PLURALISTIC INSTITUTIONAL SOLUTIONS OF THE PROBLEM OF EXTERNALITIES*

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Abstract

In this paper, the evolution of institutional forms of taking account and controlling externalities is analyzed. Theorizing is based on the pluralistic from the institutional viewpoint concepts of 'transaction' and mode of coordination'. That is to say, the three types of transaction (managerial, bargaining, and rationing) indicated by John Commons which structure state-economy-society interaction and corresponding institutional setups (government regulation, Coase's market bargaining, and relational contracting with emphasis on the idea of corporate social responsibility, CSR) which structure contractual agreements. The choice of the transaction types and institutional arrangements depends on their relative efficiency. The paper includes a characterization of the Russian institutional setup and an analysis of advantages and disadvantages of the different forms of institutional arrangements designed for solving the problem of externalities.
Key Words: *Externalities, Institutional Pluralism, Contractual Arrangements, Types of Transaction.*

1. Introduction

In the modern socio-economic discourse, a theme of externalities, both negative (pollution from a factory) and positive (honeybees kept for honey that also pollinate crops), occupies a rather prominent position. Generally, it is socially desirable for parties having relation to externalities (harm or benefit) to do more than it is in their self-interest to reduce negative (detrimental) externalities and to act so as to increase positive (beneficial) ones. In the case of negative externalities, however, their presence becomes – mainly for recipients of unwanted side effects – a serious problem that needs solving. Usually such a problem emerges in the cases when the actions of one agent directly affect the utility or production of other agents in the economy and as a result lead to a non-Pareto optimal outcome (a situation of market failure). Generally, such negative externalities can happen in cases of consumption (with and without preference, externalities in which other individuals' consumption effect an individual utility) and production (a firm's production includes arguments other than its own inputs).

There are some ways of solving the problem of externalities (taxation, regulation, direct intervention, voluntary negotiation, property rights, merges, incentives mechanism design, etc.) and all of them can be grouped in a number of institutional approaches. In contemporary economic literature there seem to be two radically different approaches to the problem of externalities, "delineated from each other both by conflicting theoretical foundations and by the policy implications derived from them" (Dahlman, 1979, p. 142). The *first* approach is based on the government intervention because of impossibility of market forces to solve the problem. The *second* one, contrary, stems from the possibility, according to Coase theorem, of the producer and recipi-

ent of externalities to come to the result through market transaction. Any of the solutions from both approaches may theoretically result in Pareto efficient outcomes, but may lead to different income distributions. Such theoretical possibility of reaching the efficient result depends on a variety of factors: the kind of information (complete or non-complete, with cost or costless) required to implement a solution, the assumptions (on source and degree of the externality, their recipients, causal relationship, the cost of preventing the externality, the cost of implementing the taxes and subsides, the cost of voluntary negotiation) used to solve the problem and so on. Both of these two approaches have their pluses and minuses. However, there is another approach, a *third* one as stated in this paper and which is based on the relational contracting. In some sense, the third approach can be regarded as a modification or hybridization of the first two.

There are at least two parties involved in the process – a creator (emitter, producer) of externalities and their recipient; however, the solution of the problem may require turning to the third party. What connects all these parties is transaction. In the paper, the first approach is associated, according to a typology of transactions of John Commons (1934), with rationing transaction, the second approach – with market transaction, and the third approach – with managerial transaction.

All of these approaches and corresponding to them transactions need their own policy. It is common place that the first approach in the form of Pigou taxation tradition needs a government policy to solve the problem of negative externalities. However there are also alternative views according to which it is not the case; one of them affirms that in fact it is the Pigou tradition itself that logically suggests no policy, whereas the Coase analysis does give to positive suggestions which could assign an important role to the government" (Dahlman, 1979, p. 143). One way or another, the choice of policies should be based on ideological reasons, even if the authorities do not give a report in this. Institutional forms, mechanisms, and modes of coordination should be free from the dominant in the society views. Focus on institutional pluralism can ensure proper methodological framework for the implementation of a socially effective choice of policy.

This paper attempts to solve three tasks: *first*, to show the necessity of implementing institutional pluralism as a basis for adequate decision-making (Section 2), *second*, to study regulation, Coasean bargaining, and relational contracting and corresponding with them rationing, market, and managerial transactions as alternative institutional forms and modes of the externalities' problem solution (Sections 3-5), *third*, to give some possible extension of institutional forms, particularly with account of fuzzy cognition of externalities decision-makers and an accent on the so-called fuzzy version of the Coase theorem (Section 6). The paper is concluded with Section 7.

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2. Institutional Pluralism: Varieties of Transaction Types and Modes of Coordination

Methodologically, institutional pluralism, as opposed to institutional monism, deals with more than one institutional form or way of realization of economic functioning. As for institutional monism, it comes from the fact that there is one true and efficient institution or a system of institutions. Contrary to it, institutional pluralism affirms that there are various institutions that can perform similar functions and their choice is a matter of their relative advantages over others regardless to ideological inclinations of decision-makers. Demarcation between institutional monism and institutional pluralism apart of its theoretical-methodological interest has a crucial practical significance, especially for the post-socialist countries. The reason is as follows: economic development of them "is based on permanent discrepancy between rhetoric on pluralistic institutional changes and monistic implementation of neoliberal recipes of macroeconomic politics" (Draskovic, 2011, p. 8).

