MARKET AND MARKET MECHANISM VERSUS REFLEXION

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Abstract

The article explains the exchange of information between subjects in a society. Exchange of information is explained on the example of a logical system with one input, one output and three control variables. The parallel with the example of the logical system is used to explain how a new technology and a new product are put into practice. The role that plays the interaction between a society and its subjects when a new technology and a new product are put into practice is explained in conclusion.

Keywords: Information, control variable, interaction, reflexive process

Introduction

Every human society must confront and resolve three fundamental economic problems:

What commodities are produced and in which quantities

Who will do the production, with what resources and what production techniques they will use

For whom goods are produced

There is a lot of ways to solve these problems. Actually, a market economy is used mostly.

A market economy is an elaborate mechanism for coordinating people, activities and business through a system of prices and markets. It is a communication device for pooling the knowledge and actions of billions of diverse individuals. Without central intelligence or computation, it solves problems of production and distribution involving billions of unknown variables and relations that are far beyond the reach of even today's fastest supercomputer. Nobody designed the market, yet it functions remarkably well. The market, as well as human society, is subject to a change.

A market serves as a basis of a market economy. A market is a mechanism by which buyers and sellers interact to determine the price and the quantity of a good or service.

Main Text

Let's start by defining the terms economy and economics to avoid their confusion.

Economy is a science how the society uses rare sources to produce helpful goods and distributes them among various groups of people.

Economics is a historically given summary of production relations, the economic base of society. It is the economy of a country, including relevant sectors and types of production. Some economic sciences are called economics (industrial economics, agricultural economics).

Speaking about economy or economics means to speak about the society because both, economy and economics, forms an integral part of a society. Resulting form the above mentioned definitions, neither economy nor economics can exist without a society and vice versa.

Every society is formed by subjects and the interaction between subjects is its natural feature. The interaction is done through the exchange of information between subjects.

The exchange of information between subjects in a society is affected by:

Rules that are valid in a society (current legislation, traditions, habits, etc.) rules that follows an individual subject (characteristics given at birth, knowledge, experience, etc.)

rules that follow surrounding subjects (family, friends, their characteristics, knowledge, experience, traditions, habits, etc.)

These rules are stored in a brain of every subject and they are applied when information is exchanged between them. When information is exchanged, one of the conditions below is always true:

rules that an individual subject follows are identical only with those that a society follows

rules that an individual subject follows are identical only with those that surrounding subjects follow

rules that an individual subject follows are identical with those that the society and surrounding subjects follow

The principle of exchange of information between subjects in a society is described on Figure 1.
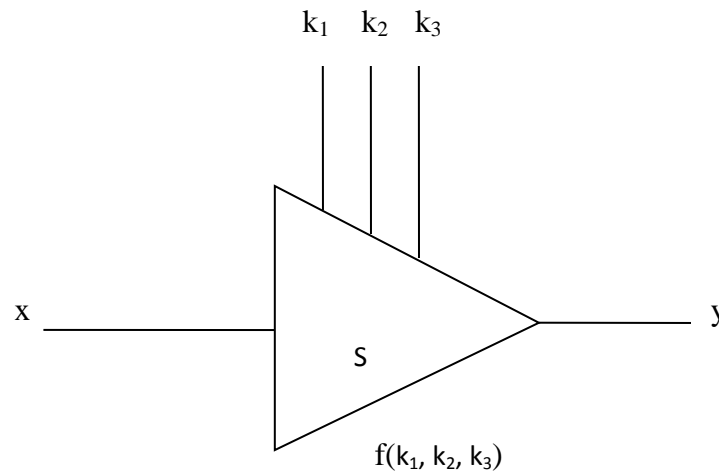

Figure. 1

The input information x of a subject S is modified by three control variables. Rules that the society follows are the first control variable k_1. Rules that an individual subject follows are the second control variable k_2. Rules that surrounding subjects follow are the third control variable k_3. Control variables k_1, k_2 and k_3 are Boolean variables in the range of values (0; 1). The output information y from a subject S is a function of control variables k_1, k_2 and k_3, i.e.

y = f(k_1, k_2, k_3)

As control variable k_1 and k_3 cannot be changed, the control variable k_2 of an individual subject is used to determine which of two information will be passed as output information y to the other subjects. The output information y of an individual subject is the input information x of surrounding subjects. The control variable k_2 determines whether the output information y is identical with the input information x or the output information y is negation of the input information x. In fact, the control variable k_2 is the weight coefficient of an individual subject to determine which rule is in agreement with its own rules.

