Law and Economics

Contract Law I

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Introduction

- **Contracts**: legal agreement to mutual obligations.

- Examples:
  - Provide good or service in exchange for a fixed sum of mo ney.
  - Marriage.
  - Non-disclosure agreement.

- Explicit or implicit.
- Enforced by the state.

Introduction

- **Contract law**:
  - What sort of promises should be legally enforceable?
  - How can a party legally break the contract?
  - What should be the penalty for breaching the contract?

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.

- **Examples**:
  1. An uncle promises to pay his nephew 5000 EUR on the 21st birthday.
  2. 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.

Modeling assumptions

- Contracts are **incomplete**.
  - Unforeseeable contingencies.
  - Transaction costs.
  - Otherwise, there is no breaching or inefficiency.
- **No externalities**.
  - Contracts only affect the parties involved.
- **No transaction costs**.
  - In the spirit of the Coase Theorem.

Information and Contract Validity

- Information is at the center of the question of contract validity.

- Examples:
  - 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.
  - **Key distinction:** socially valuable vs purely distributive information (more on this later).

A Simple Model of Information

- Model:
  - Car can be of two types, θ_L or θ_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 $\theta = \theta_L$.
  - The seller still prefers to sell for price $P^N > c_L$.
  - However, to sell would be inefficient.

- Information leads to a more efficient allocation.
- (With common values, 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 $\phi(p)$.
    - ϕ is assumed to be increasing and convex.

Timing

- Payoffs:

$$\begin{aligned} \text{Buyer:} \quad & v \cdot q - P \\ \text{Seller:} \quad & P - c \cdot q - \phi(p) \end{aligned}$$

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

First-Best

- Assume that $c_L < v < c_H$.

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

- Investment:

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

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

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:

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

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

- p is inefficiently low.

Solutions

- What if Buyer and Seller 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:

$$\min_{p} \quad p \cdot c_L + (1 - p) \cdot c_H - \phi(p)$$

- 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 $c = c_H$.

Renegotiation

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.