

Law and Economics

Introduction to the Economic Approach to Law

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University of Mannheim - Fall 2021

Goal of the course

General goal: Present a *cohesive* and *formal* theory of *pure* Law through the lens of economics.

Main references:

- Miceli, T. J. (2017). *The Economic Approach to Law*.
Stanford University Press, 3rd edition
- Cooter, R. and Ulen, T. (2016). *Law and Economics*.
Berkeley Law Books, 6th edition

Legal Theory:

- Kelsen, H. (1997). *Introduction to the Problems of Legal Theory*.
Oxford University Press

Structure

- Two meetings each week. Questions encouraged.
- Office hours: Wed 5-7 pm. (L7, 3-5, Office 310. Virtual?)
- Assignments.
 - Exercises (with a correct answer).
 - Open questions (not graded).
- Grading: HW (20%), Midterm (30%), Final (50%). Format TBD.

Communication

- Email: `poggi@uni-mannheim.de`
 - Questions,
 - Comments,
 - Etc.
- Subject: **Law and Econ - Fall 2021**
 - If you **DO**: I will see the email in ~ 24 hs. Reply with probability 1.
 - If you **DON'T**: I will see the email in ~ 2 hs. I might not reply.

Tentative topics:

- Today: broad introduction/overview.
- Wed: review of economic concepts.
- Tort Law.
- Property Law.
- Intellectual Property Law.
- Economics of Litigation.
- Economics of Crime.
- Maybe: Empirical Topics.

Categories in Law

Law: system of rules regulating actions, which might be enforced by the imposition of penalties.

Four major categories:

- Tort Law
- Contract Law
- Property Law
- Criminal Law

Tort Law

Area of law that seeks to remedy losses or injury with monetary compensation.

Examples:

- Defamation,
- Medical malpractice,
- Defective products,
- Dog bite.

Contract Law

Contract Law

Area of Law that regulates legally binding agreements.

- Importance of consent.
- What contracts are legal?
- Breach of contract.

Property Law

Property Law

Area of law that governs ownership.

- Bundle of rights.
- How are property rights initially assigned? What can be owned?
- What can owners do with their property?
- What are remedies for violation of property rights?

Criminal Law

Related to *crime*. Prescribes conducts perceived as threatening, harmful, or otherwise endangering to the property, health, safety, and moral welfare of people.

- Emphasis on punishment/rehabilitation (instead of victim compensation): Fines, jail, capital and corporal punishment, house arrest. Loss ability to hold office.
- Victimless crimes.
 - Consensual but illegal sexual acts.
 - Gambling.
 - Recreational drug use/possession.

What can Economics bring to the table?

Economics brings:

1. A theory of behavior.
2. A standard to evaluate laws: *efficiency*.

Theory of Behavior

- Decision-makers react to incentives.
 - Legal sanctions as implicit prices for certain kinds of behaviors.
 - (Compensated) Law of Demand: higher prices imply lower compensated demand.
 - Legal sanctions can be set to guide behaviors in certain directions.
- This does not mean that the threat of sanctions are the only thing that affect behavior.
 - Sense of rightness.
 - Customs, etc.
- Aggregate reaction. General equilibrium.

Standard: Efficiency

- Is efficiency a valid standard?
 - What about justice? fairness? or morality?
 - Kaplow and Shavell (2001): efficiency should be the only criterion.
 - (Others disagree.)

Pareto Efficiency

Let \mathcal{A} be the set of all allocations and I the set of agents. Each agent $i \in I$ gets an utility $u_i : \mathcal{A} \rightarrow R$.

Definition

An allocation $a \in \mathcal{A}$ is *Pareto efficient* if there is no $a' \in \mathcal{A}$ such that

$$\begin{aligned} u_i(a') &\geq u_i(a) && \text{for all } i \in I \\ u_i(a') &> u_i(a) && \text{for some } i \in I \end{aligned}$$

Kaldor-Hicks Efficiency

We add transfers in a world of quasilinear preferences.

