

Industrial Organization and Industrial Policy

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The teacher is available for any question by email, or by setting an appointment for a Skype call.

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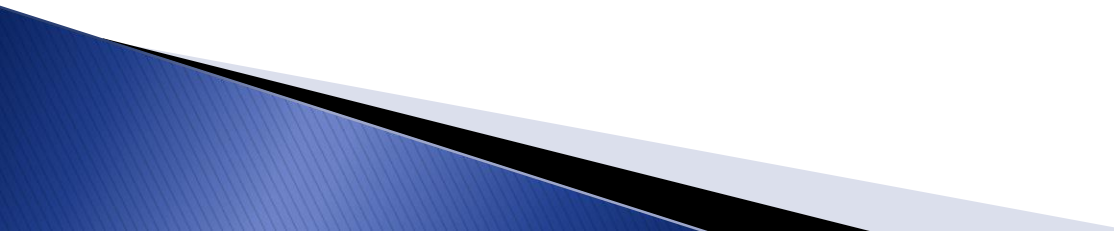
Main aim of the course

To become acquainted with the main concepts related to **industrial organization** and **industrial policy**.

1. **Industrial organization:**

- Competition dynamics, structure–conduct–performance paradigm, cost structure, theories of the firm, market structures, firm strategies and innovation dynamics (...)

2. **Industrial policy:**

- Market failures
 - Government failures.
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Two scenarios

1 – THE CORONAVIRUS EMERGENCY ENDS BY EASTER (OR EARLIER)

- The course will continue in classrooms.
- Partial exams might still be possible (one immediately after Easter and the other at the beginning of June).

2 – ALL THE LESSONS OF THE SEMESTER HAVE TO BE REGISTERED

- Only total exams.

My suggestion is:

In both cases follow the lessons, keeping the pace with the registrations and following them weekly. Do not wait until the very end, in order to be prepared for both scenarios.



Two paths to pass the exam



1 – ATTENDING STUDENTS

- To **regularly** attend classes
- To **study weekly** both notes and indicated material
- To sit for the **exam** (2 partial exams or 1 total exam)



Is there a third way?

NO!

2 – NON ATTENDING STUDENTS

- To **study** the specified material
- To sit for the **exam** (only 1 total exam)

Course material

- ▶ J. Lipczynski, J.O.S. Wilson and J. Goddard (2013), *Industrial Organization. Competition, Strategy and Policy*, Edinburgh, Pearson.
EXCLUDING: chapt. 6; par. 7.5; chapt. 12; par. 13.4, 13.5, 13.6; chapt. 14; par. 15.3, 15.4, 15.5, 15.6; par. 16.4, 16.7, 16.8; par. 18.4, 18.5, 18.6; par. 19.6; chapt. 21; par. 24.6, 24.7, 24.8, 24.9.
- ▶ Di Tommaso M.R. and Schweitzer S.O. (2013), *Industrial policy in America: Breaking the taboo*, Cheltenham England: Edward Elgar Publishers (pp. 1–42).
- ▶ Chang H.J. (1994), *The political economy of industrial policy*, London – New York, Macmillan/St. Martin's Press (chpt. 1, pp. 7–32)

Possible further references will be provided during the course.

The ppt presentations will be weekly available on the website of the course.

Exam dates

- ▶ FIRST PARTIAL EXAM?
- ▶ SECOND PARTIAL EXAM?
- ▶ 16th June 2020, 11.00 a.m.
- ▶ 16th July 2020, 11.00 a.m.
- ▶ 4th September 2020, 10.00 a.m.
- ▶ 15th September 2019, 2.00 p.m.



N.B. (1): To be admitted to the exam it is **NECESSARY** to enrol **WITHIN** the deadline. **No one** will be accepted after the closure of the enrolment list (that is usually about 5–6 days before the exam date).

N.B. (2): If you want to take the exam as attending student you have to specify it, while enrolling, in the field named “note”. **Otherwise you will take the exam as non attending students.**

N.B. (3): If you change your mind after enrolment, and you do not want to take the exam anymore, please **CANCEL** your name online or send me an email.



Industrial organization.

An overview of the main approaches

Industrial organization: the main approaches

1. The neoclassical theory
2. Schumpeter and the Austrian school
3. Industrial organization
 1. The Harvard School and the S-C-P paradigm
 2. The Chicago School
4. The New Industrial Organization (NIO)

1) The neoclassical theory (static approach)

(End on XIX century)

The N.T. is based on a static view of competition, focused on long-run equilibrium. The market is considered the best resource allocation mechanism. This implies liberalism and very limited possibility for the government to intervene in the economy. Neoclassical economists are also named marginalists because according to them individuals take their decisions on the basis of marginal quantities, and not of the absolute values.

The N.T. foresees 4 main market structures:

- 1) Perfect competition;
- 2) Monopoly;
- 3) Oligopoly;
- 4) Monopolistic competition.

