MICROECONOMICS AND POLICY ANALYSIS - U8213
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What is a firm? Not-for-profit firms

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Reading: "Organization of the Firm", Holmstrom/Roberts, Hart/Moore, Hansmann (2)

What is a firm?

We will answer four questions to describe firms:

1. What is a firm?
2. Why do firms exist?
3. What activities should be carried on inside the firm?
4. Who is the owner of the firm?

1. What is a firm?

It shouldn't be the case that we need firms at all. There are employees and owners who engage in all types of activities as part of a firm's productive enterprise. But, why couldn't we use the mediation of the market to interact. Does the same firm that creates the body of the car need to do the upholstery? How about the door and trunk? Should these all be in the same firm? In reality, all of these steps are in fact are done within the same firm. All of these steps mentioned to make a car are done within the firm but some steps are done outside the firm. One of the defining features of the firm is that the market does not exist within the firm – your supervisor tells you what to do and you do what you're told (within some broad parameters). Basically, within a firm there is no market. So, the defining features of a firm are:

1) An area where market forces do not operate
2) Set of assets in which the owner of the firm has the right to decide what happens to those assets. (See section below "Who is the owner of a firm?")

2. Why do firms exist?

The *Theory of Teams* describes the basic problems describes why we need firms at all. To understand the Theory of Teams, let's examine an activity which requires several workers to work simultaneously. For instance, moving a piano. All workers must work together to move the piano.

You can write a contract for each mover. But, moving the piano has one implicit feature in that even though the people lifting the piano may have some sense of how much effort each mover is exerting, an outside observer may have a more difficult time to assess. Therefore, you can't write an individual contract based on each individual's effort. So, how do you motivate each mover? You could offer an incentive to each mover. For instance, you can split any profit made between each worker so there is more incentive to work hard. The more effort a worker exerts in moving the piano, the more pianos the partnership would be able to move and the more profit each

receives. The workers are then called *residual claimants*. Residual claimants are the people who receive the money left over, or profit. However, this technique has its limitations. You can show that each individual would work hard, but not hard enough. The problem is *shirking*. *Shirking* is when one worker changes their work efforts that impose a cost on other team members. "The shirking team member is better off by shirking if none of the other team members change their behavior." (see "The Organization of a Firm, p. 231-3). However, other workers won't put up with this behavior for long. So, once the shirking worker is discovered each worker will also work less. Everyone will work somewhat less accounting for the fact that others are not working to their full potential. The equilibrium that results is that everyone is not working as hard as they could. If you could coordinate (as in prisoner's dilemma) then everyone would be better off. For instance, if we all agreed to work hard. However, if the others were working hard then I would want to work less. What is the marginal cost in regard to each individual? If I work harder, then I bear the cost of the extra work. I may increase my work by unit 1 but only receive the benefit of ¼ of my working harder (assuming four residual claimants).

How can you give adequate incentive? One possibility is to hire a 5^{th} person who will walk around and assess how hard everyone is working. When everyone is working hard we will earn a bigger pie, probably more than enough to hire the extra 5^{th} person. The person with the whip has the power, but in this case the owners of the firm are the 4 workers. Now if we have this person inflicting punishment, we have solved one problem of teamwork so that everyone is now working hard. But then how do you motivate the person with the whip, or the monitor. This is the problem of the *monitor's monitor*. You can hire another person to whip the whipper, but you could also include the monitor as a claimant of the activity. The bigger the pie for the partnership, the more the monitor will be paid. However, the person with the whip will not work as hard as they should. We need a stronger incentive for the monitor. One solution is that each of the partners (movers) could figure out how much money they would make (including how much they would make without working hard and how much they would make by working really hard) so they can set their own wage that is set sufficiently high to motivate them and then allow the motivator to take the residual earnings.

3. What is the natural and appropriate extent of the firm? What activities should be carried on inside the firm and what activities should go on outside the firm?