In the paper, *three* different institutional forms or modes of coordination for solving the problem of externalities are considered. They are as follows:

a) a traditional or governmental way (based on the recognition of rights and obligations of the state to practice intervention in the economy in a situation of market failure);

b) a market-based way (proposed by Coase for realizing the idea of market opportunities of internalizing the problem);

c) a relational one (based on the idea of the quasi-market, relational way of internalization of the problem of externalities).

The solution is a result of the transaction. Each of these methods has its own type of transaction, correspondingly:

a') allocation (rationing);

b') trade exchange;

c') control.

All of them are in accordance with the classical understanding of the transactions proposed by John Commons, distinguishable as *bargaining* transactions, *managerial* transactions and *rationing* transactions. The participants in each of them are controlled and liberated by the working rules of the particular type of moral, economic, or political concern in question. The bargaining transaction derives from the familiar formula of a market, which, at the time of negotiation, before goods are exchanged, consists of the best two buyers and the best two sellers on that market. The others are potential. Out of this formula arise four relations of possible conflict of interest, on which the decisions of courts have built four classes of working rules. Here are these three types of transactions:

a") in the *rationing* or *distributional transaction* there is asymmetry of the legal status of the parties to the collective, as a rule, the agency responsible for the specification of property rights;

b") in the *bargaining transaction or transaction of trade exchange*, there are symmetrical legal relations between the trade by mutual consent and the pursuit of each their interest;

c") in the *managerial transaction*, the asymmetry of the parties is retained subject to the same transaction serves the behavior of one of the sides of the legal relationship.

3. First Solution to Externalities: Government Regulation

Standard economic theory states that – in the absence of externalities when an exchange causes additional effects on society leading to not socially optimal outcomes – any voluntary exchange is mutually beneficial to both parties involved in the trade. But in the case of negative externalities, their recipients do it involuntarily and suffer from external costs. As a result, they want them to be reduced or completely vanished at. How can they accomplish this?

The traditional solution is as follows: a recipient (a side that suffers from the negative externalities, say, a local community), appeals to the state (government) so that it, by virtue of possessing legitimate authority to pressure a producer of externalities, say, a corporation, would restore justice and, redistribute negative externalities – completely or in part – in the direction of the corporation. In the framework of regulation, there are some mechanisms to solve the problem. One mechanism or remedy is a Pigouvian tax intended to correct market outcome – a special tax that is often levied on companies that pollute the environment or create excess social costs, called negative externalities, through business practices. As it is well known, a Pigouvian tax is the most efficient and effective way to correct negative externalities. Other mechanisms: technically, it can be realized through the purchase and implementation of treatment facilities or replacement of environmentally unacceptable equipment and / or technology, economically, it can be realized through [the threat of using] penalties, forcing the company to resort to technical means of solving the problem.

Obviously, there may be other mechanisms for realization of the governmental pressure on the company. For example, legal intervention aimed at ameliorating the problem of externalities may include direct regulation (the state restricts permissible behavior), injunction (a potential victim can enlist the power of the state to force a potential injurer to take steps to prevent harm), corrective tax (in Pigou tradition), financial incentives (society can make use of them to induce injurers to reduce harmful externalities), and so on. The key to this is mitigation or complete

exemption from harmful impacts of externalities on the suffering community. The effectiveness of solving the problem in this case depends on the strength and determination of the state as a spokesman for the public and, partly, the community and its interests as an initiator to influence the producer of externalities.

In the case of a weak state or its seizure by business as a regulator and a weak community, unable to defend its own interests before the state, the beneficiary will be the corporation. This method of solving the problem of externalities is offered in standard courses on economic theory (economics). What we add here is a description of this method in the jargon of transactions used by the state, the dominant type of which, in our understanding, is a transaction of rationing or distribution with a negative side effect as the object of redistribution between the community and the enterprise.

In some situations, there is the problem of determining the degree of centralization or decentralization within the regulatory framework of solution to externalities. For example, Alla Friedman (2012) studies the problem of pollution of surface waters and the role of the state environmental policy in terms of centralization/decentralization of regulation as a way of solving the problem of negative externalities. It should be mentioned that a level of centralization of environmental performance varies widely, even in developed countries. There are a number of arguments both for and against the centralized approach. The decentralization of environmental decision-making allows, on the one hand, to take into account the differentiation in the preferences of agents, and, on the other hand, to raise, the problem of external influences. In addition, decentralization may lead to the establishment of environmental standards too soft. However, existing studies ignore the problems associated with estimating the quality of effluent.

Policy on protection of water resources in the most developed countries is based on a combination of two instruments: the maximum permissible volume of pollutant discharge and water quality standards. *Pros* and *cons* of each of these tools are discussed in detail in (Whitehouse, 2001). Limits are usually set in relation to certain sectors of the economy and are the same for all subjects in the industry. The implementation of effective environmental policies based on combination of these instruments is only possible with reliable in formation about the quality of water. In her paper, Friedman (2012) gives a modeling analysis of the effects of decentralization, followed by a decrease in the distortion of information about the quality of discharges to surface water runoff. She detects the consequences of decentralization, i.e. the division into two jurisdictions in the region with the environmental efficient allocation of the budget between the jurisdictions. It is shown, that in the case of perfect information, such decentralization leads to (i) an increase in the discharge of polluted runoff in all localities of the top jurisdictions, (ii) a decrease in the accumulated level of pollution in all areas of the upper jurisdiction, except for the border, and an increased pollution in the border point, (iii) a reduction of social welfare. Thus, decentralization creates incentives for the reallocation of the environmental budget in favor of settlements located farther from the border. Therefore, to maintain the effectiveness of decentralization, it must be accompanied by some specific programs of water treatment at border crossings. Since decentralization is at a constant level of distortion, it causes the deterioration of well-being.But the reduction in distortion, in contrast, brings the economy to an efficient path. The total effect depends on how large the initial level of distortion was and how greatly it was reduced as a result of decentralization.

