THE DEFINITION AND SCOPE OF MANAGERIAL ECONOMICS

What is Managerial Economics?
Douglas—“Managerial economics is ... the application of economic principles and methodologies to the decision-making process within the firm or organization.”

Pappas & Hirshey—“Managerial economics applies economic theory and methods to business and administrative decision-making.”

Salvatore—“Managerial economics refers to the application of economic theory and the tools of analysis of decision science to examine how an organisation can achieve its objectives most effectively.”

Howard Davies and Pun-Lee Lam - “It is the application of economic analysis to business problems; it has its origin in theoretical microeconomics.”

These Definitions Cover a Number of Different Approaches
1. Analysis based on the theory of the firm
2. Analysis based upon management sciences
3. Analysis based upon industrial economics

Related to, but not the same as management science and industrial economics.

The Process of Model-building
The economics “method” - “illicit relationships with beautiful models”

The steps: the hypothetico-deductive approach
- make assumptions about behaviour
- work out the consequences of those assumptions
- make predictions
- test the predictions against the evidence
- PREDICTIONS SUPPORTED? The model is accepted as a good explanation (for the moment)
- PREDICTIONS REFUTED? Go back and re-work the whole process

Should Assumptions be Realistic?
The assumption of profit-maximising may be unrealistic or inaccurate. However, what matters is the explanatory or predictive power of a theory (or model), not the descriptive realism of its assumptions. A model built on unrealistic assumptions may give good predictions. Assumptions are a necessary simplifying device. Example: Overtaking

What is A “Good” Model?
It allows us to make predictions and set hypotheses. The predictions can be tested against the empirical evidence. The predictions are supported by the empirical evidence

The Use of Economic Models
Positive Economics—Derives useful theories with testable propositions about WHAT IS.

Normative Economics—Provides the basis for value judgements on economic outcomes. WHAT SHOULD BE

Managerial Economics
Economics in general takes a „positive” and predictive approach not prescriptive/or „normative”
—trying to explain “what is” not what “should be”
—the main objective is to understand how a market economy works

Not very concerned about the descriptive realism of assumptions: “I assume X” does not mean “I believe X to be true”. Some real tension if the models are used for prescription—assume “perfect knowledge”: OK for model-building—cannot say to a manager: “behave AS IF you had perfect knowledge”

Economic Analysis
Comparative Statics
—begin with an initial equilibrium position - the starting point
—change something
—identify the new equilibrium, e.g.: in neo-classical model of the firm
  1. When demand increases?
  2. When costs rise?
  3. When a fixed cost increases?

This is the main purpose of the model - what it was designed to do

Normative prescriptions
—It will cost me $30 per unit to supply something which will give me $20 per unit in revenue—Should I do it?
—I must pay $20 billion to set up in my industry. Should I charge higher prices to get that money back?

Positive and Normative are linked by “if?” IF the aim of the firm is to maximise profit what will it do/what should it do?

What is the purpose of economic analysis?
Why do we want to apply economic analysis to business problems?

For the academic economist: to understand, to make predictions about firm’s behavior

The “positive” approach to theory; What is?

For the businessperson: “to assist decision-making”, to provide decision-rules which can be applied The “normative” approach to theory: What should be?

These purposes are different, they can lead to misunderstanding, and economists are not always honest about the limitations of their approach for practical purposes.

What are these limitations?
If the aim is prediction, unrealistic assumptions are acceptable and may be needed; for instance, the firm may be assumed to behave “as if” its managers had perfect knowledge of its environment. If the aim is to produce decision-rules which can be applied by practising managers, unrealistic assumptions will produce decision-rules which are not operational for instance, set output and price by MC=MR

How Can Managerial Economics Assist Decision-Making?
1. Adopt a general perspective, not a sample of one
2. Simple models provide stepping stone to more complexity and realism
3. Thinking logically has value itself and can expose sloppy thinking

Why Managerial Economics?
A powerful “analytical engine”.

A broader perspective on the firm.
1. what is a firm?
2. what are the firm’s overall objectives?
3. what pressures drive the firm towards profit and away from profit

The basis for some of the more rigorous analysis of issues in Marketing and Strategic Management.
Links between Managerial Economics and Industrial Economics

In industrial economics (or industrial organization), the emphasis is (or was) upon the behavior of the whole industry, in which the firm is simply a component. In managerial economics, the emphasis is upon the firm, the environment in which the firm finds itself, and the decisions which individual firms have to take.

What is Industrial Organization?

It studies how the performance of an industry is related to its structure, that is, to the number and size of firms it contains. It is the study of markets for goods and of the firms which produce them. It is the study of industry. It is more concerned with why markets are structured the way they are and behave the way they do.

Questions Asked in Industrial Organization:

1. Why are some markets monopoly-like while others are competitive?
2. How can industry performance and structure be measured or analyzed?
3. How does the performance of individual firms affect the structure and performance of the industry in which they operate?
4. If industry performance seems deficient but remediab, which government policies are likely to help more than they cost?

The Structure-Conduct-Performance Paradigm:

Basic Conditions: factors which shape the market of the industry, e.g. demand, supply, political factors

Structure: attributes which give definition to the supply-side of the market, e.g. economies of scale, barriers to entry, industry concentration, product differentiation, vertical integration.

Conduct: the behavior of firms in the market, e.g. pricing behavior, advertising, innovation.

Performance: a judgement about the results of market behaviour, e.g. efficiency, profitability, fairness/income distribution, economic growth.

How can the government improve the performance in an industry?

Links between Managerial Economics and Management Science

Management science: is essentially concerned with techniques for the improvement of decision-making and hence it is essentially normative: firms are not assumed to find the optimal solutions for themselves. They are found by the researchers who then present them as prescriptions for what the firm should do.

Managerial economics: is often concerned with finding optimal solutions to decision problems. However, the primary purpose of using models is to predict how firms will behave, not to advise them what ought to do. Managers are assumed to find the optimal solutions for themselves and that is how predictions are made.

CHAPTER 2

BUSINESS OBJECTIVES AND BASIC MODELS OF THE FIRM

The Assumptions of the Neo-classical Model of the Firm

1. The firm is a profit-maximiser - it optimises
2. The firm can be treated in a holistic way
3. There is perfect certainty

Assumption 1:

The firm is a profit-maximiser: it is assumed to make as much profit as possible. This means that the model is an “optimising” model: the firm attempts to achieve the best possible performance, rather than simply seeking “feasible” performance which meets some set of minimum criteria.

The profit-maximising assumption can be interpreted in two ways:

1. Maximisation of profit in the short-run:
The firm has a given set of plant and equipment and makes as much profit as it can with that.

2. Long-run profit maximisation:
Maximise the wealth of the shareholders in most situations these are consistent with each other. Shareholder wealth is maximised by selecting the most profitable set of plant and equipment and then operating it in the most profitable way. BUT THERE MAY BE EXCEPTIONS - making maximum short term profit might trigger entry or government intervention.

Assumption 2:

It is a holistic model: the firm is a single entity which has objectives of its own and which can be said to take decisions.

Assumption 3:

It assumes perfect certainty. Cost and demand conditions are perfectly known.

The Basic Model of the Firm

The neo-classical model

The firm aims to maximise profit by choosing the level of output which gives the biggest difference between revenue and costs.

WHAT IS THE EQUILIBRIUM?

Profit maximising output

MORE DETAIL ON THE EQUILIBRIUM

Profit maximising output

What Can We Do With This Model?

Comparative Statics
begin with an initial equilibrium position - the starting point
change something
identify the new equilibrium, e.g:
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Positive and Normative are linked by “if?” IF the aim of the firm is to maximise profit what will it do/what should it do?

The assumptions of profit-maximisation has been criticised in a number of ways; so we have:
1. The “Managerial School”
2. The “Behavioural School”

ABC TELECOM

**Managerial** Criticisms of the Profit-Maximising Model

Berle and Means (1932)
- firms are owned by shareholders but controlled by managers
- owners’ and managers’ interests are different
- managers have discretion to use the firm’s resources in their own interests

The Managerial School argues that:
1. Ownership and control are in the hands of different groups of people.
2. The interests of owners (shareholders) and Controllers (managers) are different.
3. Managers have the power to let their interests over-ride those of the shareholders.
4. Therefore firms are run in the interests of the managers.