Imperfect Competition



Pure Competition | Monopolistic Competition | Oligopoly | Pure Monopoly

2) Schumpeter and the Austrian school (1920s–1940s) (dynamic approach)

- ▶ Abnormal profits do not necessarily indicate a market power abuse at the expense of consumers and can motivate and guide entrepreneurs to reach an improved resource allocation in the long run
- ▶ Information is always imperfect

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graph TD; A[ ] --> B[Schumpeter: competition is driven by innovation. The entrepreneurs actively initiate change. Creative destruction. Monopoly profits are temporary.]; A --> C[Austrian: entrepreneurs play a crucial role but only by responding faster to new exogenous information, i.e. identifying faster missed opportunities (more passive role)]; B --- D[ ]; C --- D; D --> E[No intervention of the State in the economy];
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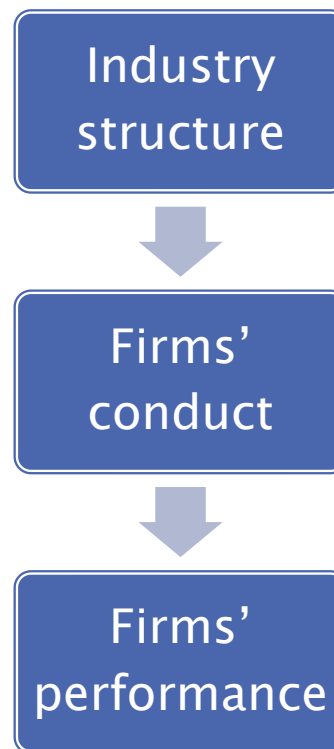
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No intervention of the State in the economy

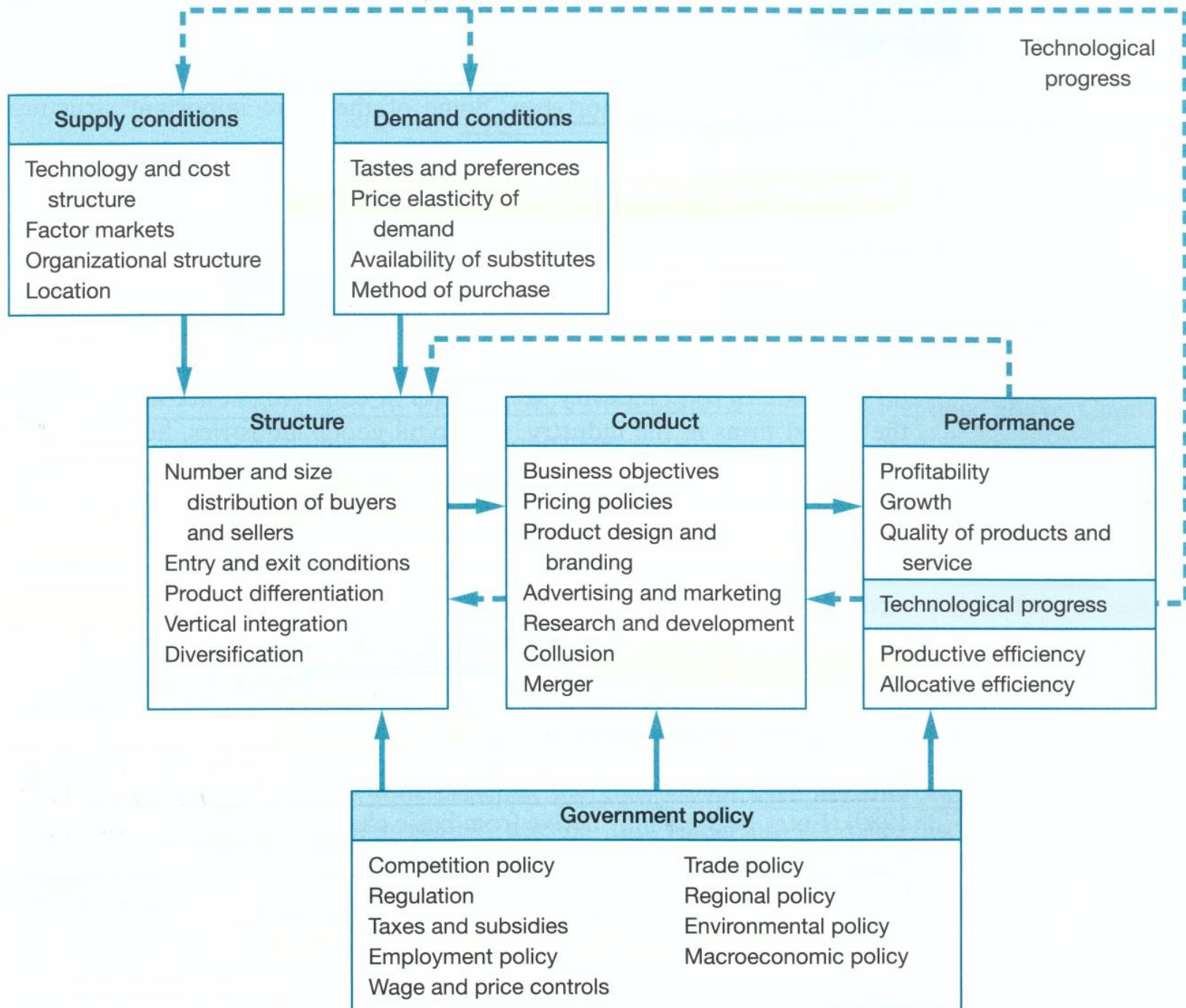
3) Industrial organisation (empirical approach).

a) The Harvard School (1950s and 1960s)

- ▶ It starts from data to arrive to general implications and theories.
- ▶ Heavily based on the so-called **structure-conduct-performance (SCP) paradigm**, which aims to provide a framework to analyse markets and industries.