Many of the objects of economic activity contain waste waters and specific to the enterprise contaminants, higher than the industry standard for pollutants. This information is private and unlikely to be available at centralized regulation. Since getting the total test water samples for all possible contaminants is associated with very high costs, the centralized approach may have underestimated the level of the importance of water pollution. Thus, the decentralization of environmental decision-making can not only take into account differences in preferences (which is traditionally presented as the main benefit of decentralization), but it can also reduce losses arising from the inadequacy of information on water quality.

4. Second Solution to Externalities: Coasean Market Bargaining

To solve the externalities problem, Coase, in his famous theorem, assesses that as long as property rights are clearly specified, the two parties – producer and recipient of externalities correspondingly – will voluntarily negotiate in such a way that the optimal level of the externalities production is implemented. As a policy implication, a government should simply rearrange pro-perty rights to be appropriately designed. Market then could take care of externalities without direct government intervention. The second approach based on market bargaining and described by Coase gained the widest distribution until its inclusion in the standard university courses of economics. This is not surprising, even on the contrary: instead of the state mechanism, a mode of market coordination is proposed to address the problem of externalities. Such approach is like a balm for the soul – for the neo-classical economic theory and, to some extentтe also for neo-institutionalism.

The essence of Coase's theorizing is that as soon as the powers are in the countries with common law of the market subject of bargaining, then – under certain conditions – the producer and consumer of negative externalities can solve the problem without resorting to a third party – the government. In fact, why need a third [playing] party, when the problem could be an internal affair of the corporation and the community as market counterparties in bilateral contract with the right to ban the harmful use as the subject of the transaction. The theorem states that if trade concerning externalities is possible and if there are no transaction costs, bargaining will lead to an efficient outcome regardless of the initial allocation of property rights.

The absence of transaction costs is essential for otherwise all the Coase's arguments on possible trade in the form of voluntary change can "swim". The importance of transaction costs is because Coase proceeded in his arguments on the fact that, firstly, the existence of externalities does not necessarily lead to efficient result, secondly, Pigouvian taxes do not lead to the efficient result, and lastly and maybe most crucial for him, the problem is in transaction costs as such and not externalities. The theorem allows for the interpretation from different perspectives: the free exchange (initial allocation of rights does not matter), transaction costs (they are missing), market failure (exchange of rights occurs under conditions of perfect competition), etc. The effectiveness of this mode of coordination depends on the relative strength of the players: if it is comparable, it is theoretically possible to compromise between them, which, ideally, is a Pareto optimal. The government is not directly involved in the game, although it may be (even more so, in fact, it should – in a situation of formal and legal transactions) the guarantor of the fulfillment of the market contract. Theoretically – in an economic sense, for in the legal sense one can, perhaps, run into the pitfalls – the idea of bilateral cooperation can be extended to countries with other institutional arrangement, other than common law legal system. In the case of the redistribution (transaction costs not included) of products, claims, rights (especially property rights), or changes in institutional arrangements, which, after payment of compensation to all victims would increase the overall utility, such a transfer will happen. Note that in this sentence, the mandatory nature of redistribution has strong modality, which means that there are no obstacles to Coasean bargaining, and this circumstance has been fully adopted by the Russian reformers for the ideological justification of their actions during the mass privatization. Here is a typical statement from those days: even if the government made a mistake with the initial allocation of property rights, according to Coase theorem, private agents would correct this error in the process of free exchange, concluding the relevant private contracts (Rapaczynski, 1996, p. 89). But the problem is precisely that the theory and practice – especially for such a complex, open, dynamic, and institutionally unique system are far apart from each other. Moreover, in the case of the Coase theorem, there is a claim to the very theoretical basis of the theorem, because if we accept the hypothesis of rationality and do not take into account transaction costs, then this theorem becomes a tautology. This attitude to the theorem is shared by many economists. Coase himself, as we know, never gave a formulation of his ideas.

We suggest that Coase may have acted quite consciously avoiding the exact wording, since attempts to formulate a theorem found serious difficulties (Yerznkyan, 2005a). For example,

R.Cooter (1987), abandoning a clear interpretation of the Coase theorem, gives some of his most common interpretations, while stressing that they all contain flaws, and an attempt to prove the theorem inevitably turns to a false statement or a tautology in the aspect of: (i) free exchange (in terms of efficiency does not matter, as initially allocated rights, provided that one can freely share); (ii) transaction costs (for efficiency does not matter, as originally distributed legal rights, provided that the transaction costs of exchange are equal to zero); (iii) market failure (for efficiency does not matter, as originally distributed legal rights, provided that the sharing happens in a perfectly competitive market).

