



## Problems and Prospects of the Land Market Development in Russia

**Galina Nikolayevna Barsukova<sup>1\*</sup>, Nikolai Mikhailovich Radchevskiy<sup>2</sup>, Natalia Rafailovna Saifetdinova<sup>3</sup>, Yuriy Iosifovich Bershtskiy<sup>4</sup>, Petr Filippovich Paramonov<sup>5</sup>**

<sup>1</sup>Kuban State Agrarian University, Kalinina Street, 13, Krasnodar, 350044, Russia, <sup>2</sup>Kuban State Agrarian University, Kalinina Street, 13, Krasnodar, 350044, Russia, <sup>3</sup>Kuban State Agrarian University, Kalinina Street, 13, Krasnodar, 350044, Russia, <sup>4</sup>Kuban State Agrarian University, Kalinina Street, 13, Krasnodar, 350044, Russia, <sup>5</sup>Kuban State Agrarian University, Kalinina Street, 13, Krasnodar, 350044, Russia. \*Email: [interkubsau@mail.ru](mailto:interkubsau@mail.ru)

### ABSTRACT

The article formulates the problem of land ownership formation, and land market development. It has been found that the theory of institutional changes has a high methodological potential for the studies of land relations. It is proposed to use the institutional approach to the study of land ownership and transaction costs, whose growth hinders the development of the land market in Russia. According to the theory of R. Coase, the significance of transaction costs for the land market development was shown, and the conclusion about the need to reduce them was made. Taking into account the objective limitations of turnover of agricultural land category, it was proposed to assess the potential of development of the various sectors of land market in the country using the growth curve methodology. There was justified the expediency of evaluating the public and private sector of land market in terms of turnover, which expresses the ratio of the total land area of transactions in the segmental markets to the total amount of land in the definite form of ownership. The land transactions were evaluated and the forecast of the land market development in the Russian Federation was defined.

**Keywords:** Form of Ownership, Land Market, Institutional Approach, Transaction Costs, Market Infrastructure, Market Value of Land

**JEL Classifications:** K11, Q15

### 1. INTRODUCTION

The issues of land relations, which are based on land ownership problems, occupy one of the key positions in the economic, political and social aspects of public life. The resolution level of these issues determines the political stability, level of economic development, social security of the majority of people at all historic periods.

As a result of the modern transformation of land relations in Russia, the distribution of powers established in the new organizational and legal forms of agricultural enterprises proved to be very difficult. The process of land property rights specification, which is accompanied by considerable transaction costs proved to be difficult and time-consuming.

At the beginning of the reform D. Stark used a “recombinant” property definition, which means the discrepancy of actual and certain property rights (Stark, 1996). The property of land share owners remained the recombinant one for the long period. The

discrepancy between the actual and certain property rights to land share finds has been in place until now.

The contradictions in the Russian legislation have formed the institutional constraints to the free turnover of agricultural lands in the early stages of reform and the land market formation. The institutional system created in the process of transformation has been less effective than the pre-reform one in many respects.

The scientific literature recognizes the fragmentation of the existing land ownership analysis techniques and the effectiveness of their implementation, which does not allow to understand the object of study as a whole system in motion, development, and contradiction. At present, there is a need to develop an adequate methodology for the analysis of land relations.

At the present time, in our opinion, a certain interest in the study of land relations in the process of their transformation represents an institutional approach expressed in one of its

directions - neo-institutionalism, whose representatives are A. Alchian, B. Klein, D. North, R. Coase, O. Williamson, the Russian economists - R. Kapelyushnikov, R.M. Nuriev, R.M. Oleynik, V. Tambovtsev et al. The theory of institutional changes has a high methodological potential for the studies of land relations.

A feature of the modern neo-institutionalism is the study of the institutional environment, which determines the conditions of production and interchange, and behavior motives. The modern interpretation of "institution" includes a variety of concepts - a system, property, state, language, religion, law, customs, contracts, etc. They include the formal constraints (rules, laws, constitutions), informal constraints (rules of behavior, conventions, internal principles), as well as mechanisms allowing to monitor their implementation (North, 1993).

The main institutions are the most significant in economic ties and relations, and form a stable social structure. So the basic institutions are the market institutions that have emerged as a social link between producers and consumers of goods, and were gradually gaining the specific rules and regulations in its development. The institutional approach is required with respect to a wide range of formal and informal institutions - it is the land market, land price, land bank, land mortgage, land tenure, land use, etc.

The objects of our study are the problems and prospects of development of the Russian land market. However, emphasizing the relevance of the institutional approach to the construction of land ownership theory, we believe that it is impossible to objectively study the problems and prospects of the land market development only on the basis thereof.

Formation of the modern land market in Russia does not have enough theoretical basis. The land market is a special institution in a market economy, which should have its own legal framework, infrastructure, operation constraints, and prospects of development.

Features of the land determine the features of the land market. In a market economy, land, being a part of the natural environment and a production factor, becomes a part of the core capital and the real property item, it takes on the properties of the goods and is involved in the purchase and sale transactions, lease, donation, mortgages, etc. Determining the value of land is the major problem of the modern economic science.

During the period of command-administrative economy the land in general could not be regarded as an object of sale, and could not participate in the commodity-money relations. Despite the fact that Borozdin S., Varlamov A.A., Volkov S.N., Goremykin V.A., Kresnikova N.I., Lepke O.B., Paramonov P.F., Petrov V.I., Khlystun V.N., Shagoyda N.I and other authors dedicated their works to the issues of the land market formation, we should note the lack of methodological and methodical validity of the assessment of the land market development level, the formation of its infrastructure, the cost of land plots, and the definition of land rentals.

From the perspective of the Russian buyer, the supply of land is the elastic one in terms of the price. Now, in almost any area of

the Russian Federation it is possible to purchase a land plot if a high enough price is proposed. In the long term the supply of land cannot be significantly increased even in conditions of rising land prices. Therefore, to determine the patterns of fixing the price of land, it is necessary to analyze the supply and demand for this resource.

It is necessary to use techniques that allow identifying patterns of forming the agricultural land market category in the Russian Federation, allowing to analyze market activity in different segments of the market, explain the trends in land distribution structure by forms of ownership.

## 2. RESEARCH METHOD

### 2.1. Institutional Approach to the Research of Land Ownership and Transaction Costs

R. Coase laid the foundation for the trend of institutionalism - the property rights theory. The usual term "property" means the "property item," but in the economic theory the term "property" means not material objects, but sets of rules.

G. Demsetz argues that not the resource itself is a property; the beam or the share of the rights to use the resource – that's what makes the property.

At the same time property relations are understood not as a relationship between a person and a thing, but as a relationship between people on the use of rare benefits. The concept of property rights is directly related to the central problem of economic science - the problem of scarcity, as the ownership appears in the world of limited resources, which include land resources.

Such representatives of the neo-institutionalism as A. Alchan, G.D. Demsetz, R. Pozner, O. Williamson and others are the founders of the theory of property rights. The neo-institutionalism defines the system of property rights as the set of rules governing access to rare resources. From the perspective of society, property rights streamline relations between individual business entities.

From the standpoint of property rights theory, the property is not a particular product or resource, but a bundle of rights, or a share of rights to its use, which is determined by the terms "a bundle of rights" (a bundle or package of rights). In addition to the above, property is identified with the property right. These rights serve as behavioral relationships between people in connection with the use of benefits defined by laws, traditions, and customs. Proprietary powers - the rules and regulations determine the degree of rationality, activity, freedom, commitment and competence of the parties to economic behavior. Property rights are a normative condition of economic resources circulation.

An English lawyer A. Honore gave a complete definition of private property rights of the eleven elements, which became a textbook. It includes a set of individual rights (proprietary powers), providing a complete cycle of economic resource turnover. In fact, this set contains economic actions that the party should do to leverage, manage, save and multiply the resources belonging to it.

We believe that in today's challenging economic environment the traditional definition of ownership to the land plot on the basis of possession, use and disposal only is inadequate, as it is common in domestic practice. Undoubtedly, the ownership right to a land plot - a resource unique in nature, the right to use, manage, and dispose of the land plot, and also the right to income, capital costs, security, transfer by inheritance, and to the ownership perpetuity shall be recognized as the basic rights in the bundle of property rights. At the present time it is clearly recognized that high transaction costs prevent the development of the modern land market in the Russian Federation.

G. Coase was the first who used the term "transaction costs" as the costs of implementing transactions through the exchange on the open market, with both parties preferring to transfer them to others.

O. Williamson, F. Knight, A. Alchian, K. Menar and others have been developing the theory of transaction costs in the modern neo-institutionalism. D. North defines transaction costs as "the costs necessary to specify the subject of the transaction and monitor the implementation of its terms." He acknowledges that the current economic markets remain largely imperfect, and the transaction costs - high (North, 1993).