The Theory of Teams explains why firms exist and what activities should go on within the firm, but transaction costs also define what should go on within the firm. Ronald Coase (noble prize in the late 80s) developed a theory that assumes that the market does not operate within the firm. Outside the firm, goods are exchanged and contracts are made with associated costs. If operating within the market had costless transactions then there would be no reason for a firm. However, transaction costs in the market are not zero, so there is a cost for any transaction. **An activity should be within the firm when the costs of the activity outside the firm are greater than the costs of the activity within the firm**. For instance, if I make a contract with someone outside the firm to produce something, it doesn't matter how hard they work, I pay them when they finish, but I also have to pay the lawyers fees for establishing the contract. If I have people produce this thing within the firm I must hire monitors to ensure that my workers are working hard enough. So, you take the activity into the firm if paying the lawyers are more expensive than paying for a monitor.

Coase's theory is that transaction costs are significant.

The 3 characteristics that are factors in cost of transactions: (Holstrom/Roberts, p. 76)

- **frequency** – the cost of transaction depends on how often you undertake that transaction. For instance, you may buy new land or a factory that involves legal costs. Does that mean you want your own legal department? It depends on how often you buy land and use lawyers.
- **uncertainty** – the costs of transaction depends on the certainty of the activity. When you go through the market you need to write down the contract that specifies every possible outcome and every circumstance. Let's say we are making an order for door handles. Suddenly your design department says that we need to change the design of these handles. How predictable is this activity? Whenever uncertainty is involved two things happen (1) they charge you more when you change (2) the contract must specify all of the contingencies
- **specificity** – the costs of transaction depends on how specialized your activity is. If what you need is completely unique two things happen (1) the people making the part also has to design it from scratch as well (2) the holdup problem – once we have contracted specifically for an item then that means that we are stuck with this other firm. This gives a lot of power to the other firm – even if you specify a contract they may renegotiate the contract for more. We can't at the last minute ask someone from another manufacturer, so the firm can hold us up for more money. The classic example of the holdup problem is Fisher Autobody and General Motors. General Motors bought out Fisher Autobody because of the holdup problem (see "Organization of a Firm", p 253-5)

4. Who owns the firm? Who should own the firm?

Owners are those persons who share two formal rights (Hansmann, p269):

(1) **Right to appropriate the firm's residual earnings**. A residual claimant is the person who gets what is left over after everyone gets his or her legal share (residual earnings). The owner of the firm has a claim to the residual – basically the firm's profits.

(2) **Right to control the firm.** The owner of a firm controls the assets of the firm. Control in what sense? There are contractual limits to controlling assets. For example, if I were leasing an apartment, I would have limited control of what happened in the apartment. Am I still the owner? Yes, I can still control what happens to the apartment when it is not governed by a contract. Likewise with the assets of the firm, there may be contracts that control the assets, but then who decides what happens to the assets is the owner.

The Hart/Moore article talks about who should own a firm. They use the example of a ship, sailor, and chef. The point is that there is some investment for the chef and sailor to prepare them for the voyage. The sailor may need to learn about the waters or local knowledge. If I needed to invest time to learn a particularly unique machine, I would be hesitant to make that investment if I thought that I would not be able to use those skills elsewhere. If I own that investment then I could ensure that I could continue working on that machine.

Hansmann has a synthetic view of who should own a firm. He has a framework that considers two kinds of costs **(1) cost of ownership** and **(2) cost of contracting**. One general observation he makes is that typically owners of the firm are patrons of the firm. Hansmann defines patron as "all persons who transact with a firm, either as purchasers of the firm's products or as suppliers to the firm of some factor of production, including capital" (Hansmann, p.270). It is very easy to become an owner of IBM, if I buy some stock . To what extent am I a patron of the firm, or how much am I interacting with the firm? Well, you have provided capital to the firm so in some sense you have interacted with the firm. Employees or customers can also be owners of a firm. An example of an employee owned firm is AVIS car rental. Hansmann also explains the

different forms of organizations and why particular organizations may have evolved to a particular form.

Costs of Contracting (Hansmann, p.273)

- **Market power**. Market power refers to an industry that is not perfectly competitive. For instance, a market with a small number of suppliers. Those suppliers then have market power and will restrict the supply of goods and charge higher prices. Therefore, it may be less costly for the firm to own the supplier.

- **Hold-up** (or "Lock-In") Hold-up is when one firm has an established a relationship with a supplier which gives the supplier increased market power even if there was significant competition at the time of initial contracting. There are many places where you can buy bad coffee and muffins, but once a contract is established, the vendor has market power. In the case of the university, the vendor could slightly increase their prices and get away with it, but they don't have a lot of market prices because the university would change vendors if they did something extreme like suddenly double their prices.