Graphic illustration of Coase theorem (in a weak form) is shown in Figure 1 on the Edgeworth box – a convenient analytical tool of relations between market parties with the help of indifference curves, which allows in visual form to present the process of contracting individuals entering into a mutually beneficial, Pareto-efficient exchange of their goods. The example of exchange between nonsmoker and smoker is taken from Varian (1987).

Figure 1. The exchange between nonsmoker and smoker with money and tobacco smoke
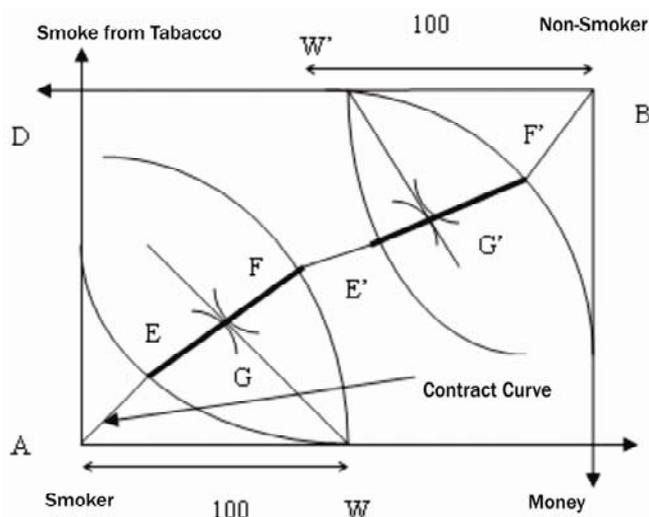
The meaning of the curve is as follows (see, Varian, 1987): there are two individuals living in the neighborhood – smoker A and nonsmoker B. Each of them has preferences for two goods – money and tobacco smoke. In addition, they each have an initial stock of money equal to $ 100. Consider the two cases, depending on which of them has the legal right to prohibit harmful use (smoking ban, which is equivalent to the right to clean air). In the *first* case, when nonsmoker B has the right to clean air (the starting point for analysis is W), the line EF on the contract curve presents all those points, where a mutually beneficial exchange between individuals can occur. The equality of the demand for tobacco smoke and its supply can be achieved in any of these points, let's say, the equilibrium established at point G. Price line, crossing points of W and G, reflects the set of equilibrium prices, providing the trade and to achieve a Pareto-efficient levels of consumption of smoke and money. Note that the point G can be moved in one or another direction, depending on individual abilities to negotiate. In the *second* case, when the right to ban tobacco smoke belongs to the smoker A (the starting point is W') any point on the line E'F', say, G', is a solution of the problem. Thus, if there were a market for tobacco smoke, the competitive equilibrium would be Pareto-optimal (Arrow, 1969, p.49ff).

Analysis of both cases is almost identical to the standard contract analysis, which uses Edgeworth box. The only difference is that the counterparties have different initial ownership of the external effect. And this difference in rights does not affect, apart from the income effect, the result of the exchange: the parties can reach a Pareto-efficient result in both cases.

5. Third Solution to Externalities: Relational Contracting

In the case, when the producer and consumer of externalities are stakeholders (i.e. players related in some sense to corporate activity), not impersonal contracting parties, realization of classic contract is, strictly speaking, impossible. To be more precise, such a contract between personalized parties will not be, by definition, a market one. This kind of interaction is appropriate to describe in the language of relational contracting, the effect of which is based upon a relationship of trust and long-term cooperation between the parties. Obviously, there is the same internalization of externalities, provided, however, that the symmetry is not guaranteed: the force of one party may be superior to that of the other. It is this fact that gives grounds to assert that we are dealing with more or less managerial, by Commons, transaction, with the principal as the side that has force to impose its will and the agent as the opposite side of contracting. We can assume that this kind of relationship between counterparties had not been taken into account by Coase, not only because of fear of the inevitable emergence of transaction costs, but apparently, due to the fact that stakeholder-oriented corporations are not peculiar to the American model of corporate business with stockholders in the role of sole principals. Recall that in such corporations the functions of principal are in fact distributed in varying degrees among all stakeholders.

What is the effectiveness of the implementation of managerial transaction? In modern Russia, the reality is that because of the immaturity of civil society, *de facto* authority is on the side of corporations. It is reasonable to wonder why then corporations prefer to chose relational (if market bargaining is impossible) contracting and to ignore government intervention. The answer is that this method is economically more advantageous to the same and more attractive to a broader point of view – public opinion, environmental agreements, preservation / enhancement of reputation, etc.

The last idea is the most completely reflected in the concept of *corporate social responsibility* (SCR) – "a contemporary pattern of corporate behavior which requires companies to be guided not only by narrow financial objectives, but by broader societal interests in sustainable development, clean environment, ethical conduct, protection of social and economic rights, etc. (Polishchuk, 2009, p. 3). It should be mentioned that the idea of CSR is full of contradictions, however, not only for the reason that it does not fit into the traditional notions of a market economy, where private firms maximize profit, governments provide public goods and regulate the private sector, and philanthropy becomes the domain of altruistic individuals rather than "heartless" legal entities. Even if CSR were treated as an instrument for reaching a Coasean arrangement between companies and their stakeholders, where the subject of such agreements consists of externalities that arise during the companies' activities, it should be stated that such an agreement is not completely a Coasean one. That is the reason why instead of a classical market agreement we offer a relational contract as a third way of problem solving. However, it may be counter to the first two institutional forms of coordination, especially the regulation. Which method is better depends on the relative advantages and disadvantages of the alternative institutions.

