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Land Market and a Pre-Emptive Right in Farmland Sales

After more than 20 years of a land sales ban, Ukraine finally opened its farmland market on July 1st, 2021. A design of the land market contains a pre-emptive right to buy the land for the farmland tenants. In this study, we model the effect of this pre-emptive right. Following the approach of Walker (1999), we use a theoretical model with three players – landowner, potential buyer, and the tenant - to model outcomes of the land transactions with and without the pre-emptive right. To empirically estimate the effect of the pre-emptive right, we use farm-level data to derive farmers' maximum willingness to pay and the minimum price that landowners are willing to accept. The introduction of the pre-emptive right decreases the land price and increases the tenant's chances of winning as well as his surplus, at the cost of a potential buyer and the landowner. The introduction of the pre-emptive right also leads to inefficient distribution and deadweight losses to the economy.



Introduction

After more than 20 years of a land sales ban, Ukraine finally opened its farmland market on July 1st, 2021. The moratorium on the sales of agricultural land in Ukraine covered of 96% of the country's farmland market (or 66% of its entire territory).

The critical element of the newly opened Ukrainian farmland market design is the pre-emption right (right of the first refusal, RoFR) that is granted to the current tenant of land plots. By applying their pre-emptive right, tenants can purchase the land at the highest price the landowner could get on the market. On top of that, this right is transferable, meaning that the tenant could sell the right to the interested party. In this brief, we model the consequences of the pre-emptive right introduction in Ukraine.

Farmland Market in Ukraine

The moratorium on farmland sales that was in place for the last 20 years created a substantial distortion on the farmland market. It led to the situation where large companies predominantly cultivate the rented land, with the average share of leased land in the land bank for corporate farms in Ukraine approaching 99% (Graubner et al., 2021). Another noticeable trait of the farmland market in Ukraine is significant inequality in Ukrainian farms' land banks. Based on the statistical forms 50AG, 29AG, and 2farm, our calculations show that the GINI index for the allocation of cultivated land across farms in Ukraine is 86%, indicating an extreme degree of inequality. As we can see from Table 1 - the top 10% of farms operate on 75% of all cultivated farmland in Ukraine. On the other side of the spectrum, 49% of the smallest farms in Ukraine operate on only 2% of the cultivated farmland and rent only 0,3% of all rented farmland.

Table 1. Ukrainian farmland market structure

Farm type	Farm size, ha	Number of farms	Share of total number of farms	Area, cultivated by the farm type, mln. ha.	Share of the total cultivated area, %	Rented land, mln. ha.*	Share of total rented land, %
Ultra-small	<50	20 431	49%	0,4	2%	0,05	0,3%
Small	>=50 & <250	10 552	25%	1,1	5%	0,41	2,3%
Medium	>=250 & <1300	6 531	16%	4,0	19%	3,25	17,8%
Large	>=1300 & <6300	3 742	9%	9,7	45%	8,68	47,5%
Ultra-large	>6300	418	1%	6,5	30%	5,87	32,1%
Total		41674		21,7		18,26	

Source - own calculations based on the statistical forms 50AG, 29AG, 2farm for the year 2016.



Therefore, in our analysis, we break a sample of Ukrainian farms into five categories with respect to their size.

Framework

To model the effect of the pre-emptive right, we will use the approach proposed by Walker (1999) using farm-level data. Thus, this study compares two scenarios - with the pre-emptive right (right of the first refusal, RoFR) and without the pre-emptive right in place. We assume that there are only three sides to each transaction – the seller (landowner), the prospective buyer, and the tenant, to whom the pre-emptive right is granted. Throughout this brief, we assume that there are no transaction costs involved.

Scenario 1. No Pre-emptive Right

In the no-RoFR scenario, the prospective buyer offers the landowner a price that the seller is willing to accept. The seller now has two options: either accept and get the offered price or reach the tenant and propose to outbid this offer. The option of reaching a tenant is more attractive since, in a worst-case scenario, if the tenant's valuation - i.e., the maximum price the tenant is willing to pay for the land plot - is lower than the offered price, the tenant would simply not respond to this offer, and the landlord still gets the offered price.

