

Monitoring the Functioning of Local Agricultural-Land Markets: Research Methods and Results

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Abstract — This paper presents the results of monitoring the functioning of local agricultural-land markets; it identifies the reasons why the ownership rights market becomes monopolized, and why a monopolistic competition develops in the management rights market. It also substantiates the determinants that restrict the development of local agricultural-land markets, explains the effects of market signals and informal institutes on the re-distribution of agricultural land between land users. With evidence from a single Russian region, Volgograd Oblast, we find out that such re-distribution of land between the market actors depends on the form of ownership as well as on institutional restrictions. It is shown that the high level of transaction costs is due to the actions of the Federal Government and cannot be significantly reduced at the actor or municipality level, which necessitates the need for developing such a targeted program to institutionalize the agricultural-land market that would facilitate strengthening the land-control institute, minimizing the transaction costs of specifying the land-ownership rights and the costs of information support for the market, which in its turn will motivate the market actors to use land more efficiently.

Keywords — local agricultural-land market, land-ownership rights market, management rights market, transaction costs, market monitoring

I. INTRODUCTION

In Russia's current economic situation, the problem of stabilizing the functioning and development of local agricultural-land markets is of special methodological and practical significance. Regarding the methods for studying localized systems, it is acceptable to use the principles applicable to spatial economics, which imply the research must focus on: 1) the functioning and development of space-localized economic systems of varying scale..., 2) the interaction of spatial systems and the spatial distribution of production factors, 3) the spatial behavior of economic agents..." [4, p. 36].

Local agricultural-land markets are subject to spatial and institutional restrictions imposed by the interaction of economic agents and landowners. In this context, the institutional environment where the market functions, as well as the conditions of choosing and exercising land-ownership rights become crucial for researchers [5; 6, p 268]. The spatial behavior of economic agents in land markets depends not only

on formal rules, but also on the rural mentality and the behavioral stereotypes the market participants demonstrate. The dominance of information relations in various local-market segments is due to the under-development and inconsistency of the existing regulations that govern the specification of land-ownership rights. In reality, this has resulted in creating various reasons for demand for agricultural land in Russia, which is why inefficient mechanisms of agricultural-land re-distribution have emerged. Statistics and studies have shown that ownership rights for unused land are sometimes alienated by force on a local basis [8, 11]. In Volgograd Oblast, more than 80% of land has been forcibly alienated since 2002, meaning that every third hectare of land in the region has been redistributed [1, p. 8].

Today, the region's scientists propose various concepts for providing resources for agriculture [8], for the sustainable development of rural areas [2, 7], for ensuring the food security of the region [10], for the state-endowed support of the agroindustry complex [13], all of which are intended to incentivize both producers and consumers. A.N. Makarov's research is scientifically interesting, as it traces the interdependence of two institutional solutions: ensuring food security and completing the land reform [3]. M.V. Rogovaya, L.A. Khavina studied the territorial peculiarities of land-market development, which we also find interesting [9]. In their earlier studies [5, 6, 11, 12] based on statistical data and monograph reviews, the authors have substantiated the market dichotomy and the trends in agricultural-land development. The need to study the behavioral aspects of market actors and the conditions of choosing restricted or non-restricted land-ownership rights has necessitated monitoring the functioning of local markets. The monitoring efforts were based on the experience of monitoring the region's agroindustrial complex.

II. RESEARCH THEORY AND METHODS

When Russia's national economy was reformed, a dual market structure emerged due to transactions of full and partial land-ownership rights. Structurally, local markets feature the dominance of certain market segments: the ownership rights market (full alienation of land-ownership rights) and the management rights market (restricted alienation of rights) [11, 12]. Models of combining a bundle of ownership rights are chosen not only on an objective, but also on a subjective basis,

as such choice depends on formal and informal rules and preferences of the market participants.

In order to identify the functional specifics of local agricultural-land markets and development trends, our monitoring was carried out in two stages: Stage One in 2011 to 2013; and Stage Two in 2015 to 2017. The monitoring methodology included developing the toolkit (the AIC expert's questionnaire), substantiating a research-area sample, arranging the collection and processing primary data by means of multivariate analysis, ranging the expert-evaluation results, and carrying out correlative, comparative, and positive analyses. The functioning of local agricultural-land markets was analyzed on the basis of statistical data and the results of sociological surveys the authors had carried out in the municipalities of Volgograd Oblast, which formed three land-evaluation areas (1. Yelansky and Uryupinsky Municipalities; 2. Olkhovsky Municipality; 3. Kletsky Municipality); these areas differed in terms of soil fertility, ownership rights, and entity forms.