As a rule, a socially responsible company takes steps in the interests of its stakeholders that are not dictated by direct commercial needs and market requirement (Baron, 2001). Paradoxically, but in Russian companies, social investments are much higher than in the US. Indeed, American corporations, for example, donate to charity an average of about one percent of before-tax profits, whereas in Russia social investments outside the company reached, according to various estimates, 6-17 percent of profits. Corporate philanthropy in Russia in recent years has been many times greater than donations by private individuals, in contrast to the state of affairs in industrially developed countries (Polishchuk, 2006, 2009).

In the case of strong interdependence and the approximate equality of the forces of stakeholders, say, local industry and the surrounding community (population, local authorities), the solution of the problem of externalities on the basis of the mechanism of SCR can be very attractive and profitable. This is particularly important when the community is well-organized, i.e. has significant social capital in response to the actions of company causing it harm and may resort to

its own sanctions, say, in the form of a boycott of products (not side-effect, but the main) of the enterprise.

The realization of the relational contracting depends largely on the characteristics of ways of doing business. It should be mentioned that there are some specific dominant norms in contemporary Russian economy, and one of them is the so-called business *po ponyatiyam*, i.e. (literally) business *on the notions*. Its theoretical analogue is, in a certain sense, an economy of local networks with personal and continuous relations between their participants based on the informal, mafia-type norms of behavior. While acting accordingly to these norms, agents conduct themselves in the institutional frameworks of the locally shared notions that indicate acceptability of what they ought to do and what is right and wrong and thus the notions shape participants' actions. In short, notions are the essence, specific code of ethics, forming the regulative, unwritten, and informal institution – locally acting not in geographical sense but by its nature, although widely diffused in the modern Russian economy (Yerznkyan, Gassner, 2010).

The scale and intensity of the business practice based on the notions in Russia which can be understood as a specific kind of relational contracting between agents who share this kind of norms, may be explained both from synchronic (total collapse of supply networks after breakdown of Soviet Union leading to the high value of transaction costs of interaction giving rise to a lock-in effect) and diachronic (historical legacy combined with weak legal system shaping an effect of path-dependency) points of view.

As to effects, rationale for the existence of such type of economy could be found *inter alia* in the effects of *lock-in* and *path dependence*, having in mind their following interpretation: the first effect means that "once reached, a solution is difficult to exit from" and the second – that "the consequents of small events and chance circumstances can determine solutions that, once they prevail, lead one to a particular path" (North, 1990, p. 94). It may also prove useful a concept of an *institutional man* as a player governed by institutions (in the case of aforementioned Russian- style business, non-formal notion-norms) rather than reason / emotion. The behavior of an institutional man, contrary to the absolutely transparent behavior of *homo oeconomicus*, is principally relative for there is no possibility to separate his nature from the institutional reality in which he is embedded (Yerznkyan, 2005b).

6. Extension of Pluralism: Towards Systemic Institutional Solutions

All of the aforementioned alternatives are idealized ways of addressing the externalities' problem. In practice, they can be used (with account of non-zero transaction costs, imperfect competition, incomplete contracts, and other realities) either individually or in a variety of combination. However, the list of alternatives, or "institutional menu", may increase if we take into account the different realities.

Thus, all of the above alternatives are based on the idea of *power as a force*: a) the *rationing* transaction is possible, because the state has the power to take enforcement of fair from its point of view options of redistribution of side effects; b) possibility of *bargaining* or *market exchange* transaction is based on the internalization of enforcement function by counterparts who have enough force to implement this contractual function; c) the *managerial* transaction is based on contracting force to realizing the relational contracting.

If we start from the idea of *power as a liability*, then the field of alternatives will inevitably expand. In fact, the concepts of strong government and responsible government are not the same, and solutions received from a strong state may differ from the decisions of the responsible state. Of course, the situation may be "two in one", which will probably give another variant of the solution. It should also be distinguished between corporate strategy to adhere to the SCR and the true intention of the corporation liable to the community, which is obviously wider than rationally calibrated implementation of the strategy. The same applies to the community, the strength of which may go contrary to its responsibility.

In Russia, burst of activity of civil society in connection with the parliamentary and presidential elections at the turn of 2011 and 2012 has demonstrated not only the strengthening of its

position in the form of highly visible protest movement, but also its obvious weakness. Of course, we are talking about civil society as a whole, and the above is not intended to detract from its significance for the development of the country. The reason is that civil society and community (as a recipient of externalities) do not have immunity against irresponsibility. Moreover, society's tyranny may be stronger than tyranny of the state, as claimed by John Stuart Mill in the Introduction to *On Liberty* (and add, possibly also tyranny of the company): "protection, therefore, against the tyranny of the magistrate is not enough: there needs the protection also against the tyranny of` the prevailing opinion and feeling".

Issues of power rarely attracted the attention of orthodox economists. They are limited by reference to market power as the ability of the seller or buyer to influence the folding market prices. The heterodox economists highlight an omnipresent character of power and domination: they arguably structure interactions in sphere as distant as intimacy on the one hand and the market on the other (Foucault, 1976, pp. 123–124).