On the other hand, if the tenant's valuation is higher than the offered price, he has a strong incentive to make the counteroffer and start a bidding process. Both the tenant and the prospective buyer are incentivized to make a counteroffer up until the point where the offer's value reaches their respective valuation. Thus, the smallest valuation between those of the tenant and prospective buyer would be the final transaction price.

Scenario 2. A Tenant Has the Pre-emptive Right

In this scenario, the tenant does not need to increase the price in his counteroffer if the third-

party buyer's offer is lower than the tenant's valuation. The tenant could execute his pre-emptive right and buy the plot at the third-party buyer's proposed price. Therefore, the outside buyer will change his approach to the initial offer. If the offer he makes is "too low", he loses the chance of buying this plot since the tenant would exercise his pre-emptive right. If the offer is "too high," he misses the profit he would make by making a lower offer.

In such circumstances, the transaction price will be given by the third-party buyer's offer that maximizes his expected profit. The latter, in turn, depends on the probability of the tenant exercising his preemptive right, the third-party buyer's own valuation, and the price he offers to the landlord. The probability of the tenant exercising the offer is the probability that the tenant's valuation exceeds the offered price. It depends on the tenant's farm size category and on the offer itself and can be calculated based on the distribution of valuations.

Empirical approach

Our empirical analysis considers a (hypothetical) situation of a third-party buyer coming to the landowner, whose land is rented to another farmer, with the offer to buy a one-hectare plot. We assume that the offer exceeds the landowner's minimum price that a landowner is willing to accept (WTA). The landowner's WTA is proxied by the current rental price the landlord gets multiplied by the capitalization rate, set to 20 for all three sides of the transaction. The farmers' valuations are estimated based on their net profit per hectare. We use the farm-level data to compute the average net profit per hectare needed for valuations estimation and the average rental price per hectare for the WTA estimation. This data was collected by the State Statistics Service of Ukraine through statistical questionnaires called 50AG, 29AG, and 2farm for the year 2016 and covers 39,297 farms. The descriptive statistics of the data are presented in table 2.



Table 2. Descriptive statistics

Farm size category	Range, ha	Number of Legal Entities	Number of Production Units	Farm size, ha			Net profit per ha (thsd. UAH)			Rental price, thsd. UAH per ha		
				mean	median	sd	mean	median	sd	mean	median	sd
Ultra-small	<50	19916	19972	21	20	15	0,91	0,39	1,40	1,21	1,11	0,52
Small	>=50 & <250	9911	10071	104	86	55	1,56	0,82	1,90	1,28	1,19	0,58
Medium	>=250 & <1300	5163	5476	607	529	289	2,69	2,31	2,37	1,30	1,18	0,68
Large	>=1300 & <6300	2734	3184	2618	2242	1176	2,75	2,50	2,42	1,45	1,32	0,74
Ultra-large	>6300	272	594	19809	11587	21504	3,16	3,01	2,61	1,68	1,64	0,77
All sample		39297	37772	634	49	3639	1,53	0,71	1,97	1,29	1,18	0,62

Source - own calculations based on the statistical forms 50AG, 29AG, 2farm for the year 2016.

We construct a set of potential buyers for each farm that operates on rented land based on the 10-km threshold distance between the tenant and third-party buyer. We end up with a sample of 764760 pairs of tenants and potential third-party buyers. We drop all pairs where third-party buyers cannot make an offer landlord is willing to accept. Therefore, only a sample of 291506 observations of tenant - prospective buyer pairs is used for the analysis. Importantly, for large and ultra-large farms, the share of observations that would attempt a transaction is 70% and 69% correspondingly. On the lower side of the size spectrum, this share is noticeably lower. For the group of small third-party buyers, the buyer would attempt the transaction only in 42% of cases. The most excluded from the farmland sales market category are ultra-small farms as they would only attempt the transaction in 25% of all cases.