III. MONITORING RESULTS

General information about the experts. 300 respondents were interviewed as experts, including agricultural producers, tenants, owners, market infrastructure workers, and specialists of municipal administrations, see Table 1.

TABLE 1. ABOUT THE EXPERTS

<i>Number of experts</i>	<i>Position</i>	<i>Education</i>	<i>Work experience on average</i>	<i>Entity's specialization</i>	<i>Basic forms of land ownership pertaining to the expert</i>	<i>Organizational and legal form</i>
Uryupinsky Municipality (66 pers.)	Head (81 pers.)	Vocational	Experience in agricultural production (20 to 25 years)	Crop farming (175 entities)	Rented land, owned by third-party individuals (38%)	LLC (22 entities)
Yelansky Municipality (72 pers.)	Administrative Specialist (36 pers.)	Higher education in agriculture	General work experience (25 to 26 years)	Animal farming (20 entities)	employees' common or joint ownership (19%)	Agricultural cooperative (60 entities)
Olkhovsky Municipality (84 pers.)	Mid-level Specialist (66 pers.)	Higher education in technology	Longevity (18 to 20 years)	Mixed (54 entities)	Land owned by a legal person or an owner (29%)	Family farms (74 entities)
Kletsky Municipality (60 pers.)	Sundry (99 pers.)	Higher education in economics or law	Land tenure (14 to 15 years)		natural persons' land share transferred to the entity's authorized capital (14%)	Self-employed (48 entities)
					Land-share owners (69 pers.)	Household plot (9 entities)

The experts were aged 48 to 49 on average, ranging from 23 to 75 years. Land in use amounted to 1,900 ha on average, ranging from 1 to 17,000 ha. Native locals planning to stay

and continue working in the area formed an absolute majority of the respondents (77%).

During the study, we collected and systematized expert opinions on key issues.

One such issue consisted in choosing the land-ownership form (full or partial rights), crucial for shaping the market structure. According to official statistics, 69.04% of entities is owned by individuals (natural persons), 3.58% is owned by legal persons, and 27.8% is owned by the state or municipalities. While the first local area featured high activity regarding all types of transactions (a dual market), the second area was dominated by leases (the management rights market), whereas the third one had a high rate of purchase-and-sale transactions (the property rights market).

In the total two-stage sample, most experts stated they would prefer full land-ownership rights (65% to 68%), whereas 25% to 22% believed renting land owned by a third party would be the most optimal form of land use, and 5% would prefer to rent land owned by local authorities. The main expert-stated advantage of full ownership consisted in the opportunity of free disposal of land (mentioned by 61% of respondents), which freedom also included non-payment of rent (mentioned by 11%), absence of contractual risks (4%), possibility of profitable resale (2%), and possibility of land consolidation (17%); possibility of gaining land rent and economic rent was also mentioned as an advantage. As the institutional environment in which agricultural-land markets function is unstable and asymmetrical, experts were worried that land can be monopolized (consolidated) by a single owner (mentioned by 21%); land speculations might result in land prices skyrocketing (17%); land tax might increase (12%), just as land-ownership registration costs (16%). In such circumstances, local authorities preferred to rent out state-owned and municipal lands rather than sell them. According to the experts, farmers (81%), major agricultural companies (61%), and rural residents (37%) were interested the most in purchasing land. In such a situation, land might be consolidated by owners to create major companies of various forms, capable of quickly adapting to changes in the economic and institutional environment.

Transaction costs in the ownership rights market. Local-market functioning conditions were unstable and inconsistent, featuring institutional imbalance and informational asymmetry. The identified institutional restrictions mostly manifested themselves when buying a land plot; in terms of significance, they can be ranked as follows:

- high land-purchase transaction registration costs (40%);
- no registration on the part of the land-plot owner (24%);

- legal restrictions expressed in the priority right of purchase of land (13%);

- mental behavior: rejection of the private land ownership concept on the part of the locals (11%), unwillingness of selling land plots on the part of the local authorities (10%), the latter's preference to rent out state-owned and municipal land (35%).