All abovementioned institutional forms are dyadic in essence from agency perspective: in the first case – government versus company, in the other two cases – company and society in the role of counteragents. In his numerous papers, Anton Oleinik (see, e.g., 2007, 2011) has offered a possible transition from such a dyadic relationship between two counterparties (say, A and B) to a triad (A. B. and, C) relationship. The reason of this is to describe in-depth analysis of entry control as a crucial element for better understanding the role of power and incorporating it in a transactional analysis. The third party C performs the role of a 'gate-keeper' regulating access to the field and making it conditional upon acceptance of particular 'rules of the game/ underpinning domination. It is important to underline that such a third party shall be clearly differentiated from the third party as a contract enforcer. For better understanding it is advisable to compare this statement of Anton Oleinik with three forms or general patterns of exchange of Douglas North: personalized exchange, impersonal exchange without third party enforcement, and impersonal exchange with third party enforcement (North, 1990, pp. 34-35).

In practice, as for contemporary Russia and the problem of externalities, the role of the third party (as gate-keeper, not enforcer) can really only be played by the state (centralized or decentralized government). One of the theoretically relevant reasons is that "private contracting [both classical and relational, having in mind second and third solutions of the problem of externalities] in markets will not lead to the elimination of the negative influences of externalities. Hence the policy implication: government intervention is necessary to correct the failure of the market forces (Dahlman, 1979, p. 151). From the point of view of institutional pluralism, it is important to underline that this conclusion is essentially positive, not normative. It may be understood in a sense that focusing government efforts on solving the problem of externalities is treated as practical necessity, not an attractive goal, which right now cannot be properly reached in practice, and we realize it.

A crucial but separate question is how the state / government will play this role. Nowadays, the effectiveness of the state is low. As rightly notes E.P. Ushakov in *Mesoeconomics of Development*, "the [Russian] state as the owner of the natural resources fund of the country is now ineffectively manages this fund, giving the right of disposal ... on the basis of the existing soft system of the fiscal burdening" (Mesoeconomics, 2011, p. 705). Nevertheless, due to immaturity of civil society and myopic behavior of business, in contemporary Russia it is difficult to find an alternative to the government. Theoretically, this discussion on transition from dyadic to triadic transactional configuration can be regarded as an extension of Commons tradition of three transaction types. Though the theme of power in the context of transactions is found in other studies (see, e.g., Yerznkyan, 2006), only Oleinik gave an explicit and theoretically reliable rationale. It should also be added, that if issues of power as force or responsibility/irresponsibility describe stakeholders' opportunistic behavior terminology and reduce unlimited rationality to bo-unded rationality, not to say emotionality, irrationality, and so on, we can confidently expect further expansion of the range of alternative ways of solving the problem of negative externalities.

Further development of institutional forms is associated with the psychological factors such as limited cognitive abilities of counterparties. An example of such limitations is the vagueness, of their preferences which we consider on the example of modification of the Coase theorem, dedicated to the possibility of internalization of negative externalities, or solutions to problems between the parties directly concerned in private – without recourse to a third party (the state, as taught by the orthodox theory). The following represent a modified version of the theorem, which is the source of ambiguity preferences. The basis for this fuzzy, in the sense of Zadeh (1965), approach is the fact that decision-makers are often unable to articulate not only one's requirements, but also their own preferences, not to mention the difficulties of predicting the preferences of their counterparts (Yerznkyan, 2010).

Fuzzy contract curve can be constructed directly by extending the concept of a set of clear points that form the locus of points on the contract curve to a set of fuzzy points. However, it is easier and clearer to construct this curve with reference to the generalized contract curve, obtained by selection based on a generalization of well-being of the standard analytical model. Since many of the adherents of behavioral economics distinguish between decision utility that rationalizes the choice and the true utility that encapsulates the well-being (see, e.g., Kahneman, 1999; Kahneman et al., 1997), the very concept of a standard approach becomes ambiguous. At least two interpretations of the standard framework are possible here: according to one of them, the standard normative analysis takes into account the true purpose of the decision, according to another, the well-being is defined in terms of choice rather than its underlying purpose. Staying in the second interpretation of the standard welfare analysis, B. Douglas Bernheim and Antonio Rangel (2008) propose generalization of the standard analysis in terms of multi-self Pareto optimality and multi-self Pareto criterion. Their approach exploits the coherent aspects of choice: x is (strictly) unambiguously chosen over y (written xP^*y) if y is never chosen when x is available. Under weak assumptions, P^* is acyclic and therefore suitable for welfare analysis. As for criterion of multi-self Pareto optima, it is most commonly invoked in the literature on quasi-hyperbolic discounting, where it is applied to an individual's many time-dated selves.(see, e.g., Laibson, 1997; Laibson et. al., 1998).