Bain, Joe S. (1959),
Industrial Organization,
New York, John Wiley &
Sons.



The S-C-P Paradigm: components

- 1) **STRUCTURE of the market**: it changes rather slowly and it is often considered fixed in the short run. These variables affect the behaviour of sellers and/or buyers. The structure of the market is always determined by the nature of the product and by the available technology.
- 2) **CONDUCT of firms**: it refers to the strategic behaviour chosen by firms (ex. R&D investments, collusion, advertising levels, etc.), which is affected by the structure of the industry in which they operate and which, in turn, affects their performance.
- 3) **PERFORMANCE of firms**: measured according to different indicators (sale growth, profits, innovation, etc.).

GOVERNMENT: government policy can affect all three components.

The Harvard school recognises market power as dangerous: the higher the concentration ratio of a market, the higher the damage for social welfare. The government should intervene with a competition policy limiting strategic behaviours.

3) Industrial organisation.

b) The Chicago School (1970s–1980s)

Theoretical approach starting from the perfect competition model and the SCP paradigm but mainly ending in drawing these conclusions:

- The SCP paradigm is rejected;
- Characteristics of the single firms (rather than of the market in general) are important;
- Pro-market and pro-competition;
- **Anti-government intervention:** the market allocates resources more efficiently than the government.



- Large firms are large because they have operated better (more efficiently and more profitably): they should not be «punished».
- Market abuses in the short run are likely to be corrected in the long run: markets and industries have a «natural» tendency towards competition.

4) Beyond S-C-P: The new industrial organisation (NIO)

It starts from criticisms towards the SCP paradigm:

- Even if the SCP paradigm is based on the NC theory, the latter does not always specify **precise linkages** between structure, conduct and performance variables;
- It is sometimes difficult to decide **which variables** belong to structure, to conduct or to performance (ex. vertical integration or product differentiation);
- If we consider performance as the measure of the degree of success in achieving desired goals, it is not possible to have a set of uniform performance indicators, unless we assume that firms have the **same exact goals**;
- Many studies measure structure only using seller concentration, with the danger of overestimating the role of concentration. In general, many variables of the SCP are very **difficult to measure**;
- The relations between S-C-P are often **statistically weak**;
- The S-C-P paradigm focuses on the **short run equilibrium** and neglects the evolution over time.

4) The new industrial organisation (NIO) (cont.)

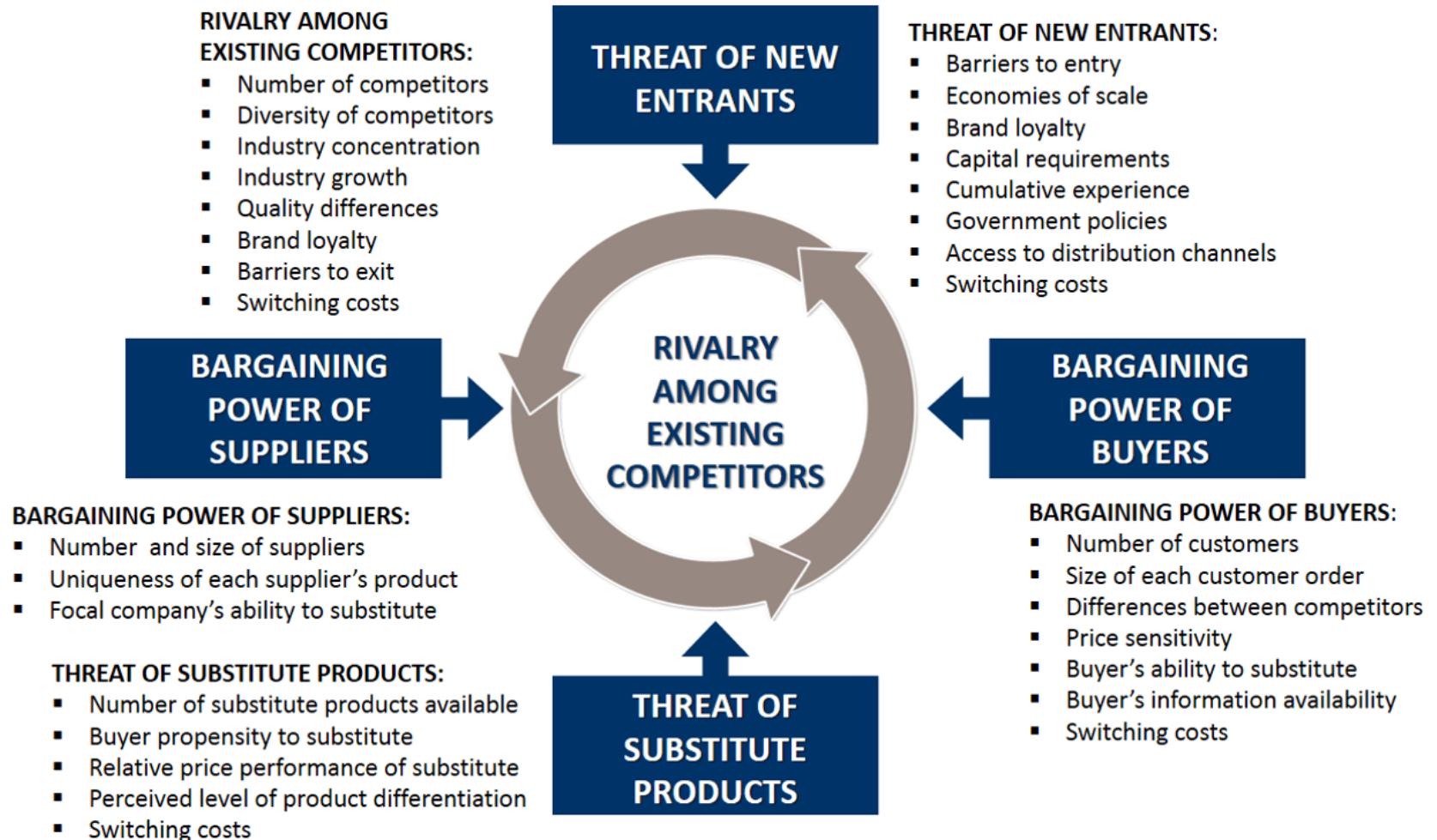
- NIO shifts away from the presumption that structure is the most important determinant of the competition level.
- NIO mainly focuses on **strategy** and **conduct** and does not see firms as passive actors but as active decision makers able to implement a wide range of different specific strategies.
- The interdependence among firms becomes relevant in order to analyse the strategic decisions taken by firms (game theory).



