Economics of Information

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Classic Microeconomics studies the role of markets in the allocation of scarce resources, and concludes that under the appropriate conditions,

> *the exchange of goods and services in competitive markets leads to an efficient allocation of resources: inputs are used in the most valuable production activities, and consumption goods are distributed in a way such that there are not further gains to trade.*

(First Welfare Theorem)

Incorporating explicitly the role of *time* and the presence of *uncertainty* allows to study the roll of markets in the *intertemporal* allocation of resources as well as the distribution of *risk*.

Classical microeconomics suggests to incorporate these dimensions of the resource allocation problem simply (re)defining appropriately the set of commodities that are exchanged: the definition of a good must specify what is, but also when and in what circumstances (states of nature) it is available.

Redefining the set of commodities in this way suggests to reinterpret exchanges as *contingent contracts*:

an exchange specifies the quantity of the physical good involved, the time and circumstances (state of nature) the seller is to deliver the goods, and the payment the buyer is to make at the moment of formalizing the contract.

The existence of competitive markets for the exchange of contingent contract leads, under appropriate conditions[1], to an efficient allocation of resources, considering

consumers' intertemporal preferences, as well their preferences for risks.

(That is, efficiency requires an optimal intertemporal allocation of goods to production and consumption activities, as well as optimal risk sharing.)

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[1]Which include, in addition to the usual ones, the existence of judicial system capable of enforcing these complex contracts.

Contingencies included in a contract must refer to

▷observable events, or

▷verifiable actions,

by all parties (including the external authority enforcing the contracts).

Thus, *information asymmetries* impose restricctions on the contingencies that contracts may consider, which

▷limit the scope of the results of classic microeconomics, and

▷open the possibility that institutions other than markets may help improving the allocation of resources.

An examination of common situations involving asymmetric information revels that a sophisticated contract design allows to remove some of the restrictions that a superficial look would suggest:

▷Even when one of the parties does not observe relevant events or actions it is possible to design contracts that provide appropriate incentives to reveal private information or take the desired action.

The Economics of Information provides a *theory of incentives* for the analysis of the effects of private information or hidden actions in contractual settings.

Recent developments in the study of the topics that emerge in long run contracting (*dynamic contract theory*) such as

▷ renegotiation, relational contracts, incomplete contracts, etc.,

provide instruments for the analysis of questions related to ownership and control, which are central to economics. (This analysis aims at providing a *theory of the firm* or, more broadly, a the *theory of organizations*.)

The purpose of the course is to provide an introduction to the ideas and methods of *Contract Theory.*

http://www.eco.uc3m.es/docencia/economiainformacion