O. Williamson, in his major papers "Markets and Hierarchies" (1975), "The Economic Institutions of Capitalism" (1985), represented a transaction as the main unit of analysis and called his study as the transaction cost economics (Williamson, 1996).

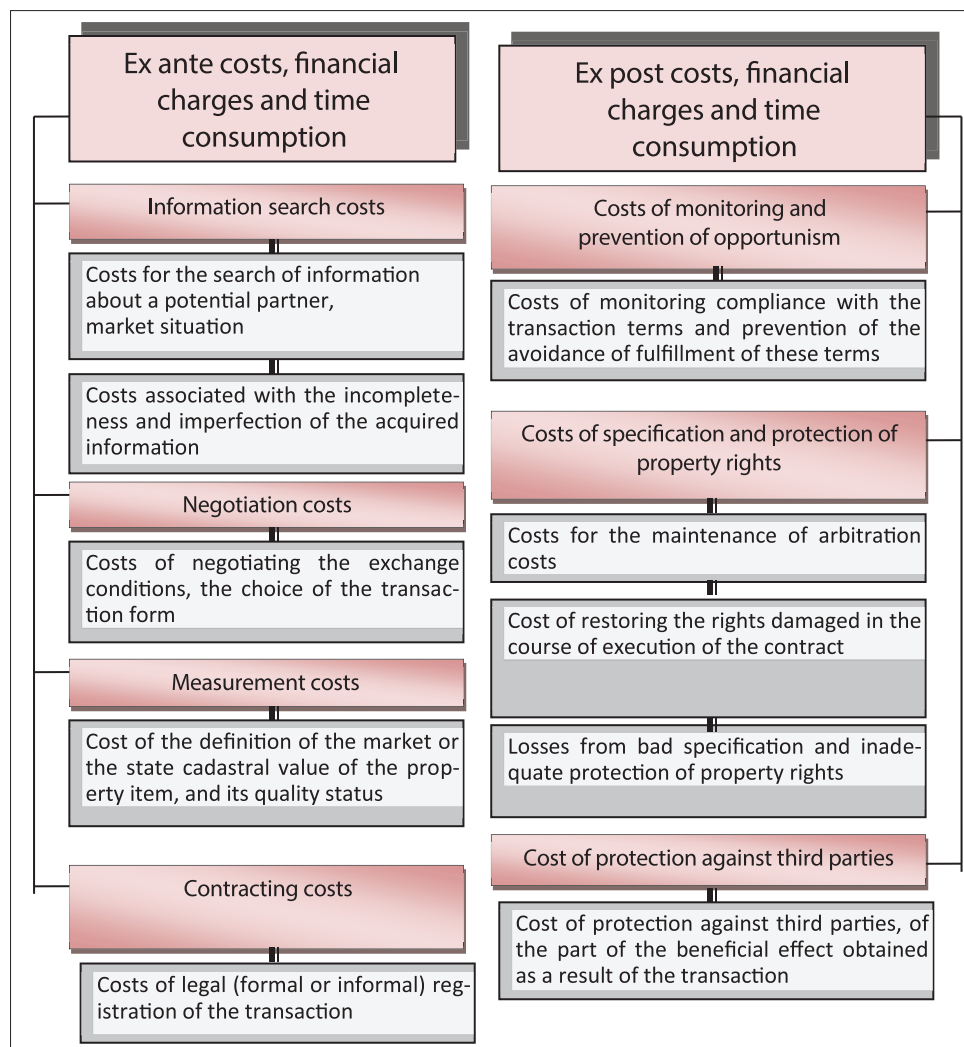
According to G. Coase the transaction costs can be hidden from the casual observer, and they may be so large as to block the possibility of market exchange in general. If they cannot be taken into account when the market transactions are not made, the potential level of costs compels the contracting parties (economic agents) to refuse the transactions.

According to the theory of R. Coase "If property rights are clearly defined, and transaction costs are equal to zero, the structure of production will remain unchanged, regardless of the changes in the distribution of property rights" (Coase, 1991; 1993).

O. Williamson provides the classification of the transaction costs arising before (ex ante) and after (ex post) the transaction, which we have specified in accordance with the characteristics of the land market (Figure 1) (Williamson, 1996).

If they are small, the market is capable itself to find the most rational solutions without the participation of the state. It should

**Figure 1:** Classification of transaction costs before and after the transaction



be noted that the market with zero transaction costs cannot exist, as any market has a complex information system. If the transaction costs are high and the distribution of property rights affects the production efficiency, the state regulation will not necessarily provide the best solution. These conclusions are valid only under the condition that the property rights are clearly defined. In the current Russian environment the main condition was not fulfilled throughout the period of reforms (Barsukova et al., 2012, 2016).

According to R. Coase, the market will work as soon as the property rights are delineated and the possibility to conclude the transactions on the exchange or on mutually acceptable prices occur. In this situation, for the market not those who own particular resources are important, but rather the fact that at least someone would possess them. Only then there will occur a chance for market transactions with these resources to create a chain of exchanges.

The better the property rights are specified, the more honestly they are protected, and the more valuable they are. The specification is expressed in the presence of complete information about the property and the property item, as well as the associated rights and restrictions. The exchange, which is considered not only as the purchase and sale of physical objects or benefits (in our case - land), but the purchase and sale of property rights is the main area of institutional analysis.

## 2.2. Method of the Land Market Development Analysis

P. Samuelson, the Nobel Prize winner in economics, considering the formation of supply and demand for a factor of production, concludes that “the same amount of natural land resources is an interesting special case where the supply curve is perfectly vertical, and inelastic” (Samuelson, 1997). He defines this case by an “economic rent” which is possible with limitations, exhaustion of land resources, when the growth of prices does not cause a response in supply growth. It should be noted that this absolutely inelastic supply occurs when the factor supply is depleted, and the advance in prices does not increase the supply, and *vice versa*, the elastic supply involves the growth of supply in response to the advance in prices.

Opponents of such characteristics of the land market bring forward as the main argument the low probability of the situation with a complete lack of land plots supply. In the long run, the land plots for sale, suitable for agricultural production may be exhausted. Now, even in countries with a high level of economic development, there are always areas of land suitable for agricultural production, suspended for various reasons.

Our research shows that at the present stage of development of the land market in Russia there are sufficient land plots for sale and other land transactions.

S. Fisher, R. Dornbush and R. Shmalenzi consider the condition of the absolute lack of elasticity, but not the absolute inelasticity of supply, as the condition for the emergence of rent. Undoubtedly, the land market has a number of features that distinguish it from other markets. The supply of land at any given moment is fixed and cannot change rapidly depending on the price changes, and on

the increase in demand. This suggests that the elasticity of market supply in the short term is equal to zero in price.

In the longer term the price increase will gradually cause an increase in supply, but this process cannot be long-term, as the number and land area is limited. Therefore, in the long run the elasticity of the land supply becomes nonzero. We can agree with these provisions in the conditions of already established and stably functioning land market.

The supply of land cannot be significantly increased even in conditions of rising land prices. Therefore, to determine the laws of fixing the price of land, it is necessary to analyze the supply and demand for this resource (Erickson et al., 2015; Hardin et al., 2015; Holden and Bezu, 2015; Kvasha et al., 2015; Oppedahl, 2015; Qian et al., 2015; Wang et al., 2008; Elsner, 1999; Blaug, 1994).

The demand for land is characterized by the size of the land area used for agricultural production and horticulture. We consider it appropriate to separately assess the activity in the public and private sector of land market in terms of turnover of the land market, which expresses the ratio of the total land area of transactions in the segmental markets (rental, sale, pledge, etc.) to the total amount of land in some form of ownership.

It should be taken into account that in accordance with the land legislation of the Russian Federation not all agricultural lands may participate in turnover, and their share in the total land fund of this category is different in the constituent territories of the Russian Federation. Given these objective limitations, let's evaluate the turnover development potential of various sectors of land market using the growth curve methodology. The following form of logistic curve will be selected as a tool:

$$y = \frac{L}{1 + ae^{-bt}}, \quad (1)$$

Where  $y$  – is the turnover of the segmental market of agricultural lands of the analyzed territorial unit, %

$L$  - Market saturation limit, the upper limit of the  $y$  variable is assumed taking into account the objective restrictions in the legislation, natural, technological possibilities of land use by agricultural designation of the analyzed territorial unit.

$a$  and  $b$  – parameters of management assessment.

This approach will allow analyzing market activity in different segments of the agricultural lands market, explaining the ongoing trends in land distribution structure by forms of ownership.

Land is the main factor of agricultural production, an important source of income both for the agricultural producer, and for its owner. However, until quite recently, cadastral registration of the cost of land resources - the basis of the formation of land rent and their market value - was held in the country using the procedures not adapted for market economic conditions. The introduction in the valuation activity of new approaches to the determination of the valuation of agricultural lands has equalized the value of



inventory and market value of the lands in this category, which provides a fair basis for determining the costs of the involvement of a major factor in the production process.

