Contracts and Ex-Post Renegotiations

Ram Singh

Lecture 26

October 28, 2015

Specific Performance I

- Under SP, the Buyer can make sure that he always gets at least $V(r) - P - r$.
- Re-negotiation is possible only if $V(r) > C$.
- When renegotiation takes place, the Buyer gets $\alpha \in [0, 1]$ of the surplus.

When ex-post negotiations are possible, under SP the breach set

$$BS(r) = \{C|C > V(r)\} = BS^*(r).$$

The Buyer chooses r that solves

$$\max_r \{V(r) - P + \alpha E[C - V(r)|C > V(r)] - r\}, i.e.,$$

$$\max_r \{V(r) - P + \alpha[\int_{V(r)}^{\infty}(C - V(r))dF(C)] - r\}, i.e.,$$

Specific Performance II

the optimal r opted by the Buyer solves

$$V'(r) + \alpha[-(1 - F(V(r))V'(r))] - 1 = 0, i.e.,$$

$$V'(r) - 1 = \alpha(1 - F(V(r))V'(r)), i.e.,$$

$\forall\alpha \in [0, 1](r_s \in [r^*, r^{ED}])$. When $\alpha = 0$, r solves

$$V'(r) - 1 = 0, i.e.,$$

$r^{SP} = r^{ED}$, and when $\alpha = 1$, r solves

$$V'(r) - 1 = [1 - F(V(r)]V'(r), i.e.,$$

$$F(V(r)V'(r) - 1 = 0, i.e.,$$

$r^{SP} = r^*$.

Specific Performance III

Lemma

When ex-post negotiations are possible, under Specific Performance choice of r by B is a function of α. Moreover,

$$\frac{dr^{SP}}{d\alpha} < 0.$$

Proof: Under Specific Performance, the Buyer's payoff is

$$V(r) - P + \alpha[\int_{V(r)}^{\infty} (C - V(r))dF(C)] - r, i.e.,$$

$$V(r) - P - r + \int_{V(r)}^{\infty} (C - V(r))dF(C) - (1-\alpha) \int_{V(r)}^{\infty} (C - V(r))dF(C), i.e.,$$

Specific Performance IV

$$F(V(r))V(r) - P - r + \int_{V(r)}^{\infty} CdF(C) - (1-\alpha)\int_{V(r)}^{\infty}(C - V(r))dF(C), i.e.,$$

$$\begin{aligned} F(V(r))V(r) - P - r \quad & - \quad \int_0^{V(r)} CdF(C) + \int_0^{\infty} CdF(C) \\ & - \quad (1-\alpha)\int_{V(r)}^{\infty}(C - V(r))dF(C), i.e., \end{aligned}$$

the Buyer will solve

$$\max_r \{Z(r, BS^*(r)) - P + E(C) - (1-\alpha)\int_{V(r)}^{\infty}(C - V(r))dF(c)\}. \quad (1)$$

Specific Performance V

We assume that (1) has a unique solution for every $\alpha \in [0, 1]$. Let $1 - \alpha = \beta$ and

$$g(r) = -\int_{V(r)}^{\infty} (C - V(r))dF(c).$$

Note that $g'(r) > 0$. Now, (1) can be written as

$$\max_{r}\{Z(r, BS^{*}(r)) - P + E(C) + \beta g(r)\}. \tag{2}$$

Next, consider

$$\max_{r}\{Z(r, BS^{*}(r)) + \beta g(r)\}. \tag{3}$$

Note that (2) and (3) have the same solution. Let r solve

$$\max_{r}\{Z(r, BS^{*}(r)) + \beta g(r))\}. \tag{4}$$

Specific Performance VI

Clearly r is a function of β. First we show that $r'(\beta) > 0$.
Let r_i solve

$$\max_r \{Z(r, BS^*(r)) + \beta_i g(r))\}. \tag{5}$$

Suppose $\beta_1 < \beta_2$ and $r_1 > r_2$ holds. Since $g'(.) > 0$, $r_1 > r_2$ and $\beta_1 < \beta_2$ imply that

$$[\beta_2 - \beta_1]g(r_1) > [\beta_2 - \beta_1]g(r_2). \tag{6}$$

Since r_i solves (5),

$$Z(r_1, BS^*(r_1)) + \beta_1 g(r_1) > Z(r_2, BS^*(r_2)) + \beta_1 g(r_2). \tag{7}$$

(6)+(7) gives us $Z(r_1, BS^*(r_1)) + \beta_2 g(r_1) > Z(r_2, BS^*(r_2)) + \beta_2 g(r_2)$, which is a contradiction.
Therefore, $\beta_1 < \beta_2 \Rightarrow r_1 < r_2$ i.e., $\alpha_1 < \alpha_2 \Rightarrow r_1 > r_2$.
Hence, $r'^{SP}(\beta) > 0$ and $r'^{SP}(\alpha) < 0$.