Focus on STRATEGIC MANAGEMENT TOOLS: explain competitive advantage over rivals underlining the internal characteristics of firms.

Strategic Management tools: Porter's five forces

Similarly to the SCP, it is a **static** approach

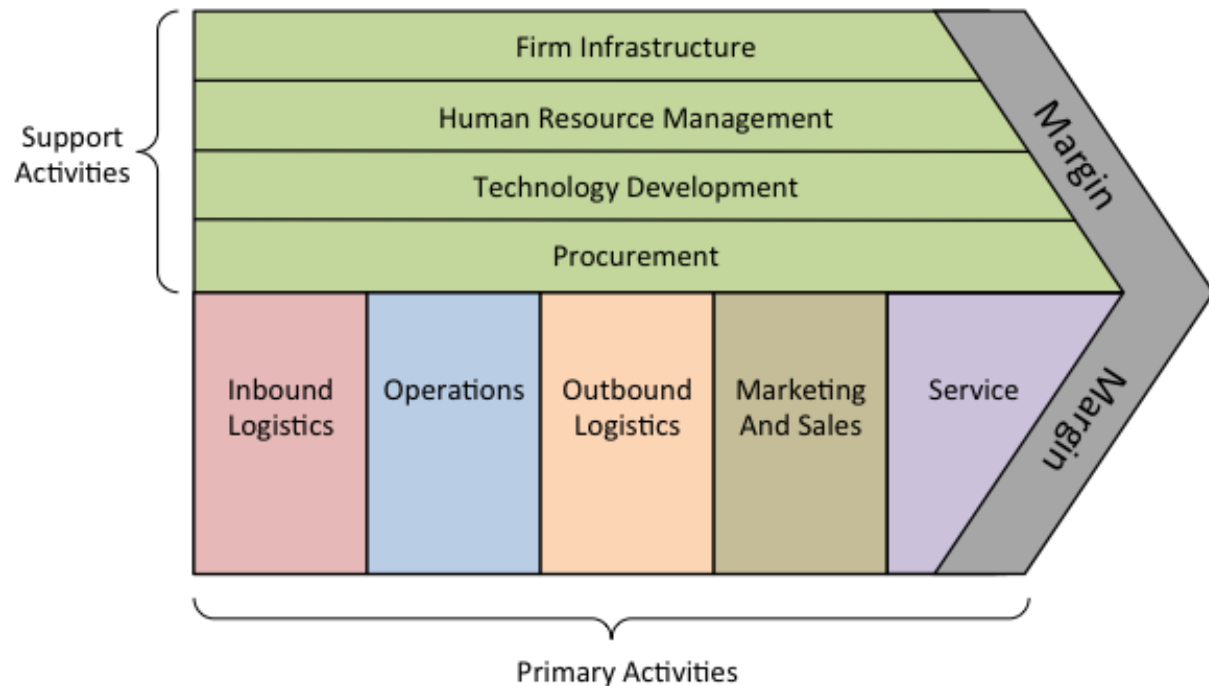


Strategic Management tools: Porter's value chain

Porter's value chain (1980) disaggregates the firm into its strategically relevant activities:

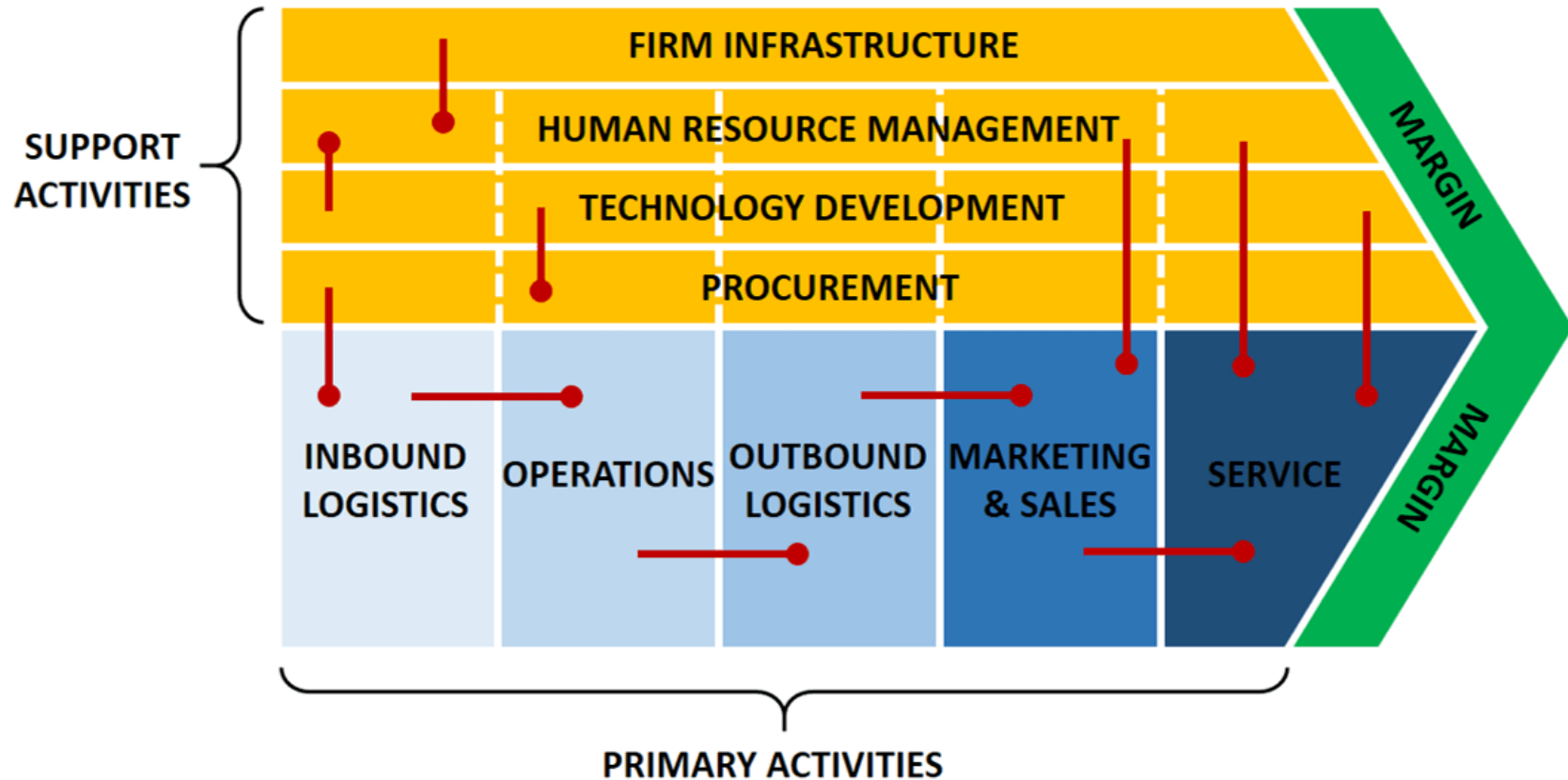
- **Primary:** for the physical creation of the product or service
- **Support:** support primary activity or each other.

Aim: to understand how to improve the links among the activities so as to increase margins.



Strategic Management tools: Porter's value chain

Ex. Linkages among different activities



Strategic Management tools: Porter's generic strategies

To gain advantage over rivals Porter asserts that a firm should choose a **generic strategy**:

<i>Target Scope</i>	<i>Advantage</i>	
	Low Cost	Product Uniqueness
Broad (Industry Wide)	Cost Leadership Strategy	Differentiation Strategy
Narrow (Market Segment)	Focus Strategy (low cost)	Focus Strategy (differentiation)



Production and cost theory.

Core elements

Production, costs and profit maximisation

The short run

Profit maximisation

- ▶ According to the neoclassical theory, profit maximisation is the only driver of firms' behaviour (along with welfare maximisation for consumers).
- ▶ The maximisation of individual welfare/profits automatically leads to the maximisation of collective welfare.
- ▶ We focus now on firms' side: profit maximisation

PROFIT: TOTAL REVENUES – TOTAL COSTS

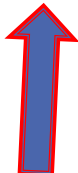
$$\Pi = (p \cdot q) - (c \cdot q)$$

To maximise profits you need to minimize costs while maximising revenues. We start our analysis with costs.

1) Cost minimisation: quantity

$$\Pi = (p*q) - (c*q)$$

To determine the optimal produced quantity, i.e. the level of output that minimises costs, we first of all need to analyse how the output varies according to the quantity of inputs used.

$$\Pi = (p*q) - (c* \textcircled{q})$$


The production function

It represents the technological relation between inputs and outputs in a specific period of time

$$q = f(f_1, f_2, \dots, f_m)$$

Simplifying, in the long run:

$$q = f(L, K)$$

In order to increase output the firm has to increase the quantity of used inputs, and in particular:

- ▣ To use better the existing machinery $\Rightarrow$ short run
- ▣ To acquire new machinery $\Rightarrow$ long run
- ▣ To develop new technologies $\Rightarrow$ very long run

Short, long and very long run

SHORT RUN: Period of time in which capital and technology are fixed. Only labour can vary.