In place of the profit-maximising model, the managerial school substitute a variety of alternatives - sometimes referred to as managerial discretion models

- Sales-revenue maximising (Baumol)
- Managerial utility maximising (Williamson)

**Managerial Discretion Models of the Firm**

Baumol’s Sales Revenue Maximising Model
- managers’ rewards seem to be more closely linked to size than to profit
- therefore, firms aim to maximise sales revenue
- but subject to a profit constraint

Baumol’s Model

TRTCProfit$Level of Output

Comparison of Baumol’s Model with the Profit-Maximising:

A. The unconstrained version

- Price?
- Output?
- Profit?

B. The constrained version

- depends where the constraint is
- note what happens if the constraint is so tight that maximum profit is required

**Comparative Statics of Baumol’s Model**

- What if demand rises?
- What if fixed costs change?
- What if variable costs change?

Williamson’s Managerial Utility Maximising Model

What do managers want?

- Utility = happiness, satisfaction

What gives them utility?

Manager has “expense preferences”, maximisation of utility derived from
a) amount spent on staff (S)
b) additions to managers’ salaries and benefits in the form of “perks” (M)
c) discretionary profit (D) which exceed the minimum required to satisfy the shareholders; available as a source of finance for “pet project”

How to solve the model? What gives them utility?

- Maths must be used, more complex

What results does it give? The comparative statics?

**Note the Common Characteristics Shared by Managerial Models and the Profit Maximising Model**

Optimising
- the firm aims for a maximum

“Holistic”
- the firm has purpose and takes decisions and actions as a single entity

Deterministic
- full knowledge of market opportunities and costs is assumed

**Behavioural Model of the Firm**[Simon (1959), Cyert and March (1963)]

the firm hardly exists; it consists of a group of people with multiple objectives. decision-makers exhibit “satisficing” behaviour; organisational slack/in-inefficiency. problem-oriented search using rules of thumb, which are a function of the past experience of the firm and the people within it

organisation learning: meeting all objectives; then raising aspiration levels. If cannot meet; then reducing aspiration levels

The Behavioural Approach

“organisations do not have objectives, only people have objectives”. the firm does not exist - it is a set of shifting coalitions of individuals. individuals and groups do not maximise - they “satisfice”. information about the environment is very limited. If all aspirations are being met - everyone is satisfied - do nothing. BUT then aspiration levels will rise until someone is not satisfied THEN rules of thumb used to find solutions to “the problem”

Aspiration levels, which adjust according to experience Problem-oriented „rules of thumb” based on past experience.

A dynamic model
- not “holistic”
- not “deterministic”
- not optimising

comparison of alternative models of the firm

<table>
<thead>
<tr>
<th>Profit-max Managerial Behavioural</th>
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<tr>
<td><strong>Objective</strong></td>
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<tr>
<td><strong>Ownership management</strong></td>
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<tr>
<td><strong>Decision-making</strong></td>
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<tr>
<td><strong>Environment</strong></td>
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<tr>
<td><strong>Holistic?</strong></td>
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**Which Approach is Most Useful?**

Behavioural approach is a more accurate description of what happens INSIDE the firm. BUT it tells us almost noth ing about how the firm will
respond to changes in the environment. To use it to make predictions about how the firm will react to changes in the environment we need to know everything about the individual firm. However, if shareholders are a powerful group and their aspiration level requires making maximum profit the firm will again behave in the same way as a profit-maximiser.

In Conclusion?
The behavioural approach is a useful complement to the profit-maximising and managerial approaches, not a substitute for them.

CHAPTER 3
THE NATURE OF THE FIRM

What is a Firm?
One answer:
- a set of transactions* coordinated by authority instead of by the market.*a transaction takes place whenever a good or a service is transferred from one party to another

Why Do Firms Exist?
- Some transactions are co-ordinated by markets
- Some transactions take place inside firms

The firm is the supersession of the market mechanism. The firm is that set of transactions which is co-ordinated by managerial authority instead of the market. Why does this happen?

Example 1: Explain why a tailor chooses to work in a factory instead of selling his service on the market.

Transactions inside a firm

Cloth → Designer ↓ Cutter ↓ Sewer → Product

Example 2: Which of the following is more likely to own printing machines?
1) A textbook publisher
2) A newspaper publisher

Give your reasons.

Market Transaction: Vertical Integration

Some Simple Explanations
People like to be directed by others?
Some people are willing to pay to be in charge?

Knight (1921)
- Someone must forecast the future and take decisions on output and price
- Income is uncertain and most people prefer a known income
- Entrepreneurs take responsibility for forecasting, pay fixed wages and take any profits
- BUT the entrepreneur could just sell his forecasts

Alchian and Demsetz (1972)
- Team production problem; how to stop shirking?
- Appoint a monitor; but just another worker, same problem
- Monitor takes the residual earnings and therefore has proper incentives

Transactions Cost Analysis
Began with Ronald Coase (1937)
Firms come into being because in some circumstances they reduce the cost of doing transactions

Developed most by Williamson (1975, 1986)
Identifies the circumstances under which different forms of „transactional governance“ are most efficient

Why Firm Exists? Transaction Cost Analysis

The “Coasian” Analysis
Transaction problem: firm supersedes market-transactions are “normally” done through markets; market is the default-some transactions are done inside firms—transactions are done in a firm when the costs of transacting on the market is higher than costs of transacting in the firm

What Are Transactions Costs?
A transaction takes place when a good or a service is transferred from one party to another

Direct costs arise in respect of:
- Locating buyers and sellers
- Acquiring information about their availability, quality, reliability
- Prices
- Negotiating, re-negotiating and concluding contracts
- Co-ordinating the agreed actions of the parties
- Monitoring performance with respect to fulfilment of contracts
- Taking action to correct any failure to perform

Opportunity costs arise in respect of:
- Inefficiencies if inappropriate equipment used
- Failure to adapt to changing conditions

Transaction costs include:
- Information and measurement costs
- Negotiation costs
- Contracting costs (ink costs, legal costs)
- Monitoring and enforcing costs, etc.

Coasian Analysis:
What decides whether a transaction takes place through the market or inside a firm?

Answer: TRANSACTIONS COSTS
Coase suggested the costs of transacting inside a firm rise with:
- As firm becomes larger marginal cost of transacting increases
- Managerial diseconomies arise
- Larger firms may pay more for resources
- Physical distance
- Dissimilarity of transactions
- Rapidly changing environment

Transactions will be organised in the least-cost way

Williamson’s Analysis
- Identifies the key characteristics of a transaction
- Identifies the different types of “governance structure” that are available
- Matches the governance structure to the key characteristics

- Bounded rationality: imperfect information; therefore contracts must be incomplete.
- Opportunistic behaviour: guileful strategic behaviour of individuals to take advantages from incomplete contracts (moral hazard problem)
- Why the combination of them will cause problems for the organisation of transactions?

The Characteristics of a Transaction
1. The extent to which complete contracts are possible – note that the term “contract” here refers to any agreement between parties, not just those which are formally written down.
2. The extent to which there is a threat of opportunism on the part of transactors
3. The degree of asset/specificity idiosyncratic investment involved in a transaction
4. The frequency with which the transaction is repeated

Contracts are Never Complete
Uncertainty/complexity
Bounded rationality
Asymmetric information
– Hidden information leads to adverse selection
– Hidden action leads to moral hazard

Incomplete Contracts are Not a Problem in Themselves
- Parties to the contract could agree to treat each other “fair and square” if something unexpected happens. The problem arises because human beings are opportunistic.
- “Self-interested behaviour with guile”
- Cheating

Before the contract is made
- Strategic misrepresentation: “It will cost me much more to do that!”

Ather the contract is made
- Reneging: “I won’t do what I promised”
- Hold up: “Pay me more or I won’t do it”

Incomplete Contracts And Opportunism Are Still Not The Problem
If one party cheats, the other party can simply take their business elsewhere. A third condition is required before arm’s length transactions between independent parties become too expensive

Idiosyncratic Investment or Asset Specificity
Investment in assets which lose their value if the transaction does not take place with a specific partner. When there is asset specificity the parties cannot take their business elsewhere - there is the “small numbers problem”

Many Different Types of Asset-specificity
- Site-specificity
  - The assets are next door to each other
- Physical capital -specificity
  - My machines only work with yours
- Dedicated asset-specificity
  - I installed these general purpose machines to meet your order and I have no other customers
- Human capital specificity
  - My managers only work with yours
- Brand-name specificity
  - I am famous for my TV series

Asset-specificity creates a “small numbers problem” - bilateral monopoly
- If I can only deal with you
- And you are opportunistic
- You may renege or hold me up
- To avoid that danger I buy you and bring you under my authority

If asset specificity and uncertainty all take “high” values and transactions are frequent it will be more efficient to “internalize” the transaction. Why? To avoid hold-up or negotiation problem.