Currently, the valuation of agricultural lands is carried out by applying a model of land rent capitalization, whose main value generating factors include the relative gross income, the costs of crop production, the maintenance of soil fertility, as well as the entrepreneur profit and capitalization rate.

Technically, the market price of the land for agricultural purposes is determined by the following formula:

$$P_{land} = \frac{SGR - SCC - SCSFM - P_{prod.}}{r}, \tag{2}$$

Where  $P_{land}$  - the market price of the land plot,  $SGR$  - specific gross revenue,  $SCC$  - specific cost of cultivation,  $SCSFM$  - specific costs for soil fertility maintenance,  $P_{prod.}$  - profit of an agricultural producer, and  $r$  - land rent capitalization rate.

By dividing both parts of the equation  $SGR$ , we obtain

$$\frac{P_{land}}{SGR} = \frac{DL - S_{SCSFM} - R_{repr.}}{r} \tag{3}$$

Where  $DL$  - the design level of profitability of agricultural production,  $S_{SCSFM}$  - share of expenses for the maintenance of soil fertility in gross income,  $R_{repr.}$  - reproduction rate of entrepreneurial activity.

By drawing an analogy with a multiplier of revenue used to determine the market value of companies, our index  $\frac{P_{land}}{SGR}$  can be used to analyze and forecast market value of land plots.

Using the multiplier plays an important role in understanding the variability of market value while changing the fundamental variables. Such an analysis is possible when considering the index  $\frac{P_{land}}{SGR}$  as a function of its determinants:

$$\frac{P_{land}}{SGR} = f(DL, fertility, R_{repr.}, r) \tag{4}$$

Construction of regression dependence (4) will allow revealing the patterns of the formation of the market price of agricultural lands, and to making the predictive calculations of its value.

At the same time, the market value of the land is a result of the interaction of supply and demand for the land. Traditional modeling of market equilibrium in the land market involves perfectly inelastic supply of land at a price which is formed from the available fund of agricultural lands.

Given that the demand curve for agricultural land has a negative slope, the formation of the equilibrium price of land is provided in Figure 2.

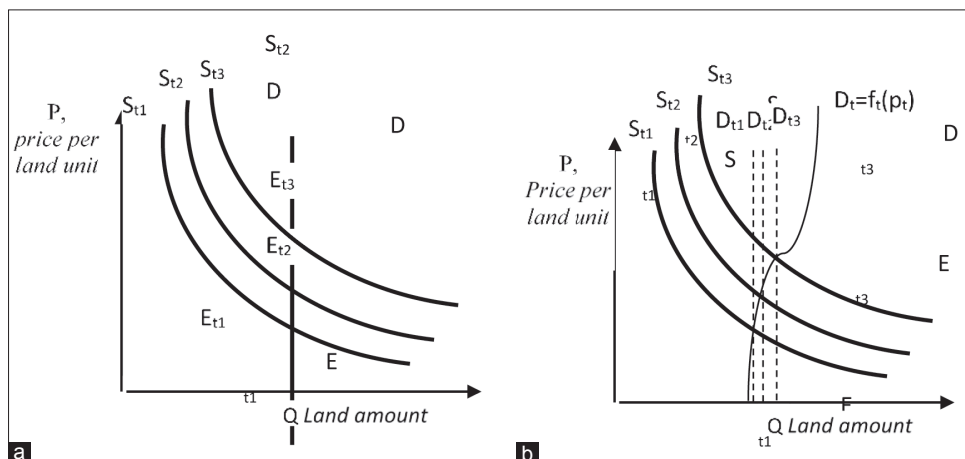
In the short term the intersection of the  $D$  demand curve with the  $S$  supply curve determines the balance on the land market and its valuation (Figure 2a). When the price rises above  $E_1$ , the supply on the land market exceeds the demand for it, the difficulties with the sale of land occur, and, hence, a need to reduce the price will emerge.

Consider the market situation in the long run. According to Equation (3) the market value of land is directly dependent on the level of profitability of agricultural production. Let us assume the increase in the profitability of agricultural production. This led to a shift up in an agricultural land demand curve, and on a constant supply of land the market price will move from  $E_1$  to  $E_2$ .

However, the agrarian reforms of the nineties of the 20<sup>th</sup> century were accompanied by the spontaneous privatization of state-owned lands, low income, lack of prestige of agricultural production, and a large number of cheap imported food. As a result, part of the land was withdrawn from active turnover and was not used, there were non-demanded land shares.

Renewal of the general economic situation in the last decade, the growth of agricultural producers' income, activation of investment activity in the industry have led to an increase in the market value of agricultural land, and the demand for these lands. The portion of unused land is returned in the turnover, so it is advisable to consider the proposal as a function of the market price of land,

**Figure 2:** Equilibrium in the agricultural land market: (a) Perfectly inelastic supply; (b) inelastic supply of land, the availability of unused land reserves



which allows simulating low elasticity of response by price and the asymptomatic nature of dependence explained by the depletion of land resources (Figure 2b).

From these positions an increase in land prices will lead to a shift of the land demand curve to the right and up, the supply of land will grow through the introduction of unused land (inactive proposals) in the turnover that, and, in turn, will reduce the market price in relation to the situation with a completely inelastic land supply (Figure 2a).

Thus, the analysis of developing land market in Russia can be made by constructing the following economic equilibrium model (K. G. Borodin):

$$\begin{cases} S = f(P, DP, Inv) \\ D = f(P, Inv_{trn}) \\ BPI = S_{dp} + Export \\ S_{dp} = f(S_{finaldemand}, price, Quota_{import}, \frac{P_{domest}}{P_{import}}) \\ S_{finaldemand} = f(Income, L_{occup}, I_{CPI}), \\ Export = f(\frac{P_{export}}{P_{domest}}, P_{exp}) \end{cases} \quad (5)$$

Where  $S$  is the demand for agricultural land,  $D$  - supply of agricultural land, - domestic agricultural production,  $Inv$  - investments in the fixed capital of agricultural production,  $Inv_{intr}$  - the capital costs associated with the introduction of unused land,  $S_{dp}$  - demand for agricultural products and domestic food products,  $Export$  - export of agricultural products and foodstuffs,  $S_{finaldemand}$  - final demand for agricultural products and foodstuffs,  $P_{price}$  - food price (CPI) for domestic agricultural products,  $P_{import}$  - food price (CPI) for imported agricultural products,  $Import$  - per capita income,  $L_{occup}$  - occupational level,  $I_{CPI}$  - consumer price index,  $P_{exp}$  - food price (CPI) for agricultural products intended for export.

The market price  $P$  of agricultural land, defined by setting the equilibrium conditions ( $S = D$ ) of the model (5), will be a function of the economic state of the agricultural sector, the availability of unused land, the income levels, the patterns of formation of the balance of agricultural and food products.

Adaptation and implementation of the approach proposed in the article will allow revealing the patterns of the formation of the agricultural land market in the Russian Federation.

### 3. RESULTS AND DISCUSSION

#### 3.1. Assessment of the Level of Transaction Costs in the Formation of Land Ownership and Development of the Land Market

Currently, the land share converted into land plot is the main object in the market of agricultural lands. It should be noted that the share of land is a new concept born by the modern land reform, and having no analogues in foreign economies. It is possible to analyze the features of a unique institution of land shares, peculiar only to the Russian economy. The institutional constraints that

provoked the growth of transaction costs have always prevented the implementation of rights to land shares. Currently, it is also difficult to identify own share of land in a large land plot, that is non-uniform in quality, and belonging to the common share ownership of a large number of persons. Each owner of a land share having a certificate of ownership cannot determine the location of its share before the solution of a quite complicated issue of land share conversion into a land plot in the prescribed manner.

Taking the neo-institutional approach as a basis, in accordance with the A. Honore's elements of private property rights, we identified the elements of private land ownership rights to land plots and land shares, and the conditions for their implementation in accordance with applicable Russian legislation (Table 1).

The development of market infrastructure, i.e. those sectors that will ensure its normal functioning should contribute to the development of the land market. We believe that internal and external macroeconomic factors, institutions forming its infrastructure have a great influence on the development of land market. The infrastructure composition depends on the market type and category (Figure 3).

The land market infrastructure scheme was developed using the research of G. V. Komlatskiy, P.F. Paramonov, who rightly believe the land market is quite complicated in structure, stressing that its product is not the land itself, and the right of ownership in it (Paramonov and Komlatskiy, 2011).

The most important are the institutions of land tenure, state cadastral registration, banking and tax system, which currently are undergoing the process of formation and development with regard to new conditions of the market economy. Classification of transaction costs allows making their quantitative assessment at the microeconomic level.

During the study we analyzed the change of transactional costs in the individual formation (in the absence of a decision of the general meeting of the joint owners) of the land plot from the common share ownership plot for the last four years, and the registration of property rights thereto (Table 2).

It should be noted that the Table 2 shows the actual costs that occur under the most favorable circumstances for the conditions of the Krasnodar Territory. Until 07.01.2011, the registration of a land plot was performed by a simpler scheme; it was more rapid and less costly one.