- It does not have the same duration in all sectors.
- It also depends from technological choices and from the price that the firm is available to pay in order to quickly increase its productive capacity.

LONG RUN: period of time in which both capital and labour can vary. Only technology is fixed.

- It does not have the same duration in all sectors.
- It is the period in which a firm decides its entry in a market, the expansion or contraction of its activity.

VERY LONG RUN: both inputs and technology can vary.

- In practice this could also be a relatively short period of time.

In the «real» world the three periods are not always in sequence.

Total, average and marginal product of labour

Total Product (TP) = Total output produced in a certain period of time using all inputs

Average product (AP) = total output for every unit of the variable input

$$AP = \frac{TP}{L}$$

Marginal product (MP) = variation of total product for every unit of the variable input. It represents the variation of total product caused by a variation in the quantity of labour employed

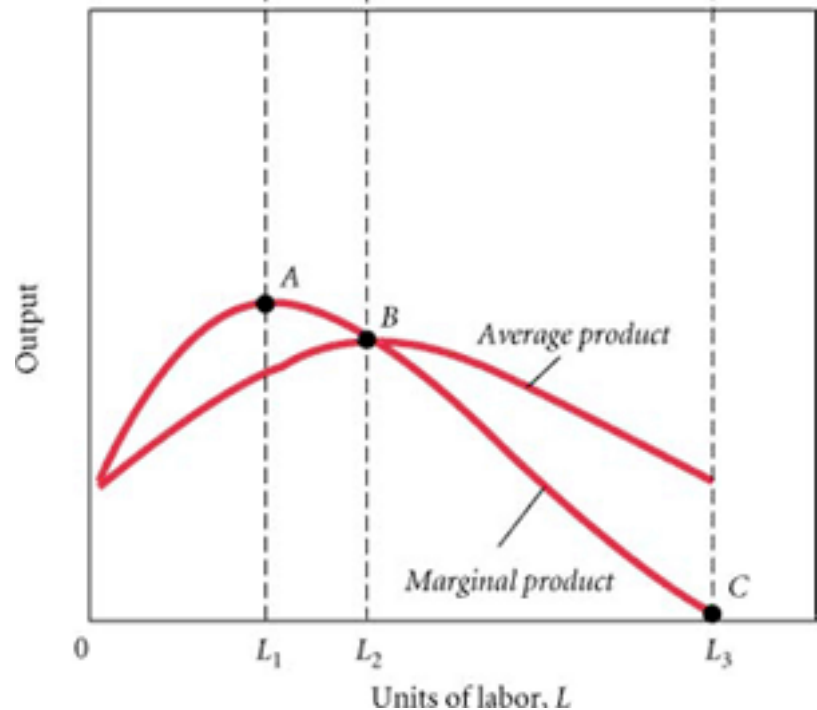
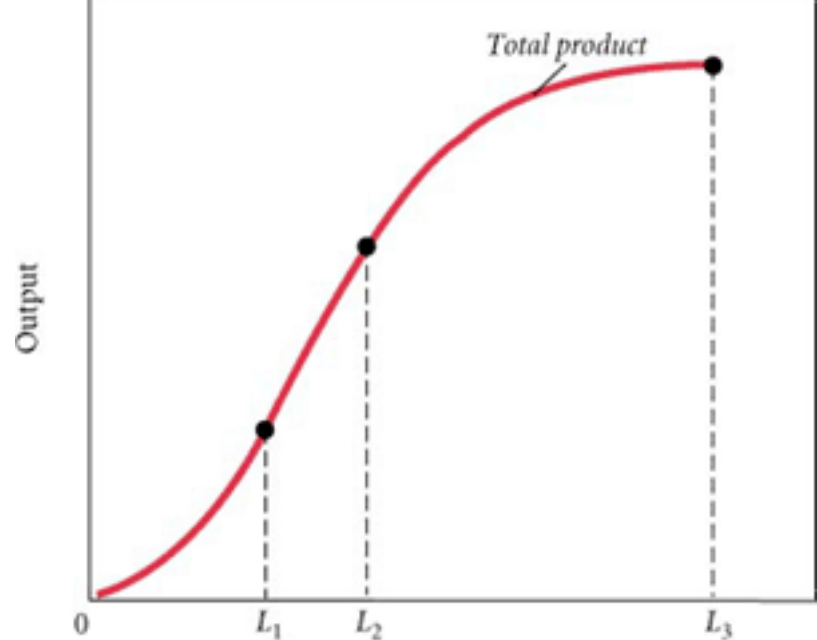
$$MP = \frac{\Delta TP}{\Delta L}$$

- *MP (or P')*

It grows up to when total production increases more than proportionally than the increase of labour (A). Then it starts to decrease, becoming negative in C.