Experts we surveyed believed that market transactions constituted quite a time-consuming transaction process that would involve visiting the Cadastral Chamber (69%), as well as paying visits to the Land Committee (63%), the registration authority (54%), and a private land-surveying company (24%). Demand for land-market infrastructure services was different for buyers and for sellers and also varied by time. During Stage One (2011 to 2013), buyers and sellers would incur unequal transaction costs; however, by Stage Two (2015 to 2017), the implementation of e-services had considerably reduced transaction costs. 40% of experts believed high transaction registration costs caused by shared ownership was the main factor impeding the process of purchasing land. Those were mostly land-surveying costs (42.9%) as well as the costs associated with the legal registration on the part of the land owner (25.3%). Registration of ownership would take (and probably still takes) one month to two years. Registering a land-sale transaction would similarly take five days to one month. One should note that transaction costs incurred by buyers and by sellers would not be distributed equally. While the buyer would bear higher land-purchase registration costs, the seller would pay more for land surveying. As a result, sellers frequently found themselves in an unfavorable and disadvantageous situation, especially where the local market had stably low land prices (30%). In that situation, market prices would be set not by "tatonnement" as suggested by L. Walras, but rather by the method of analogy (to be equal to neighbor-offered prices, 34%); the local market would perceive such pricing as a set value. With the differences in land-plot prices for a given area being quite negligible, local agricultural-land markets displayed rigidity and lack of flexibility.

Local markets showcased informational asymmetry, so there were two ways of obtaining the necessary data: an official way, and an informal way. As noted by 35% of experts, formalized information channels were provided by the Land Committee, information and consultancy services, multifunctional centers (15), or via the Internet (19%). Insufficient information on the agricultural-land market situation, coupled with the locals' mentality, meant that informal information channels found a greater use (31%). Land-ownership rights registration costs were dominated by the following components: processing documents for ownership registration (46%), land surveying (44%), collecting information on the necessary documentation and procedures associated with registering right of ownership (37%); and cadastral registration (29%). Costs of measurement and search for information would not differ by segment; in terms of time consumption, such operations would take several days (25%) to 25–30 days (7%).

Management rights market is based on renting land owned by land-share owners. Prioritization of ownership rights to the cultivated land was found to be in direct correlation with the size of expert-owned land plots (Pearson correlation coefficient = 0.46). Obviously, owners of small and moderately-sized landholdings would mostly act as landlords, while those in possession of medium-size and large

landholdings would mostly act as tenants (land shares of rural residents), a fact confirmed statistically, with the Pearson correlation coefficient being equal to 0.446 for small-plot landlords, and to 0.51 for tenants. Land was mostly rented by such entities as family farms and limited-liability companies, while agricultural cooperatives were reluctant to rent land (Pearson correlation coefficient = 0.381). Unlike family farms, agricultural cooperatives and limited-liability companies rarely rented their land out. Self-employed persons (or individual entrepreneurs) equally used both types of landlord-tenant relationships. Speaking of the most significant advantages of rent, experts specifically mentioned lower transaction costs as compared to land purchase (26%), and low rent (23%). According to the experts renting the lands they used, one would most likely prefer to own land due to the a number of disadvantages associated with landlord-tenant relationships, especially the need to enter into multiple rent agreements with small-plot owners (31%) as confirmed by the Pearson correlation coefficient (0.31). Various types of entities analyzed landlord-tenant relationships in terms of their profitability, information support, and economic efficiency. For family farms, the main advantage of rent lied with lower transaction-registration costs as compared to purchase (46%); for self-employed persons, the main advantage was low rent (44%) (Pearson correlation coefficient = 0.409), see Table 2.

For family farms, the main disadvantage was the need to enter into rent agreements in numerous owners (50%); self-employed persons found the lack of guarantees regarding premature termination to be a particular drawback (44%). Most experts stated that natural persons in possession of land shares constituted the main source of rented land (59%), which was characteristic of all types of entities. Notably, information relationships dominated the management rights market, although the experts clearly preferred formal contracts (77 to 100%). When entering into a landlord-tenant relationship and when exercising it, there emerge risks associated with the landlord's opportunistic behavior; such risks may cause various situations related to unilateral amendments to the rent agreement as made on the landlord's part, including: an increase in rent (34%); premature termination of the contract (35%); transferring the land to a third party without terminating the contract (13%), see Table 2.