Currently, the allocation of a land plot requires the development of approval of the surveying project for the entire plot of the common share ownership, and it is a quite expensive and time consuming process.

In 2015, the owner of the land share shall spend on registration of property rights by up to 44% longer time and 2.5 times more funds than in 2011.

After the ownership over the land plot is appropriately registered, the owner has the right to rent it out or sell.

**Table 1: Elements of proprietary powers to the land plots and land shares**

A. Honore's elements of private property rights	Elements of private land ownership rights to land plots, shares	Conditions of implementation of private land ownership rights to land plots, shares
1. Ownership right (exclusive control over economic resources)	1. The ownership of land parcel, land share, the actual possession (exclusive control)	It occurs after allocation of land plot in the locality and the registration of rights in the Rosreestr, and it is lost when vesting a land share in the share capital of an agricultural organization
2. The right of use (including in its own interests)	2. The right to use the land plot, the land share as the subject of economic activity, the possibility of rent, mortgage	It occurs after allocation of land plot in the locality and the registration of rights in the Rosreestr, and it is lost when vesting a land share in the authorized capital of an agricultural organization. It is conveyed to the lessee in renting
3. The right to manage (deciding on who shall use the resource and how the resource shall be used)	3. The right to manage, dispose of land plot, land shares - the possibility to sell, bequeath, give, exchange, pledge or transfer to the share capital, rent, use in agricultural production	In accordance with the legislation it is available to the owner of the land plot or land share, and in case of agricultural use, it is available to the tenant and is limited by the terms of lease
4. The right to income (for awarding benefits of the economic resource turnover)	4. The right to income, appropriation of benefits from the turnover of land plot, land share in the sale, leasing or use in agricultural production	In accordance with the legislation it is available to the owner of the land plot or land share, and in case of agricultural use, it is available to the tenant under the terms of the lease agreement
5. The right to "capital cost" (to the alienation of the resource)	5. The right to "capital cost" of the land plot, land share in the sale and lease	In accordance with the legislation it is available to the owner of the land plot, land share
6. The right to safety (immunity from expropriation)	6. The right to immunity from expropriation of land plot, land share	In accordance with the legislation it is available to the owner of the land plot, land share
7. The right to transfer by inheritance	7. The right to transfer land plot, land share by inheritance	In accordance with the legislation it is available to the owner of the land plot, land share
8. The right to perpetuity (in case of legitimacy of rights)	8. The right to perpetuity of ownership of the land plot, land share	In accordance with the legislation it is available to the owner of the land plot, land share
9. Prohibition of use to the detriment of others	9. Responsibility for the use of land plot, land share in harming way	In accordance with the legislation it is available to the owner of the land plot (land share), and arises after the allocation of land plot in the locality and the registration of the tenant's rights in Rosreestr under the terms of the lease agreement
10. The responsibility of collecting on debts (the resource may be withdrawn from the owner in settlement of a debt)	10. The responsibility of collecting the land plot, land share in settlement of a debt	In accordance with the legislation it is available to the owner of the land plot (land share), and arises after their allocation in the locality and the registration of rights in Rosreestr
11. The right to the automatic return of resource to the owner after the expiration of the contract period	11. The need to return the land plot (land share) to the owner after the expiry of lease contract	In accordance with the legislation it is available to the tenant of the land plot (land share) under the lease contract

In the conclusion of the land plot lease transaction, involving the transfer of the rights to use the land plot from the owner to the tenant, the tenant's transaction costs take the following forms:

- The costs of searching for information on rent land plots, with market prices. They include the purchase of specialized publications and calls on the ads, and appeal to the real estate company. These are the costs in cash and time expenditures;
- The costs of negotiating with the owners of the selected plots on specific rental conditions. These are the time expenditures, which may be passed on to the intermediary and in this case, may take the form of money;
- The costs of land quality assessment - these are the time expenditures and travel expenses, expenses for the valuation of the land plot;
- The costs of legal registration of the lease contract, its notarization. These are the costs in the form of money;
- The costs of preventing the opportunism of the owner, which is expressed in a desire to change the terms of the lease, for

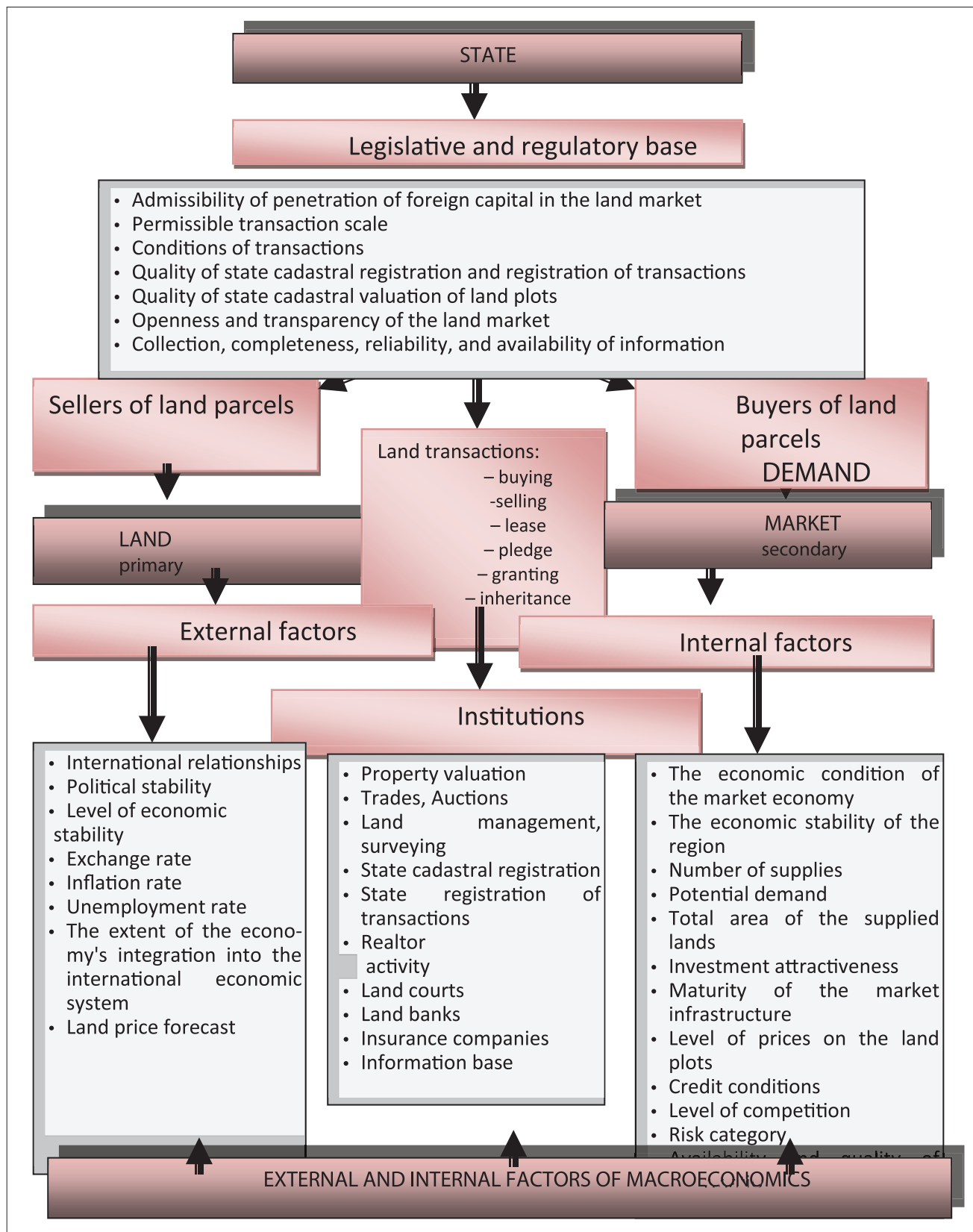
example, to increase the rent. These are the time expenditures, and psychological costs;

- Protection of the right to use the plot transferred for the contract validity period if the owner makes a claim to the tenant on the maintenance of the site or wants to terminate the contract. These are the time expenditures and costs in the form of money associated with the legal recourse.

After the transaction, it is rather difficult to quantify the costs of land ownership protection. These will consist mainly of legal costs. Our research has shown that the average time expenditures will be around 10 months, and money costs could reach 166.5 thous. rubles.

The state regulation of land transactions, simplification of procedures for registration of property rights, and market infrastructure development should contribute to reduction of transaction costs (Coase, 1993).

Figure 3: Land market infrastructure



### 3.2. Evaluation of Land Transactions in the Russian Federation

The development of land relations leads to changes in the structure of land use by categories and forms of ownership. In accordance with the legislation in the Russian Federation land

relations are implemented in private, state and municipal forms of ownership.