But internal transactions have their own disadvantages:
1. Internal sources distort procurement decisions
2. Resistance to change
3. Distortion of communication
4. Poor quality of data on cost of internal production relative to market purchase

The Optimal Choice Lies in a Balance Between the Advantages and Disadvantages of Market and Hierarchy. The “best” choice is that which gives the minimum of transaction cost and production cost combined.

Alternative Governance Structures
Othen described as “markets vs hierarchies”. But more than just these two options.

- Classical contracting: the spot market transaction
  - Identity of parties is irrelevant
  - All future contingencies are accounted for
  - Self-liquidating, no further obligations
- Neo-classical contracting: building an airport
  - Contract is recognised to be incomplete
  - Arbitration provided
- Relational contracting: longer duration, more complex, original purpose may change: employment contracts.

Two Variants (Williamson)
- Obligational contracting: between independent entities
- Unified governance: inside the hierarchy of one firm

The Four Types of Governance Structure:
1. Classical contracting - complete contracts which are ideal market transactions, e.g. transactions on the spot market, one-off transactions.
2. Neo-classical contracting - incomplete contracts; some form of arbitration, e.g. employment contracts.
3. Relational contracting - greater duration and complexity
  a. Unified governance - e.g. firm
  b. Obligational contracting - e.g. licensing and franchising agreement; long term distribution agreements; networking arrangements

Extent of Idiosyncratic Investment

Which is the best governance structure?

Example 3. Vertical integration in Steel Production
Blast furnaces pour hot steel into rolling mills. Why are they both inside the same firm? Technological explanation would say “to save heating energy” But why not locate the facilities of two independent firms next door to each other?
- A Long Term Contract would be impossible to write.
- A series of short term ones too expensive: high “ink” costs, negotiation and monitoring costs
- Danger of opportunistic “hold-up” by one party or the other.
- Inefficient bargaining over the profits.

Example 4. Make v Buy for Motor Vehicle Components

Masterbook of Business and Industry (MBI)
Case A: Fisher Body and general Motors
High level of asset-specificity; Unexpected high demand; “Hold-up”

Case B: Ford and General Motors, examined by Monteverde and Teece
When high level of engineering development cost involved - Make in-house. Otherwise - Buy in. The transactions cost analysis is supported, but note that differences across firms vary very important; GM significantly more vertically integrated than Ford.

Limitations of Transaction Cost Analysis?
So flexible it explains everything above the event, but can it really predict much before the event? Transaction costs not directly observable, so empirical work must be indirect. May be many efficient solutions, so which one will occur? Is opportunism really universal? Should it be something we explain instead of an assumption? Ghoshal and Moran (1996) - teaching it is bad for business.

CHAPTER 4

OWNERSHIP AND CONTROL, DIVERSIFICATION AND Mergers

The Questions to Answer
1. to what extent do firms seek maximum profit when ownership and control are in the hands of different people?
2. what factors determine the extent to which a firm diversifies across different industries
3. how and why do mergers and take-overs take place?

Do Firms Really Try to Maximise Profits?
The profit-maximizing model assumes that there is no separation of ownership from control

i.e. Owners = Managers

But we have often have a separation in the modern corporation.

Separation of Ownership from Control
Benefits - Division of labor, capital requirement, reduction of financing costs.
Problems: Control loss, divergent interests, higher monitoring costs.

To What Extent Do Firms Seek Maximum Profit When Ownership and Control Are in the Hands of Different People?

Two questions here
1. Do shareholders always seek maximum profit?
2. If shareholders do seek maximum profit, do senior managers behave in ways which are consistent with shareholder interest or do they have significant discretion?

- Links between ownership and control
- Concentration of ownership and the influence of institutional investors
- The market for corporate control

Do shareholders always seek maximum profit?
If they buy from or sell to the firm they may prefer lower prices for outputs or higher prices for inputs. If the firm can affect prices in any way, shareholders may prefer lower profit. But it is mostly reasonable to assume that shareholders prefer more profit.

Do senior managers behave in ways which are consistent with shareholder interest or do they have significant discretion?
- Links between ownership and control
- Concentration of ownership and the influence of institutional investors
- The market for corporate control
- Managerial labour markets

Links between ownership and control
Berle and Means (1932, 1967) defined “management controlled” firms as those where no single shareholder has more than 20%. ~58% of the assets of US top 200 firms were management controlled in 1929, 85% in 1966. But many senior managers/controllers have shares in their firms and are also owners. Studies conflict each other:
- Cosh and Hughes (1987): 33% of directors have more than $US1m equity in their company - enough to motivate?
- Jensen and Murphy (1990): increase in shareholder value of $1000 brings CEO $3.25

Concentration of ownership and importance of institutional shareholders
Berle and Means 20% criterion may not demonstrate manager control - a coalition of a small number of shareholders may be able to exert control as: they hold a larger % and as other holdings are more dispersed - Leech and Leahy (1993): in 54% of UK firms a coalition of just 3 shareholders could control. In only 1 case did the coalition need to have more than 10 members.

Institutional shareholders are important
- They hold large % of equity
- Their own performance depends on their investments performing well

Ownership of Listed Corporate Equity: 1996

<table>
<thead>
<tr>
<th>Country</th>
<th>United States</th>
<th>Japan</th>
<th>Germany</th>
<th>France</th>
<th>United Kingdom</th>
<th>Sweden</th>
<th>Australia</th>
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<tbody>
<tr>
<td>Shares Owned by</td>
<td>United States</td>
<td>Japan</td>
<td>Germany</td>
<td>France</td>
<td>United Kingdom</td>
<td>Sweden</td>
<td>Australia</td>
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<tr>
<td>Shareholders</td>
<td>46</td>
<td>52</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>1% Shareholders</td>
<td>6</td>
<td>12</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Institutional</td>
<td>25</td>
<td>14</td>
<td>12</td>
<td>12</td>
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</tbody>
</table>

But do institutional shareholders use their potential influence?
Cosh and Hughes (1987): NO, they think it expensive and not very effective: worried that they may draw attention to poor performance of their investments: not under much pressure to perform themselves

But: Liberalization and de-regulation in late 80s and 90s may have changed this significantly. Institutions under much greater pressure to perform

Note: Differences between US and UK "outsiders", "market-based" systems - exit used - and Asia, Japan, Germany "insiders", "bank-based" systems - voice used

The "market for corporate control" (MCC)
MCC is the market for voting shares, which give ultimate control. The value of a firm’s stock is equal to the value of the stream of future profits (whatever the dot.coms thought!). If managers use a firm’s resources badly, the value of its stock will be below its potential value. The under-valuation is an opportunity for a more efficient management to buy at the current price, shake up the existing managers, improve the profitability and increase the share price

In principle, the MCC should prevent managers from being lazy or pursuing objectives other than profit. They will be punished for poor performance. This is often seen as one of the most important and powerful mechanisms in a market economy. One of the major reasons for "privatizing" state industries

But how effective is the MCC?

PROBLEM 1: Think of the position of a shareholder in the "victim" firm
- If shareholders know that the firm is worth more than its current value they will not be willing to sell for less than the "real" value
- the "raider" will have to offer the "real" value
- in that case the "raider" will not make a big enough offer to persuade the shareholders to sell, because he/she has costs to cover
- the "raider" could profit by buying shares in the "victim" before the takeover. But if such purchases are big the market will notice. So they must be small and therefore the share price gain needed after takeover will be very large

PROBLEM 2: The existing management may develop defences
- supermajority clauses
- poison pills
- greenmail
- golden parachutes
- the Jardine defence: find a country which will pass laws defending you

Managerial labour markets?
If top managers/CEOs job opportunities, salaries and benefits depend upon their performance they will have incentives to work hard

But: How does this work?
- Senior managers are hired by other senior managers - why would they hire the best - the best might make them look bad
- If IF IF senior managers are always moving from job to job and they think that other managers can observe them shirking and they think that other managers will punish them for shirking because they will also be punished the it would work IS THIS CREDIBLE?
- It is not very convincing that managerial labour markets work through the actions of senior managers themselves

Muhammad Firman (University of Indonesia - Accounting)
Principal/agent theory: a general way to explain the problem and the answer
Agencies (or principal-agent) problems: arises from the separation of ownership from control; divergent objectives between owners and managers: the managers (agents) may not act for the interest of the shareholders (principals). Principal/agent theory: a general way to explain the problem and the answer.

