

August 25

Information economics refers to a broad set of problems in economics in which information known privately by some individuals can affect the outcome for a group as a whole.

1. Individuals know things that other individuals do not know and they may use this information strategically to further their own personal interests.
2. All the information that is relevant to a group's decision or choice may not be centrally available to any one individual. Besides the opportunities that this may present for strategic use of private information, this also raises questions of what information should be communicated among the group members in order to allow a good or even optimal collective choice for the group.

relevant related fields of economics and social science:

1. game theory (problem 1)
 2. team theory (problem 2)
 3. mechanism design (problems 1 and 2)
 4. the theory of organizations (especially, accountancy)
 5. information economics is increasingly of interest to computer scientists and engineers
- Asymmetric information* refers to a situation in which different people know different things.

0.0.1 Examples

1. A competitive marketplace
 - a. Adam Smith's *Wealth of Nations*
2. A planned economy such as Soviet Union
 - a. Hayek and the "socialist controversy" – its role in inspiring the field of information economics
3. the *principal-agent problem*

One party (the principal) employs another party (the agent) to perform a service for him. The agent may have private information about the appropriate service to provide (i.e., he may have special expertise), or his actions on behalf of the principal may not be fully observed or monitored by the principal. How should the principal compensate the agent as a function of the outcome of the agent's action so as to provide the agent with the proper incentives to take the best action on behalf of the principal?

The world is full of principal-agent relationships.

 - a. client-lawyer relationship – points to the significance of uncertainty in the outcome of the agent's action in making the problem interesting and difficult
 - i. "billable" hours versus a percentage of a settlement

- b. home seller and real estate agent
 - i. the most common arrangement is that the seller pays 5-6% of the entire sales price to his realtor. If the buyer is represented by a realtor, this payment is split between the two agents.
 - ii. What are the "bad" consequences for the home seller of this particular method of paying his realtor? Can you propose a contract that provides better incentives for the realtor to work hard on behalf of the home seller?
- c. patient and doctor. The patient is interested in his own health. One of the doctor's interests is his own salary. The doctor may increase his salary by providing more services or tests on the patient. The doctor also wishes to avoid the possibility of malpractice lawsuits by being extremely meticulous in his care. The patient wants all appropriate tests performed, but he does not want unnecessary tests because: (i) even with insurance, he may bear some of the cost; (ii) the test may be painful; (iii) the test is time-consuming; even if he does not bear the full cost of the test (either because of government or private insurance), the patient may find the waste of economic resources to be personally distasteful and bad for our society. How do we provide incentives to doctors to exercise the "best judgment" in choosing tests and procedures, and what exactly do we mean by "best judgment"?
- d. two aspects of the principal-agent relationship: *hidden action* vs. *hidden information*
 - i. hidden actions give rise to the problem of *moral hazard*, while hidden information give rise to the problem of *adverse selection*. These are two terms that originate in the insurance business.
 - ii. moral hazard and my college dormitory (the night watchman)
 - iii. moral hazard in the news: the banking industry
 - iv. moral hazard and the origination of loans