

**Alexandr Omelyaniuk,**  
candidate of economic sciences, docent,  
**I. Klimovich,**  
senior lecture,  
Brest State Technical University

## **USE OF PUBLIC GOODS AND ESTIMATION OF INSTITUTIONS EFFICIENCY**

It is well known that the creation and use of public goods is aimed at reducing social costs and leveling market failures. However, this paper will reveal that this is not always the case.

Let us consider the situation when the number of public goods users considerably exceeds limit possibilities of these goods use. Public roads and traffic jams are in question.

A large number of cars want to pass a road section at one and the same time. Let us examine this situation in terms of the neoclassical model of economic man. Each driver is individually motivated and selfish, and aims to maximize his/her objective function. In this case that is to drive this road section with minimum transport risks and time and fuel costs. In addition, the objective function value (its public value) of various vehicles will also differ. For example, in case of a successful trip the car in which the driver is travelling alone will maximize the objective function to one driver of this vehicle only. If the driver is travelling along with 2 passengers, then the degree in maximizing the objective function grows in multiple numbers of times. If the vehicle is a rout taxi or bus, then the satisfaction- and maximization degree of the objective function increases manyfold.

Traffic jam is a shortage of road capacity in a given period of time, that is, the inability to maximize the objective function due to the scarcity of a resource, i.e. the capacity of the road in this particular case.

Another side of the problem under discussion is the question about the origin and distribution of the individual and public expenses. Individually motivated motorists strive to reach their destination as fast as possible with time and fuel costs saved. Every motor-car enthusiast striving selfishly to maximize individual utility function

creates additional expenses for the same egoists who travel the same route. As a result, total individual expenses of players involved in a traffic jam grow, and, therefore, so do public costs.

Similarly, motor transport users' expenses increase unevenly during a traffic jam. When trying to use a limited resource being a public good (highway is not private property, but it is referred to as state, regional or municipal property), individually motivated players are forced to maximize the use of this good which is worth less than other goods, applying the law of maximizing utility. When used by an individual player the cost of a public good for him/her tends to zero (or it is very small as compared to the price /cost of private goods). Therefore, marginal utility of a public good is always higher than that of any private good substitute. That is why an individual player does prefer a public good to similar private goods substitutes.

The same strategy will be applied by all participants of the traffic jam. No player can minimize his/her costs of being in a traffic jam because his behavior will have little impact on the overall picture of costs distribution. Therefore individually motivated player is not economically interested in reducing the use of a limited resource (a good), that is, he would not solve the problem of a traffic jam personally.

Price forms of regulation in the number of vehicles (price restriction of demand) will not have the desired effect as the road is not a commodity but a public good. Excess demand of any good or service is artificially restricted by price. It means that travel on the «problem road area» at a certain time period is more expensive than at the time when the risk for a traffic jam to occur is minimal. Automatically the increased price for travel would force the part of motor-car enthusiasts to give up travelling at this time of the day, and the toll rate could regulate this part.

The problem is that the road is not a common commodity, but performs the functions of a public good, and is used by the whole community, although its construction and maintenance expenses are paid by the government. A public good has no price forms of regulation and no mechanism to reach an equilibrium level of its use.

The presented example allows us to formulate the traffic jam effect (author's name).

The traffic jam effect: when individually motivated player uses at least one public good (a commodity or resource) in his/her market activities in addition to his/her use of private property things from a certain moment it results in ineffectiveness of market mechanism application of flexible market price and requires public institution to be created and used in order to increase the efficiency of public

property usage and minimize social costs, i.e. the sum of the private players' individual expenses).

There occurs an obvious contradiction between the purpose of creating a public good, and the results of its use. Thus, the aim of a public good creation can be either «market failures» leveling or an effort to reduce total individual expenses. For example, free secondary education minimizes parents' costs when giving their children basic knowledge each citizen of the given society should have, and reduces total social costs of the human capital reproduction. Individual education of every separate child or teaching schoolchildren groups on the market basis would significantly increase total social costs which in the very particular case minimize a public good — «free secondary education».

In the example with a highway as a public good — this mechanism starts to fail, and one can observe a clear contradiction.

When a public good is used by individually motivated players in a certain case (at a definite period of time) it results in the increase of their total individual expenses.

The list of the examples can be long indeed: the functioning of other public goods — health care, medical service, health resort treatment, etc. — are referred to such paradoxes.

An obvious way out of this situation will be the development of the institution to regulate the use of limited public or group property.

Thus, the conclusion is the following: there is a need to establish the institution where there are no clearly fixed property rights, or there is at least one object of public or group ownership. The use of a public good in individually motivated players' activities involves a public institution. To improve the efficiency of using collective or group ownership by individually motivated players and institution needs to be established.

In other words, any-to-implement public good requires a simultaneous introduction of the (formal) institution to improve the efficiency of this good public use, while the effectiveness of the institution (or institutional environment) in its turn one can treat as the efficient performance of those public goods the use of which this institution regulates.

Modern development of economic relations becomes more and more complicated. There appear new forms of relations and forms of property allocation. These transformations are followed by the change in conceptual bases of leading schools and trends in economics.

At present, the mainstream is based on the neoclassical synthesis principles and describes the behavior of individually motivated

players (households and firms), as well as the measures of the state (or, in fact, the same individually motivated players but with a more complex objective function). And that was enough to describe the economy of the time when these theories were first formulated.

Today social and economic relations have become much more complicated. New forms of interaction and cooperation such as public and private partnership have appeared, global problems (globalization and ecological problems being examples) have been intensified, and property relations have become more complex. Nowadays a coherent mainstream model is insufficient not only for the effective simulation of economic processes, but even for its convincing description.

These facts explain the objective necessity for the mainstream to be consistently replaced by the theories that belong to Neoinstitutional School.

The use of this effect gives the opportunity to explain the concept of «institutional effectiveness». For Douglass North the goal of the institution establishment is «minimizing transaction costs» Therefore, the institution effectiveness or institutional efficiency is the ability of this institution to perform its function that is to minimize transaction costs). Measuring transaction costs in its turn involves a number of problems: definition ambiguity, measurement uncertainty, subjective evaluation, etc.

Measuring transformation costs doesn't deal with such problems. Therefore, if the institution is considered a way of minimizing total individual transformation costs, then the institutional effect will be these costs reduction, which has occurred owing to the institution performance. In the example of traffic jam given above that is time saving and a reduction in fuel losses by public from being in a traffic jam.

To sum up, when measuring institution that regulates the functioning of public goods by means of transformation, rather than transaction costs, is applied, it, of course, considerably weakens this assessment value. But, at the same time, it enables the effectiveness of using institution to be practically calculated and measured when applying neoclassical theory instruments, which confirms the viability of economic imperialism ideas once again.

### **References**

1. Geoffrey Hodgson, «Economic theory and institutions: Manifesto modern institutional economics». — M.: Delo, 2003. — 464 pp.

2. North, Douglass C. Institutions, Institutional Change and Economic Performance. — M.: Delo, 2003.