Experts renting land plots owned by local authorities stated that they cultivated land areas of 1,200 to 17,000 ha; whereas rented plots in possession of privately-owned companies had an area of 1 to 1,000 ha. Local authorities showcased a great interest to the issues of developing landlord-tenant relationships. 35% of experts noted that municipalities would prefer to rent land out; and only 11% believed that the authorities actually facilitated the purchase of state-owned and municipal land. At the same time, 4% of experts noted that the unwillingness of local authorities to sell land was mostly due to institutional restrictions imposed by the current legislation. Therefore, major agricultural producers would be interesting in renting state-owned and municipal land, as the local markets of land were quite limited on the one hand, whereas

the rent was quite strict and stable provided a limited number of landlords.

TABLE 2. FEATURES OF LOCAL MANAGEMENT RIGHTS MARKETS, %

Question	Entity's organizational and legal form				
	LLC	Family farm	Self-employed	Household plot	Agricultural cooperative
Prioritization of expert participation in landlord-tenant relationships (as landlords or as tenants)					
Rented land	71.4	68	50	-	25
Rented land out	14.3	36	50	100	5.3
Advantages of landlord-tenant relationships					
Agreements can be made orally	14.3	12.5	-	-	-
Low transaction-registration costs	14.3	45.8	25	50	5.6
Low rent	28.6	20.8	43.8	50	33.3
Opportunity to optimize the area of an entity	28.6	16.7	25	22.2	20.9
Undecided	14.3	4.2	6.3	-	38.9
Disadvantages of landlord-tenant relationships					
High rents	28.6	20.8	-	-	21.1
Possible premature termination	14.3	12.5	43.8	50	5.3
High transaction costs	28.6	12.5	6.3	-	-
Necessity to enter into agreements with numerous land owners	-	50	50	50	21.1
Undecided	28.6	4.2	-	-	52.6
Number of landlords per agricultural producer					
1 to 10	40	79.2	100	100	66.7
10 to 100	40	16.7	-	-	9.5
> 100	20	4.2	-	-	33.3
Rate the formality of relations in the management rights market					
formal	100	70.8	93.8	100	80
informal	-	16.7	6.3	-	10
no rating	-	12.5	-	-	10
Rate the fairness of rental rates					
Fair	42.9	45.8	31.3	-	30
Unfair	14.3	25	56.3	-	30
No rating	42.9	29.2	12.5	100	40

Note: For more detailed information on entity types, consult Russian sources: limited-liability company is referred to as OOO in Russian; family farms are KФХ; self-employed persons, or individual entrepreneurs, are ИП; household plots are ЛПХ; and agricultural cooperatives are СПК.

Correlations between factors affecting the further development of this market segment were evaluated by the Pearson coefficient. For instance, the correlation between the selected land-use form and the land-plot size equaled 0.46, whereas the correlation between the former and the transaction costs equaled 0.41. In that case, small-plot and medium-plot landowners would act as landlords (0.45), whereas major owners would act as tenants (0.51). Notably, regarding the preference for landlord-tenant relationships the Pearson correlation coefficient equaled 0.42 for family farms, 0.54 for LLCs, and 0.38 for agricultural cooperatives. Given that at a Pearson coefficient value of 1, the correlation evaluation is deemed effective, these correlations manifested themselves at a mean level of 0.4 ranging from 0.38 to 0.54.

Local-market development determinants During interviews, experts were asked to evaluate the influence of factors affecting the development of local markets, see Table 3.

TABLE 3. LOCAL AGRICULTURAL-LAND MARKET DEVELOPMENT DETERMINANTS

Market determinants	Features of determinants	Ranking significance of a feature, %	
		2011 to 2013	2015 to 2017
D1 — institutional conditions of market functioning	d ₁ – opportunities for speculative land transactions and changing the category of agricultural lands	36	34
	d ₂ – possible land-market monopolization	34	31
	d ₃ – dominance of rented land in use	28	30
	d ₄ – issues of using land as a collateral	23	20
	d ₅ – need for information relations in transactions	12	15
	d ₆ – priority right of purchase of land by local authorities	12	15
D2 — fiscal and pricing factors	d ₇ – low prices for agricultural products	68	70
	d ₈ – existing tax system	43	44
	d ₉ – costly land-turnover system	37	31
	d ₁₀ – lack of proper support from the local authorities	36	33
	d ₁₁ – high prices of agricultural land	33	35
	d ₁₂ – inadequate pricing of state-owned and municipal agricultural lands for sale	33	35
D3 — transaction-cost determinant	d ₁₃ – high costs of registering land ownership	51	48
	d ₁₄ – lack or insufficiency of legal and economic information available to the land-market participants	43	44
	d ₁₅ – shared ownership of land	22	24

Factor analysis helped identify the following aggregate market-development determinants: institutional environment, fiscal-pricing and transaction costs. Stage-Two studies showed that the identified factors affecting the market functioning had changed slightly, as transaction costs became lower while electronic information support became more extensive, leading us to a conclusion of the functional stability of the market.

