

# Lecture 1

The firm



Industrial Economics 

## IE vs. Micro

- ★ Most students **fail to understand** the difference between IE and Micro right away
- ★ **Microeconomics** focuses on **developing tools** *create models* for various sets of given assumptions and figure out how to **solve them**
- ★ **IE** focuses on **using of the tools** to analyze markets *select* the appropriate model to **assess** a given market and **forecast** the behavior of each participant
- ★ The focus of IE is **not quantitative**, it is **analytical**
- ★ Several students **think** that they know IE because they **heard** a few things about the micro models before. ^\_.

## Questions

- ★ **Why** are firms created?
  - ★ Why some firms grow **uncontrollably**?
  - ★ Why others do **not develop** much?
  - ★ Why some firms **succeed** and **others vanish**?
- ★ But first:

**-What is a firm?\_**



The screenshot shows the Wikipedia page for "Firm (disambiguation)". The page title is "Firm (disambiguation)" and it includes a disambiguation notice: "From Wikipedia, the free encyclopedia (Redirected from The Firm)". The main text states "A firm is a business." and lists various organizations and film/television references. The "Organizations" section lists: The Firm, Inc. (talent management), Fair Immigration Reform Movement, The Firm (London criminal gang), The Firm (Firmaet) (Danish intelligence agency), The Firm (consulting company), The Firm (Hong Kong-based conglomerate), The Firm (British Royal Family), The Firm (British Secret Intelligence Service), The Firm (CIA), and The Firm (skateboard company). The "Film and television" section lists: The Firm (1989 film), The Firm (2009 film), and The Firm (1993 film).

## So, what is a firm?

- ★ A proposed definition:
 

*"a firm is a commercial partnership of two or more persons"*
- ★ But, this is a **descriptive** definition *does not address* the reason(s) of existence of the firm as an economic entity
- ★ Four approaches to what a firm is:
  1. A **loophole** for market power
  2. A **static synergy**
  3. A **long-run relationship**
  4. An **incomplete contract**\_

## 1. Loophole for market power

- ★ The firm is an integrated economic **entity** with **no internal conflict** and with **aligned interests**
- ★ Unification under the firm umbrella leads to **desirable size**
- ★ Size yields **two advantages**:
  1. Increased **market power**

how efficiently the firm **exploits** the market
  2. Increased **efficiency**
    - ◆ Economies of **scale** and **scope**
    - ◆ Reduced **transaction costs**
    - ◆ Alleviate **incompleteness** with property rights \_

## Integration and market power

- ★ **Market power** requires **size**, which can be built with **integration**
- ★ **Horizontal Integration**: increase joint **market share** and enjoy **market power** in the commodity market
- ★ **Vertical Integration**: leads to **control of production**, **exclusion** of competitors and **work around** the law
  - ◆ **Price discrimination** to different retailers
  - ◆ Intermediate **price controls** to vertical partners
  - ◆ **Internalizing transactions** to make them **unobservable** to tax authorities
  - ◆ **Internalizing distribution process**

## 2. Static synergy

- ★ Size leads also to increased efficiency
- ★ This is the **technological view** of the firm  
what is **technology**?
- ★ Technology defines the firm's **production function**, which together with factor prices yield the **cost function**
- ★ The cost function incorporates the notion of **opportunity cost**
- ★ The **cost structure** also **outlines**
  - ◆ The **scale** of the firm (size)
  - ◆ The decision **timing** (flexibility)

## Two problems

- ★ Technological approach is important but is **not the whole story**
  1. It explains the joint use of facilities, but **not joint ownership**
  2. If the LAC rises at high output, why firms don't produce in **independent divisions** under the same ownership?  
**ownership** should not affect **cost**

## 3. Long-run relationship

- ★ When firms are related in a **vertical structure**, a **long-term relationship** may be required  
it **takes time** for investment to **pay off**
- ★ This is because some relationships are associated with **switching** or **search costs**
- ★ OR required investments are **firm** or **industry specific**
  - ◆ **site specificity** (e.g. investment to save transport costs)
  - ◆ **physical asset specificity** (e.g. specific equipment)
- ★ Investment specificity is measured by the **quasi-rents**  
the **difference** between the value of the asset in its **present use** and its value in the next **best alternative use**

## Exposure

- ★ In vertical cooperation specificity creates the possibility of **renegotiation**
  - ◆ **Ex ante** both parties have **bargaining power**
  - ◆ **Ex post** the party who commits to sunk the specific investment **loses** its bargaining power and is exposed to **opportunistic behavior** by the other party
- ★ Investing in a **specific asset** or facing **high switching costs** makes you **vulnerable** to the other party  
this is referred to as **the hold-up problem**
- ★ Therefore, high quasi-rents require **long-run** relationships to **give time** to the exposed party to **recover** their investment