As of January 1, 2013 the land fund of the Russian Federation is 1,709,800,000 ha, including land in state and municipal



**Table 2: Transaction costs in the formation of the land plot from the common share ownership, individually, and registration of property rights thereto**

Transaction costs	Costs in 2011(until 01.07)		Costs in 2015	
	Time, days	Financial, thous. rub.	Time, days	Financial, thous. rub.
Finding information about the cadastral engineer, negotiations on the transaction terms	15	0.2	15	0.5
Land plot surveying	30	6.0	30	15.0
Obtaining an extract from the cadastral registration authority	5	0.4	5	0.4
Obtaining an extract from the unified state register of rights	5	0.1	5	0.2
Cadastral engineer's publication of notice of the place and manner of acquaintance with the surveying project in the media*	5	2	5	4.4
Drafting the surveying project by the cadastral engineer	-	-	2	2.2
Coordination of survey project (size and location of land boundaries) with the joint owners	-	-	30	-
Adoption of the draft surveying by the owner of the land share	-	-	3	-
Drafting the surveying plan by the cadastral engineer	2	4	15	10
Provision of statement, boundary plan, certified copies to the state cadastral registration authority	1	-	1	-
State cadastral registration of the land plot (without interruptions and withdrawals)	18	-	10	-
Obtaining documents from the cadastral registration authority	1	-	1	-
Filing the documents for state registration of property rights with the Rosreestr directorate, payment of state fees	1	0.2	1	0.4
State registration of property rights with the Rosreestr directorate	7	-	7	-
Obtaining documents from the Rosreestr directorate proving ownership of the land plot	1	-	1	-
Total costs	91	12.9	131	32.1

\*Legislation allows mailing to joint owners the notice of the place and manner of acquaintance with the surveying project

ownership - 1,576,800,000 ha, and the land owned by individuals - 118.3 million ha, and that owned by legal entities - 14.7 million ha.

The modern period of the formation of the land market in Russia can be analyzed by the presence of transactions with land plots. Table 3 shows all types of transactions with land plots in the Russian Federation, implemented with state and municipal lands and lands owned by individuals and legal entities of property for 1996-2012, and registered with Rosreestr (formerly Roszemkadastr) of the Russian Federation.

Mostly we are interested in the market of agricultural land plots. Currently, the secondary market is the most active one, represented by privately owned land plots. The primary market includes transactions with the lands in the state and municipal property.

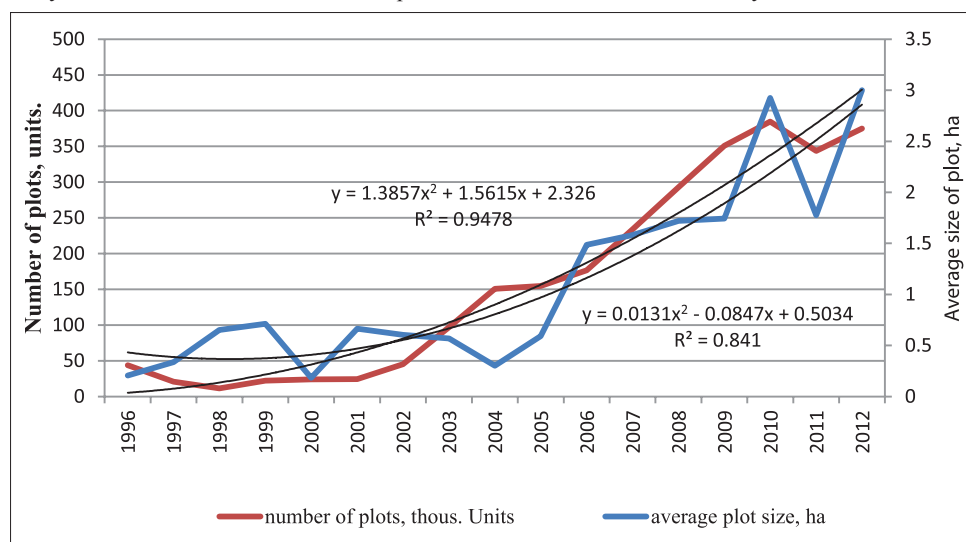
The transactions with state and municipal lands dominate. Until 2005, their ratio by area was 99% of all transactions. In recent years, the share of state and municipal lands in the market has dropped to 85-90%, and the market activity in the sector of purchase and sale of land by individuals and legal entities has increased.

The sales of state and municipal lands have significantly expanded by the number of transactions and land area. There is an increase in the number of transactions and the average size of land plots (Figure 4).

Sale of state and municipal lands is one of the most important trends of development of the primary land market, but until 2005 the area of sold land plots in the state and municipal ownership was negligible. The factors constraining the privatization process included the incompleteness of the issue of delineation of state

**Table 3: Transactions with land plots in the Russian Federation, thous. ha**

Year	Transactions with land plots in state and municipal property			Transactions with land plots in private property of individuals and legal entities				Total transactions between individuals and legal entities	Total transactions taking into account all existing lease contracts
	Rent of state and municipal land plots	Sale of state and municipal land plots	Total transactions with state and municipal lands	Purchase and sale of land by individuals and legal entities	Donation	Inheritance	Pledge		
11996	20,308	9	20,317	34	8	128	3	173	20,491
11997	23,352	7	23,359	59	6	49	3	118	23,476
11998	24,523	7	24,531	41	7	47	4	98	24,629
11999	72,029	16	72,051	45	6	48	1	39	72,151
22000	60,214	4	60,223	56	6	62	1	124	60,347
22001	69,791	16	69,832	48	7	67	1	124	69,956
22002	43,729	27	43,759	53	7	82	4	145	43,904
22003	67,403	55	67,470	82	13	138	32	265	67,735
22004	70,154	45	70,238	123	27	106	19	9,276	70,513
22005	68,230	91	68,345	294	58	134	17	502	68,847
22006	104,827	263	105,215	468	70	524	169	1,232	106,447
22007	114,103	369	114,622	56	127	336	199	1,222	115,844
22008	114,532	504	115,352	1,067	335	596	417	2,415	117,767
22009	113,082	611	114,019	3,160	10,583	4,116	903	18,762	132,780
22010	138,577	1,125	142,745	4,707	4,733	5,090	1,786	16,316	159,061
22011	159,420	882	166,241	7,788	4,899	10,244	3,554	26,484	192,726
22012	156,924	931	164,058	20,886	2,260	13,748	2,447	39,342	203,399

**Figure 4:** The dynamics of sales of state and municipal lands in the Russian Federation by the number and average land area

ownership for land, the imperfection of land legislation, and the land policy aimed at curbing the development of private land ownership.

On April 17, 2006 the new Federal Law No. 53-FZ “On Amendments to the Land Code of Russian Federation, the Federal Law “On introduction of the Land Code of Russian Federation,” and the Federal Law “On state registration of rights to immovable property and related transactions” was adopted, which contributed to the revitalization of the land market.

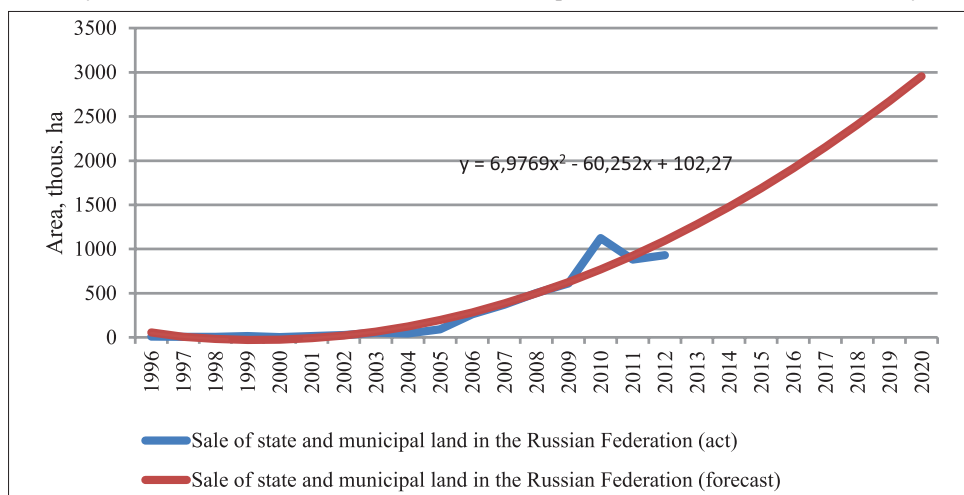
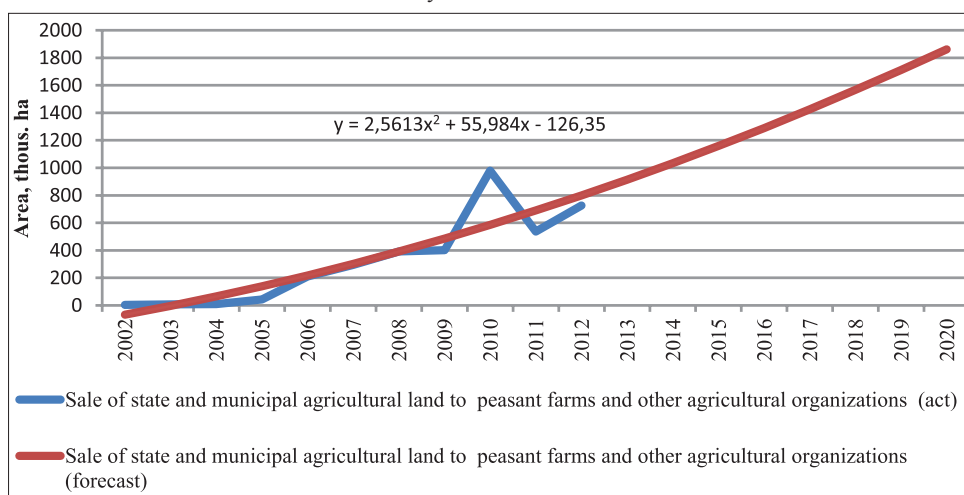
Improvement of the legislation helped to promote the process of the sale of state and municipal lands, however, the proportion of the area of the sold state-owned lands in the total area still remains low and is less than one percent.