How does the Principal (the shareholders) make sure that the Agents (the CEO and senior managers) do what the Principal wants when:

- perfect information is not available
- monitoring is costly
- moral hazard is a problem

In general:
- find cheaper ways to monitor, monitor performance, not what they do
- incentive contracts, MCC, managerial labour markets, properly organised

Can We Answer the First Question?: Do Firms Try to Maximise Profits or Not?
A Yes/No answer is not possible. There are pressures which limit the amount of discretion which CEOs and senior managers can exert. But none of those pressures are absolute; however, if a wide gap opens up between the current value of a firm and its value under better management, the pressure will be very strong to correct the management. The Jardines example: can the old management keep control?

Can We Draw a Conclusion?
1. The realism of the assumption varies with the circumstances
2. The analysis above helps to identify when profit-maximising behaviour is more or less likely.

LESS LIKELY WHEN:
- firm has monopoly power
- stock market is inefficient
- shareholders are a diffuse and poorly informed group

New Directions on Ownership and Control
The Berle and Means view that firms are “widely-held” and hence management control has dominated for 70 years. Attention therefore focussed on “do managers have discretion to use the firm’s resources as they want?” But recent re-working of the data suggests that outside the US, UK and Japan many firms are controlled by family shareholders. Attention has been shifting to the ways in which these families may appropriate the assets of the firm, to the disadvantage of minority shareholders.

The Extent of Diversification
What factors determine the extent to which a firm diversifies across different industries?

Diversification will be efficient if there is SYNERGY. SYNERGY can come from:
- economies of scope
- exploitation of specific assets
- reduction of risk and uncertainty

BUT DOES IT REALLY EXIST IN PRACTICE?

The history of diversification is not good
In the 1960s and 1970s the “conglomerate” was a favourite form of business. Although the purchased firms were usually good performers, the merged firm tended to have poor performance. It became clear in the 1980s and 90s that there is a “diversification discount” of about 15% on average

WHY?
Firms seemed to not understand the sectors they entered

If there is a diversification discount why did firms do it?
Perhaps the discount only emerged in the 80s, some studies suggest it was not evident in the 70s. Mergers were to satisfy the managers, not the shareholders. With more liberalized and efficient financial markets, “focus” has been the trend for some time now

MERGERS & TAKE-OVER
A firm may grow and extend its scope through INTERNAL DEVELOPMENT or through MERGERS or TAKE-OVERS

The objective of this topic is to consider:
- WHO DO MERGERS/TAKE-OVERS TAKE PLACE?
- WHAT DOES THE EVIDENCE TELL US ABOUT WHO GAINS FROM MERGERS?

- Are mergers really for managers?

Alternative forms of merger
Horizontal: with competitors
Vertical: with suppliers or customers
Conglomerate: unrelated firms

Mergers in a perfect world
All managers are efficient; they work in the interests of shareholders; stock markets price share efficiently; no uncertainty; everyone uses the same discount rate. In that situation there are only two reasons for mergers to take place:
- SYNERGY: 2+2=4; economies of scope or scale, joint use of key resources or capabilities
- MARKET POWER: merger gives some degree of monopoly power

Mergers as the transfer of resources to better managers
If a firm is run inefficiently, share price will be low. The firm will be purchased by someone who installs better managers. Share price rises. BUT IF THIS WERE TRUE PERFORMANCE WOULD BE BETTER ALIHER MOTHERGERS!

Mergers as the result of manipulation or valuation discrepancies
Manipulation: planting rumours, “bootstraping” — my P/E is 15: 1. If I buy a firm whose ratio is 10:1 its share price will rise until the P/E is 15:1

Valuation discrepancies when there is a lot of “turbulence” in the environment, different people will make different judgements. Some will think a firm is worth more than the market valuation

The performance consequences of mergers
Shareholders of the acquired firms gain —because the acquiring firm pays a premium. The pattern of results for the acquiring firm is very mixed with values tending to fall, not rise!

Are mergers really for managers?
CEOs and senior managers like mergers
- larger firms involve more prestige and other more pay
- larger and more diverse firms reduce risk for managers (but not for shareholders who could do it another way)
- publicity is welcomed by many CEOs

The “hubris” theory of take-over
Hubris —exaggerated pride or self-confidence, often leading to retribution

the premium paid for firm is related to the CEO “hubris”, determined by:
- recent success
- media coverage
- CEO “self-importance” — his pay relative to other senior managers

Results?
1: Hypotheses are supported
2: When CEO is chairman of the Board and when the Board has higher % of “insiders” the premium paid is larger, less external oversight of senior managers

Illustration 1
In the UK, firms subject to hostile take-overs had been performing poorly before take-over. Victim firms in hostile take-overs had higher turnover of senior managers both just before and after take-over

Illustration 2
- Jardines - the great Hong of Hong Kong
- Worth $US 40bn on some estimates
- Market value of shares $US10bn

Insider managers protected by cross-shareholdings and special law in Bermuda. Minority shareholders losing out. But pressure beginning to bite

Use of US financial markets may make liable to US laws. Insider directors might be sued for breach of duty

CHAPTER 5
THE MULTINATIONAL ENTERPRISE
Multinational Enterprise

Definition: "An enterprise that controls and manages production establishments -plants- located in at least two countries." (Caves, 1996).

Note that the MNE is involved in Foreign Direct Investment, not simply Portfolio Investment

An outline history of the multinational

1. Early 19th century: Almost all European-based (e.g. British American Tobacco, Lever Brothers, Michelin and Nestlé), reflected distribution of colonial influence and most were involved in backward integration into agriculture and minerals in the colonies.

2. In the 1920s and 1930s: Establishment of international cartels in many industries for global competition.

3. From the 1950s to the early 1970s: Led by American firms moving into the European market (The American Challenge); research-intensive manufacturing industries.

4. In the 1970s, 1980s and 1990s: Emergence of the Japanese multinationals, "export-platform" activities in the newly-industrializing countries. More diversity; more host countries; more home countries; more in and out.

Economic theory and the multinational

EQUI-MARGINAL PRODUCTIVITY OF CAPITAL

Diminishing returns to capital investment

Capital will flow from countries (B) with lower rates of return to those with higher rates of return (A) until rates of return are equal, but this does not explain the MNE-owners of capital can simply invest in portfolios (buying shares and bonds), no need for foreign direct investment (setting up offices/subsidiaries, involving management and control)

The Hymer-Kindleberger proposition

Multinationals must face some disadvantages relative to incumbents-they must possess some form of offsetting competitive advantage over the incumbents; these advantages can be exploited by producing in overseas markets. Competitive advantages of multinationals: e.g. technology, capital, management skills, etc. But why not produce in home country and export the goods?

Locational theory

Host countries possess some locational advantages, otherwise the firm would simply operate in a single location. E.g. some countries have cheap resources; cheap and abundant supply of land and labour; some are close to the customers. But why not license the competitive advantage of multinationals?

Internalisation and transaction cost theory

High transaction costs involved in using marketing transactions; e.g. costs in enforcing licensing agreements. Buckley and Casson’s analysis: five advantages that an internationalised trade transaction over the market:

- Increased control and ability to plan
- The opportunity for discriminatory pricing
- Avoidance of bilateral monopoly
- Reduction of uncertainty
- Avoidance of government intervention

The “eclectic” framework: OLI

For foreign direct investment (FDI) to take place, THREE types of advantage must be in place.

(1) O: "Ownership" Advantage

The firm must have some proprietary competitive advantage

(2) L: "Locational" Advantage

There must be some reasons for the firm to change its location of production, e.g. lower labour cost; tariffs or other problems of market access; advantages of being near to the customer

(3) I: "Internalisation" Advantage

Must be more profitable to transfer the advantage inside the managerial hierarchy of the firm, instead of through a contract (e.g. licensing, franchising). Some theorists argue that "internalisation" in itself is a general theory of the multinational

It is then a part of the general analysis of the "scope" of the firm and the determination of the firm's boundaries. The same general issues determine the outcome. If a firm wishes to transfer some activity to another location it has to decide whether the resulting set of transactions should be coordinated through contract or hierarchy, i.e. neo-classical or unified governance.

The problems with contracts arise from:

1. Bounded Rationality
2. Opportunism
3. Asset-specificity

A multinational will develop wherever:

a) A transnational shift of activities become profitable, i.e. locational advantages.

b) The resulting set of transactions involves bounded rationality, investment in specific assets and the threat of opportunism, i.e. internalisation advantages.

