Economics of Organizations

Milgrom/Roberts, chapter 2

In all we've covered so far, assume firm is a profit-maximizing entity. Finally, focus on how a firm (or any organization) should be designed and managed to achieve economic efficiency.

Focus on the following issues:

- Analysis at *transaction* level. Organization as a nexus of *contracts* between individually self-interested people.

- Define: efficiency

- Transactions costs: costs associated with economic activity. Organizations arise to minimize transactions costs?

- Value maximization and the Coase Theorem

Introduction to organizational analysis

- *Contract:* specifies action and associated payment. (Examples: work 1 hour for \$10, sell used car for \$2000)

- Organization is a nexus of contracts between individually self-interested and utility-maximizing people.

- Contracts align the incentives and interests of self-interested people with those of the organization. Given individual self-interest, contracts are *feasible* only when they specify actions which a utility-maximizing individual would voluntarily choose (actions must be *incentive-compatible*).

- Organization form affects the range of contracts which are feasible.

- Example: with worker heterogeneity, it is infeasible to write contracts which specify a uniform wage for maximal effort. More productive workers will "shirk".
  - Employee-owned firms align employee's incentives to maximize firm profits.
  - Paying executives in stock options ties managerial effort to firm performance.
  - Basic principle: sharpen incentives by making an individual's payment *directly dependent* on her action.

Efficiency: definitions

- An *efficient* organization is one in which there is no available alternative which at least one of the individuals involved would strictly prefer.

- Simple example: Divide a cake between two people
  - 1/2,1/4 is not efficient, since you can do 1/2, 1/3 without making person 1 worse off and making person 2 strictly better off
  - 1/3, 2/3 is efficient: *any* division of 1 is efficient. Actual division depends on bargaining power of parties, legal institutions, etc.

- Efficiency relative to underlying organizational goal: most efficient organizational form for a company and for (say) a monastery may be very different.

- Throughout, we focus on understanding existing arrangements as efficient choices: why is this valid way of proceeding?

Efficiency 2

Efficiency principle: If people are able to bargain together effectively and can implement and enforce those decisions, then the outcomes of economic activity will tend to be efficient (at least for the parties involved).

Simple example: Anti-smoking laws in a restaurant

- Smokers' utility: 0 if smoke, -1 if can't smoke

- Non-smokers' utility: 0 of no smoke, -1 if there's smoking

- Assume 120 smokers, 80 non-smokers.

- Under non-smoking law: utility of all customers is -120.

- Consider contract: each smoker pays $0.66 to the non-smokers. In total, smokers pay non-smokers $80 in order to smoke. Total utility: -80. This is efficient.

- If more non-smokers than smokers, then non-smokers pay smokers not to smoke.

- In general, with M smokers and N non-smokers, highest total utility is $-\$(\min M, N)$, achieved by having majority pay off the minority. This is efficient solution.

Efficiency 3

- Efficient contract will be struck relative to the *feasible* contracts: more efficient outcomes which result from infeasible contracts not achievable.

- Imperfect enforcibility renders certain contracts infeasible: above contracts break down if (say) nonpayment is not punished.

Transactions Costs

Up to now, mostly focused on costs associated with production decisions. Organization theory proceeds from recognition that economic activity (hiring/firing workers, buying inputs, selling to retailers) involves *transactions costs*.

In general, market provides the "right incentives" with regards to production decisions (Adam Smith's "invisible hand"). Free enterprise encourages efficient production (i.e., at lowest cost).

Organizations arise in order to achieve effiency in economic transactions (i.e., minimize transactions costs).

Example: Firm's employment decisions.

- Hiring on spot labor market is ideal without job turnover costs

- Long-term employment contract attractive in the presence of transactions costs (training costs, disruption of production line, etc). But may have to pay workers higher-than-market wage to induce them to stay (feasible contracts entered-into *voluntarily* by workers).

Value Maximization Principle

Often it's difficult to gauge whether a given outcome is efficient. Value maximization principle solves this problem in certain cases.

- Assume **no wealth effects:** individuals' marginal utility from an action y doesn't depend on wealth level x. This assumption places restrictions on individuals' utility functions:

  - Two parties, with utility functions is $U_i(x_i, y_i) = x_i + v(y_i)$. Note that $MU_y = v'(y)$, which is independent of x ("no income effects").

  - *Total value* of the two parties defined as $U_1 + U_2 = (x_1 + x_2) + (v(y_1) + v(y_2))$. Note that all that matters is total wealth $(x_1 + x_2)$, not how it is divided among the two parties.

- Cake-division example: no actions in this example

  - If $U_i = x_i$ (no wealth effects), then *any* two-pieced division of the cake is value-maximizing

  - If (say) $U_1 = x_1$, but $U_2 = 2x_2$, then in order to maximize total value $x_1 + 2x_2$, you give the entire cake to player 2: distribution matters.

Value Maximization Principle 2

- **Value maximization principle:** with individuals whose preferences exhibit no wealth effects, an outcome is efficient only if it maximizes the total value of the parties. Moreover, for any inefficient allocation, there exists another (total value maximizing) allocation that *all* the parties *strictly* prefer.

- Example: anti-smoking law. With M smokers and N non-smokers, total value is maximized if the larger contingent pays each of the smaller contingent $1, so that maximized TV is $-\$(\min M, N)$.

- For the most part, we focus on situation where value maximization is correct criterion for efficiency.

The Coase Theorem

This leads to a celebrated result, which combines the efficiency and value maximization principles:

Coase Theorem: Bargaining among parties whose preferences exhibit no wealth effects will lead to the most efficient (i.e., value-maximizing) among the feasible outcomes, *no matter how much bargaining power each side has.*

Bargaining power (or "property rights") affects only the distribution of the payoffs, not the total payoffs.

Return to cake-division example again:

- Coase Theorem says that bargaining will still lead to the efficient outcome, where the cake will be completely divided between the two parties.

- Bargaining power only affects sizes of slices.

Summary: chapter 2

- Organization as nexus of contracts. Contracts enacted to align incentives of parties. Organizational form affects *feasibility* of contracts.

- Efficient outcome: can't make one party better off without making another party worse off

- Efficiency principle: bargaining leads to a (feasibility-constrained) efficient outcome

- Markets lead to efficient production; organizations arise to promote efficient transactions.

- Coase Theorem: bargaining in the absence of wealth effects leads to a value maximizing, efficient outcome, regardless of relative barginaing power between the parties.