Figure 5 shows the trend for the period of 1996-2012, and the forecast of sales of state and municipal land in the Russian Federation to 2020 by the total area.

In the transactions of purchase and sale of state and municipal lands, those for the sale of lands to peasant farms and other agricultural enterprises prevail, by annually taking up 60-87% of the total area of the lands sold.

The sale of agricultural land to peasant farms and other agricultural organizations is of greatest interest in the composition of state and municipal lands of the Russian Federation sold. This market segment is actively developing and demonstrates clear upward trend (Figure 6).

The annual reduction in the number of transactions with a simultaneous increase in the plot area of one transaction

**Figure 5:** The dynamics and forecast of sales of state and municipal lands in the Russian Federation by the total area**Figure 6:** The dynamics of sales of state and municipal agricultural lands to peasant farms and agricultural organizations in the Russian Federation by the total area

occurs in the sector of the lease of state and municipal lands (Figure 7).

Thus, since 2000, the number of rental transactions has decreased by almost 1.5, and in 2012 was 3.5 million units, and the average size of the leased land plot increased from 6.5 ha to 46 ha.

For a long period, in the transactions of lease of state and municipal lands the share of agricultural lands was the dominant one, and occupied more than 70-80%.

Annually there was more than 20% of agricultural land under lease.

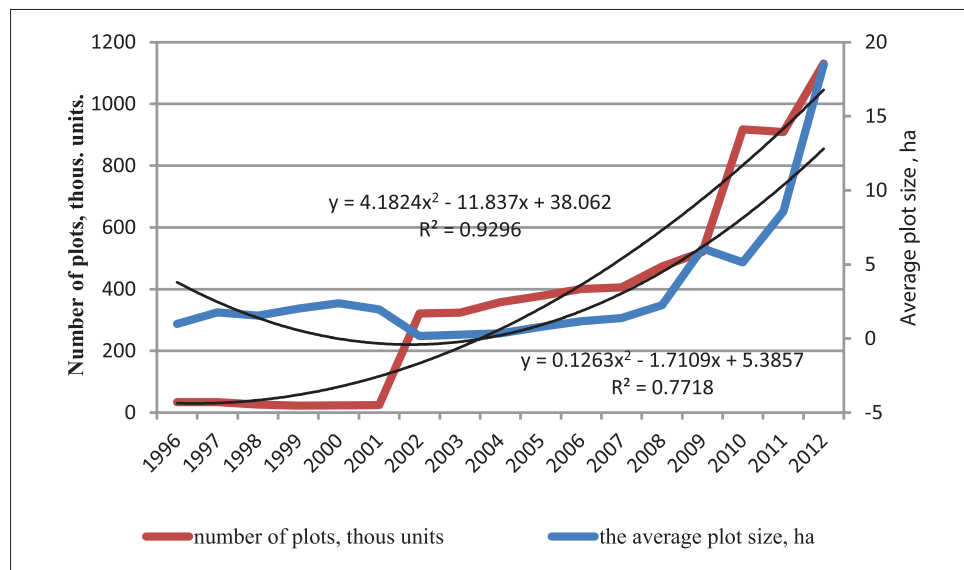
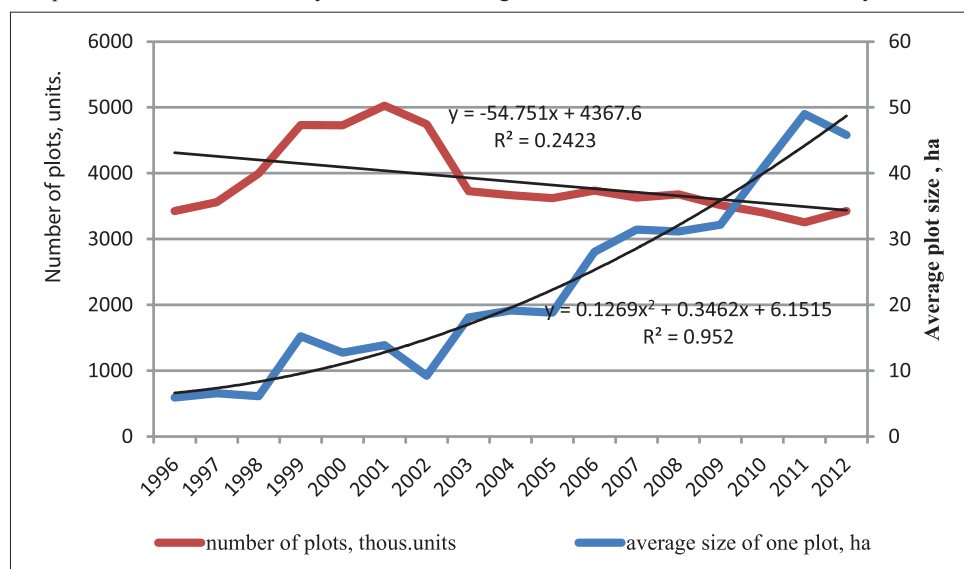
Over the last 5 years of the analyzed period, the share of agricultural land in the total area of the leased state and municipal lands has decreased from 78% to 45%. This is due to the fact that as a result of the implementation of the land reform a reduction occurs in the redistribution fund area, which is the main source of agricultural land for rent. Currently, the replenishment of reallocation fund is due to the inclusion of unclaimed land shares therein in accordance with the procedure referred to in modern legislation.

For the period under review the number of transactions between citizens and legal entities increased more than five times (Figure 8) with a simultaneous increase in the land area of one transaction from 0.15 ha in 1996 to 18 ha in 2012.

Out of all the privately owned Russian lands, the share of agricultural land accounts for 96.5% (128.3 million ha), of which 74.0% (94.9 million ha) accounted for land shares of individuals in the joint land ownership.

However, in recent years, there is a redistribution of agricultural lands by type of ownership: The proportion of land in private ownership increases, which can be regarded as a result of the land turnover and development of the land market (Figure 9).

As of January 1, 2014 the area of agricultural land in Russia was 386.5 million ha, or 22.6% of the total land fund, of which agricultural land - 196.2 million ha (50.8%). During the reduction of the agricultural land area, the area of this category of lands held by legal entities increases. According to Rosreestr, as of 01.01.2006 the amount of lands owned by legal entities was

**Figure 7:** The dynamics of lease of state and municipal lands in the Russian Federation by the number and average land area**Figure 8:** The dynamics of purchase and sales of land by individuals and legal entities in the Russian Federation by the number and average land area

5.2 million ha, for 10 years the area increased 3 times, and as of 01.01.2014 it amounted to 15.2 million ha.

Currently, the process of land plots acquisition by legal entities from individuals that have implemented ownership rights to land share for agricultural production has intensified.

The formation of large landowners in Russia causes some concern. BEFL made a rating of Russia's largest owners of agricultural land as of April 2015. This rating included 40 companies known in Russia and abroad. The number one is Prodimex - the largest producer of white sugar in Russia. Its assets include 570 thous. ha of agricultural land. The following companies are the largest landowners: Ivolga Holding - 550 thous. ha, "Ak Bars" Holding Company - 495 thous. ha, Rusagro - 495 thous. ha, Rosagro - 400 thous. ha, Miratorg - 381 thous. ha, Avangard-Agro - 353 thous. ha, Krasny Vostok Agro - 0.350 thous. ha, Razguliay - 38,520 thous. ha, GC "Dominant" - 320 thous. ha. StavropolAgroSoyuz, LLC is the smallest of the largest

landowners of agricultural lands in Russia - 100 thous. ha of agricultural lands. The company specializes in the production of various types of agricultural products.