The Impact of the Multinational on Host Economies

- Resource transfer and technology transfers effects
- Trade and balance of payments effects
- Effects on competitive structure and performance
- Effects of sovereignty and local autonomy

The Impact of the MNE on its home country

Some concerns:

1. Balance of payments effects
2. Employment effects
3. The loss of technological lead
4. Tax avoidance and loss of sovereignty

Global Competition and Corporate Strategy

The need for an analysis of global strategy: links between economic analysis and literature on global strategy. A diversity of definitions and prescriptions

General frameworks for the analysis of global strategy: by Porter (1986):

1. Configuration of the firm’s activities
2. Coordination of those activities
3. “Generic strategy” between cost leadership and differentiation

General frameworks for the analysis of global strategy:


Drivers: The characteristics of the environment that determine the need for a global approach to strategy: market factors, cost factors, competitive factors, technology factors, environmental factors

Levers: The actions firms can take to secure advantage from the drivers: global market participation, product standardisation, concentration of value-adding activities, uniform marketing, integrative competitive moves.

Zou and Cavusgil (1996): an integrated conceptual framework for global strategy

Global strategy determines global business and is a response to the external organisational factors also constrained and determined by organisational factors

Illustration 1

Multinationals in the hotel industry, ownership-specific advantages: “brand image”, “know-how” of standardised production and control difficulties arise from transferring ownership advantages: impossible to transfer across boundaries between organisations; conflicts between the company’s global interests and its local interests; difficult to fully “appropriate” the returns

Illustration 2

Globalisation in the hard disk drive industry, location decisions: driven by the balance among the level of technical difficulty, the skill level needed and the cost of labour

CHAPTER 6

CONSUMER BEHAVIOUR

Economic Theories of Consumer Behaviour

ARE NOT rich and highly descriptive analyses of the links between consumers’ personal, social and psychological characteristics and their purchasing behaviour. Look for that in the Marketing treatment of the issue. They ARE abstract and logical analyses of what is meant by “rational choice behaviour” and the implications of rational behaviour. For instance, is it necessarily true that a rational consumer will buy more of a product as its price falls? Begin by defining “rational choice” and then follow through the consequences

The Main Approaches Are:

1. Utility Theory
2. Indifference Analysis
3. Revealed Preference
4. The Characteristics Approach
Utility Theory
Consumers seek to maximise their UTILITY, which increases as they consumer more „goods“ and decreases as they consumer more „bads“. As a consumer has more of a „good“, the extra (marginal) utility they enjoy from each successive extra unit of the good declines, the principle of diminishing marginal utility. A utility-maximising consumer will purchase a combination of goods such that the extra utility acquired per $ or cent, £ or penny, is the same for every good or: the ratio of the marginal utilities is equal to the ratio of the prices.

Utility Theory and Falling Prices
If a consumer has a fixed income and begins in equilibrium:

\[
\text{MU apples}/\text{P apples} = \text{MU pears}/\text{P pears}
\]

Then the price of apples falls. Left-hand side of the equation> Right-hand side. There is an opportunity to increase UTILITY—how to do it? Shift spending from pears to apples. WHY DOES THIS WORK? Because each extra penny spent on apples gives more additional utility than each extra penny spent on pears.

Indifference Analysis
UTILITY theory requires us to think in terms of a cardinally measurable unobservable concept, which is rather „heroic“. INDIFFERENCE ANALYSIS explains consumer behaviour on the basis of less restrictive assumptions (the logic is very similar)

The following assumptions are made about „rational“ consumers:
- Preferences are complete.
- Preferences are transitive.
- Preferences are symmetric.

(These are not as unproblematic as they may seem)

An Indifference Map

The Optimal Combination of A and B

If the Price of B Falls

What Can We Say in General About the Consequences of a Price Fall?
- The overall move from one equilibrium to another is the PRICE EFFECT.
- PRICE EFFECT can be divided into SUBSTITUTION EFFECT and INCOME EFFECT.
- SUBSTITUTION EFFECT is the result of changing prices.
- INCOME EFFECT is the result of changing real incomes.

How to Find the Substitution and Income Effects?

Substitution Effect

If the consumer was on the same I curve as before (same real income) but prices moved to their new level, (budget line has the new slope) more B must be bought.

Income Effect

If relative prices don’t change but real income rises.
The substitution effect MUST lead more B to be bought if the relative price of B falls.

The Income effect could work in either direction or be neutral

- for inferior goods, income effect is negative
- for normal goods it is positive

A GIFFEN good is one where the income effect is negative and powerful enough to outweigh the substitution effect, lower prices, less is bought.

Other Approaches

Indifference analysis, and its mathematical version, is the standard approach. Revealed Preference and the Characteristics Approach merit brief consideration.

Revealed Preference

Less restrictive assumptions - consumers are consistent in their choices. A budget line is constructed and the consumer’s choice observed. When price of one good falls, a new choice is made. The new choice cannot involve less of the good whose price has fallen.

If combination X is the original choice and Z is the new choice (after the price of oranges falls), X to Z is the price effect. The broken line shows the goods which could be bought if income remained at the level required to buy the original basket of goods, but the new price ratio held. We don’t know exactly where the consumer would choose to be, but they cannot be to the left of X because they have already rejected superior combinations in flavour of X.

The Characteristics Approach

Lancaster 1966
Consumers do not desire “goods” but bundles of “characteristics” not a computer but:
- processing speed
- memory
- storage
- functions

Different brands offer different combinations of characteristics. Combining brands may allow other combinations to be achieved. Desirable mixes of characteristics might be identified.

Practical Applications of Demand Theory?

LIMITED. The purpose is to examine the meaning and consequences of rational behaviour. Forms the theoretical foundation for statistical analyses of demand. The “characteristics” concept is a useful starting point in Marketing and has led to ideas like “hedonic price” models. Take many different examples or brands of a good. Regress the price on the characteristics to see how the market prices them. In Hong Kong, residential property prices are determined by net floor area, but age, a view of water, pollution and family density also had significant (but small) effects.

CHAPTER 7
DEMAND AND ELASTICITY

The Determinants of Demand
Demand is the quantity of a product that purchasers are willing and able to purchase in a specified period.

It is determined by:
- Own Price -Po
- Price of other products, especially close substitutes and complements, Ps
- Consumers’ disposable income, Yd
- Consumers’ tastes, T
- The amount spent on advertising the product, Ao

These Relationships May be Represented As:
A „demand function“ - the general mathematical form

\[ Q_d = f(Po, Ps, Yd, Ao, Ac, As, I, C, E) \]

A demand curve

The demand curve shows the quantity that would be bought at each price, for some fixed combination of all other factors.

D-curve shifts when anything except own factors

A demand-curve shows the quantities sold at each price, assuming other things do not change. “Assume” here does not mean “we believe this to be true” but simply “if”. We know the other things change but we can only show two dimensions on a diagram.

Concepts of Elasticity

Own price elasticity is: percentage change in quantity demanded, divided by percentage change in price:

- If demand is price-elastic, revenue increases with lower prices.
- If demand is price-inelastic, revenue decreases with lower prices.
- Cross-price elasticity of demand between substitutes is positive.
- Income-elasticity determines how demand changes with customers’ incomes. For most goods income-elasticity is positive.
- Advertising elasticity is important in deciding on advertising budgets. It is positive. As the level of advertising increases, we would expect advertising elasticity to fall.

The Demand-Curve: Examples

Zero-elasticity at all prices

Infinite elasticity at all prices

\[ E_d = \infty \]

Ed = a
Unitary elasticity at all prices

This curve is a rectangular hyperbola such that price x quantity is a constant.

A Linear Demand Curve

Determinants of Own-price Elasticity

Substitutes: how close and at what prices? How narrowly defined is the product? The more narrowly defined the more close substitutes. Proportion of consumers’ income spent on the product (or % of industrial buyers’ costs accounted for)

Time. Demand is more elastic over longer periods of time

Income Elasticity

Type of good

– necessities-salt, drinking water, zero elasticity
– luxuries, zero at low levels of income then high when income thresholds exceeded
– inferior goods-negative, purchase less as income rises - bus travel, low-grade margarine, paraffin

Cross-price elasticity

– substitutes or complements, and how close?
– An industry is a group of firms producing products with high positive cross-elasticities

The Demand Curve for an Individual Firm

Depends on the conditions of competition. For a monopoly, industry demand curve is the firm’s demand curve. Under perfect competition, demand is infinitely elastic at the market price. Where competition is amongst a few firms it depends on each firm’s market share and rivals’ reactions

Elasticity and the Power of Buyers

the concept of „buyer power” which is one of the 5-forces determining the structure of competition in an industry. Buyer power has two components – price sensitivity of buyers (looser version of the elasticity concept) – bargaining power of buyers

Price Sensitivity of Buyers Is Determined By:

– Customers’ own profitability
– Decision-makers’ incentives

This usefully extends the analysis of demand away from consumers to industrial buyers and provides a link to marketing.

