

External Effects and Methods of Their Neutralization in the Contemporary Russian Economy

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Abstract: This article reasons the theoretical and methodological approach to the subject matter of the institutions of internalization of external effects to the use of epistemological potential of neo-institutional concept and, on the basis of the made conclusions, develops practical recommendations with respect to the forms and methods of their project planning, which ensure the progressive development of the contemporary Russian economy.

Key words: Positive and negative externalities (external effects) • Neo-institutionalism • Transaction expenses • Institutions • Contracts • Institutional project planning

INTRODUCTION

Intensification of the social differentiation of labor and occurrence of new types of economic activity, expansion of the borders of production capabilities and transformation of the subject matter of conventional production factors determine the changes in the forms of implementation of penetrating economic laws and regularities, which assumes the necessity of reconsideration of the key provisions of the modern economics, which include the provision on external effects, or externalities, appearing as a result of excess of the marginal social expenditures over the marginal individual expenditures (negative external effect) and excess of the marginal social benefit over the marginal individual benefit (positive external effect).

The foundation of the external effects theory was laid within the framework of the neo-classical concept by the thesis of A. Marshall about the influence of a new firm's entering the group of entities of sectoral market on the dynamics of average costs (external economy). Later on, the conceptual framework of the theory of external effects was efficiently used during the study of externalities in the sphere of reproduction of social amenities, pollution of environment, formation of urban agglomerations etc. which confirmed the epistemological potential of the neo-classical paradigm with respect to reasoning the necessity of usage of quasi-market mechanisms and government control of market *failures*.

At the same time, the transition to post-industrial stage of the humankind development required further development of the external effects theory with account of the changing factors and tendencies of the modern economy development, which is characterized by the high level of macroeconomic instability, the expansion of the subject matter of the transactions and transformation of their institutional contour. In this connection, it seems necessary to reconsider certain axioms of the neoclassic concept, which would allow to determine the margins of the market inefficiency and the role of the government in the internalization of externalities, as well as to reason the efficient methods of project planning of institutions, which ensure prevention (enhancement) of the consequences of selection of a single economic agent with respect to the choice of other participants of the transaction.

RESULTS

The research of the subject matter of the transaction participants allowed determining external effects with participation of manufacturers and consumers, the peculiarities of which are exemplified in Table 1. The subject matter of transactions, which initiate an external effect, can be represented by either manufacturers only, or manufacturers and consumers, or consumers only. The result of the transaction fulfillment is the entering into indirect contractual relations by third

Table 1: External effects with participation of manufacturers

Subject matter of a transaction, which initiates an external effect	Recipients of the external effect	
	Manufacturers (economic entities)	Consumers
Manufacturers (economic entities)	The external effect of certification of the management system in compliance with international and national standards of quality, which manifests itself in the formation of trust-based relations and decrease of the environment uncertainty level.	The external effect of certification of the final products in compliance with international and national standards of quality
Manufacturers (economic entities) and consumers	The external effect of investments in human capital, which results in the increase of labor potential of the enterprise's location area	The external effect of investments in human capital, which results in the increase of the incomes of insiders and the life quality of their family members.
Consumers	The external effect of consumption of ecologically clean products, which ensures turning consumer expenses into an efficient demand for products manufactured in compliance with environmental standards	The external effect of consumption of ecologically clean products, which ensures the improvement of the life quality with respect to its duration for all members of the society

parties - manufacturers and consumers (households), which is translated into both positive and negative externalities.

In the presented subject matter of transactions, the government can play the role of both the manufacturer, represented by state unitary enterprises, business companies, 50% of the stock capital of which belongs to government and the consumer, represented by public bodies, which make purchases through placing orders for state requirements.

The contradiction between the processes of stripping and specification of the ownership rights in the context of this research is the main and the source one. The forms of its implementation are the contradictions between the subjects of contractual relations, namely: the contradiction between the interests of initiators of the positive external effects and the interests of their recipients, which manifests itself as the excess of marginal social benefits over marginal individual benefits and as the excess of the demand for the manufactured goods over their offer; the contradiction between the interests of initiators of the negative external effects and the interests of their recipients, which manifests itself as the excess of marginal social expenditures over marginal individual expenditures and as the excess of the offer of the manufactured goods over the demand for them; the contradiction between the interests of economic agents - the recipients of positive local external effects and the interests of the whole economic community, which is deprived of such an opportunity; between the short-term and long-term interests of economic agents.

Due to the existence of externalities of the institutional environment, it is to be noted that the probability of contradiction between their evaluation from

the perspective of standalone economic agents. For example, the effect of coordination, which implies the positive external effect for a separate tax avoider, generates the negative external effect for the whole society.

The participants of transactions, which generate the external effects, are at the same time the subjects of their institutional project planning. The government acts as the participant of such transactions in the form of state unitary enterprises, public bodies, economic entities, 50% of the shares (stakes) of which belongs to the government. The government in its function as the subject of such transactions, exercises its right of ownership with respect to assets and this provides production of individual and public benefits and at the same time initiates external effects, both the positive (e.g. externalities of the production of meritorious amenities) and the negative ones (e.g. externalities of production of goods in violation of environmental standards). At the same time, the government develops formal institutions, which are represented by the rules and regulations, which states the order of specifying the rights of ownership and forms sanctions against the violators of those rules and thus it develops the mechanism of formal enforcement of contracts.