### 3.3. Forecast of the Land Market Development

In accordance with the above procedure, there was estimated the activity in the public and private sector of land market in terms of turnover of the land market, which expresses the ratio of the total land area of transactions in the segmental markets (rental, sale, pledge, etc.) to the total amount of land in some form of ownership.

In 2012, in Russia with regard to the existing leases of state and municipal lands, the turnover included 5,792,019 land plots with a total area of 203,399.62 thous. ha. In Russia, the average share of leased lands in state and municipal property is 10.0%.

Approximation of the actual data by an analytic function



(1) allowed obtaining the forecast of development of the market of state and municipal land lease in the Russian Federation in the future (Figure 10), using the following equation:

$$y = \frac{15}{1 + 10.31e^{-0.78t}} \quad (6)$$

$$R^2 = 89\%, F = 122, t_0 = 12.14, t_1 = -11.05$$

Thus, according to our calculations, about 14% of the land in the state and municipal property will be leased by 2020.

In our studies, the most interesting is the forecast of development of the agricultural land market.

The development of the Russian market of lease of state and municipal agricultural lands is characterized by a greater intensity and in recent years it has been about 30%. The volatility of the actual data on a flattened analytic curve is high due to the dependence of the demand for agricultural lands on the factors of the macroeconomic environment. Under the influence of the 2008-2009 economic crisis the lease market had fallen sharply, and only 2 years later the trend changed to the growth (Figure 11).

Considering that according to the Ministry of Agriculture the area of the unused arable land in the Russian Federation is 20.7 million ha, of which 8.62 million ha have been in a derelict state for more than 10 years, 42% of the unused arable land are scrubbed and overgrown with forest, about 9% - subject to erosion, 2.4% - waterlogged and flooded, let's take saturation of the agricultural land lease market as equal to 40% (Figures 11 and 12).

The analytical equation has the following form and statistical evaluation:

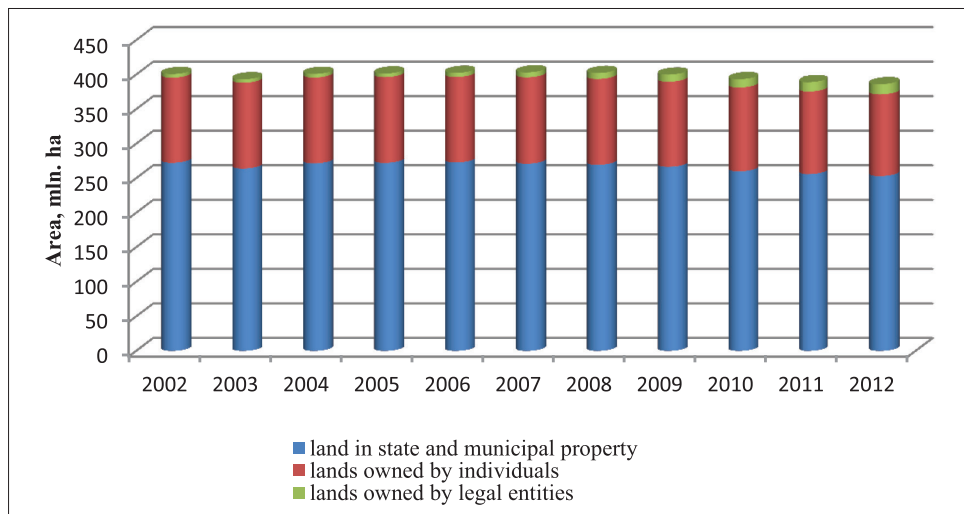
$$y = \frac{40}{1 + 1.31e^{-0.19t}} \quad (7)$$

$$R^2 = 49\%, F = 7.6, t_0 = 0.55, t_1 = -2.75$$

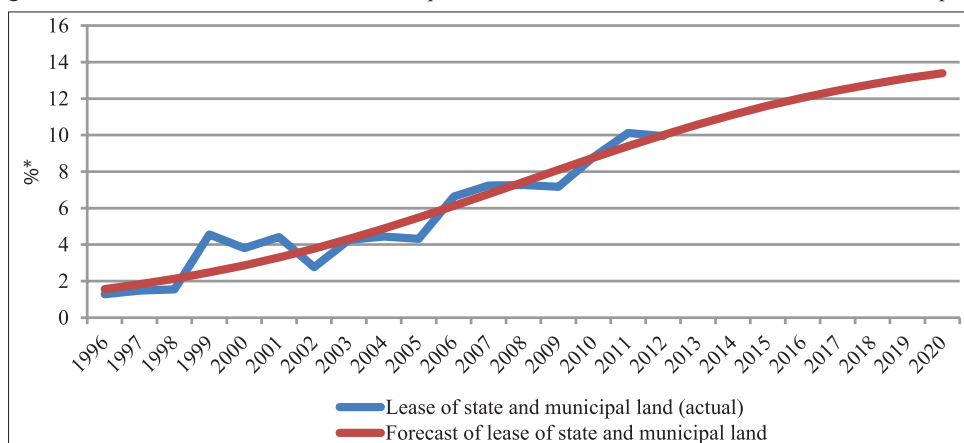
First of all, the land will be put into circulation through the provision of its lease to legal entities and individuals.

In the land market, there is an upward trend of the lease rents and average prices for the sale of land plots. The lease values and the sale prices of state and municipal lands are largely determined by the cadastral value of lands, the value of the territory, and the

**Figure 9:** Distribution of agricultural land by ownership in the Russian Federation



**Figure 10:** Indicators and forecast of lease of state and municipal land in the Russian Federation. %\* the ratio of the total land area of transactions in the segmental market of lease of state and municipal lands to total area of lands in the state and municipal property



price of the transaction with the land plots of the individuals and legal entities is the category largely formed under the influence of market forces.

The preliminary analysis showed that the formation of the price of land was affected by the location of land plots, their fertility, the general economic situation in the country, and changes in agricultural yields and food demand. The collected data show that the prices of the land private property market are much higher than those of the state and municipal plots. It is necessary to take into account the limited volume of the analyzed sample available to us for analysis.

The study showed that the turnover of land was growing in all sectors of the land market. The sector of purchase and sale of land plots in private ownership was under the most intensive development. The price of agricultural land is increasing in all agricultural districts of the country.

The segment of purchase and sale by individuals and legal entities in the private sector of the land market is very active. Market turnover is increasing on a logistic curve (Figure 12), and according to our calculations, by 2020 will be close to 30%.

The analytical equation has the following form and statistical evaluation:

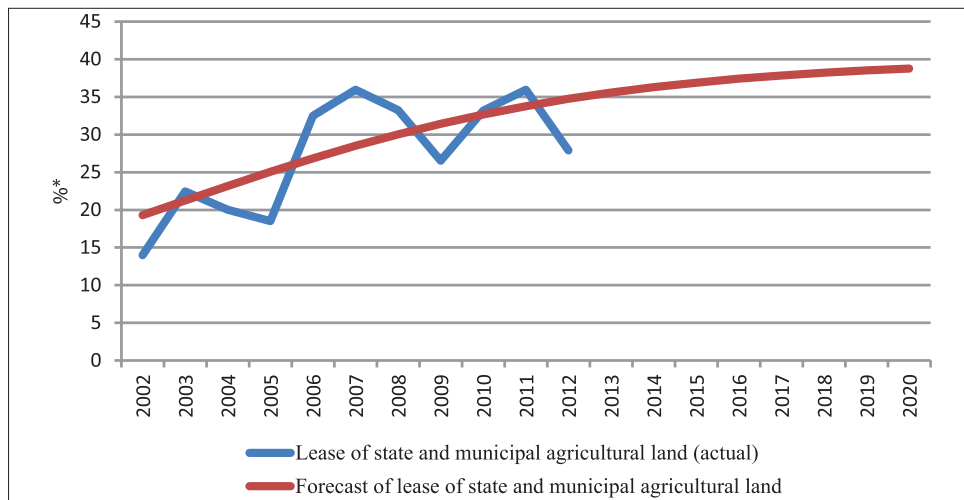
$$y = \frac{0,3}{1 + 6332.95e^{-0.031t^{2}}} \tag{8}$$

$$R^2 = 97\%, F = 446, t_0 = 43.01, t_1 = -21.12$$

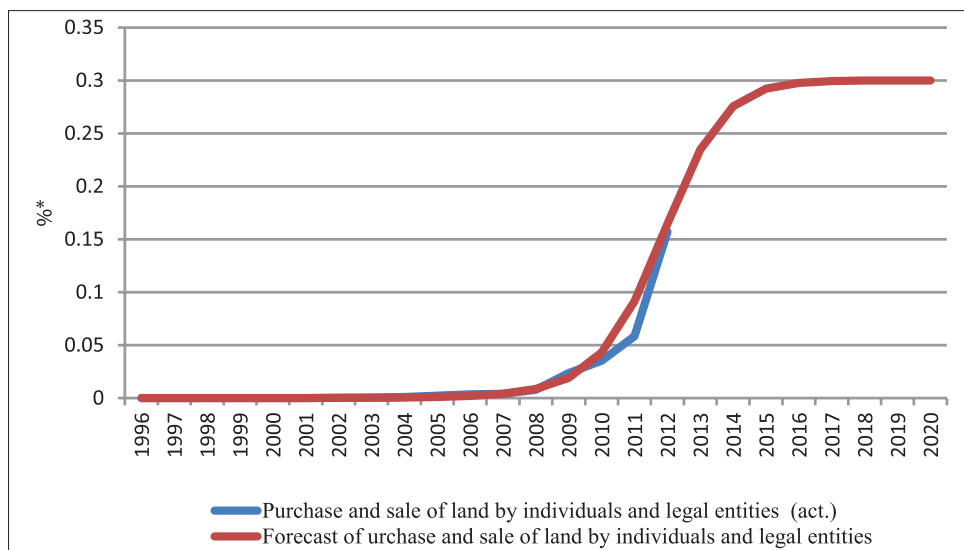
The market of purchase and sale of agricultural land plots in private ownership in the Russian Federation is shown in Figure 13.