CHAPTER 8

ESTIMATING AND FORECASTING DEMAND

Estimation

Estimation attempts to quantify the links between the level of demand for a product and the variables which determine it.

The demand for hotel rooms depends upon:
– their price
– the price of bed and breakfast accommodation
– household incomes in visitors’ home countries
– natural events (the weather, foot-and-mouth disease)

Forecasting

Forecasting simply attempts to predict the level of sales at some future date
– How many Japanese tourists will visit Hong Kong in 2000?
– How many delegates will attend conferences in London in 2001?

Simple Estimation Procedures

Direct estimation of an arc elasticity

But are A and B on the same demand-curve?

Econometric Estimation

\[ Q_d = f(P_o, P_c, P_s, Y_d, T, A_o, A_c, A_s, I, C, E) \]
– THE GENERAL FORM OF THE DEMAND FUNCTION
– CANNOT BE ESTIMATED BY THE USUAL METHODS UNTIL A PARTICULAR LINEAR FORM IS CHOSEN

\[ Q_d = a + b_1 P_o + b_2 P_c + b_3 P_s + b_4 Y_d + b_5 T + b_6 A_o + b_7 A_c + b_8 A_s + b_9 I + b_{10} C + b_{11} E \]
– THE SIMPLE LINEAR FORM

\[ \log Q_d = a \log P_o + b \log P_c + c \log P_s + d \log Y_d + e \log T + f \log A_o + g \log A_c + h \log A_s + i \log I + j \log C + k \log E \]
– THE LOGLINEAR FORM

In principle, collect data on quantity demanded and the other variables and find the „best-fit” line/plane

For instance, Dr. P.L. Lam took the following approach for the Hong Kong Town Gas Industry

Muhammad Firman  (University of Indonesia - Accounting )
Some Estimates of Elasticity (Baye et al 1992)

<table>
<thead>
<tr>
<th>Product</th>
<th>Own Price Elasticity</th>
<th>Advertising Elasticity</th>
<th>Income Elasticity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport</td>
<td>-0.59</td>
<td>-0.027</td>
<td>1.787</td>
</tr>
<tr>
<td>Food</td>
<td>-0.67</td>
<td>-0.016</td>
<td>0.843</td>
</tr>
<tr>
<td>Alcohol &amp; Tobacco</td>
<td>-0.261</td>
<td>-0.051</td>
<td>1.22</td>
</tr>
<tr>
<td>Recreation</td>
<td>-1.094</td>
<td>0.078</td>
<td>1.067</td>
</tr>
<tr>
<td>Clothing</td>
<td>-0.889</td>
<td>0.013</td>
<td>1.024</td>
</tr>
<tr>
<td>Household and Personal Care</td>
<td>-0.629</td>
<td>-0.023</td>
<td>0.0855</td>
</tr>
</tbody>
</table>

How Useful are Economists' Estimates of Elasticity?
Not very useful for business purposes - tend to cover very broad categories of goods - tend to vary widely from study to study. Do have some public policy interpretations (impact of taxes). Marketing researchers have focussed on estimates for more practical purposes:
- managers found to know little about their customers' responsiveness to price surveys, price experiments and examination of store level data used to estimate 'deal elasticities' and store specific

Simplest Method is EXTRAPOLATION

Time Series Analysis
The DECOMPOSITION METHOD

\[ X_t = T_t + S_t + I_t \]

How to forecast using the decomposition method?
1. Estimate the trend factor
- use regression, with time (the number of seasons from time zero) as the independent variable and sales volume as the dependent, OR
- just use a straight-line extrapolation

2. Calculate the trend value for each period/season to date (Tt)

3. For each season/period, calculate
- Actual - Trend = Seasonal + Irregular
- For any future time-period, first calculate the trend value
- e.g for Spring 2003, first calculate the trend value for that quarter

What Are the Weaknesses?
Forecasting based on time-series analysis assumes that time is the only determinant of sales volume and that the link between time and volume will stay the same in the future as in the past. Tends to give poor results in times of instability, which is when you have most need of accurate forecasts. There are many more sophisticated approaches to time series but in many cases, “naïve” methods give forecasts which are just as accurate.

How To Evaluate the Forecast?
1. Objectivity. Does the result depend on the data or on the person making the forecast?
2. Validity. How closely does a series of forecast estimates correlate with the actual time series, for the time period used to make the forecast?
3. Reliability. If we take different starting points for the forecast, do the results stay approximately the same?
4. Accuracy. How close are the forecasts to the actual figures, for the period outside that used to generate the forecast?
5. Confidence. Is there a high probability that we can accept the results?
6. Sensitivity. If we use the method to make forecasts using data with very different patterns, do we get very different results?

Accuracy Is the Main Concern: How to Measure It?
- Mean Error - but this could be zero if large positive and large negative errors cancel each other out
- Mean Absolute Error
- Mean Square Error - to give a higher weighting to bigger errors
- Root Mean Square Error - to give a result in the same units as the original data
What Other Methods are Available?

Barometric forecasting
leading indicators are used: variables which change in advance of the variable you wish to predict
- IDD traffic for forecasting international trade
- births for forecasting demand for primary schools, baby clothes
- machine tool orders for forecasting national income
- new building starts for national income

Market Surveys
whose usefulness depends on:
- cost of finding buyers
- buyers' willingness to disclose their intentions
- buyers' propensity to carry out their intentions

Most useful for:
- Products where buyers plan ahead
- Products where potential buyers are a well-defined, identifiable and small group
- New products where no past data is available

Sales Force Opinion
Your sales force are closest to the customer but: they may have incentives to distort their forecasts, deliberately predicting low sales in order to increase their bonuses and get lower sales targets. - they may be unaware of broader developments, new types of customer, macro-economic changes

Expert Opinion
Ask industry analysts, consultants, trade association members to make the forecast. If this is done openly, there is a danger of „groupthink”. an alternative is the „Delphi” approach to expert opinion
- ask a group of industry experts to write down forecasts ANONYMOUSLY and to explain why they believe they are correct
- circulate the forecasts to all those involved
- ask them all to revise their forecasts in the light of the other experts' opinion

IN MANY CASES, DELPHI FORECASTS CONVERGE

Market Testing
- Sales Wave Research: give the product to a group of customers, measure their repeat buying rate. (May also use this to compare the effect of different packaging, etc)
- Simulated Store Techniques: Give a group of target customers some money to spend on the product, show them your advertising, monitor their behaviour
- Test Marketing: make the product and sell it

Which Technique Is Best For Each Product?

- 1. An industrial product with a limited market
- 2. A consumer good which has been on sales for many years
- 3. A new product whose full scale launch will be very expensive
- 4. A technically very complex product, to be sold in a very wide market

CHAPTER 9

PRODUCTION COST

The Relationship Between Inputs and Outputs
The fundamental relationship is that between inputs and outputs - expressed as the production function

This can be examined at a number of levels
- the economy as a whole
- the industry
- the firm
A number of different mathematical forms can be used to model the relationship
- Cobb-Douglas: Q = aKL^b
- translog production function Q = aKL^b
- The Cobb-Douglas Example

The Relationship Between Inputs and Outputs
The fundamental relationship is that between inputs and outputs - expressed as the production function

The source of diseconomies of scale
Economies and diseconomies of scale

As each individual input (KL) is increased, output increases, but at a decreasing rate - the principle of diminishing returns - one of the most fundamental economic ideas. A production function identifies many different techniques within the same technology

If (a+b) > 1; economies of scale
If (a+b) < 1; diseconomies of scale
If (a+b) = 1; constant returns to scale

How to Find the Cost Minimizing Way to Produce Each Level of Output?
As a mathematical problem, for level of output Q*
minimiseTC=(w)(L)+(r)(K) subject to Q = aKL^b

As a graphical approach, see the book p.167-170
As a verbal explanation the ratio of the wage rate to the cost of capital should be equal to the ratio of the marginal productivity of labour to the marginal productivity of capital: WHY? because otherwise $1 could be moved from spending on one input to another and increase output without increasing cost

From Production Functions to Cost Curves
Short run - some inputs are fixed. (K). The firm is restricted to a fixed set of plant and equipment, capacity utilisation decisions
Long run - both inputs are variable. (K,L). The firm can choose the set of plant and equipment it wants, investment decisions

Statistical approach
Collect data on size and cost, or on inputs and outputs and fit a production or cost function
- but are the observed firms on their cost curve? They may be above it
- how can firms at high cost/inefficient sizes survive? If they cannot where do we get the data from?
- Is the curve fitted a good fit?

