Chapter 5
Remedies for Breach

The Efficient Breach Model

Define:

> $V(R)$ = value of performance to the buyer;
> R = reliance by the buyer, $V'>0$, $V''<0$;
> C = cost of production to the seller.

Assume that C is a random variable distributed by $F(C)$ with density $f(C)\equiv F'(C)$. Reliance must be chosen by the buyer before C is realized, and thereafter is a sunk cost (i.e., R is non-salvageable).

Socially optimal breach and reliance

Once C is realized, it is efficient for the seller to perform if $V(R)\geq C$, and efficient to breach if $V(R)<C$, given the value of R. Thus, at the time the buyer must choose R, the probability of performance is $F(V(R))$, while the probability of breach is $1-F(V(R))$. If breach occurs, neither the value nor the cost of performance is realized, but the buyer incurs the sunk cost of R. However, if performance occurs, the buyer realizes $V(R)-R$, while the seller incurs the realized cost of performance, C. Combining these yields the expected value of the contract as of the time of its formation:

$$F(V(R))\{V(R) - \mathrm{E}[C \mid C < V(R)]\} - R$$

$$= F(V(R))V(R) - \int_0^{V(R)} C\,dF(C) - R \qquad (5.1)$$

Differentiating this expression with respect to R yields the first-order condition for optimal reliance, R^*:

$$F(V(R))V'(R) = 1 \qquad (5.2)$$

This says that the expected marginal benefit of reliance should be set equal to its marginal cost. Note that R^* is less than the value of reliance that maximizes $V(R)-R$ given that performance is uncertain.

Damage measures and breach

Define D to be the damage payment the seller must make to the buyer in the event of breach, and let P be the contract price (payable on performance). Given R, the seller makes the breach decision after realizing C to maximize her profits. If she performs, her profit is $P-C$, and if she breaches, it is $-D$. Thus, she will breach if $-D>P-C$, or if

$C>P+D$. We said above that breach is efficient (given R) if $C>V(R)$. The seller thus makes the efficient breach decision if $P+D=V(R)$, or if $D = V(R)–P$, which is just *expectation damages*. Any damage measure less than this amount will induce excessive breach (e.g., reliance and zero damages), and any damage measure greater than this will induce too little breach.

Expectation damages and reliance

The buyer will choose R to maximize his expected return from the contract, given P and D. Thus, he maximizes

$$F(V(R))[V(R)–P] + [1–F(V(R))]D – R \tag{5.3}$$

Substituting $D=V(R)–P$ into this expression yields $V(R)–P$. Thus, the buyer *overinvests* in reliance under expectation damages because he is fully insured against breach.

Consider *limited* expectation damages as a possible remedy for this problem. Specifically, define $D_e*=V(R*)–P$, where $R*$ is efficient reliance. Substituting this into (5.3) and differentiating with respect to R (treating $V(R*)$ as a constant) yields (5.2). Thus, the buyer invests efficiently.

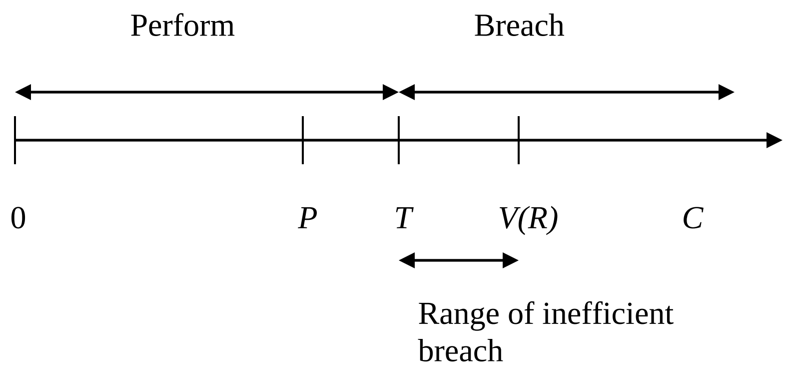
Commercial Impracticability

Commercial impracticability is an excuse that allows the seller to breach without damages if her costs are especially high. Thus, it is not a zero damage remedy but rather a conditional remedy. That is,

$$D = \begin{cases} V(R)–P, & \text{if } C < T \\ 0, & \text{if } C > T \end{cases} \tag{5.4}$$

The buyer is therefore discharged form performance if costs exceed some threshold T (to be determined), but otherwise he faces expectation damages for breach. (Note that this rule therefore resembles negligence in tort law.)