Gompertz curve applied to describe the trends in the turnover of the market of purchase and sale of agricultural land by individuals is as follows:

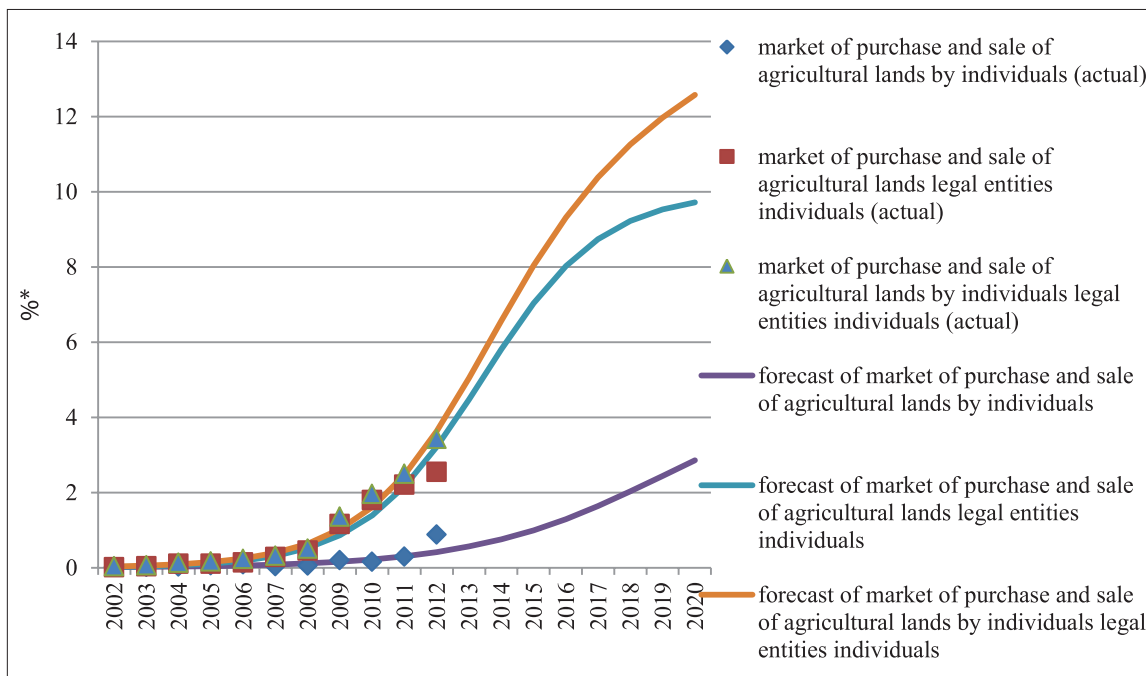
**Figure 11:** Indicators and forecast of lease of agricultural state and municipal land in the Russian Federation. \*% the ratio of the total land area of transactions in the segmental market of lease of state and municipal agricultural lands to total area of agricultural lands



**Figure 12:** Indicators and forecast of the market of land purchase and sale by individuals and legal entities in Russia (%). \*% the ratio of the total land area of transactions in the segmental market of the land purchase and sale by individuals and legal entities to total area of lands owned by individuals and legal entities



**Figure 13:** Indicators and forecast of the market of purchase and sale of agricultural land plots privately owned in Russia. \*% the ratio of the total land area of transactions in the segmental market of purchase and sale of privately owned agricultural land to the total area of privately owned land



$$y = \frac{5}{1 + 436.8e^{-0.335t}}, \tag{9}$$

$$R^2 = 82\%, F = 41, t_0 = 17.2, t_1 = -6.43$$

Where  $t = 1, 2, \dots, 12$  – is the serial number of a year from 2002 to 2012.

The trend of turnover of the market of purchase and sale of agricultural land by legal entities varies between 2002 and 2012 in the following way:

$$y = \frac{10}{1 + 775.9e^{-0.537t}} \tag{10}$$

$$R^2 = 98\%, F = 397, t_0 = 96.4, t_1 = -19.94$$

Where  $t=1, 2, \dots, 12$  – is the serial number of a year from 2002 to 2012.

Taking into account the anticipated saturation limits of certain segments of the market of purchase and sale of agricultural land, in 2020, the total turnover of the private sector of the agricultural lands market  $y_{purchase\ and\ sale}$ , calculated by formula  $y_{purchase\ and\ sale} = y_{indiv.} + y_{leg.ent.}$ , will be close to 13%.

Perspective development of the land market promises to make it a more civilized and transparent one, with the minimal transaction costs.

#### 4. CONCLUSION

The conducted research allows to make the following conclusions:

1. The trend of institutionalism, which explores the social institutions affecting economic behavior – the state, market, banks, land ownership, etc. - is of great interest in the study of mechanisms of regulation of land relations in the context

of the modern land reform. The theory of institutional changes has a high methodological potential.

2. Currently, in Russia the land ownership institute is actively forming. Land ownership is a complex socio-economic category, whose institutional environment includes a combination of economic, legal, political, psychological, and social phenomena.
3. In accordance with the institutional approach the objects of land relations represent the proprietary powers - the rules and regulations concerning land plots, legally registered and limited on the terrain. In accordance with the elements of private property rights of A. Honore, we have identified the elements of private land ownership rights to land plots and land shares, and the conditions for their implementation.
4. The organizational mechanism of regulation of land relations is based on the theory of transaction costs. If they are small, the market is capable itself to find the most rational solutions without the participation of the state. If the transaction costs are high, the distribution of property rights affects the efficiency of production. These conclusions are valid only under the condition that the property rights are clearly defined. In the current Russian environment throughout the period of reforms the main condition was not fulfilled.
5. Specification is the exact definition of a set of proprietary rights, the main condition for the effective operation of the economy, the degree of specification must comply with the degree of scarcity of resources. Specification of land property rights should be considered as a procedure for determining the subjects, objects of land rights, and the system of land powers disposed by each subject. In accordance with the legislation, the owners of land shares have a set of specific rights, but the restrictions do not allow them to become full-fledged landowners.

6. The opposite phenomenon called attenuation of property rights takes place when they are not accurately set, poorly protected, are subject to restrictions. This leads to weakening the benefits of full private property rights, reduces the degree of market economy, narrows the field of economic choice, and reduces the value of resources.
7. The turnover of land is growing in all sectors of the land market. The most intensive development was in the sector of purchase and sale of land plots by individuals and legal entities in the private sector of the land market.
8. The price of agricultural land is increasing in all agricultural regions of the country. The market price of agricultural land, defined by setting the equilibrium conditions as a function of the economic state of the agricultural sector, the availability of unused land, the income levels, the patterns of formation of the balance of agricultural and food products. More research is needed in this regard.
9. At the present stage of transformation of land relations the land market state regulation is necessary, primarily in the field of legislation improvement, and the land specificity requires more stringent state control and restrictions on the rights of market participants. The need for government regulation is due to the uniqueness of the product, which will be supplied to the market, the presence in the economy of the state and non-state forms of ownership, and the multistructurality of the economy.
10. The civilized land market should contribute to raising of direct investments to the agricultural production when depositing land as a contribution to the share capital, and the borrowed funds through the pledge process, the development of the land market is becoming a fundamental requirement of the market economy.
11. Development of the land market contributes to solving the problem of unclaimed land shares. Currently, land shares are the most attractive and sought-after commodity in the land market. The land market in general, and in particular the market of land shares is a way of land redistribution. It is very important that the transactions with land shares contributed to land concentration in the hands of the most effective land users.

The implementation of the approach proposed in the article will allow revealing the patterns of the formation of the agricultural lands market in the Russian Federation. The study of theoretical and methodological aspects of the formation of the Russian land market leads to the conclusion that its further civilized development depends on the improvement of the legal base, the degree of reasonableness of administrative decisions, the effectiveness of state regulation of the processes, the improvement of economic methods of land management, and the market infrastructure development.

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