Economies and diseconomies of scale

Empirical evidence?
- Statistical approach - production function or cost function
- Engineering approach
- Survivor technique

The fundamental problem
What we need to know is: WHAT COST WOULD BE IF FIRMS WERE PRODUCING OUTPUT USING THE BEST SET OF PLANT AND EQUIPMENT FOR THE PURPOSE, USING THE CURRENT TECHNOLOGY AND AT CURRENT FACTOR PRICES, AND IF THEY ARE 100% EFFICIENT
But we cannot observe that by looking at real firms

Engineering approach
Ask consulting engineers to design facilities of different sizes and calculate cost
advantage is that it does involve estimating cost for current technology and best practice
disadvantage is that this approach takes no account of the MANAGERIAL factors which might cause scale economies

The engineering approach gives this kind of result

Survivor technique
Divide the industry into groups of firms by size
– e.g. small, medium, large
Observe the market share of the different groups over time
– if large firms gain share, scale economies
– small firms, diseconomies
– medium, U-shaped curve

Can market forces be relied upon to select out the lowest cost firms over time?
Firms might have different objectives, different products, different environments, different strategies, But used in a recent study of the US beer industry (Elzinga 1990)

Economies of Scope and Learning Effects
Economies of scope—the production of two or more products together is more efficient than producing them separately
Learning Effects—costs fall as cumulative output to date increases

Economies of scope
May arise from the existence of resources which can be shared by different products. Physical facilities or perhaps “core competences” but the latter might not be real

Multi-product Firms
Multi-product firms complicate the idea of scale economies
– ray economies—if costs fall as more is produced of the same output mix
– product-specific economies—if costs fall as output of a single product increases

Learning effects
Important in World War 2—the same plants, same rate of output but lower costs over time. Most important for complex products and processes where humans can learn. A possible source of “first-mover” advantages—important in business strategy. Boston Consulting Group made the experience curve and learning effects the centre of their approach in the 1970s

Costs in the information sectors
Products like software, CDs have unusual cost structures. Most costs are fixed and also SUNK—they cannot be even partially recovered
– first copy costs and marketing costs
Average variable and marginal cost is almost zero. No natural limits to scale

Implications of this cost structure
High sunk costs may be an entry barrier because the cost of exit is low. Industries where consumers respond strongly to spending on sunk costs—advertising, R&D—tend to be more concentrated. Competition may force price right down to zero

Other cost drivers
– Location
– Timing
– Company policy— what type of product
– Government policy—taxes, subsidies, health and safety
– Vertical integration
– Institutional factors—trade unions, the legal system, corruption etc

What Is the Structure of These Different Types of Industry? What is the Result of that Structure?

Perfect Competition
Large No of Small Firms, (i.e. No Economies of Scale), Identical Products, Free Entry to the Industry, Perfect Knowledge of market Opportunities

SHORT RUN
– price is determined at industry level by supply and demand
– each firm has a horizontal demand curve at the market price
– demand and marginal revenue curve are the same
– MR = P = MC

LONG RUN
– entry takes place, shifting supply curve to the right and price down
– super-normal profits are competed away, P= minimum LAC

Perfect Competition: Short Run

The Firm in More Detail

PL is the only possible long run price

Perfect Competition is “Socially Optimal”
P= MC is the important result
Benefit to Consumers minus Cost to the Economy is Maximized. Price = Marginal Cost (which gives economic efficiency and a perfect allocation of resources). In the long run entry forces price down to minimum average cost. Every firm uses the most efficient plant available. There is competition but no rivalry
Area B is the gross benefit to consumers from having quantity Q of the good

Area C is the avoidable cost to the economy from producing quantity Q of the good

Price P and quantity Q give the maximum difference between benefit and cost. This is a basic form of cost/benefit analysis

Monopoly
One firm, no entry is possible - "pure monopoly" Firm's demand-curve is industry's demand curve

- Price > Marginal Cost

economic inefficiency. Super-profits can be made in the long run. The firm does not necessarily use the plant which gives lowest cost. Most countries have some kind of anti-monopoly policy
- note that the economic rationale for monopoly policy is P>MC not P>AC
- the problem is inefficiency not inequity

A monopolist produces less and charges a higher price, relative to the socially optimal

Monopolistic Competition
Many firms, free entry, differentiated products. Downward-sloping demand-curves. In the long-run Price = Average Cost. Firms have plants which are too small to take full advantage of scale economies. (But there is only an equilibrium in this market structure if heroic and perhaps contradictory assumptions made). when new firms enter, they take customers in equal proportions from all old firms. all firms have same cost and demand curves, while producing different products. will new firms not imitate successful old ones? Krupgan only introduces it because it is in the introductory texts. Krugman cites it as the "analytical workhorse" for innovative analyses

The „excess capacity” result: but which firm is shown here? ALLOF THEM?
Differenitated products but identical cost and demand conditions?

Oligopoly
- Competition amongst the Few
- Key feature is interdependence and rivalry
- Small number of firms (2 = duopoly)
- Condition of Entry may vary
- Product differentiation may vary

Possible outcomes include:
- co-operation and collusion - the monopoly price
- price war - the perfectly competitive price

The modern approach to oligopoly is through game theory

Oligopoly: Pre-Game Theory Ideas
What determines whether collusion takes place or not?
How well-informed are rivals about each other?
- Trade association increases probability of collusion
- Published prices increase it
- Slow technical progress
- Small number of firms
- Limited product differentiation

How to Describe These Textbook Models?
- Formal. Assumptions are clearly stated (or should be -not always true for monopolistic competition)
- Rigourous. The precise logical consequences of the assumptions are derived.
- Predictive. Purpose is to provide hypotheses which might be tested. E.g what happens when demand increases or cost rises?
- Part of a larger picture. How does a market economy function? (This is the most important role for these models)

What Do These Models Tell Us About the Impact of Structure?
- Entry Conditions are Important: They affect whether high profits can be maintained in the long run..
- The Number of Competitors and their Behaviour is Important. A few co-operating "competitors" can lead to monopoly-type profits
- Product Differentiation is Important. Without it all firms must charge the same price in a competitive market

What Are the Limits to the Formal Models?
- A Limited Number of Tightly Defined Cases Are Examined
- Cannot Be Used to Describe „Real” Industries -that is not their purpose. To Use Them That Way is Confusing
- Make No Reference to the Structure of the Industries which Purchase Outputs or Supply Inputs. (Customers assumed to be households, inputs bought from perfect markets)
CHAPTER 11
THE FIVE FORCES APPROACH TO MARKET STRUCTURE

What is Porter's 5-Forces Model? What Does It Help Us to Do?
- An attempt to extend the formal models
- Use the insights from the formal models to develop a way of describing the competitive structure of real-life industries
- Identify the factors which determine each of the 5-forces
- Allow (loose) predictions on the "attractiveness" of an industry (how profitable is it for incumbent firms)
- Allow executives to identify the key features of their industry, which they may seek to change, or influence, or respond to

Porter's 5-Forces Model
1. Power of Suppliers
2. Power of Buyers
3. Threat of Entry
4. Threat of Substitutes
5. Intensity of Rivalry Amongst Incumbents

How Do Each of The Following Determine Intensity of Rivalry Amongst Incumbents?
- Industry Growth-does more growth lead to more or less rivalry?
- Fixed Costs as % of Total Costs-if fixed costs are a high % of total will rivalry be high or low?
- Over-capacity-does over-capacity raise or lower rivalry?
- Switching Costs for Customers- ???
- Corporate Stakes- ??
- Industry Growth -rapid industry growth reduces intensity of rivalry -
- Fixed Costs as % of Total Costs -if fixed costs are a large % of the total, firms cannot afford to have reduced sales or lose sales to rivals. They will respond aggressively if sales are threatened -
- Intermittent Over-capacity -if the industry has over-capacity, rivalry will be more intense as losses are threatened in those times -
- Differentiated Products -reduce intensity of rivalry as each firm has its own „niche” with some protection from others through customer loyalty -
- Brand Identity -same point -
- Switching Costs for Customers -higher switching costs, less intense rivalry -
- Corporate Stakes-if corporate survival depends on this industry, more intense rivalry

How Do Each of The Following Determine Threat of Entry?
1. Economies of Scale
2. Product differentiation and brand loyalty -
3. Capital requirements -
4. Switching Costs for Customers -
5. Absolute Cost Advantages/Proprietary Technology-
6. Proprietary Learning Effects -
7. Access to distribution channels -
8. Threat of retaliation -
9. Government policy

Economies of Scale
more scale economies, less threat of entry. If entrant cannot quickly get large market share, he will have a major cost disadvantage. Incumbent can threaten to increase output and cut price.