Behavior is coherently arbitrary when some psychological anchor (e.g., calling attention to a number) aspect choice, but the individual nevertheless conforms to standard axioms for any fixed anchor (see Ariely et al., 2003), who construed this pattern as an indictment of the revealed preference paradigm. To be more precisely, let's suppose, after Bernheim and Rangel (2008, p.17, 18), that an individual consumes two goods, y and z, and that we have the following representation of decision utility $U(y; z j d) = u(y) + dv(z)$ with u and v strictly increasing, differentiable, and strictly concave. We interpret the ancillary condition, d 2 [dL; dH], as an anchor that influences decision utility. Figure 2(a) shows two decision-indifference curves passing through the bundle (y0; z0), one for dL (labeled IL) and one for dH (labeled IH). All bundles (y00; z00) lying below both decision-indifference curves satisfy (y0; z0)P(y00; z00); this is the analog of a lower contour set. All bundles (y00; z00) lying above both decision-indifference curves satisfy (y00; z00)P_(y0; z0); this is the analog of an upper contour set. For all bundles (y00; z00) lying between the two decision-indifference curves, we have neither (y0; z0)R0(y00; z00) nor (y00; z00)R0(y0; z0); however, (y0; z0)I_(y00; z00). Now consider a standard budget constraint, X = f(y; z) j y + pz _ Mg, where y is the numerate, p is the price of z, and M is income. As shown in Figure 2(b), the individual chooses bundle a when the ancillary condition is dH, and bundle b when the ancillary condition is dL. Each of the points on the thick segment of the budget line between bundles a and b are uniquely chosen for some d 2 [dL; dH], so all these bundles are strict individual welfare optima.

Now consider the situation of generalized contract curve (Figure 3) formed by two standard contract curves. The one labeled TH is formed by the tangencies between the consumer's indifference curves when consumer 1 faces ancillary condition dH (such as the point at which I1H touches I2); the one labeled TL is formed by the tangencies when consumer 1 faces ancillary condition dL (such as the point at which I1L and I2).

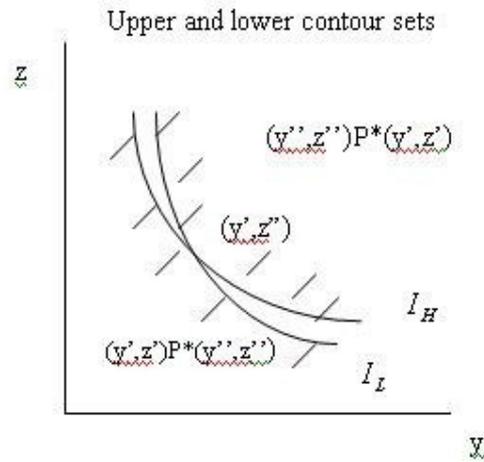## Figure 2(a): Coherent arbitrariness: the higher and lower indifference curves

Upper and lower contour sets

z

$(y'',z'')P^*(y',z')$

(y',z')

I_H

$(y',z')P^*(y'',z'')$

I_L

y

Figure 2 (b): Coherent arbitrariness: individual welfare optima

Individual welfare optima

z

a

I_H

X

b

I_L

y
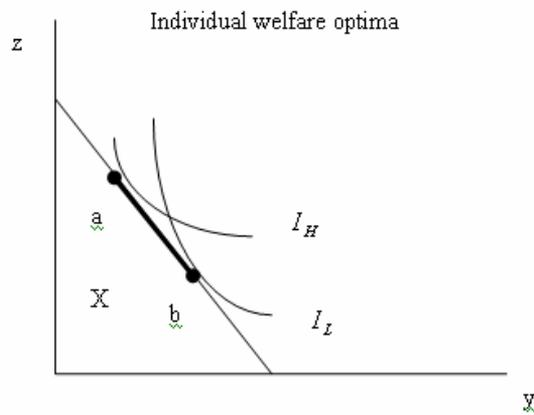
Figure 3: The generalized contract curve

y_2 0

I_{1L} T_H

z_1 I_{1H} T_L z_2

I_2

I_{1L}

I_{1H}

0

y_1
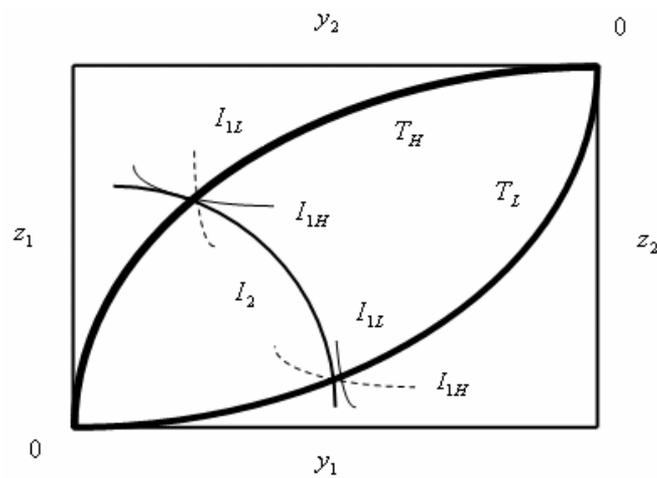
Note that all points of the generalized contract curve (which, strictly speaking, is not a line, and is bounded by lines of the plane) are Pareto optimal outcomes. A separate question is how to determine the boundaries of a particular contract curve? Do not touch this and other possible issues, we emphasize that in principle there is the possibility of establishing a continuum of mutually beneficial solutions. The source of not one but many possible solutions is the uncertainty inherent in the immanent individuals: they are not able to set their own indifference curves are the only way possible options, and whether they are even two, it will be a continuum of solutions, in accordance with the logic of coherent arbitrariness, guaranteed.

