

# Law And Economics

## Contract Law I

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# Introduction

- Contracts: legal agreement to a transaction.
  - Explicit or implicit.
  - Enforced by the state.
- Contracts are **incomplete**.
  - Unforeseeable contingencies.
  - Transaction costs.

# Introduction

- **Contract law:** what sort of promises should be legally enforceable.
- **Also:** How can a party legally break the contract, what should be the penalty for doing so.

# Elements of a Valid Contract

- Contract entails a *mutual promise*.
- Elements:
  - Offer: what the *promisor* will provide.
  - Acceptance: whether the *promisee* accepted the offer.
  - Consideration: the return promise.
- Example:
  - An uncle promises to pay his nephew 5000 EUR on the 21st birthday.
  - An uncle promises to pay his nephew 5000 EUR on the 21st birthday, provided that the nephew refrains from drinking or smoking until that time.

# Introduction

- Information is at the center of the question:
  - An used car buyer realizes, after a week, that the car needs a break job. This was not disclosed by the seller, who should have known about it.
  - An specialist in antiques goes ‘treasure hunting’ to thrift shops. He does not disclose that he’s a specialist and buys things with high value without reporting it to the sellers.

# A Simple Model of Information

- Model:
  - Car can be of two types,  $\theta_L$  or  $\theta_H$ .
  - Both states are equally likely.
  - Two players:
    - Seller's value:  $c_L$  and  $c_H$ . Expected  $\bar{c}$ .
    - Buyer's value:  $v_L$  and  $v_H$ . Expected  $\bar{v}$ .
- Consider the case:

$$v_L < c_L < \bar{c} < \bar{v} < c_H < v_H$$

# A Simple Model of Information

- No information.
  - It is efficient to trade.
  - After bargaining, agents trade for a price  $P^N \in [\bar{c}, \bar{v}]$ .
- With (symmetric) information.
  - Efficient to trade only if  $\theta = \theta_H$ .
  - Agents trade if  $\theta = \theta_H$ . Price  $P^H \in [c_H, v_H]$ .

## A Simple Model of Information

- Suppose that we are in the case with no information but, unexpectedly, the seller learns that  $\theta = \theta_L$ .
  - He still prefers to sell for price  $P^N > c_L$ .
  - It is efficient that the seller keeps the good.
- Information leads to a more efficient allocation.
- Things are different in a model with common values since information is merely distributive.



# Reasons for Invalidating Contracts

- Mental Incapacity/Incompetence.
  - Those who are mentally impaired.
  - Those too young.
- Coercion/Duress.

# Coercion/Duress

Example: Alaska Packers.

# The Hold-Up Problem

- Classical Problem in Economics: Hart and Moore (1988)
- Model:
  - Two parties: Buyer and Seller.
  - They can trade a quantity  $q \in \{0, 1\}$  at price  $P$ .
  - Buyer values  $v$ .
  - Cost of production is uncertain  $c$  either  $c_H$  or  $c_L$ .
  - Probability of low cost  $p$  depends on investment  $\phi(p)$ .
    - $\phi$  is assumed to be increasing and convex.

# Timing

- Payoffs:

$$\text{Buyer:} \quad vq - P$$

$$\text{Seller:} \quad P - cq - \phi(p)$$

- Timing

1. Seller chooses investment  $p$ .
2. Cost  $c$  is realized.
3. Parties negotiate quantity  $q$  and price  $P$ .
4. Contract is executed.

- Assume that  $c_L < v < c_H$ .

$$q = \begin{cases} 1 & \text{if } c = c_L \\ 0 & \text{if } c = c_H \end{cases}$$

- Investment:

$$\max_p \quad p(v - c_L) - \phi(p)$$

$$\phi'(p) = (v - c_L) \quad (\text{FOC})$$

# Equilibrium

- Buyer and Seller have something to gain if  $c = c_L$ .
- Assumption: equal bargaining power.  $P = \frac{1}{2}(v + c_L)$ .

- Problem of the Seller:

$$\max_p \quad p \left[ \frac{1}{2}(v + c_L) - c_L \right] - \phi(p)$$

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$$\phi'(p) = \frac{1}{2}(v - c_L) \quad (\text{FOC})$$

- $p$  is inefficiently low.

- What if they can negotiate before the investment?
- Timing:
  - Buyer and seller contract: quantity  $q$  and price  $P$ .
  - Seller chooses investment  $p$ .
  - Cost  $c$  is realized.
  - Contract is executed.