IV. CONCLUSIONS

Monitoring data analysis helps characterize the local agricultural-land markets under study while also substantiating the market-development trend predictions, see Table 4.

Virtually all local markets display a greater preference for full-right lands; on the other hand, more and more rent agreements are entered into, which boosts the management rights market. Sale-and-purchase agreements were entered into in the 3rd area for the most part; land was rented in the 2nd area; a combined evaluation favors 1st area. Choosing the land-use form (rent or ownership) depends on numerous factors: the land-plot size, the organization and legal form of the entity, the value of its transaction costs, the financial and institutional market situations. In general, local markets are rather slow in terms of supply and demand; they also feature slower land turnover, and therefore less dynamic functioning and infrequent market transactions.

This research has shown that in the region, the land-management rights market has more favorable conditions. This is due to the existence of shared ownership of land as well as the dominant position of small- and medium-size enterprises in the region's agroindustrial complex, which in its turn is a result of the region's policy that was aimed at

boosting farming activities in the early 1990s. Thus it is necessary to highlight a sophisticated system of landlord-tenant relationships existing between all the market participants: tenant — local authorities and the tenant — land-share and land-plot owners. This is why we herein propose the following actions to further and enhance landlord-tenant relationships:

TABLE 4. LOCAL-MARKET FEATURES, %

Factors	Evaluation criteria	Local areas					
		1		2		3	
		2012 to 2014	2015 to 2017	2012 to 2014	2015 to 2017	2012 to 2014	2015 to 2017
Preferred type of land use	land ownership	62	64	60	62	73	75
	rent, including:	30	32	42	42	18	20
	renting a land share	25	26	35	37	15	16
Rent agreement terms and conditions	renting state-owned and municipal land	5	6	7	5	3	4
	formal	77	80	82	82	72	64
	informal	7	9	5	7	9	5
	Pricing	cadastral value	28	30	38	37	42
	market bargaining	31	33	29	30	27	30
	real-estate agent's services	22	20	19	15	16	14
Transaction costs	information	39	29	35	27	37	30
	contracting	29	33	26	31	32	34
	opportunistic	13	18	15	19	11	10
	document registration and filing	46	45	44	43	48	50
	dimensions	21	22	19	18	23	25
Information channels	formal, including:	81	88	57	62	65	73
	Multifunctional centers, information and consultancy services	22	28	15	24	8	18
	Land Committee	43	41	25	27	37	41
	Internet	12	21	11	19	10	17
	newspapers	8	7	6	4	10	8
	informal (personal channels)	31	32	30	33	32	30
How many transactions per annum	sale-and-purchase	24	31	18	19	30	37
	rent	63	60	67	64	38	39

1) in tenant-authority relationships, one must be offer activating such landlord-tenant relationships by:

— reducing the rent rates for agricultural companies renting municipal lands, so as to improve the efficiency of using land in that way;

— Amending the Federal Law on the Turnover of Agricultural Lands, which would imply the forcible expropriation of agricultural lands used for non-agricultural purposes or containing signs of apparent violations and damage; municipalities must be able to purchase such lands

exclusively at the expense of the state budget so as to consolidate municipal land for renting out subsequently. This will help improve local budgets to booster the economic development of rural areas.

2) in the relationships of tenants and land-share and land-plot owners, contractual relations must be improved in order to reduce risks and costs of opportunistic behavior. As land rent conditions are imposed by the tenant, land-share owners often have to deal with unfavorable terms and conditions. Landowners, being unaware of the true price of land, agree to such terms and conditions without bargaining much and then have to solve the problem of choosing the tenant, be it a farm or an agricultural enterprise. In order to enforce formal contractual rules, it would make sense to use municipal Land Committees to organize a law consulting session and to provide support for making contracts, which will better actualize the economic interests of landowners and tenants alike.

In order to activate the functioning of the agricultural-land market, one should implement a policy for institutionalizing the market under a targeted program for the development of small and medium-size producers of the regional agroindustrial complex; the policy must seek amendments to the formal rules that would minimize transaction costs while also enabling a higher market efficiency.

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