- *AP*

It reaches its peak when it intersects the marginal product curve (B)

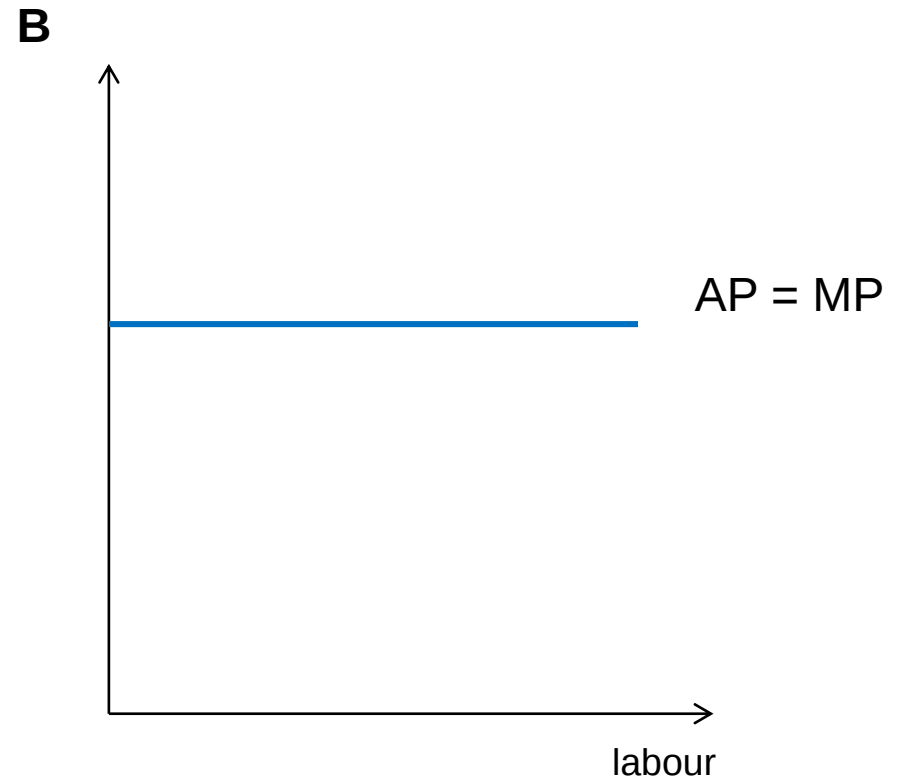
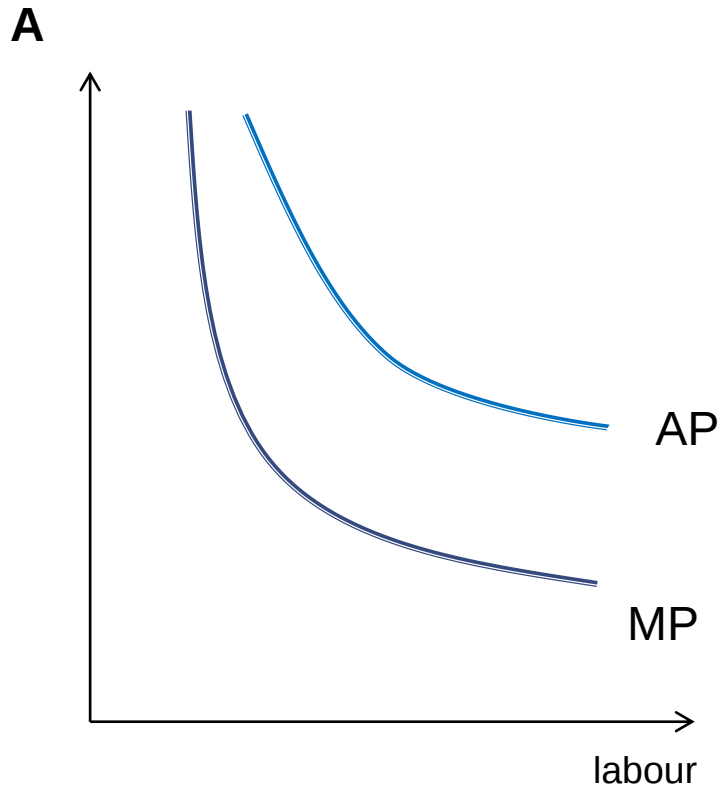


The law of diminishing returns

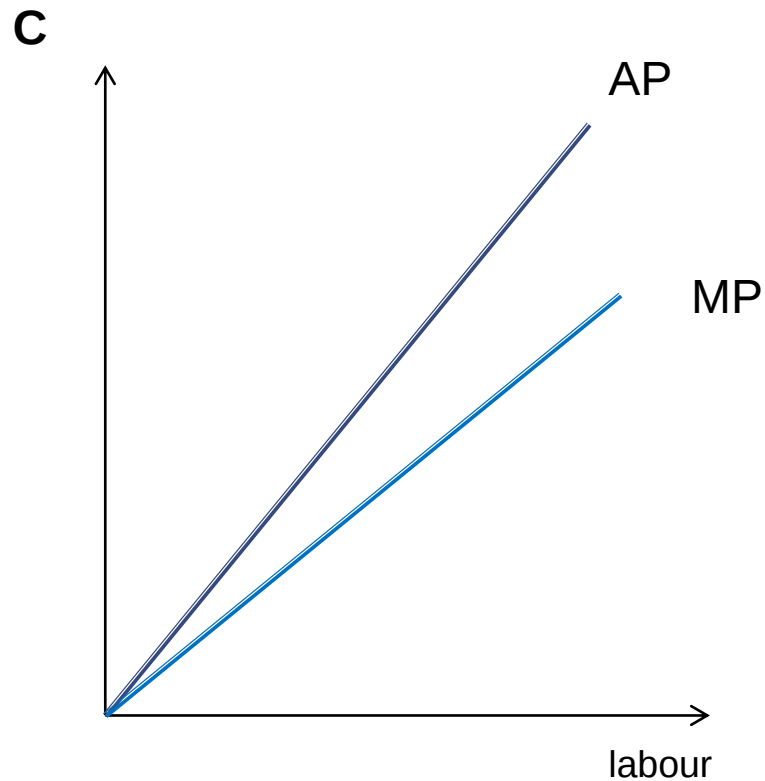
Using growing quantities of labour, given a fixed amount of capital, eventually the additional contribution that each successive unit of labour makes to total output starts to decline.