Let \mathcal{A} be the set of all physical allocations, x the monetary allocation and I the set of agents. Each agent $i \in I$ gets an utility $\hat{u}_i(a, x) = u_i(a) + x_i$.

Definition

An allocation $a \in \mathcal{A}$ is *Kaldor-Hicks efficient* if there is no $a' \in \mathcal{A}$ and $x \in R^n$ such that

$$\begin{aligned}\hat{u}_i(a', x) &\geq \hat{u}_i(a, 0) && \text{for all } i \in I \\ \hat{u}_i(a', x) &> \hat{u}_i(a, 0) && \text{for some } i \in I \\ \sum_{i \in I} x_i &= 0\end{aligned}$$

Welfare maximization

Definition

An allocation $a^* \in \mathcal{A}$ *maximizes welfare* iff

$$a^* \in \arg \max_{a \in \mathcal{A}} \sum_{i \in I} u_i(a)$$

Claim

a is Kaldor-Hicks efficient $\Leftrightarrow a$ maximizes welfare.

Consensual vs Non-Consensual Exchange

Consent guarantees mutual gains from trade.

- A buyer and a seller. Single object.
- Buyer values the object v , seller values it c .
- **Trade**: the buyer gets the good and pays a price p to the seller.
- There are costs associated with trade k_B and k_S .
- Efficient to trade when the gains $(v - c)$ are larger than the costs $(k_B + k_S)$

Claim: mutual consent to trade implies that the gains are larger than the costs.

Consensual vs Non-Consensual Exchange

Not true: no trade implies efficiency.

- it could be that it is efficient to trade but parties don't reach an agreement.
- (Although if it is efficient to trade, there must exist a price such that both parties would be better off trading.)

Potential robbery (unilateral consent):

- If there is a robbery: $v > k_B$.
- This doesn't say much about $v - c$ vs $k_B + k_S$.

Dealing with Externalities

Classical externality example: the rancher and the farmer.

- A rancher lives beside a farmer.
- Cattle wanders off onto the farmer's property and damages the corn plantation.
- Herd size: $x \geq 0$.
- Rancher benefit: $\pi(x)$ concave, $\pi(0) = 0$, interior. E.g. $\pi(x) = p \cdot x(10 - x)$.
- Cost to farmer: $c(x)$, convex with $c(0) = c'(0) = 0$. E.g. $c(x) = c \cdot \frac{x^2}{2}$.

Dealing with Externalities

- Joint value is maximized: $\pi'(\hat{x}) = 0$.
- Independent actions: rancher ignores the crop damage. Produces at \hat{x} .
- This is inefficient.

- Socially optimal herd size:

$$\max_{x \geq 0} \quad \pi(x) - c(x)$$

- FOC: $\pi'(x^*) = c'(x^*) > 0$.
- The rancher chooses an inefficiently high size: $\hat{x} > x^*$.

Dealing with Externalities

Solutions?

Dealing with Externalities

Solution 1: Prohibition.

- A law is passed that puts a cap on the herd size at x^* .
- Incentives: How large should be the fine for efficiency to be achieved?

Solution 2: Property.

- Farmer buys the Ranch.
- Rancher buys the Farm.
- Farmer and Rancher form a company that jointly operates the Ranch and the Farm.

Company goal:

$$\max_{x \geq 0} \quad \pi(x) - c(x)$$

Dealing with externalities

Solution 3: Pigouvian taxes.

A constant tax τ is paid per unit.

Rancher objective function:

$$\max_{x \geq 0} \quad \pi(x) - \tau x$$

What tax rates achieve the efficient allocation?

Dealing with Externalities

Coase Theorem: actually you don't need any of that.

- If the rancher and farmer can negotiate with no transaction costs, they will reach an efficient allocation.
- For example, the farmer pays a certain amount T to the rancher not to add animals beyond x^* .

Coase Theorem

Coase “Theorem”

In the absence of transaction costs, bargaining will lead to a Pareto optimal allocation of resources (independently of how rights are initially allocated).