Product differentiation and brand loyalty
If Incumbents have differentiated and branded products this will reduce the threat

Capital requirements
high requirements reduce threat of entry

Switching Costs for Customers
higher switching costs, less threat of entry

Absolute Cost Advantages/Proprietary Technology
reduce threat

Proprietary Learning Effects
reduce threat

Access to distribution channels
If incumbent firms control the distribution channels, threat of entry is less

Threat of retaliation
will reduce the threat of entry

Government policy
may provide entry barriers

How Do Each of The Following Determine the Threat from Substitutes?
- Price and Performance of Substitutes. -if there are close substitutes which perform well at a low price, the threat is high.
- Switching Costs for Customers -higher switching costs, less threat from substitutes
- Buyers Propensity to Substitute-high propensity will increase the threat from substitutes. . if product is expensive and important to buyers, if buyers are professionals putting effort in to finding the best buy, threat will be HIGH-
-if product is not expensive and buyers are householders with no great interest in the product, threat will be LOW

Price Sensitivity
Purchases from this industry as a % of buyers” total purchases. IF THIS IS LARGE, BUYERS WILL BE PRICE SENSITIVE. ——Product differences and brand identity REDUCE PRICE SENSITIVITY. If this industry’s product is necessary to maintain quality of purchasers’ PRODUCT PRICE SENSITIVITY WILL BE LOW. If customers are losing money or have poor profits, PRICE SENSITIVITY WILL BE HIGH. Purchasing decision-makers” incentives. If purchasers have incentives to keep costs down, they will be more price- sensitive

Bargaining Leverage
—Buyer Concentration and Buyer Volume
—Buyer Switching Costs
—Buyers” Information
—Threat of Backward Integration from Buyers
—Existence of substitutes

How Do Each of The Following Determine Power of Suppliers?
1. Differentiation of Inputs. —firms in this industry need differentiated inputs from suppliers their power will be high
2. Switching Costs for Transferring to Other Suppliers -higher switching costs, more power for suppliers
3. Availability of Substitutes-more availability, lower power of suppliers
4. Supplier concentration-fewer suppliers, more supplier power
5. Suppliers” dependence on volume-more dependence, less supplier power
6. Cost as % of this industry's costs-a high % will give less supplier power
7. Impact of suppliers” inputs on this industry’s quality-high impact gives supplier more power
8. Threat of forward integration by suppliers-more threat, more supplier power

Example A:The Feedstock Industry
This is a chemical industry, using very large and expensive plant to produce a basic raw material for making plastics.

Threat from Substitutes
—INTENSITY OF RIVALRY-very high fixed costs, no brand identity or product differentiation mean high rivalry, but one firm is a clear leader, owning the lowest-cost technology. RIVALRY KEPT IN CHECK BY LEADERSHIP
—THREAT OF ENTRY-huge scale economies, patented technology, limited sources of inputs, strong learning effects, powerful threat of retaliation-VERY LOW THREAT
—THREAT OF SUBSTITUTES -product has hundreds of end uses. LOW THREAT
—POWER OF BUYERS -buyers are price-sensitive in some segments but have little leverage LOW POWER
—POWER OF SUPPLIERS -the supplier of gas has a lot of power, but needs to sell the huge amounts purchased by the feedstock producer POWER BALANCE

OVERALL? A HIGHLY ATTRACTIVE INDUSTRY, WHICH CONTRIBUTES A LARGE PROPORTION OF THE TOTAL PROFITS OF THE LEADING FIRM

Example B:The Touring Caravan Industry
This is a small-scale, craft-based industry, producing caravans to be towed behind cars for recreation

Threat from Substitutes
—INTENSITY OF RIVALRY-low growth, intermittent over-capacity, high storage costs, high corporate stakes. VERY INTENSE RIVALRY
—THREAT OF ENTRY-little capital needed, no scale economies, no proprietary technology , anyone can set up in this industry - VERY HIGH THREAT
—THREAT OF SUBSTITUTES -tents or motor caravans. LOW THREAT
—POWER OF BUYERS -buyers are price-sensitive and can turn to the second-hand marketPRICE SENSITIVE BUT LOW LEVERAGE
—POWER OF SUPPLIERS -many alternative suppliers available LIMITED POWER

OVERALL? VERY INTENSE RIVALRY AND HIGH THREAT OF ENTRY MAKE THIS A VERY UNATTRACTIVE INDUSTRY. MANY BANKRUPTCIES, COMPANIES HAVE NOT BEEN ATTRACTIVE TO CONGLOMERATES

Strengths and Weaknesses of the 5-forces approach?
Strengths
- sound theoretical basis
- allows systematic analysis

Weaknesses
- how to measure and weight the many different components which determine each of the forces?
- It is only possible to make an unambiguous judgment on the strength of a force if all the indicators „point” in the same direction. If indicators contradict each other, how to balance them?

CHAPTER 12
RISK AND UNCERTAINTY

Alternative States of Information
- Certainty: we have perfect information about future outcomes
- Risk: we know what future outcomes are possible and we can attach probabilities to each outcome
- Uncertainty: we do not know the precise nature of the outcomes or their probabilities

Expected Monetary Values
In a situation of RISK we could use Expected Monetary Values (EMV) to take a decision

$$EMV = \sum piVi$$

Where:
$$pi = \text{probability of the } i^{th} \text{ outcome}$$
$$Vi = \text{value of the } i^{th} \text{ outcome}$$

Expected Monetary Values

<table>
<thead>
<tr>
<th>Weather</th>
<th>Probability</th>
<th>Takings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunny</td>
<td>0.2</td>
<td>$500</td>
</tr>
<tr>
<td>Cloudy</td>
<td>0.4</td>
<td>$300</td>
</tr>
<tr>
<td>Raining</td>
<td>0.4</td>
<td>$100</td>
</tr>
</tbody>
</table>

Limitations of EMV
- Will you accept a 50/50 bet for $5? Probably YES
- Will you accept a 50/50 bet for $5m? Probably NO
- BUT BOTH HAVE AN EMV = 0!

In some way you „care“ more about losing $5m than winning $5m
- Your house is worth $200,000
- The probability of destruction by fire is 1/10,000
- EMV of the loss = $20
- So $20 is the most you will pay for insurance?

NO, YOU CARE MORE ABOUT THE CHANCE OF LOSING YOUR HOUSE

How to Take This Into Account
Decision-makers have different „attitudes to risk”
RISK NEUTRAL - values gains and losses equally
RISK AVERSE - values losses more highly than gains
RISK LOVER - values gains more than losses

How to Model This?
A Risk-Averse Person

A Risk-Neutral Person

Decision-makers Are Usually Assumed to be Risk-averse
Instead of using EMV, use Expected Utility (EU)

$$EU = \sum piUi$$

Where:
$$pi = \text{probability of the } i^{th} \text{ outcome}$$
$$Ui = \text{utility of the } i^{th} \text{ outcome}$$

How to Find Utility Values?
They depend on the individual or corporate decision-makers „degree of risk aversion”

Standard gamble comparisons, e.g.
- $50 = 0 “utils”
- $-100,000 = 1 “util”

What is the “util” value of $50,000?
Ask the decision-maker to choose between $50,000 for certain and a bet involving probability P of winning $100,000. Start with low P and increase it until the bet is just preferred. Then: (if P = .6)

$$U($50,000) = .6(U($100,000)) + .4(U($0)) = .6$$

Indifference Curves
The steeper the curves the greater the risk aversion

Return Risk Preferred Direction

Decision trees

Alternative Types of Probability