Hence, there is one step to fuzzy contracting. As for the fuzzy version of the Coase theorem, it suffices to replace the exchange of goods for exchange of rights and the version is ready. Graphic illustration of this release is presented in Figure 4. Thus, fuzzy Coase theorem represents an exchange of a two-dimensional situation, where one dimension characterizes the heterogeneity of income received by individuals, and the second - the heterogeneity of preferences of individuals themselves. Any decision is framed by borders of fuzzy Pareto-optima.

Figure 4: The fuzzy version of the Coase Theorem:
In the shaded area are Pareto-optimal potential outcomes
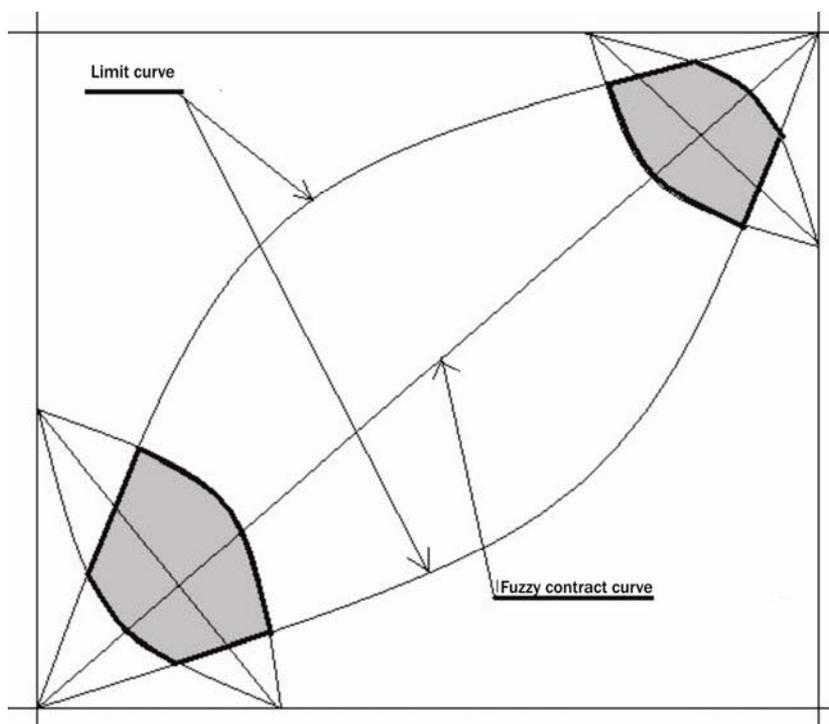
7. Conclusion

In this paper, on the basis of a well-known from the practice observation that various institutions often perform – more or less efficiently and, obviously, with relative advantages – similar functions in an economy and society, we have proposed pluralistic institutional forms or modes and mechanisms of coordination for solving the problem of externalities: government regulation, Coasean internalized solution (voluntary exchange), and relational contracting. Then we have compared these three approaches with three Commons-types of transaction (distributional, exchange, and managerial, accordingly) and have emphasized that their merits are not uniform and need to be assessed with both the formal institutional rules and the informal institutional norms of real practice.

Based on the belief "that the system's and the agent's behavior can be described with a group of basic parameters on which deviations from desirable, useful or expected level are always observed" (Sukharev, 2011, p. 87), we then discussed the possibilities of the enlargement of the basic institutional modes of coordination and presented a fuzzy version of Coase theorem given that decision-makers are often unable to articulate not only their requirements, but also their own preferences, not to mention the difficulties of predicting the preferences of their counterparts. This lack of clarity drives the need to refer to the device, which allows describing the individual behavior with the help of and in terms of fuzzy concepts.

In this illustrated example, the solution in the form of a single point, turned into a solution in the form of a piece, and then the plane of the segment: (i) Edgeworth (contract curve as the locus of Pareto-optimal points at which goods are exchanged, resulting in one of the fixed points); (ii) Coase (contract curve as the locus of Pareto-optimal points at which the exchange of rights: as a result of the segments are fixed contract curve with many points); (iii) Bernheim & Rangel (plane contract between two curves as the locus of Pareto-optimal multiple points at which the exchange of goods: from fixed plane segments contracted with a number of points); (iv) Yerznkyan (plane contract between two curves as the locus of Pareto-optimal fuzzy points with a membership function equal to one, which is an exchange of rights: as a result of fixed segments of the plane of the contract with many unclear points).

As for policy, usually, in the study of developing and transition economies, researchers explain the failure of economic policy, in particular with regard to solving the problem of negative externalities, by the presence of institutions inherited from the past regimes. The logic is simple: under the new conditions the old institutions do not work, so they must be replaced with new ones. In reality, a desire to modernize the institutions leads to the replacement of one variation of institutional monism with another. As practice of such economies shows, institutions imported, or transplanted, from the industrialized countries are often ineffective, in the sense that they do not give the desired results (see, e.g., Polterovich, 2001, de Jong et al., 2002). The reason is that the structure of the economy in developing and transition countries may differ significantly from that of the industrialized countries and institutions that are well proven in the Western countries, and may give new market economies unexpected adverse outcomes (Matveenko, 2010). We add that this difference between institutional systems of Western and Eastern countries underlies the theory of institutional matrices (X & Y) of Svetlana Kirdina (2000, 2004).

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