# Incomplete Contract

- Suppose that they contract  $q = 1$ . Then seller minimizes cost of production:

$$\min_p p \cdot c_L + (1 - p) \cdot c_H - \phi(p)$$

- FOC:  $\phi'(p) = (c_H - c_L) > (v - c_L)$ .
- Thus, the investment is higher than socially optimal.
- Also, sometimes the good is produced when  $c = c_H$ .



But this is all fixed if we add renegotiation:

- When  $c = c_H$  the seller offers to pay  $v$  to the buyer to not produce the good.

# Mistakes

- Mutual Mistakes.
  - No ‘meeting of the minds’.
  - Car example.
- Problem: based on beliefs.

# Duty to Disclose Private Information

- Casual Acquisition.
- Deliberate Acquisition:
  - Social value higher than social cost.
  - Social value lower than social cost.

# Duty to Disclose Private Information

- We will compare two regimes.
  - Upon new information the contract is still enforced.
  - Upon new information the contract is rescinded.

## Cow Example

- Example:
  - Cow can be fertile (\$ 1000) or infertile (\$ 100).
  - Seller has a cow thought to be infertile (90%) for sale.
  - If cow is fertile, this is revealed (prior to slaughter, after delivery to the Buyer).

**Benchmark: No information acquisition prior to the contract.**

## Cow Example: Benchmark

- Court *enforces* the contract if cow is fertile.
  - Price is \$ 190.
  - Profit of seller is \$190.
  - Profit of buyer is \$-90 or \$ 810. On average zero.
- Court *rescinds* the contract if cow is fertile.
  - Price will be \$ 100.
  - Profit of seller is \$ 190.
  - Profit of buyer is \$ 0.
- The court's decision affects the distribution of gains, but not the expected value.

## Cow Example: Information Acquisition ( $SV < SC$ )

- Buyer can pay \$ 50 to learn about the Cow's type.
  - Social value of information: zero.
  - Information is wasteful.
- Court enforces the contract. Price \$ 190.
  - Private value of information:  $0.1 \times \$810 = \$ 81 > \$ 50$ .
  - Buyer acquires information. Expected profit \$31.
  - Seller's expected profit:  $0.1 \times \$190 + 0.9 \times \$100 = 109$ .

## Cow Example: Information Acquisition ( $SV < SC$ )

- Court requires disclosure to enforce the contract.
  - Private value of information: zero.
    - Buyer discloses it in any case.
  - Since the buyer does not acquire information, we are back to the uninformed case.



## Cow Example: Information Acquisition ( $SV > SC$ )

- Now assume that there is no information revelation prior to slaughter.
  - Again, the Buyer can pay \$ 50 to learn about the cow's type.
  - If information is not acquired the cow is used for beef (value of \$ 100) independently of its type.
- Acquiring information is socially efficient:
  - $SV: 0.1 \times (\$1000 - \$100) = \$90$ .
  - Higher than the social cost (\$50).

## Cow Example: Information Acquisition ( $SV > SC$ )

- Court enforces the contract.
  - For the Buyer is always profitable to acquire information if he owns the cow.  
Value is \$ 90 and cost is \$ 50.
  - For any price  $P > 100$ , Buyer prefers to acquire information prior to the contract and buy only fertile cows.
    - Buying a random cow:  $\$140 - P$ .
    - Buying only fertile cows:  $-\$50 + 0.1 \times (\$1000 - P) = 50 - 0.1P$
- Many possible equilibria.
  - We will consider that the buyer makes a take-it-or-leave-it offer.
  - In this equilibrium, the price is \$100.

## Cow Example: Information Acquisition ( $SV > SC$ )

- Court rescinds the contract.
  - Buyer can acquire the information and disclose it before contracting.
  - Once any information is disclosed, the seller will not accept less than the expected value of the cow.
  - Private value of information is zero.
  - Information will not be acquired before contracting.
- A rule that forces the player to disclose all information acquired before contracting achieves the first best if Buyer can acquire information after the contract.
- But what if the timing of information acquisition is unobservable?

## Unknown Time of Information Acquisition

- With unknown time of information acquisition:
  - After buying the cow with no information, the buyer acquires information.
  - If he is going to acquire information anyways, it is better to do it before the contract.
  - Then the buyer will not buy the infertile cow for a price above \$100.