In the circumstances of the post-industrial economy, the independent type of social amenities is formed - the meritorious amenities (services of cultural, educational and scientific institutions and organizations), the true value of which is unknown to individual consumers. However, the government forces its consumer preferences, which it finds more correct, as the meritorious amenities are characterized with strong positive external effects mainly represented by the increase of the human capital along with the attributive properties of social

Table 2: Methods of internalization of negative externalities of automobile transport in Russia

1	Rationing of emissions of vehicles	Requirements of the regulations on the vehicles' emissions
2.	Rationing of the fuel quality	Requirements of the regulations on the fuel quality
3	Fees for emissions by movable sources	Applied with respect to vehicles of enterprises
4	Excise tax for purchasing cars	For the cars with the power exceeding 150 hp
5	Transport tax	It is differentiated depending on the power of a car (different regions adopt different rates)
6	Excise tax for petrochemicals	Since 2011, it equals to 3,500 rubles per ton for AI-95 (and the others are higher)
7	The excise tax in the price of fuel	Since 2011, 1 ruble from every 1 liter of fuel has been being forwarded to the road fund
8	Toll roads	According to Rosavtodor, by January 1, 2010, there were 432.2 km of toll roads
9	Liability for the quality of the fuel for sale	Penalties associated with the minimum monthly wage
10	The information disclosure strategy	Publishing the blacklist of gas stations

amenities. Reproduction of these amenities is closely interrelated with the formation of networking and agglomeration effects and the effects of innovations.

The contemporary status of the government control of external effects is reasonable to evaluate based on the determination of the completeness of externality internalization. In the sphere of environment pollution, the evaluation of the completeness of internalization of the economic damage caused by the environment pollution seems the most rightful. In the sphere of the environment protection, the role of the Pigouvian tax is played by the payments for using natural resources.

According to the official data, the annual expenses of enterprises for obtaining permissions in the Russian Federation equal to approximately 30 billion rubles. The revenues of the consolidated budget from these payments are less than 0.2% and tend to decrease. Approximately 25-30% of all expenses for the environment protection are the expenditures of budgets of different levels, which are much more than the received payments for pollution (in 2006-2008, the excess was between 38% and 61%). This confirms that the society pays at the expense of the government budget for the access to the assimilatory potential of the nature (the capability of the environment for biosynthesis processes) by the economic entities, whose activity causes the negative external effect. Payment for pollution has turned into an institutional trap or an inefficient stable standard of self-supporting nature. For economic entities, such payments are not a factor that encourages them to reduce emissions, implement innovative technology and carry out actions dedicated to protect the environment.

In the sphere of automobile transport, the Pigouvian tax has the form of an additional tax at purchasing a car, transport tax, payments for car storage (parking fee), fuel tax, payment for using roads in a certain district, city entrance fees, fees for using the road network during certain period, electronic payment systems depending on

the place of driving and the passed distance, etc. Methods of internalization of negative externalities of automobile transport in Russia are provided in Table 2.

The negative external effects of the automobile transport are represented by the impact on the land utilization, the unpaid part of expenditures for parking, waste of time in road jams, air pollution, external infrastructure expenditures, water pollution, noise pollution, wastes of disposal of vehicles, etc. At that, among Russian car owners, there is a high level of agreement (coordinated egoism) in their common interest in new roads construction, increase of parking lots number, development of intellectual transport systems; though, they are not ready to pay the external expenditures in the form of higher transport fees. According to expert reports, the external effect is approximately 3 rubles for 1 km of car roads. Out of this amount, a driver in Moscow pays only 0.62 rubles per kilometer for one car.

In this view, it seems necessary to change the nature of institutions, which regulate transactions that generate negative external effect in the sphere of environmental management, along with the Pigouvian tax application. At that, the newly created or transformed institutions must encourage economic agents to change the situation and coordinate interests of various groups at the pre-investment stage.

The analysis of external effects has allowed to come to the conclusion that in the circumstances of insufficient information, they act as an essential attribute of market transactions and determine the prevailing of incomplete contracts. In this view, it seems essential in the course of institutional project planning to take into account the potential probability of their occurrence, to determine the subject matter of the transactions participants, implementation of which results in the externalities, to determine the recipients, to evaluate the possible value of externalities and to develop methods of their internalization.

CONCLUSIONS

In the course of the research, it was proved that implementation of the known set of principles of institutional project planning (the principle of completeness of the project with respect to its milestones and components, the principle of sufficient variety of incentives, the principle of maximum protection from opportunistic behavior of the project participants, the principle of involvement) assumes the necessity to supplement the criterion of the project selection with the requirements of minimization of transaction expenses, which occur in connection with the operation of the newly created (transformed) main institution. This, in turn, assumes project planning of the institution(s), which complements it and is oriented to internalization of external effects of implementation of institutional projects. These institutions must include an institution that would provide exact specification of property rights as well as institutions determined by the specificity of the particular economic activity.

E.g. the institutional project planning of the construction services market and refusal from the institutions of licensing the construction and the design development activity in Russia were oriented to the reduction of transaction expenses at information search, opportunistic behavior of manufacturers and conclusion of contracts in their function as the essential conditions of improving the quality of construction work. Cancellation of licensing the construction and design development activity was accompanied by activation of self-regulation tools and creation of self-regulated organizations (SRO), which required qualitative changes in the institutional environment of this market segment. The institution of compensation fund acts as the institution, oriented to ensuring the quality of construction and design development work in this market segment.

Thus, with the mechanisms of self-regulation available, the role of the government is to establish the institutions of prevention (neutralization) of risks and of tools of formal enforcement of contracts, thus providing conditions for internalization of negative external effects. The necessity of inclusion of the above-mentioned criterion in the system of institutional project planning increases transaction expenses of the process of

institutions establishment. At the same time, the supplementing of institutional project planning with this criterion significantly enhances the probability of decreasing the negative and increasing the positive externalities.

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