THE INFLUENCE OF EXTERNAL EFFECTS ON THE ECOLOGY AND POSSIBILITY OF THEIR INTERNATIONALIZATION

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ABSTRACT
External effects are one of the market imperfections. They occur whenever some activity, which takes an individual or company, has an impact on another individual or company that does not pay for it or are not paid. These are the costs or benefits arising to third parties in market transactions between buyers and sellers and which are not included in market price.
Environmental catastrophes and the limited natural inputs affirm the importance of the negative external effects researching. The aim of this work is to explore the best possibilities of internationalization of the negative external effects, and their neutralization, in order to reduce the ecological costs and ecological risk.
Key words: externalities, ecology, internationalization.

1. INTRODUCTION
The Market is not a perfect economic mechanism for connecting independent economic subjects. It always checks economic decisions *ex post*, thus confirming or denying their validity.

In market economy it is assumed that all economic subjects make decisions on their activities taking into account their personal interest primarily and not the economic welfare of the society as a whole.

In a number of cases the activities of one economic subject influence other economic subjects. A situation where an individual or a company performs an activity which influences the welfare of another individual or another company which are neutral observers neither paying for nor being in any respect rewarded for that effect is called an external effect. This happens when one actor does not cover the expenses imposed on another actor, which causes negative external effects, or when one actor enables another actor to gain benefit without asking for remuneration, which has positive external effects as a consequence.
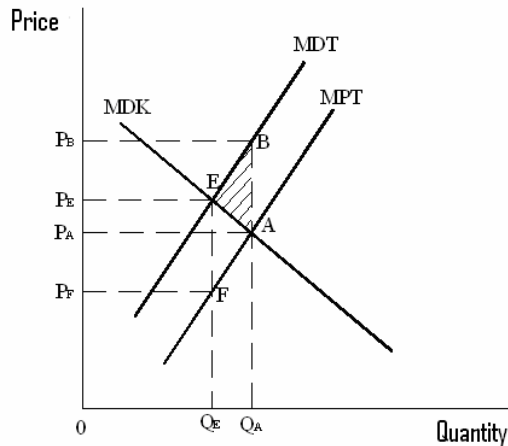
In case of the existence of external effects the market equilibrium is not efficient, the Market is unable to allocate the resources efficiently and maximize the overall benefits of the society as a whole. This happens due to the fact that the actors on the Market do not fully bear the expenditures of the negative external effects they themselves cause. Therefore they will continue to induce the costs to a great extent.

Negative external effects appear in various forms:
- Exhaust gases from automobiles create smog which is inhaled by other people. A single extra vehicle on a very busy highway will additionally increase traffic congestion and the possibility of traffic accidents.
- Air, water, and soils pollution by industrial facilities, which jeopardizes people's health
- Dogs' barking also causes a negative external effect since the noise disturbs the neighbours.

2. NEGATIVE EXTERNALITIES

Aluminium production will serve as an example of negative external effects. For the negative external effects aluminium production has on the environment, the expenditures of its production borne by the society are greater then those borne by the producer. For each unit of the aluminium produced, the social expenditures include individual costs of the aluminium production plus the expenditures imposed on those affected by the pollution.

Price

MDT

MPT

MDK

P_B ———— B

P_E —— E

P_A —— A

P_F —— F

0   Q_E Q_A Quantity

Mark as:

MPT- individual expenditures of the producer; MDT- social expenditures; MDK- individual efficiency;

Q1- Q_A efficient production from the producer's perspective; Q_E- social optimum;

As it is shown in the graph the curve of the social expenditures is placed above the curve of individual expenditures because it takes into account the external expenditures of the pollution emitted, which is imposed on the society by the aluminium producers. The external expenditures are graphically represented by the ABE triangle. The ABE triangle represents the loss of social efficiency. From the aluminium producing companies' perspective the efficient production would reach the level $Q_{A,,}$ whereat the aluminium would be sold at the market price of P_A. The decision on the production quantity Q_A has been made on the basis of MPT. The production range Q_A does not represent an efficient market solution because it does not take into account MDT. If these expenditures were taken into account the curve of expenditures would shift into MDT position. If the social expenditures were included in the overall expenditures of aluminium production, the aluminium should be sold at P_B price. But, since on that level the supply is greater than the demand the price will fall to the equilibrium point E, i.e. the point of intersection of the supply curve (MDT) and the demand curve (MDK). Point E determines the optimum aluminium production from the social point of view on the level Q_E, the price of aluminium being equal to P_E value on the graph. The difference between the prices P_B and P_A equals the marginal external effects. The PABPB area represents the total negative external effects. Therefore, for the welfare of the society as a whole it is better that the company reduces the aluminium production from Q_A to Q_E. The reason for this is the fact that the market equilibrium reflects only the individual production costs, while the value attributed to the aluminium by a marginal consumer is lesser than the social expenditures for its production. Hence, by decreasing the production and consumption of aluminium below the market equilibrium level the overall economic welfare is increased.

3. PUBLIC SECTOR SOLUTIONS TO EXTERNALITIES

The internationalization of negative external effects results from modifying MPT values in such a way that they express total MDT values, so that MDT equals MPT plus the indemnification of damage done to third parties. Since the third parties are not included in the contract which regulates exchange relations the state is to be involved through its regulations.

