

## RESEARCH ARTICLE

# Competition as a Model Economic Behavior: Theoretical Aspect

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## Abstract

The article deals with competition as a model of economic behavior. It describes economic determinants and agents' participation motives (participation forms) in this process. In contrast to the F. Hayek's approach, the author suggests to consider the problem of competition as a "closure" procedure and not as a discovery one, as this aspect is the second part of one and the same process of competition.

**Keywords:** *Competition, Economic behavior model, Contracting, Institutions, Informational asymmetry.*

## Introduction

In this paper we advocate the view that the competition can not be a procedure of «discovery» by F. Hayek [2] or «closing» - in the opposite sense, as both processes are two sides of the same coin. Hayek does not seem to take into account the important property of the competitive process, namely, that during the competition, along with the losing subject lost valuable information; experience and knowledge are updated deskilling staff problems for which open opportunities previously closed. If we recognize that competition is a particular form of behavior of economic agents, it must be deliberately organized. Any measures to organize and support any institutional systems require diverting some resources. Consequently, the competitive economy to ensure its existence needs investment, motivating agents to generate this form of economic behavior. Moreover, it is necessary to consider the economic model of agents' behavior, their conditions of formation of economic motivation. It is these aspects to consider theoretical positions below.

## Economic Agents and Model Their Behavior

Agents can behave differently, but from the economic point of view the types of this behavior can be presented as competitive behavior characterized by agents' competitiveness, non-competitive behavior which does not assume competitiveness, and special behavior models aimed at competition avoidance. As a rule, the agent shows three behavior models: absolutely

rational, restrictedly rational and irrational (non-rational). Economists often associate this irrational model with altruism. One and the same agent can simultaneously show some behavior models on different directions of his actions

The agent's behavior model becomes defining to describe any phenomena, to explain them and to make a choice. Methodological individualism treated as absolutely rational model of a person and as restrictedly rational behavior model, is thereby the major principle allowing to describe the whole class of the phenomena, models, and choice problems. If we describe the principle of methodological individualism in such a way, the desire to think up a principle opposing it will, naturally, lead to "uncovered" part of rationality (absolute, limited), that is, to irrational behavior or irrationalism. In this case, the principle of "methodological irrationalism", in idea, should be opposed to the principle of "methodological individualism".

Other things being equal, economic science gives economists or economy agents rational criteria to make concrete decisions in conformity with them. In this book devoted to privatization, nationalization and economic reform I also tried to suggest a number of principles and criteria which make arguments in this area more rational, in comparison with the previous ones. Probably, science by its existence and as a results of the activity of its representatives has the aim of people's thinking rationalization. In this

connection, and due to some other reasons about which I would like to mention in the end of this work, criticism of the principle of methodological individualism by some economists and especially by sociologists is unreasonable, and problem statement on its revision or replacement seems “Sisyphean toil” in the field of economic science. To be exact, this problem is incorrect in its statement and is unpromising.

Firstly, what should be considered rational and what the criterion of rationality is. For example, let's imagine the agent who using computer and modern decision-making methods chooses from analyzed alternatives the only decision which then will turn out to be not the best and erroneous. Is this choice rational? From the point of view of the meaning of the word “rational”, that is, reasonable, reasoned, probably, the answer is positive. Nevertheless, the agent has made a mistake.

Secondly, if we act on the premise that agents are mentally healthy, for certain, each of them wishes to live as long as possible, thus keeping active capacity as long as possible. It is difficult to imagine the agent who wishes to live and be bedridden. It means that if we introduce such criterion, proceeding from living condition of the agent, it is absurd to say, that it is not rational. It is absolute rationality, at least, from the point of view of such rationality criterion. Thus, the definition and standard introduction of rationality criterion in many respects determine our idea about rational behavior, limited rationality and the principle of methodological individualism. But are the agent's actions aimed at life shortening (smoking, drinking alcohol, intensive work without rest, and etc.) restrictedly rational or irrational? Do they correspond to the principle of “methodological irrationalism” or “methodological individualism”? In this case, the criterion is obviously broken. Should it be considered an error of rational behavior or an irrational behavior? And how does it affect other facts and models of agents interaction, that is, other economic phenomena.