## Hold-up model

- ★ A and B want to **cooperate** producing a good of **value  $p$**   
A undertakes the **intermediate** stage; B the **final** stage
- ★ **Cost** for A and B are
 
$$c_A = I + a \quad \text{and} \quad c_B = p_w + b$$
 $I$  is specific investment,  $p_w$  is the transfer price,  $a, b$  constants
- ★ A and B must **agree** in  $p_w$  beforehand
 
$$p_w \in [I + a, \quad p - I - a - b]$$
- ★ If this set is **non-empty**, agreement is **feasible**
- ★ Say they **agree** that:

$$p_w = c_A + \frac{p - b}{2}$$

## Opportunistic behavior

- ★ Assume now that  $a, b$  are **completely** salvageable
- ★  $I$  however can be **partially** salvaged at  $I_s \in [0, I)$
- ★ After the agreement on  $p_w$  and after A has **sunk**  $I$ , B has room to **re-negotiate** or threaten to **exit** under the **excuse** that  $p$  has fallen, for example
- ★ In this stage, A will **accept any**  $p_w \in (I_s + a, c_A + \frac{p-b}{2})$
- ★ Investment specificity allows B to **hold-up** A
- ★ Notice that hold-up can be **reversed** from A to B, if B faces a **termination cost**  $T > I - I_s$   
**search costs** to find another partner, for instance.

## Theoretical prediction

- ★ The more **specific** the investment, the stronger the incentive for **opportunistic** behavior
- ★ Hence, the more **specific** the investment, the higher the probability of **integration** as opposed to a contractual relationship
- ★ Monteverde & Teece (1982) investigated why car mfs produce some parts **in-house** and **outsource** others
  - ◆ They found that the **higher the development cost** of a part, the more likely that production was in-house
  - ◆ Also, **firm-specific components** were more likely to be produced in-house than generic components.

## 4. Incomplete contract

- ★ Consider the **choice between** organizing activity **internally** or using the **spot market**
- ★ Can we **replace** the firm with a web of contracts?
- ★ A **contract** is a **specific agreement** with **specific terms** “you do **exactly** this – you get **exactly** that”
- ★ The **firm** is an arrangement more **open to interpretation** “you do **approximately** this – you get **roughly** that”
- ★ Contracts do not leave room for open interpretation and contingencies **not specified** in the contract may **void** it.

## Bounded rationality

- ★ Unspecified contingencies often lead to **conflicts** if they occur, requiring **external arbitration** or **bargaining**
- ★ **Bounded rationality**: a complete agreement is **impossible**
  - ◆ **Unforeseen** contingencies
  - ◆ Prohibitive **costs** of **contracting**, **monitoring** or **enforcing**
  - ◆ **Incentive distortion** in usual cases from unusual stipulations
- ★ In reality, contracts are **incomplete**  
 some **bargaining** will have to take place ex post, and this may lead to **inefficiencies**
- ★ A firm is an **integrated authority organization**  
**hierarchy settles** the unspecified contingencies.

## GM vs. Fisher

- ★ Klein, Crawford and Alchian published a monumental paper in 1978 about this infamous case
  - ◆ GM was one of the biggest car manufacturers in the world
  - ◆ Fisher Body was an iconic maker of car frames at the time
- ★ The case concerns a contract signed in 1919
  - ◆ Fisher would **supply all bodies** for GM for 10 years
  - ◆ The **transfer price** was set to  $AVC + 17.6\%$
  - ◆ Fisher would have to make **specific to GM investment**  
 closed composite bodies – relocation close to GM plants
  - ◆ GM acquired 60% ownership of Fisher with no direct control right.

## Unanticipated contingency

- ★ Till 1924 the contract **worked well**  
 Fisher indeed **built** 14 new mf locations near various GM plants
- ★ In 1925-26 GM increased its demand for closed bodies by Fisher by 200%  
 the market was growing and shifting towards closed cars
- ★ Such growth of demand was **unanticipated**  
 at the  $AVC + 17.6\%$  Fisher's specific investments were recovered faster than expected because of EoS.

## Economies of scale

- ★ Fisher cared a lot about developing **Economies of scale**
- ★ GM cared more about **streamlining the production** of the final product
- ★ Tensions grew in 1925 when Fisher **declined** to build a plant in Flint near Buick
  - ◆ Fisher preferred to produce the Buick frames in Detroit together with bodies it was producing for Chrysler (GM's competitor)
  - ◆ Fisher, however, marked up the shipping costs by 17.6%!\_

## The Flint plant

- ★ The Flint plant was very **important** for GM
  - it ultimately became the **largest** car m/f plant in the **world**
- ★ Allegedly GM **offered** financing Flint but Fisher denied because **transfer price** would not be under the 1919 contract
- ★ Fisher **did not want** to finance the Flint plant, either upon completion in 1926 only 3 years would remain to the contract
- ★ Fisher knew that a potential **new contract** would define a lower **transfer price**
  - also, GM's 60% over Fisher could give GM **full control** after 1929\_

## Holdup, or not?

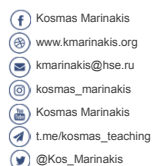
- ★ GM considered that Fisher is “**sitting on** the contract” for the remainder years
- ★ Fisher considered that GM was **holding it up** with the requirement for the **new plants**
  - after Fisher would sunk the investment, GM could hold it up after the contract expired
- ★ These tensions ended in 1926, when GM **acquired** Fisher
- ★ GM cars carried Fisher's emblem on their door sill plates until the mid-1990s
  - Fisher still exists as GM's division Fisher Coachworks, LLC\_..



## \*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\_..

ευχαριστώ!  
(thank you!)



## WARNING!

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