# Law and Economics

## Contract Law II

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# Efficient Breach

- Consider two parties that contract.
- When is it *efficient* to breach an enforceable contract?
  - Unforeseen changes can render the contract inefficient.

- Ideal contract law should generate incentives for parties to breach contracts only when it is efficient to do so.
  - We will focus on the design of *breach remedies*.

# Reasons for Efficient Breach

- Consider a buyer and a seller that contract over the production and delivery of some good.

- Reasons for efficient breach:
  - Realized high cost of promise keeping.
    (Think of the hold-up model from before.)
  - Realized low value.
  - Third party that values more.
  - Third party that can produce cheaper.

# The Efficient Breach Model

- In this model, we focus on uncertainty about costs.
  - Value for Buyer $V$ (deterministic).
  - Cost for Seller $C$ (random variable).

- Timing:
  - Parties contract: decide a price $P$.
  - **Reliance**: Buyer makes investment $R$ that is not *salvageable*.
  - $C$ is realized and publicly observable.
  - Seller decides to *perform* ($a = 1$) or *breach* ($a = 0$).

- The non-salvageable investment $R$ is what makes contract useful.

# Goal

- Let $\psi$ be the damages that the seller must pay in the event of breach.

$$\begin{aligned} \text{Seller:} \quad & a(P-C)-(1-a)\psi \\ \text{Buyer:} \quad & a(V-P)+(1-a)\psi-R \\ \text{Society:} \quad & a(V-C)-R \end{aligned}$$

- **Goal**: determine a breach remedy function $\psi$ that induces the seller to breach efficiently.
  - Efficient to breach when $C > V$.
  - What can $\psi$ depend on? $C, P$ ($V$ and $R$ are constants).

# Seller's Decision

- The seller will choose to breach ($a = 0$) when:

$$P - C < -\psi \quad \Rightarrow \quad \underbrace{C}_{\text{cost of performing}} > \underbrace{P + \psi}_{\text{cost of breaching}}$$

# Trivial Implementation

- The seller is *"killed"* if she breaches inefficiently.

$$\psi = \begin{cases} \infty & C < V \\ 0 & C \geq V. \end{cases}$$

- Efficiency is achieved!
- Issue: The remedy rule depends on $C$.
  - Might be unobservable.
  - Seller might inflate costs.

# Damages in Practice

- **Expectation damages**: $\psi$ leaves the promisee as well of as if the contract had been performed.

$$\underbrace{V - P - R}_{\text{contract performed}} = \underbrace{\psi - R}_{\text{breach}} \quad \Rightarrow \quad \psi^{ED} = V - P$$

- **Reliance damages**: $\psi$ that leaves the promisee as well of as if contract was never made.

$$\underbrace{\psi - R}_{\text{breach}} = \underbrace{0}_{\text{no contract}} \quad \Rightarrow \quad \psi^{R} = R$$

# No Damages

$\psi^{ND} = 0$

- Seller chooses to breach ($a = 0$) iff

$$C > P + \psi^{ND} \qquad \Rightarrow \qquad C > P$$

- Efficiency is, in general, not achieved.
  - $P \leq V$. Why?
  - Whenever breach is efficient, the seller will breach.
  - Seller breaches inefficiently often.

# Expectation Damages

$$\psi^{ED} = V - P$$

- Seller chooses breach ($a = 0$) iff

$$C > P + \psi^{ED} \qquad \Rightarrow \qquad C > P + V - P = V$$

- Efficiency is achieved!
- This remedy rule does not depend on $C$.

# Reliance Damages

$\psi^R = R$

- Seller chooses breach ($a = 0$) iff

$$C > P + \psi^R \qquad \Rightarrow \qquad C > P + R$$

- Efficiency is, in general, not achieved.
- $P + R \leq V$. Why?
- Whenever breach is efficient, the seller will breach.
- The Seller breaches inefficiently often (although less than with no damages).
- Remedy rule does not depend on $C$ or $V$.

# Incentives for Efficient Reliance

- Suppose now that value $V$ depends on the *level* of Reliance.
  - Value for Buyer $V(R)$ (deterministic concave function).
  - Cost for Seller $C$ (random variable cdf $F$).

- Timing:
  - Parties contract: agree on a price $P$.
  - **Reliance**: Buyer makes investment $R$ that is not *salvageable*.
  - $C$ is realized and publicly observable.
  - Seller decides if she performs ($a = 1$) or breaches ($a = 0$).

# Buyer's Decision

- If performance was certain:

$$\max_{R} \quad V(R) - P - R$$

  - $V'(R) = 1$.

- When perfomance is uncertain (Probability $p$), investment is lower.

$$\max_{R} \quad p \cdot [V(R) - P] - R$$

- $V'(R) = 1/p$.

# Efficient Reliance

- Suppose performance is efficient. Then efficient reliance solves:

$$\max_{R} \quad E[\max\{V(R) - C, 0\}] - R$$

  - Solution $R^*$.

- Would Expectation Damages implement $R^*$?

# (Unlimited) Expectation Damages

$$\psi^{ED} = V(R) - P$$

- ED generates efficient breach. Why?
- Thus, Buyer's decision:

$$\max_R \quad F(V(R)) \cdot [V(R) - P] + (1 - F(V(R))) \cdot \underbrace{\psi^{ED}}_{V(R)-P} - R$$

- Solution: $\hat{R}$.
- There is over-investment in reliance.

# Limited Expectation Damages

$$\psi^{LED} = V(R^*) - P$$

- Seller breaches if $C > P + \psi = P + V(R^*) - P = V(R^*)$.
- Thus $p = F(V(R^*))$.
- Buyer's decision:

$$\max_R \quad F(V(R^*)) \cdot [V(R) - P] + (1 - F(V(R^*)))[\underbrace{\psi^{LED}}_{V(R^*)-P}] - R$$

- It achieves efficiency!
  - Rule does not depend on $R$.
  - Rule depends on $R^*$, so implementation requires knowing something about distribution of costs.