The above mentioned can be expressed by logical sum and logical product:

y = k_2(xk_1 + xk_3) = k_2(k_1 + k_3)x   (1)

If the result of logical product $k_2(k_1 + k_3) = 1$ then $y = x$ (2)

If the result of logical product $k_2(k_1 + k_3) = 0$, then $y = \neg x$ (3)

The result of logical product $k_2(k_1 + k_3)$ is 1 when:

$(k_1 + k_3) = 1$ AND $k_2 = 1 \Rightarrow (k_1 = k_3 = 1)$ OR

$(k_1 = 1$ AND $k_3 = 0)$ OR

$(k_1 = 0$ AND $k_3 = 1)$

The result of logical product $k_2(k_1 + k_3)$ is 0 when:

$(k_1 + k_3) = 1$ AND $k_2 = 0 \Rightarrow (k_1 = k_3 = 1)$ OR

$(k_1 = 1$ AND $k_3 = 0)$ OR

$(k_1 = 0$ AND $k_3 = 1)$ OR

$(k_1 = k_3 = 0)$

Negation of the input information x represents one of the cases described below:
the meaning of the input information x is changed to opposite meaning at the output from an individual subject, i.e. true information is changed to false information that is passed to other subjects and vice versa the input information x is not passed by an individual subject to other subjects, i.e. an individual subject suppresses the information

As control variables k_1, k_2 and k_3 can vary with the time, i.e. they are function of time, the same input information x that is passed to other subjects can have different meaning in different time.

Moreover, control variables k_1, k_2 and k_3 are not the only variables that vary with time. Input information x of an individual subject also vary with the time that results in changed output information y of an individual subject. This fact can be expressed by the formula:

$y = \int k_2(k_1 + k_3)x \, dt$ (4)

Let's substitute the product $k_2(k_1 + k_3)$ by a general control variable w, i.e.

$w = k_2(k_1 + k_3)$ (5)

where w is Boolean variable in the range of values (0; 1)

Time change of the same input information x can be expressed by the formula:

$y = \int x k_2(k_1 + k_3) \, dt = \int xw \, dt = xw_2 - xw_1 = x(w_2 - w_1)$ (6)

The distinction $(w_2 - w_1)$ reflects the change of control variables k_1, k_2 and k_3 in time t_1 and t_2.

The above mentioned explains the decision-making process of an individual subject and variables that control the process.

Let's apply the above mentioned to explain the way the information about a new technology circulates to subjects in a society. This example can be applied to the circulation of any information.

First of all, it is necessary to explain the way that subjects in a society are informed about a new technology. It is a natural characteristic of human brain to acquire new knowledge and make new discoveries that concern all human activities. Discovering new technologies allowing to produce new products or to improve characteristics of existing ones is included. A new technology for use in a specific human activity can be only discovered by an individual who deals with this activity and therefore has sufficient knowledge, theoretical as well as practical, in that field. If a new technology is discovered, only its author can start to circulate the information about a new technology to the others through the interaction. In this case, subjects that the author of a new technology interacts with are producers which a technology is discovered for. These producers are, from the perspective of economic theory, customers of the author.

The information about a new technology is, in accordance with Picture 1, the input information x of an individual subject S. Let's analyse the way that control variables k_1, k_2 and k_3 affect the process to put a new technology into practice. Set of rules valid in a society is the first control variable k_1. If rules valid in a society are set to refuse every forward-

looking idea, a new technology will be refused by these rules. Set of rules of an individual subject, i.e. set of rules of a producer, are the second control variable k_2. If rules of a producer are identical with those valid in a society, a producer will refuse a new technology, too. Set of rules that follows other subjects, i.e. other producers that can use a new technology, is the third control variable k_3. If this set of rule is identical with those valid in a society, a new technology will be refused by other producers, too. As control variables k_1, k_2 and k_3 are included in the decision-making process of every producer, resulting from the formula (3), a new technology will not be put into practice.

