Economics of Information

Lecture 2

Jacopo Staccioli†‡

† Università Cattolica del Sacro Cuore, Milan
‡ Scuola Superiore Sant’Anna, Pisa

19th March 2019
Information is an economic good: it is costly and valuable. A firm can purchase information, or it can expend resources in research and development to wrest it from nature.

**BUT**

- The way information enters the production function is different than the way other goods do.
- The same piece of information can be used over and over again, by the same or a different producer, regardless of the scale of production.

**Arrow (1996)**

- Increasing returns can occur for other reasons than information.
- But with information, constant returns are impossible.
Information and production (cont’d)

**information as a choice variable**

Information is a *signal*, i.e. an observed random variable which may be of no economic interest itself but which is not independent of unobserved variables which affect benefits or costs.

- The cost of information is related to its accuracy.
- Information is often about *rates* (e.g. returns on securities, unit costs…).
- Then, the cost is independent of absolute magnitudes.

**BUT**

- The *value* depends on the scale of its utilisation.
- E.g. gross income $\propto$ scale of utilisation $\perp$ cost of information.
- Reasonably, demand for information increases with scale.
- Then uses on high scale are more accurate than uses on low scale.

**THEN**

- Also the expected rate of return increases with scale!
“the presence of increasing returns leads to the conclusion that the opportunity to acquire information about investments leads to a situation in which the rate of return to investment rises with the amount invested” [ibidem, p.125]

- this mechanism can explain part of the inequality of income
- departures from equality are self-reinforcing!

Example: process innovation

- extensive search for lower unit costs is economically justified only if the new process is applied on a large scale
- the larger the scale, the lower the unit cost because of more R&D
- justifies endogenous theories of economic growth
see you tomorrow

Wednesday, 20th March

h. 17:00 – Aula 6