Results

Our findings suggest that the effect of the preemptive right on the land price is twofold. On the one hand, in 55% of cases – the RoFR price is higher than the (modelled auction) price in the absence of a preemptive right. However, the median price differences in these cases are just 0,7% of the auction price. At the same time, for the cases where the auction price is higher than the price with the RoFR, it exceeds the RoFR price, on average, by 83%, with a median value of 66%. As a result, if we compare the expected prices, the expected prices under the RoFR are significantly lower than the auction prices. There are also differences between different farm size categories of the third-party buyer – the larger the buyer is, the higher the transaction price would be regardless of the RoFR. In the scenario without the RoFR, the average transaction price for ultra-small farms would be \$1259 per hectare. While for the ultra-large farm as the third-party buyer, the transaction price would be \$1647. With the preemptive right granted to the tenant, the



transaction prices would be \$977 and \$1313 correspondingly.

The pre-emptive right also increases the probability of the tenant acquiring the land. The most noticeable effect is for ultra-small and small farms - if an outside buyer attempts the transaction, their chances of purchasing the land increase from 12% to 28% and from 23% to 45%, respectively. The probability increase for the larger tenants persists, but percentage-wise it is smaller - their probability of purchasing the land due to the granted pre-emptive right increases from 42-45% to 65-66%.

The pre-emptive right also redistributes the surplus from the transaction. Measuring the surplus as the difference between the valuation and the buyer's actual purchase price, we can conclude that the third party's surplus decreased due to the RoFR introduction. The tenant's surplus, on the other hand, increases. In the case of RoFR introduction, the percentage increase in the tenant's surplus is larger for the ultra-small and small farmers, from 5% to 13% and from 10% to 23% of the tenant's valuation, respectively. For larger farms, albeit the surplus' increase is larger in absolute terms, percentage-wise, it is smaller than for their smaller counterparts. Their average surplus increased from 18-20% to 37-38% of the tenant's valuation. For the third-party buyers, the percentage-wise decrease is more or less the same, regardless of their farm size. Their surpluses, on average, shrink by 23-27% depending on the size of the farm.

We also estimated the effect of the pre-emptive right on the joint surplus of the landlord and the tenant. The effect of the pre-emptive right on their joint surplus is positive regardless of the size category of the tenant. The largest increase of the joint surplus, percentage-wise, is observed for the small-sized farms as a tenant. In this case, the average joint surplus increased by 5%, translating into an \$87 increase in the joint surplus. In absolute terms, the highest increase is for medium-sized farms as a tenant - \$108 increase in the surplus or 4.5% of their original joint surplus.

The pre-emptive right also leads to inefficient allocations when the land is acquired by a lower valuation party, resulting in deadweight losses. Inefficient allocation is observed in 19% of all observations. The deadweight losses generated by the introduction of the ROFR are statistically significant (with the t-value equal to 195) and average 233 USD per hectare.

Conclusions

In this brief, we suggest a theoretical and analytical approach to calculate the impact of the pre-emptive right in farmland sales. Our analysis offers a range of important findings. First, small and medium-sized farms are almost entirely excluded from the farmland market. While more than two-thirds of the medium, large or ultra-large farms can afford to buy a nearby parcel, based on their profitability – for ultra-small farms, which have a land bank of under 50 hectares – this share is equal to just 25%. The introduction of the pre-emptive right granted to the current tenant may exaggerate this problem. The reason is that most of the rented land is already controlled by large and ultra-large companies. At the same time, the pre-emptive right increases the tenant's probability of winning and its surplus at the expense of the landowner and outside buyer.

On the other hand, the pre-emptive right increases the joint surplus of the tenant and the landowner. Therefore, if the pre-emptive right would be a voluntaristic clause in the contract, rather than a right granted to all tenants by the government, it creates an incentive to include the pre-emptive right in the rental agreement with the price of this right negotiated between the landlord and the tenant.

Summing up, the pre-emptive right, as a policy instrument, has its costs. It leads to inefficient distribution and deadweight losses. In view of this, as much as the recent farm market reform in Ukraine is a clear step towards a market economy,



the design of the land market should be taken with a grain of salt.

References

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