Consider the seller's breach decision under this remedy. Note first that in the range where $C<T$, the buyer will breach efficiently because she faces expectation damages. However, if $C>T$, she will breach whenever $C>P$, given zero damages. Whether or not this leads to efficient breach depends on the value of T. If $T<V(R)$, there is a possibility of inefficient breach for values of C such that $C>T$ and $P<C<V(R)$. This case is illustrated in the following diagram:



In contrast, if $T \geq V(R)$, inefficient breach will never occur. If $T > V(R)$, the seller will breach efficiently if $V(R) < C < T$ because she prefers paying expectation damages to performance when breach is efficient, and she will breach if $C > T$ since damages are zero. Alternatively, if $T = V(R)$, she will breach efficiently for $C > V(R)$ since damages are zero (given that $C > V(R)$ implies $C > P$).

The preceding shows that the seller will breach efficiently as long as $T \geq V(R)$. Now consider the buyer's reliance choice. The buyer's expected return in this case is given by

$$F(V(R))[V(R)-P] + [F(T)-F(V(R))][V(R)-P] - R$$

$$= F(T)[V(R)-P] - R \qquad (5.5)$$

In the first line, the first term reflects the range where performance occurs, and the second term reflects the range where the seller breaches and pays expectation damages (i.e., the range where $V(R) < C < T$) given $T \geq V(R)$. Differentiating (5.5) with respect to R and cancelling terms yields

$$F(T)V'(R) + f(T)[V(R)-P](\partial T/\partial R) = 1 \qquad (5.6)$$

Comparing this to (5.2) shows that efficiency requires $T = V(R)$ and $\partial T/\partial R = 0$. Together, these condition imply that $T = V(R^*)$. Thus, under the rule in (5.4), both efficient breach and reliance result if discharge occurs exactly over the range where breach is efficient, given the efficient level of reliance.

Specific Performance

Under specific performance, the seller can only breach by negotiating a buy-out price if costs are unexpectedly high. This price will be negotiated at the time C is realized. Suppose, as above, that the original price is P, and the buy-out price is S. For any realized value of C, the seller will want to breach if $S < C-P$, where the right-hand side is the loss from performing. The buyer will agree to the buy-out if $S > V(R)-P$, where the right-hand side is the gain from performance. A mutually acceptable buy-out price exists if $C-P > V(R)-P$, or if $C > V(R)$, which is exactly the condition for efficient breach.

The specific value of S must now be determined in order to examine its effect on the buyer's prior reliance choice. If we assume Nash bargaining, S will evenly divide the joint gains from a buy-out, yielding

$$S = \frac{V(R) + C}{2} - P \qquad (5.7)$$

Now return to the buyer's choice of reliance in anticipation of the possibility of a buyout. The buyer's expected return is

$$F(V(R))(V(R)–P) + [1–F(V(R))]\mathrm{E}[S \mid C>V(R)] – R$$

$$= F\big(V(R)\big)(V(R) - P) + \int_{V(R)}^{\infty} \left(\frac{V(R) + C}{2} - P\right) f(C)dC - R \qquad (5.8)$$

The first term reflects the return in the performance state, and the second term reflects the return in the case of a buyout. The resulting first-order condition for R is

$$F(V(R))V'(R) + [1–F(V(R))](V'(R)/2) – 1 = 0. \qquad (5.9)$$

The buyer therefore over-relies (i.e., chooses $R>R^*$) in order to reduce the probability of breach, given that in the resulting bargaining over a buyout price, he only receives a share of the resulting surplus.