Coase, R. H. (1960). The problem of social cost.

The Journal of Law and Economics, III

Solution 4: Liability.

- Rancher must compensate the farmer for *all* damages caused by the cattle.
- This is a specific type of liability, injurer is fully responsible independent of his action.
- (There are other forms of liability that we are going to cover when we start with Tort Law.)

Fencing option

- The entire damage from cattle can be eliminated by either:
 - a. fencing the farmers land (cost k_F)
 - b. fencing the ranch (cost $k_R < k_F$).

- **K-H Efficient:** to fence the ranch and produce at \hat{x} iff

$$\pi(\hat{x}) - k_R \geq \pi(x^*) - c(x^*)$$

Fencing option

No liability: Rancher will not want to face the cost.

- Farmer would prefer to fence his land.
- Even better! Pay the rancher to fence his.
- Efficiency is achieved.

Liability: Rancher liable for all damages.

- Rancher can produce at a lower capacity to reduce costs.
- or even better! Fence the ranch and produce at max.
- Efficiency is achieved again!
- Different wealth.

Coase Theorem in Action

<https://www.nytimes.com/2019/07/22/nyregion/manhattan-real-estate-views-air-rights.html>

How Much Is a View Worth in Manhattan? Try \$11 Million

When a group of loft owners were confronted with a proposed tower that would have blotted out their views, they gave a developer \$11 million to not build.



Back to Coase Theorem

- In a Coasian world (no transaction costs), efficiency will be achieved independently of the legal framework.
 - Law only affects distribution of wealth.
- However, the world is not Coasian.
 - Most interesting economic interactions involve:
 - Transaction costs,
 - coordination issues,
 - information asymmetry.
 - Law changes outcomes and might improve efficiency.

Bonus: Kaplow Shavell (2001)

- Let $\mathcal{A} = R^2$ be a set of allocations, typical element a .
- There are n individuals.
- Preferences given by $U_i(a)$.
- All individuals like more of a_0 : U_i is strictly increasing in a_0 for all i .
- Social preferences represented by $W(a)$ continuous.
- **Question:** should the utility depend on a beyond utilities U_i ?

Definition 1

A social preference W is *welfarist* if there exists a function $w : R^n \rightarrow R$ such that

$$W(x) = w(U_1(x), U_2(x), \dots, U_n(x))$$

(equivalently, for all a, a' such that $U_i(a) = U_i(a')$ for all i , $W(a) = W(a')$.)

Bonus: Kaplow Shavell (2001)

Definition 2

Social preference W satisfies the (weak) Pareto principle if $\forall a, a' \in R^2$,

$$U_i(a') > U_i(a) \quad \forall i \quad \Rightarrow \quad W(a') \geq W(a)$$

Theorem 3

If W is not welfarist then it violates the Pareto principle.

Bonus: Kaplow Shavell (2001)

Proof.

Start with W not welfarist. Then there exists a, a' such that

$$U_i(a) = U_i(a') \quad \forall i \quad (1)$$

$$W(a) \neq W(a') \quad (2)$$

WLOG, assume $W(a) > W(a')$. Define $a'' = (a'_0 + \epsilon, a'_1)$. By continuity of W , there is an ϵ small enough so that $W(a) > W(a'')$. However, $U_i(a'') > U_i(a)$ for all i . \square

Kaldor-Hicks Efficiency Proof

Proof.



- Coase, R. H. (1960). The problem of social cost. *The Journal of Law and Economics*, III.
- Cooter, R. and Ulen, T. (2016). *Law and Economics*. Berkeley Law Books, 6th edition.
- Kaplow, L. and Shavell, S. (2001). Any non-welfarist method of policy assessment violates the pareto principle. *Journal of Political Economy*, 112:249–251.
- Kelsen, H. (1997). *Introduction to the Problems of Legal Theory*. Oxford University Press.
- Miceli, T. J. (2017). *The Economic Approach to Law*. Stanford University Press, 3rd edition.