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Lecture 3

Transcription costs & property rights

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Industrial Economics

Before we begin

- Saturday's ***labs***
- Today the lecture will be ***extremely interesting***
  - ***Just kidding***! It will be ***boring***!
  - Seriously, it will be ***very boring***
  - It will be ***easy*** and ***useful***, though
- From ***next lecture*** the material will get difficult

  missing even one lecture will hold you back significantly
- If I see anyone working on the homework during this lecture, I will ***deport*** them!

Road-map

What explains the size of firms?

There are ***two factors*** that affect the ***optimal size*** of a firm

1. The ***market power*** factor

   size allows to ***exploit*** the market more effectively
2. The ***efficiency*** factor
   a) The ***technological view*** of the firm
   b) The ***transaction costs*** approach

      avoid ***transaction costs*** and ***asymmetric info***
   c) The ***property rights*** approach

      alleviate ***incompleteness*** by authority systems

b) Transaction costs

- Consider the ***choice between*** organizing activity
  - internally or
  - using the spot market
- We need to determine the ***costs*** and ***benefits*** of these two modes
- Williamson (1975) noted the economic ***factors*** that matter:
  I. Investment specificity
  II. Opportunistic behavior
  III. Bounded rationality

b) Transaction costs

I. Investment specificity

- Investments that pay off only if the particular relationship ***lasts*** for some time
  - ***site specificity*** (e.g. investment to save transport costs)
  - ***physical asset specificity*** (e.g. investment on specific equipment)
  - ***human capital specificity*** (e.g. investment in acquiring specific skills)
- In these cases, ***quasi-rents*** are high

  the value in the investment's ***first-best use*** is much higher than its ***salvage value***

II. Opportunistic behavior

- Specificity creates the possibility of ***renegotiation***
- Ex ante both parties have **bargaining power**
- Ex post the party who sunk the specific investment ***looses*** its bargaining power
- This creates the possibility of ***holdup***
  - the strong party may want to ***renegotiate the agreement*** with better terms

III. Bounded rationality

- ***Bounded rationality***: a complete agreement is impossible to write
  - ***Unforeseen*** contingencies
  - Prohibitive ***costs*** of contracting over all contingencies
  - Prohibitive ***monitoring*** costs
  - Timely ***enforcement***
  - ***Distortion*** of incentives in usual cases
- In reality, contracts are ***incomplete***
  - some ***bargaining*** will have to take place ex post, and this may lead to ***inefficiencies***

Theoretical prediction

- The more ***specific*** the investment, the higher the incentive for ***opportunistic*** behavior
  - thus, the larger the scope for ***efficiency losses***
- Hence the more ***specific*** the investment, the higher the probability of ***integration*** (i.e. common ownership) as opposed to a contractual relationship

Monteverde and Teece (1982)

- They ask the question why firms in the automobile industry produce some components ***in-house*** while they ***outsource*** others
- Findings:
  - The ***higher the development cost*** of a component, the more likely that production was in-house
  - ***Firm-specific components*** were more likely to be produced in-house than generic components

Info asymmetries: adverse selection

- Asymmetry in information ***prior to the deal***
  - The better informed party will ***selectively participate*** in those trades that give it the advantage over the other party
  - The less informed party will ***incorporate*** the lack of information in her valuation for the trade abstaining from otherwise efficient trades
- Assume that A is better informed than B about the value, V, of a good owned by A
  - If $V_B > V_A$, efficient trade is feasible at $p \in (V_A, V_B)$
  - If B cannot assess V_B and $EV_B < V_A$ the market will fail
- ***Remedy*** for adverse selection is ***screening*** with ***menus***

Info asymmetries: moral hazard

- Asymmetry in information ***after the deal***
- Actions of one party may ***change*** to the detriment of another after the deal has taken place
- Moral hazard has ***two aspects***:
  1. One party may take ***more risks*** because the other bears the ***cost*** of those risks
  2. One party may take ***hidden action***
- ***Examples:*** car insurance, labor contracts
- Adverse selection deals with the ***agent's type*** while moral hazard deals with the ***agent's actions***

