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1

Behavioral models of contracting

- Time inconsistency models ("naive"/"sophisticated")
- Fairness
- Bounded rationality (most ambitious)

Trade (Forthcoming, AER)

Is it possible to think about the costs of complexity rigorously?

• Buyer/Seller

• Trade: Known design A (w/prob. $1-p$, it is the appropriate design: $v - c > 0$)

• with prob. p , appropriate design is "A'": delivers v , while A delivers $v - \Delta < v$

- foreseen payoffs
- unforeseen action

• If wait until learning that A' is appropriate, there is an adjustment cost a to go from A to A'.

- $a \in [0, \Delta]$

• If A' is identified at the contract stage, save a . (in expectation, save pa)

• assume $v - c - pa > 0$

• Nash bargaining: ($\beta + \sigma = 1$)

• can become aware of A': think costs

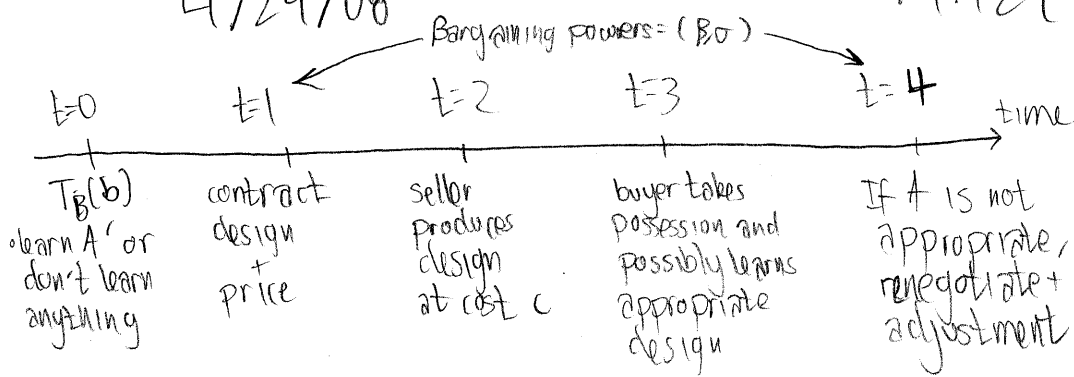
• for buyer: $T_B(b)$, for seller: $T_S(s)$, convex

• if A' is the appropriate design, buyer learns w/prob b . S learns it w/probs.

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2



First best: $T_B'(c^b) = p a$

- assume that β is "high enough", so that B has a pure strategy
- call b^* the equilibrium cognition - posterior on β :

$$\hat{p}(b^*) = \frac{p(1-b^*)}{(1-p) + p(1-b^*)} \text{ if haven't found } A'$$

$$= \Pr[A' \text{ is appropriate}]$$

- with a ^{contract with a} standard design, if it turns out A' is appropriate, seller captures: $h \equiv \sigma(\Delta - a)$
buyer captures: $\beta(\Delta - a)$

• both parties expect seller to get $\hat{p}(b^*)h$

- ex ante price $p(b^*)$ for contract with standard design A : $\sigma[v - c - \hat{p}(b^*)a] = p(b^*) - [c - \underbrace{\hat{p}(b^*)h}_{\text{holdup discount}}]$
 $\Rightarrow p(b^*) = c + \sigma[v - c - \hat{p}(b^*)\Delta]$

- ex ante price if B learns A' is appropriate, (and B gets $\beta(v - c)$ rather than $\beta[v - c - \hat{p}(b^*)a]$)

Ex ante, buyer:

$$\max_b [-T_B(b) + p b \beta(v - c) + p(1-b)[v - a - h - p(b^*)] + (1-p)[v - p(b^*)]]$$

\downarrow
 buyer bears adjustment cost

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$$\max_b [-T_B(b) + \beta(v-c) + (1-pb)\hat{p}(b^*)\sigma\Delta - p(1-b)(a+h)]$$

$$\sigma(\Delta-a-\Delta\hat{p}(b^*)) = \sigma(\Delta(1-\hat{p}(b^*)) - a)$$

$$(b): T'_B(b^*) = \underbrace{p a}_{\text{social benefit}} + \underbrace{p [h - \hat{p}(b^*)\sigma\Delta]}_{\text{benefit of avoiding holdup}}$$

social benefit
> p a

if

↓ bargained price with A'

$$(1 - \hat{p}(b^*)) > \frac{a}{\Delta}$$

excessive cognition

< p a

if

$$(1 - \hat{p}(b^*)) < \frac{a}{\Delta}$$

free-riding effect

potentior that
A is appropriate