The solutions for the problems of external effects can be divided into two large groups: market

solutions and direct regulations. Market solutions encourage individual decision makers to choose the solution to the problem themselves. The state, on the contrary issues direct regulations to restrict external effects. The interventions on the part of the public sector can be: command and control interventions and market interventions. Command and control interventions are:

- regulations – the Government can solve the problem of external effects by proclaiming certain actions forbidden or obligatory. In that sense it is necessary to establish certain rules.
- innovations – new ways of production causing less pollution.
- revealing information – In certain areas states experiment with an approach witch emphasizes the public pressure rather than the state intervention. Under the public pressure the state would demand from the companies to reveal the pollution level, but the role of the state would still be limited.

For elimination of negative external effects there are three kinds of market solutions:

- fines and taxes – collecting fines and taxes proportionally to the amount of pollution generated.
- subsidies for pollution control and reduction – Instead of collecting taxes for pollution the state should give subsidies to firms who install abatement technologies thus creating positive incentives for pollution reduction.
- transferable licences – these are licences limiting the amount of pollution emitted by a particular company.

4. PRIVATE SECTOR SOLUTIONS TO EXTERNAL EFFECTS

When solving problems of external effects the state action is not always necessary. The *Coase theorem* states that external effects are an insufficient reason for the state intervention. The essence of the *Coase theorem* is that the solutions are not to be sought in the state interventions but in clearly defined property rights of each party, whereas it is left to the Market and voluntary negotiations of the parties involved to find the most efficient solution. In the case of low transaction costs the intervention is completely unnecessary and economically unjustified, because such an action would only increase the transaction costs of the state. Therefore, solutions should be sought in the clearly defined property rights of all actors, leaving to voluntary negotiations and market actors in the dispute to find the most efficient solution. An individual solution for the problem of external effects can often be solved by relying on the personal interest of the relevant parties.

Attractive as the Coase theorem might seem, individual actors often do not succeed in addressing problems caused by external effects on their own. The Coase theorem is valid only when the interested parties do not have difficulties in achieving and applying the agreement. However, in the real world bargaining does not always succeed, even when a mutually beneficial agreement is possible. Sometimes stakeholders do not succeed in addressing the problem of external effects of transaction costs- the costs borne by the interested parties during the process of reaching an agreement. In some cases, negotiations are simply interrupted because reaching an agreement may prove difficult and a failure in settling an agreement can be expensive. Achieving an adequate settlement is even more difficult with a large number of stakeholders involved.

4.1. The Policy of Montenegro Concerning Externalities

On September, 20, 2001, Montenegro adopted the Declaration on the Ecological State and its constitutional definition as an ecological state led to establishing a new attitude of the state towards the environment in the Republic. One of its results is the project "Directions of Development of Montenegro as Ecological State," which was adopted by the Government in March 2001. The project was developed by the European Centre for Peace and Development (ECPD) of the United Nations University for Peace - Belgrade, on the basis of the Government project assignment and in cooperation with a number of institutions and individuals. The project reflects the specificity of Montenegro not only in terms of unique natural characteristics, but also in terms of simultaneous inclusion of the environmental development and protection under the umbrella of sustainable development. The strategy is based on: value creation economy, the maximum protection of the nature using adequate scientific approaches, quality of life based on traditional human values of the inhabitants of Montenegro; a continual change in the ways of doing business and consumption.

Since the very concept of the development of Montenegro as an ecological state is inseparable from the global trend of sustainable development, the document includes not only protection but also the sustainability of development in the key segments:

- the social segment: a just distribution of both the burdens and the positive results of the development process; a balance in the reproduction of population, an increase in the quality of life in general, and a political progress;
- the economic segment: a positive economic growth, an improvement of material wealth, and within it a technical and technological development, as a prerequisite for economic development;
- The environmental segment: the development which does not violate the assimilative capacity of the region while providing the necessary conditions for a higher quality of life of the inhabitants of Montenegro;
- the technological segments: the improvement of technical systems and technologies in industry and transport, agriculture and environmental protection;
- the intergenerational consensus to ensure a good quality of living conditions for the inhabitants of Montenegro.
In Montenegro, each municipality has at least one ecologically problematic spot, the spots" being categorized by their size into two groups: large and small-scale polluters. Some of them are: the red mud basin of the KAP (factory for aluminium production) in Podgorica, the shipyard in Bijela, "Arsenal" in Tivat, the tailings area in Gradac, the coal mine and thermal power plant in Pljevlja, lead and zinc tailings impoundment "Brskovo" in the municipality of Mojkovac, the forge and bauxite mines in Nikšić, the Port of Bar, etc.

5.CONCLUSION

The problem of external effects is widespread, since even the most developed and richest states all over the world face it. The ways of solving it are complex and uncertain. While solving this problem we are faced with the uncertainty as to whether or not the proposed solution will be accepted, what approach we will take, in what way the results of these solutions will manifest themselves, etc. Some otherwise successful solutions to such problems may not prove equally applicable to all situations, while those that have proved less successful in certain conditions may prove extremely adequate in changed circumstances or another time. The reasons for this are numerous: the geographic, economic and political position of the country, the mentality of the people, the ways of implementing such measures, the situation in which the problem occurred, the time of the application of the solutions, the stability of the region, etc.
In the majority of cases where externalities are present, state intervention is necessary. The state generated solutions for the problem of external effects induce high costs the state, sometimes, is unable to pay. In this case, individuals are faced with worsening conditions and quality of life. In this paper we have tried to show how the presence of negative external effects causes inefficiency, which requires state intervention in order to produce a socially tolerable amount. The measures Montenegro mainly takes in order to solve the problem of external effects are subsidizing the pollution reduction and regulation methods.

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