- **Asymmetric information**. Asymmetric information is when the "firm has significantly better information than its patrons concerning the quality of performance."(Hansmann, p.274) It is difficult to monitor or observe the product of a contract. For instance, when you buy a car you don't know how good the car is until you own it and use it for a while. But the car manufacturer or car salesman would have a better idea of how good the car is. Supposedly, there is one last American shoe factory. After study, they found out that when they paid employees piece rates (or a rate per unit produced) the quality of determining the quality of those pieces became difficult. Productivity improved with the piece rates than when there were hourly wages, but there were problems with quality.

Costs of Ownership (Hansmann, p.275)

- **Monitoring.** If you are controlling the assets of the firm, then you need to monitor and control the operations of the firm. There are costs associated with management of the firm including the costs of (1) becoming informed about the operations of the firm (2) communication for the purpose of exchanging information and making decisions, and (3) bringing decisions to bear on the firm's management. There are also costs associated with imperfect or poor monitoring.

- **Cost of decision making.** If you own a firm, you have to figure out how to run it. Trivially, you need to figure out what to do and that takes time and costs. Also, if there is more than one owner, then the process of those owners deciding how to run the firm may be difficult and costly. One of the factors that determine the magnitude of these costs depends on how divergent the interests of the owners are. For instance, in a cooperative, the interests of the owners are fairly homogeneous and therefore the costs of decision making would be small.

- **Diversification of risk and risk bearing.** Clearly, in a contractual relationship, your only risk is default, which is a fairly limited risk. However, if you own a firm, you risk the loss of capital and residual earnings. When firms initially start, they are usually owned by initial investors, but then the investors try to sell their shares to raise capital and to diversify the risk.

If you talk to anyone who is a venture capitalist, their objective is to take on the risk and then as soon as the firm looks viable they want to diversify the risk and get out of it.

Examples of Types of Ownership (Hansmann, p. 281-296)

Investor owned firm. An investor owned firm is a common structure of a firm.

Cost of contracting. The incentive for firms to be investor owned is the problems of asymmetric information and hold-up. If a lender is the owner of the firm, then they have substantially more interest in all aspects of the firm's decision making, therefore reducing the problem of asymmetric information. Having a bank lend money and have the ability to withdraw funding would ensure that the firm is run properly, but having the threat of no long-term financing makes it difficult in the long run for the firm to run efficiently. This problem can be solved through having the investors be owners of the firm.

Cost of ownership. Diversification of risk is a conspicuous advantage of investor ownership" (Hansmann, p.283). Also, usually investors have very similar interests (to increase the value of their investment) and therefore the cost of decision making is small. However, the problem of monitoring is significant when multiple small investors are involved.

Customer owned firm. Common examples of a customer owned firm is wholesalers and customer owned cooperatives. Many university bookstores are owned by the customers. The Harvard-MIT cooperative is owned by the students.

Cost of contracting. "The principal incentive for adopting the cooperative form here [at university bookstores] is apparently market power; there is usually room for only one important seller of textbooks on campus" (Hansmann, p.284). So, if there were only one bookstore, that store would charge high prices. This problem can be solved through having the customers own the firm. The cost of contracting is similar for farm supply firms. Why? Usually in small communities there is not enough room for more than one farm supply stores.

Cost of ownership. The cost of decision making is low in customer owned firms, such as wholesalers and cooperatives, because owners have very similar interests. Cooperatives sometimes ensure that customers will have similar interests by focusing on offering a small range of products.

Employee owned firm. A common example of employee owned firm is partnerships, which are often medical practices, architects, and lawyers.

Cost of contracting. It seems in professions that tend towards employee ownership, the cost of contracting seems fairly low. Hold-up or lock-in may occur when employees of the firm, after working at the firm for a while, has developed specialized skills useful only to that firm. This can be solved by the employees owning the firm. Asymmetric information does seem to pose a large problem because in most practices monitoring the quality of their service is fairly easy. For instance, it is easy to tell when a lawyer wins or loses a case. Likewise with a doctor. So, the reasons for employee owned firms probably lies in the cost of ownership.

