efficient.“

(Coleman 1989)



# Deutschland, Beispiel BGB

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## § 906 BGB Zuführung unwägbarer Stoffe

Der Eigentümer eines Grundstücks kann die Zuführung von Gasen, Dämpfen, Gerüchen, Rauch, Ruß, Wärme, Geräusch, Erschütterungen und ähnliche von einem anderen Grundstück ausgehende Einwirkungen insoweit nicht verbieten, als die Einwirkung die Benutzung seines Grundstücks nicht oder nur unwesentlich beeinträchtigt.



# Deutschland, Beispiel BGB

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## § 962 BGB Verfolgungsrecht des Eigentümers

Der Eigentümer des Bienenschwarms darf bei der Verfolgung fremde Grundstücke betreten. Ist der Schwarm in eine fremde nicht besetzte Bienenwohnung eingezogen, so darf der Eigentümer des Schwarmes zum Zwecke des Einfangens die Wohnung öffnen und die Waben herausnehmen oder herausbrechen.





# Applications



# Nuisance [Besitzstörung, Belästigung]

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Entitlement [Wer hat Recht?]

Injunction [Verfügung] or Damages [Ausgleich]

(Bienen, Spam, Email-Marketing)



# Nuisance [Besitzstörung, Belästigung]

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No TC:

Efficiency regardless of entitlement and remedies

Damage remedy:

Efficiency regardless of entitlement

Injunctive remedy:

Choose entitlement corresponding to efficient outcome



# Contract

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Contract law fills the “gaps“ of real world contracts,  
particularly breach of contract.

Expectation remedy generally preferable.  
[Erfüllung, Schadenersatz]



# Automobile Accidents

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“Interaction between liability rules, risk allocation,  
and insurance“

Negligence [Fahrlässigkeit] is efficient, provided  
perfect insurance is available for the victim.



# Law Enforcement Using Fines

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If people are risk neutral, a fine as high as possible with a probability of detection accordingly low will be most efficient, saving enforcement costs.

If people are risk averse, then risk bearing costs need to be taken into account.



# Product Liability

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Strict liability is preferable when consumers are risk averse and insurance is imperfect.  
[Gefährdungshaftung, Kausalhaftung]



# Basic Questions

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The role of efficiency versus distribution of income  
(wealth effect)

Incentives for actors to take into account costs and  
benefits for others

Risk allocation such as to reduce the risk borne by  
risk averse parties  
(allocation according to the relative aversion of  
risk)



# Problem

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Conducting the relevant comparisons in a scientific manner is problematic.



# Problem

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“Posner and other proponents of the aggregate-risk-utility test are left to mere guesses, or coin-flipping. [...]

[S]uch guesses are more likely to promote inefficiency than efficiency.“

(Wright 2003)





# Software



# Software, Quality, Competition, Innovation

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Can the problems be solved by the law?

Incentives

Competition

Innovation



# Pertinent Questions

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How much control shall producers have over interface information?

How much control shall patent holders be able to exert?

The possibility of strategic behavior seems to call for liability for damages.



# Pertinent Questions

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Problem: How to quantify the damages?

500 Mill €?

2 Mill € a day?

Who shall get the money?

The competitors, the customers?



# Pertinent Questions

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How to deal with technical barriers to reverse engineering?

Is it efficient to mandate a full disclosure of interfaces? Under which terms?



# Pertinent Questions

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How about product liability and the validity of liability disclaimer?

How about private copies of digital media?