As the control variable k_1 is constant at a given time, to put a new technology into practice, it is necessary to find a producer with control variables k_2 and k_3 that are different from the control variable k_1. In other words, if rules valid in a society are not set to support forward-looking ideas, producers that support forward-looking ideas have to be found so that a new technology is put into practice. This idea is reflected in the formula (2). In other words, the formula (2) says that a producer put a new technology into practice. Putting a new technology into practice through interaction between producers results in the change of rules that are valid in a society as well as in the change of rules of producers those rules are identical with those of a society, i.e. the change of control variables k_1 and k_3.

The above mentioned explanation can be applied to the relation between producers and consumers. Either a new product or existing one with better quality is the result of putting a new technology into practice. A producer informs consumers about a new product because a producer is the only subject that have this knowledge. Until that moment, customers are not aware of a new product. Analogically, the information about a new product is, in accordance with Picture 1, the input information x of an individual subject. A consumer is a subject whose decision-making process is affected by three control variables. Rules valid in a society are the first variable k_1. Rules of a consumer are the second variable k_2 and rules of the other consumers are the third variable k_3.

If rules valid in a society are set to refuse every new technology, a new product will be refused by the rules. If rules of an individual consumer are identical with those valid in a society, an individual consumer will refuse a new product, too. If rules of other consumers are identical with those valid in a society, a new product will be refused by other consumers, too. As control variables k_1, k_2 and k_3 are included in the decision-making process of every consumer, resulting from the formula (3), consumers will not buy a new product.

Similarly, the control variable k_1 is constant at a given time, in order to start to sell a new product, it is necessary to find a consumer with control variables k_2 and k_3 that are different from the control variable k_1. In other words, if rules valid in a society are not set to support forward-looking ideas, consumers that support forward-looking ideas have to be found so that a new product can be started to sell. This idea is reflected in the formula (2). In other words, the formula (2) says that a consumer buy a new product. Buying and using a new product results, through interaction between consumers, in the change of rules that are valid in a society as well as in the change of rules of consumers those rules are identical with rules that follows a society, i.e. the change of control variables k_1 and k_3.

In traditional philosophical and psychological understanding, reflexion is defined as a capability to take the position of observer, researcher or inspector in relation to his body, acts and ideas. This definition of reflexion was later completed with a capability to take the position of researcher in relation to other person, his acts and ideas. The completed understanding of reflexion gives a possibility to construct whole object of research and to reveal reflexive processes as independent phenomena determining specific features of objects-researchers mutual relations.

If this completed definition of reflexion is applied on a society and its subject, i.e. producers and consumers in that case, we can find that:

a society takes the position of researcher in relation to every producer and every consumer, his acts and ideas

a producer takes a position of a researcher in relation to a society and other producers, their acts and ideas

a consumer takes a position of a researcher in relation to a society and other consumers, their acts and ideas

Specific features of the relation between a society, producers and consumers are represented by rules that follow a society, producers and consumers. Rules of society, producers and consumers do not have to be identical despite the fact that they all try to set up their individual rules and to use them so that the rules of every of them are accepted by the others. This leads to the continuous change of rules that follow a society, producers and consumers and that result in replacing old technologies and products by new ones. The change of rules represents reflexive process that is independent of the will of a society, producers and consumers. Reflexive process is a natural result of acquiring new knowledge that gives a possibility to discover new technologies, new products, explain unknown phenomena, etc. In fact, it is reflexive process that regulates a society, producers and consumers, their acts and ideas.

Conclusion

I came to the conclusion that economic theory is wrong when insisting that market, market mechanism and market economy exist. I can say that economic system does not exist, it is only socioeconomic system that exists because economy is the integral part of a society and cannot exist without a society and vice versa.

Only reflexive process and the interaction between a society, producers and customers exist. Reflexive process that determines specific features of this interaction as well as what production techniques are used, what commodities are produced and in which quantities. Reflexive process uses the interaction among a society, producers and consumers to acquire information to regulate a society, producers and consumers. However, reflexive process can be effective only if acquired information is correct. If acquired information is incorrect, reflexive process is not effective.

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