Cost of ownership. "The truly striking feature that seems common to virtually all well established worker-owned firms, and that seems most clearly to divide these firms from those that are investor-owned, is the strong homogeneity of interest among the workers involved" (Hansmann, p.294). Most professionals have very similar jobs and skills. The common practice of trial

periods of young lawyers within law firms, could be to allow the other partners to decide if she/he has like abilities and temperament. This creates very low cost of decision making. It also assists in sharing services such as equipment, offices, and administrative support.

Not-for-profit Enterprises

What does it mean to be a not-for-profit enterprise? A not-for-profit enterprise is not allowed to distribute its net earnings. In other words, it has no residual claimant of the firm. There is nobody who can make a claim to what is left over. All profits are reinvested in the activities of the firm.

Hansmann presents in his article that profit-seeking firms to successfully operate, must satisfy the following conditions: "that consumers can without undue cost or effort, (a) make a reasonably accurate comparison of the products and prices of different firms before any purchase is made, (b) reach a clear agreement with the chosen firm concerning the goods or services that the firm is to provide and the price to be paid, and (c) determine subsequently whether the firm complied with the resulting agreement and obtain redress if it did not" (Hansmann, p.843). Firms that cannot meet these requirements because of the nature of the product supplied or the environment in which it operates, consumers may be better off dealing with a not-for-profit enterprise.

Hansmann describes five market failures that may best be served by not-for-profits:

(1) Separation Between the Purchaser and the Recipient of the Service

Non-profits that receive donations are a clear example of solving the contract failure problem described above. Charitable organizations usually provide goods and services to those in another location. This makes it difficult to confirm the receipt and quality of the services provided. Because not-for-profits do not seek to maximize profits, patrons would be more likely to trust the firm and donate money.

(2) Public Goods

Next class of situations where we see lots of not-for-profits is called **public goods**. A public good can be defined by two characteristics: "(1) it costs no more to produce the good to many people than to one person, because one person's enjoyment of the good does not interfere with the ability of others to enjoy it at the same time (2) once the good has been provided there is no way to prevent others from consuming it as well" (Hansmann, p. 848). Examples of public goods are National Public Radio, police, and roads. Once these things have been provided anyone can enjoy the benefits regardless if they have paid or not. Clean environment may or may not be a public good. Clean air would be a public good because it is difficult to exclude others from breathing.

There is an incentive called **free riders** which allows one person to enjoy the benefits of the service while letting others pay for the service. For instance, people donate to National Public Radio, but others who have not paid can still enjoy the radio station. However, non-profits still may be the best way to provide a public good. Public goods are also provided by the government – which you could view as a big not-for profit.

(3) Price Discrimination

Price discrimination refers to when a firm charges different people different prices. Another type of not-for-profits are the arts organizations. Arts organizations are not-for-profit organizations because it allows the arts to charge each person what it is worth to them. They do this through not charging the customer directly through ticket prices, but allows the customer to donate what the performance is worth to him/her. This is called **voluntary price discrimination** and allows the organizations to make more money.

(4) Implicit Loans

Private education of an example of a not-for-profit that helps cover for market imperfections. "In essence, the donations received by private colleges and universities are in large part simply a means by which past generations of students help to finance the education of the present generation of students. Such a pattern of finance undoubtedly responds to a real failing in our market mechanisms – namely, the lack of an adequate system of educational loans" (Hansmann, p. 835). Private institutions are apprehensive to provide loans, partly due to moral hazard. The student may not work hard enough to pay back the loans. If the education systems were to charge the full cost of the service of education, they would only be able to educate a small group of people. By being a not-for-profit organization, alumni can donate money to help current students afford school.

(5) Complex personal services

The complexity of some services makes it difficult for the consumer to assess whether the service has been performed adequately. Nursing homes are an example. The services provided by a nursing home are very complex and it would be very difficult to write down a contract, which constituted adequate care. So, a not-for-profit would allow the consumer more constraints on the organizations behavior than if he/she were to make a contract with a for-profit firm. Many not-for-profits in this industry often operate competing against for-profits providing the same services, indicating that the advantages and disadvantages of the two types of firms are closely balanced (Hansmann, p.863).