Thirdly, as it follows from the presented reasoning, rationality principle, as well as the aspiration to maximum utility, is important on each event separately. In one episode the agent will behave himself rationally, in others he will not. If in the economic system there are available  $N$  agents  $\{1, 2 \dots j, N\}$ , the first one performs the volume of actions  $a_1$ , the second performs  $a_2$ , and the  $n^{\text{th}}$  performs the volume of actions  $a_N$ . Then  $M$

$= \sum_{i=1}^N a_i$  is the total volume of actions of the given number of agents. Thus  $a_i = \alpha_i + \beta_i + \gamma_i$  a set of actions for the  $i^{\text{th}}$  agent, where  $\alpha$ ,  $\beta$ ,  $\gamma$  - the number is absolute, restrictedly rational and irrational actions accordingly. Then the volume of actions  $M = \sum_{i=1}^N (\alpha_i + \beta_i + \gamma_i)$  is performed for a

certain period of time. The actions structure is formed proceeding from introduction of rationality criterion. Thereby, if the researcher-economist studies the phenomena and events where the actions or their overwhelming majority correspond to rationality criterion and a set of absolutely rational actions, the principle of “methodological individualism” on this group of phenomena, processes, and events shows its strength and, obviously, it is not possible “to take it away”. If the group of considered facts, events, and phenomena assumes domination of actions on  $\beta$  or  $\gamma$  category, that is, agents' rationality is limited or they behave irrationally, the strength of the “principle of methodological individualism” is obviously limited, and the principle of “methodological irrationalism” or limited “methodological individualism” should work.

### Competition between Agents

In his lecture «Competition as a Discovery Procedure» and in his earlier works F.Hayek upheld the idea that competition was a process of view formation on all the events in the market, that is, it is a process of continuous change of information, collection, distribution and analysis of the facts. It is a procedure of discovery of new facts the use of which is overridden to the purposes of certain agents and is aimed at achieving a certain success in the market [2].

Thus, according to F. Hayek, at agent's level competition is a procedure of knowledge discovery about consumer preferences [2], technological possibilities, investments, institutions, etc., disseminated in the society. In relation to knowledge this approach looks static as “discovery” is carried out from the available knowledge volume. Nothing is said about the time of this very process, as well as about the possibility of loss of some useful experience and knowledge during rivalry between agents. Dynamics of competitive process is unstable. In other words, there are intensification and slackening. However, some volume of knowledge and experience is always required to surpass the rival, this kind of knowledge and experience can

be a peculiar “consumable material” which will be never claimed again. Besides, Hayek's concept does not consider inefficiency of competition procedure as a “discovery”. A loser in the market could possess unique knowledge and experience, and the winner could take advantage of conjuncture reasons or data bringing short-term benefit. This practice is rather often in modern economy and it confirms high probability of inefficient result as a certain result of competitive process when the best agent does not win. In connection with the noted features the idea of competition as a natural selection, like the phenomenon in biology, becomes also invalid.

Really, if better qualities are rejected and remain unclaimed, they are not single anomalies but genetic changes in the social structure functioning. Similar situations are described by the term “unfavorable selection”.

Let's consider economic determination (motives) of competition between agents.

In general case the agent can choose one of three behavior models depending on the balance of his total revenue, wage and costs of undertaken efforts. If we designate income and real wage of  $i^{\text{th}}$  subject  $R_i$  and  $W_i$  accordingly, and real contribution of an individual to social production  $Z_i$  or  $I_i$ , then on the time interval  $[t_1, t_2]$  the following situations are possible: I)  $R_i > W_i$ ; II)  $R_i = W_i$ , and also  $R_i > Z_i$ ;  $R_i < Z_i$ ;  $R_i = Z_i$ .

Unification in the economy of the type:  $R_i = Z_i$  for all  $i = 1 \dots N$ , is an incredible event as public institutions have power, which inevitably leads to disproportion between contribution and compensation. If the income received by each subject is equal to his contribution to economy, then it is possible to speak about achieving distributive optimum, an ideal economic condition. Actually individuals make various contributions to social production. Therefore, at best result they can get compensation exceeding their contribution or equal to it.

Thus, non-uniformity of one's own efforts contribution plus institutional heterogeneity (expressed in human capital heterogeneity) predetermine inequality in revenue earned. That is quite natural. However, total revenue can mismatch contribution to social production. It can exceed it for some individuals and be lower for others. Contribution of each subject is its investment into creation of gross product. The revenue earned depends on the amount of this investment, its qualitative characteristics,

institutions which are responsible for effective use and return of the contribution. Certainly, the possibility of realization of the investment is defined by the income of the previous period, accumulated savings, and institutional condition of the given period. In other words, it completely depends on the past.