Model: Vertical relationship

- Consider a ***seller*** with cost c
- And a ***buyer*** who values the good by v
- If they decide to ***trade*** at price p
  - The benefit for the buyer is: $v - p$
  - The benefit for the seller is: $p - c$
  - Total benefit is $v - c$, does not depend on p
- Trade will be ***efficient*** if the total benefit is ***non-negative***
- ***Under complete information***, depending on the ***bargaining power***, $p \in [c, v]$

Asymmetric information

- Suppose now, that the seller
  - Perfectly ***knows*** his cost c
  - Knows that v is distributed in $[\underline{v}, \overline{v}]$ according to $f(v)$
- The buyer ***knows*** both c and v
- The seller has the ***right*** to make a take-it-or-leave-it offer for the price
- ***Transaction*** will occur if the seller offers: $p \leq v$
- The ***probability*** of this is

$$P(v \geq p) = \int_{p}^{\overline{v}} f(s)ds = 1 - F(p)$$

Trade outcome

- Seller's ***expected gain*** is then

$$E\Pi = (p - c)(1 - F(p)) = p - c - F(p)p + c\,F(p)$$

- The seller ***maximizes*** $E\Pi$ w.r.t. p

$$\partial E\Pi / \partial p = 1 - F(p) - (p - c)f(p) = 0 \Rightarrow$$

$$1 - F(p) = (p - c)f(p) \;\Rightarrow\; p > c$$

- The FOC ***does not*** rule out the case $p > v > c$
  - ***Trade does not occur*** even though $v > c$
  - ***Market fails*** because the seller (without knowing) makes an offer the buyer cannot accept
  - The buyer has complete info but the seller has the bargaining power

Contracting

- The inefficiency could be prevented if a ***contract*** is signed ex ante and settles what happens ex post
- The contract would simply ***give the power*** of price setting to the informed party: the buyer
- In this case the buyer would set $p = c$ and acquire all the benefit ***net of*** the contract payment to the seller for the ***right*** to set the price

c) Property rights

- ***Hart:*** Given that contracts are incomplete, the ***owner*** of the physical asset(s) has the right to make ***decisions*** in the case of ***unspecified contingencies***

  this is referred to as ***'residual right of control'***
- According to this view, a firm is a ***collection of owned physical assets*** – excluding human capital
- Ownership rights yield a better ***bargaining position***

  this affects the division of the ***surplus ex post*** and the level of ***investment ex ante***

Model of authority

- Two ***agents*** $i = 1,2$ must decide on some ***action*** $d \in D$
- The ***benefit*** for each agent is $B_i = B_i(d)$
- Assume that 1 has the ***authority*** to make the choice and chooses $d_1 :\; B_1(d_1)$ is max
- If $B_2(d_1)$ is not also max, then 2 may want to ***pay t*** to 1 to choose $d_2 \neq d_1 \;:\; B_2(d_2) - t \geq B_2(d_1)$
- 1 will ***accept*** if: $t \geq B_1(d_1) - B_1(d_2)$
- Their ***net benefit*** from this ***agreement*** will be:

$$B_1(d_2) - B_1(d_1) + t \quad \text{and} \quad B_2(d_2) - B_2(d_1) - t$$

Equilibrium transfer

- Assume that 2 will make an ***offer***
  take-it-or-leave-it bargaining
- 2 faces a 2-dimentional ***optimization problem***
  d_2 affects ***gain***, t affects the ***implementation cost***
- If(d_2^*, t^*) exists, ***both gains*** will be weakly positive
- If 1 was ***not endowed*** with the authority and both players had ***equal bargaining power***:

$$d = d^* : B_1(d^*) + B_2(d^*) \text{ is max}$$

- So, ***authority benefits 1*** by

$$B_1(d_2) - B_1(d^*) + \mathrm{t} \geq 0$$

Property rights approach – Conclusions

- Integration ***reduces opportunistic behavior*** because it lessens the bargaining power of one of the parties
- Efficiency requires that the ***residual rights of control*** rest with the party whose ex ante investment has the ***larger effect*** on the joint profits
- Efficiency requires that highly ***complementary assets*** are under ***common ownership***
- ***Independent assets*** may be separately owned so that both parties will have ***incentives*** to be efficient

Thank you!

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WARNING!

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