N.B.

Admissible shapes of AP and MP



Impossible shapes of AP and MP



Why is it impossible?

The typical relation between average and marginal product: an example

L	TP	AP	MP
0	0	0	0
1	4	4	4
2	14	7	10
3	30	10	16
4	48	12	18
5	67	13.4	19
6	85	14.17	18
7	101	14.42	16
8	113	14.12	12
9	121	13.44	8
10	125	12.5	4
11	127	11.55	2
12	128	10.67	1

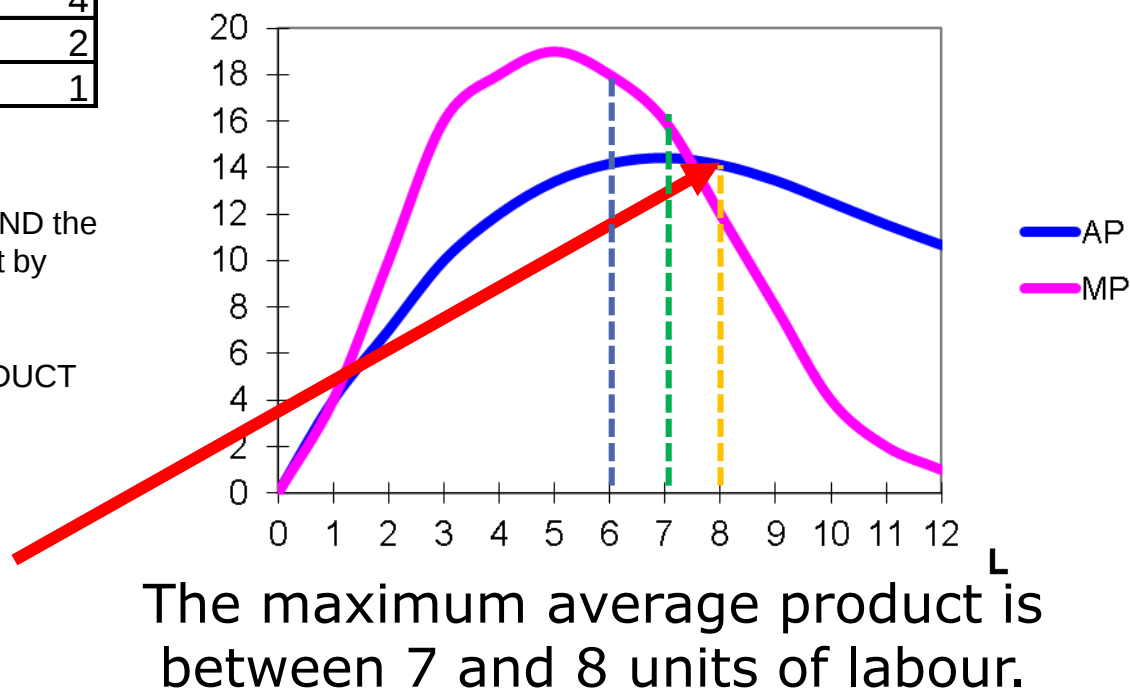
-1 = loss in MP passing from 5 to 6 workers
 BUT the last worker contributes to the average product by $18:6=3$
 GAIN HIGHER THAN LOSS: AVERAGE PRODUCT INCREASES

-2 = loss in MP passing from 6 to 7 workers
 BUT the last worker contributes to the average product by $16:7=2.28$

GAIN HIGHER THAN LOSS:
 AVERAGE PRODUCT **STILL** INCREASES

-4 = loss in MP passing from 7 to 8 workers AND the last worker contributes to the average product by $12:8=1.5$

GAIN LOWER THAN LOSS: AVERAGE PRODUCT **ALSO STARTS DECREASING**



The maximum average product is between 7 and 8 units of labour.

Summary

- ▶ Overview of the main theoretical streams:
 - Neoclassical Theory
 - Schumpeter
 - Harvard School and the S-C-P paradigm
 - Chicago School
 - New Industrial Organisation
 - Strategic management tools: Porter's five forces, value chain and generic strategies.

Reading list

- Chapter 1 – Lipczynski et al., 2013

Summary (cont.d)

- ▶ The short run:
 - Production function
 - Law of diminishing returns
 - Average production and marginal product
 - Costs
- The long run
 - LRAC
 - Economies of scale (real and pecuniary, internal and external; measurement)
 - Diseconomies of scale
 - Relation between short and long run curves
 - Profit maximisation

Reading list

- Chapter 2 – Lipczynski et al., 2013