Specific Performance Vs Expectation Damages I

Proposition

In the presence of ex-post negotiations, Specific Performance is K-H superior to Expectation damages.

Proof: First of all, we show that
$\beta_1 < \beta_2 \Rightarrow Z(r_1, BS^*(r_1)) > Z(r_2, BS^*(r_2))$ i.e.,
$\alpha_1 > \alpha_2 \Rightarrow Z(r_1, BS^*(r_1)) > Z(r_2, BS^*(r_2))$.

Suppose $\beta_1 < \beta_2$ and $Z(r_1, BS^*(r_1)) \leq Z(r_2, BS^*(r_2))$ holds.
Since, $\beta_1 < \beta_2$, we have $r_1 < r_2$, i.e., $g(r_1) < g(r_2)$, i.e.,
$\beta_1 g(r_1) < \beta_1 g(r_2)$. Therefore, we get
$Z(r_1, BS^*(r_1)) + \beta_1 g(r_1) < Z(r_2, BS^*(r_2)) + \beta_1 g(r_2)$, which is a contradiction. Therefore,

$$\beta_1 < \beta_2 \Rightarrow Z(r_1, BS^*(r_1)) > Z(r_2, BS^*(r_2))$$

Specific Performance Vs Expectation Damages II

i.e., $\alpha_1 > \alpha_2 \Rightarrow Z(r_1, BS^*(r_1)) > Z(r_2, BS^*(r_2))$. That is, the total social surplus is an increasing function of α.

Since, the case of Expectation Damages corresponds to the case $\alpha = 0$, whereas under Specific Performance $0 \le \alpha \le 1$. Therefore,

$$Z^{SP}(r^{SP}, BS^{SP}(r^{SP})) \ge Z(r^{ED}, BS^{ED}(r^{ED})).$$

Proposition

In the presence of ex-post negotiations, Specific Performance is K-H superior to Reliance damages

Restitution Damages

- Under our assumption restitution damages means no damages, i.e., $D^N(r, P) = 0$.
- But, the parties will renegotiate at time 1.

The Buyer chooses r that maximizes

$$\alpha F(V(r))[V(r) - P] - r, \ i.e.,$$

the $r^N(\alpha)$ opted by the Buyer, solves

$$\alpha F(V(r))V'(r) - 1 = 0.$$

That is, $r^N \leq r^* < r^{ED}$. Moreover, $\alpha = 1 \Rightarrow r^N = r^*$.

Contracts when Law Enforcement is Poor I

In countries with poor Law Enforcement, especially the developing countries:

- Firms build large inventories of the inputs needed in production.
  - Large inventories hold up costly capital. Therefore, increase production cost and reduce competitiveness. For example, see
- Business-persons are forced to do business with relatives or people from same communities.
- Are forced to engage in relational contracts.

Relational Contracts I

'Relational Contracts' are informal 'contracts' or more precisely legally unenforceable promises.

Examples:

- Informal promises of delivery/payment among Indian, Chinese, Vietnamese and many Asian traders, merchants, money lenders, etc.
- Informal employment contracts in Japan and Indian village

Relational Contracts:

- Are informal contracts. Therefore,
- Do not use legal system (contract law, court, etc) for contract enforcement
- Use informal mechanisms or informal institutions for enforcement.

Relational Contracts are generally used when:

Relational Contracts II

1. The trading partners come from the same community: e.g., religious, ethnic community. Or,
2. When the trading partners have to trade repeatedly with each-other or one-another. Or,
3. When it is possible to break the ‘big’ contract into several small contracts. Or,
4. All of the above.

Desirability of Relational Contracts I

Relational Contracts:

- Facilitate trade when there is no legal enforcement; or when enforcement is poor.
- Have low ‘Contracting Costs’, i.e., cost of finding trading partners, cost of writing lengthy contracts, etc.
  - Trade generally takes places among people known to each other such as from same place, community, friends, etc.
- Have low ‘Contract Enforcement Costs’.
  - The contract is enforced either through social sanctions; or
  - is self-enforcing.

Limitations of Relational Contracts I

Under Relational Contracts:

- Outcome is not competitive
- Trade is done with known and not necessarily the most efficient Supplies.
  - In some countries, doing business with relational contracts is at least 30 percent more expensive.
  - But, due to weak legal systems people have not choice in the matter.
- Trade requires physical proximities
  - It is difficult to find relatives in far away locations, countries, etc.
- Trade cannot be fully efficient,
  - especially when transactions cannot be repeated over a long time in future.
- At times can lead to other social problems.