Economic life is created by a man, but simultaneously in the economy there appear conditions, that is, institutions, organizations and structures which define the reproduction character of human capital. In essence the following chain of interactions works about which Trygve Haavelmo wrote in the Nobel lecture: «Starting with some existing society, we could conceive of it as a structure of rules and regulations within which the members of society have to operate. ... the results of the individuals in a society responding in a certain way to the original rules of the game have a feedback effect upon these rules themselves». [1]. Thus the permanent process of institutional changes is carried out, where the man and his changing behaviour models play the leading hand. The problem of human capital reproduction having two forms, individual and public, acts as a central theme in the theory of human capital development. The solution of this problem is not easy as the search of optimum proportion between individual and public capital is complicated, to say nothing about independent scientific problem of capital measurement, human capital estimation, and the so-called social investments necessary for its reproduction.

The theory of capital demonstrates us the major property of capital. It is its heterogeneity. And this property and the available difficulties while considering this aspect in economic models limit the “efficiency” of created theories of capital. In particular, J.Hicks noticed that heterogeneity of capital is a stumbling-block of modern theory of capital [3]. However, as for human capital, here heterogeneity problem is even more critical. It is heterogeneity that generates the effects of inequality, exploitation, non-even distribution of investments. Besides, it also essentially influences economic growth and development. Contracting rules act as an original skeleton forming the contours of such heterogeneous system and fixing the possibility of its functioning, setting efficiency parameters and even efficiency «ceiling».

If total revenue exceeds agent's wage, the amount of earnings on the side, including shadow income,

is positive:  $R_i - W_i = \delta_i$ ,  $\delta_i > 0$ . In case when total revenue of the individual is exactly equal to wage, two variants are possible: 1)  $R_i = W_i > Z_i = I_i$  and the subject gets unearned rent  $r_i = (R_i - I_i) > 0$ ; 2)  $R_i = W_i < I_i$  and the subject is exploited and the value of his exploitation is measured  $e_i = (I_i - R_i) > 0$ . Exploitation value, proceeding from the received equalities, is, practically, an unearned rent with the opposite sign:  $e_i = -r_i$ . Hence, comparing contribution and compensation it is very important to consider the sense of inequality to establish accurately what social process prevails.

Let's assume that the agent possesses all the necessary information about the current situation. Then, in the first case he will try to fix his positions of the payee of unearned rent, and in the second case he will direct efforts to curtailment of his activity. At the firm some workers can use the model of back-stage sabotage, evasion from established functions. It is necessary to notice, that in the first case labor productivity of the subjects whose income (wage) considerably exceeds contribution can fall due to the reduction of labor efforts because of desire to have more rest, and in the second case it happens due to labor demotivation because of very low compensation. Other things being equal, if any similar behavior model involves the majority of economy agents, economic system shows growth retardation or enters stagnation.

Having presented total revenue in the form of the sum of wage and earnings on the side, we will get two inequalities:

- 1)  $I_i - W_i - \delta_i < 0$
- 2)  $I_i - W_i - \delta_i > 0$ .

If the wage is relatively low  $W_i \ll I_i$  then the validity of the first inequality can be provided exclusively for the account of high income on the side (shadow income), which is an unearned rent. It follows from the second expression that it is possible to overcome exploitation probably by wage increase, bringing it into accord with the personal contribution of the individual, or removing from this kind of activity, lowering labor efforts and reorienting them on getting illegal incomes. Certainly, each individual experiences the situation change in the range from exploitation before acquisition of unearned rent during the time  $[t_1, t_2]$ , passing the point of distribution optimum in which contribution and compensation are equal:  $R_i = I_i$ . Hence,

functioning of the agent is non-equilibrium process at which equilibrium is a special case. Thus, there is always some set of models of exploitation and unearned rent in the economy. And if there is an excessive concentration (predominance) of any of two named behavior models or both models simultaneously, it is fraught with the most negative consequences for social development. At domination of exploitation model wage obviously mismatches individual's contribution. Besides, if its share in total revenue, which in this case is less than individual's contribution, is insignificant, it increases the value of the rise  $\delta_i$  of the income on the side (illegal income). Removal of unearned rent under conditions of exploitation model is quite possible, as the motive of getting a bribe or any other dividend sharply increases, especially if the individual makes great efforts in the principal place of business and at that considers his labor payment to be low, and he cannot change profession or the work place. He has only one way to increase total revenue. It is to use his power and to infringe the established norms for extraction of the rent without additional efforts. In the situation when total revenue exceeds contribution  $W_i + \delta_i > I_i$  different variants are possible:

- 1)  $\delta_i = 0$ ,  $W_i > I_i$  - wage exceeds cost estimation of individual's personal contribution and unearned rent is equal to zero  $r_i = 0$ ;
- 2)  $W_i < I_i$ ,  $\delta_i > I_i - W_i > 0$  and  $r_i = 0$  - though wage does not exceed individual's contribution, but extra earnings are so high, that it provides excess of total revenue over personal contribution without the necessity of unearned rent extraction;
- 3)  $W_i < I_i$ ,  $\delta_i < I_i - W_i > 0$  and  $r_i > 0$  - extra earnings do not allow to receive more income than contribution and the subject provides this, using his power or breaking generally accepted rules.

Choosing the behavior model the agent compares the income not only with his personal contribution, but with contribution and income of other subjects, professional groups, and also with cost of living and costs of access to various social standards. Therefore, it is difficult to predict, what competitive strategy he will choose, because many factors influence this choice. The only thing we can to speak about definitely is the influence of competitive strategy on the investment process. Very often the investments problem is presented out of touch with the behavior models of certain economic subjects as though investment process

exists on its own or is a model independently realized under the influence of some special motives. In practice, investment as the expenditure decision turned into action is an integral element of general behavior model of the subject. If the events are started up according to exploitation scheme, investments can be directed by the agent in the directions, following which it will be possible to leave this model.

In other words, it will be investments overcoming exploitation. In the case when additional rent is obtained, such spheres as recreation, entertainment, purchase of luxury goods etc. will be invested. If the model of exact match of contribution and compensation operates, the efforts on getting access to possibilities of unearned rent are invested. Certainly, such behavior models are observed if the agent possesses full information about the status quo and has corresponding total revenue. But even using all his income for purchasing foodstuff, the agent pays taxes which are nothing but investments into social production. These funds are accumulated by the state and are used for investment in other sectors of economy.

A manager of a private concern is employed by its proprietor, and this appointment can be as erroneous, as the appointment of the official as a person who is selected by the proprietor of the state funds, people, for realization of their interests, concerning efficient control of these very funds. In both cases there is a problem of relations of "principal-agent" type, but in the second case it is more difficult, as no one can feel secured against error at the stage of choice which is carried out by means of direct vote though in joint-stock companies with the atomized holding of shares the decision on managers appointment are made by considerable number of proprietors using the same voting procedures. And the probability of an error at micro level is less due to more complete information available for proprietors. However, such assumption is not always fair.

The distinctive feature of production in the public sector is the characteristic of the created welfare. Therefore, it is necessary to consider production

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inefficiency in the public sector not in the aspect of choice, voting, property or absence of competition in the given sphere, but from a position of production engineering and properties of created product or service. Competition absolutization as the most effective form of economic behavior and development is based on abstract assumptions about functioning of free market and low price of obtained good, and effective allocation of resources achieved in the equilibrium point. Only for individuals it is important not only the price of good, but also the amount of obtained active income. Besides, the possibility to concentrate the investment direction for the solution of only one strictly determined problem is of importance because competitive market cannot arrive at the decision accumulating the demanded volume of investments. Properties of the produced good define the way of economic coordination and contracting type. If we agree, that properties and good characteristics are invested, control over investments distribution is, in essence, a way of economic processes coordination.

Thus, transactional costs of placement of contracts and their compliance define contracting efficiency and, finally, influence investments efficiency. It is especially visible in the knowledge-intensive markets where competition is developed on technical (technical and economic) parameters of the developed products. Competitive process in such markets is characterized by asymmetry of information which can be overcome only by knowledge of the personnel involved in working out, or monitoring of scientific and technical information and/or contracting process (pre-contract arrangements, placement of contracts and their compliance) [4].

However, the asymmetry feature is that information is asymmetric in both parties, the principal and the agent. In other words, the manufacturer of knowledge-intensive production and the customer may have distorted information both about the behavior model at the placement of contracts, and about technical and economic parameters (qualities) of the product (the purpose of the contract).