Land fragmentation of agricultural enterprises in the context of administration of land

Abstract

Introduction. Under the conditions of the excessive lease of the agricultural land in Ukraine, leasing is identified as a tool for amalgamation of land parcels into one field. However, the consequences of excessive land lease by the agricultural enterprises are both positive and negative. Often the negative consequences of such leasing lack attention from the part of policy makers and scientists.

The purpose of this study is to examine how the land administration system matches the land fragmentation and what problems are faced by agricultural enterprises when concluding lease contracts under the conditions of land fragmentation in Ukraine.

Results. The obtained data testify that the land administration system in Ukraine has signs of transparency and efficiency. However, the system of land administration does not meet the requirements of the ownership fragmentation in land use of agricultural enterprises. Thus, the registration of lease rights to hundreds of the land parcels requires considerable costs and time. The long-lasting registration of the lease rights to the land parcels forces the lessees to use them illegally during the registration procedure. It has been determined that the expenditures on the registration of the lease right to the state-owned land parcel are much lower in comparison with the registration of private parcels.

Conclusions. One of the ways to reduce the time and cost of the registration of land parcels and rights to them is to increase the size of the land parcel per one landowner, thus reducing the number of the leased parcels in the structure of the agricultural enterprise. It is convenient to introduce a special administrative service aimed at registering lease rights of agricultural enterprises.

Keywords: Land Fragmentation; Land Administration; Registration; Lease Right; Land Parcel; Costs

JEL Classification: Q15; Q10; R14; C49

Acknowledgements and Funding: The authors received no direct funding for this research.

Contribution: The authors contributed equally to this work.

DOI: https://doi.org/10.21003/ea.V176-08
Фрагментация земель сельскохозяйственных предприятий в контексте администрирования земельных ресурсов

Аннотация. В условиях тотальной аренды сельскохозяйственных земель в Украине, аренду рассматривают как инструмент объединения земельных участков в целостные поля. Однако последовательной аренды земельных участков сельскохозяйственными предприятиями имеют как положительные, так и отрицательные последствия. Данное исследование изучает, как современная система администрирования земельных ресурсов отвечает запросам фрагментации земель и с какими проблемами сталкиваются сельскохозяйственные предприятия при заключении договоров аренды в условиях фрагментации земель в Украине. Полученные данные свидетельствуют о том, что существующая система земельного администрирования земельных ресурсов в Украине имеет признаки прозрачности и эффективности. Однако система земельного администрирования не соответствует запросам фрагментации собственности в землепользовании сельскохозяйственных предприятий (предложенным новым типе фрагментации). Исследования показали, что расходы на регистрацию права аренды земельного участка государственной формы собственности, по сравнению с частными участками, значительно меньше в расчете на единицу площади. Предлагается ввести для сельскохозяйственных предприятий отдельную административную услугу по регистрации прав аренды, которая бы обеспечила одновременное прохождение процедуры регистрации всех земельных участков в установленный законодательством срок.

Ключевые слова: фрагментация земель; администрирование земельных ресурсов; регистрация; право аренды; земельный участок; расходы.

Popov, A., Koshkalda, I., Kniaz, O., & Trehub, O. / Economic Annals-XXI (2019), 176(3-4), 80-90
1. Introduction

Significant changes in the structure of landholdings and agricultural land tenure in the rural areas have become the results of the land reform in Ukraine. This has led to the emergence of a large number of private land parcels for commercial agricultural production (the so-called land lots (shares)) with an average size of 4 hectares with the fluctuations from 1.1-1.5 hectares in the western regions to 7.0-7.9 hectares in the southern regions of Ukraine (The Cabinet of Ministers of Ukraine, 2019) [15]. Thus, due to various objective and subjective factors in practice, the modern land use of agricultural enterprises consists of a large number of land parcels.

In recent years, the average acreage of the agricultural enterprises increased and in 2016 was about 1,570 ha. The economic activity of agricultural enterprises is carried out through concluding hundreds and even thousands of lease contracts with the owners of small land parcels. The share of the leased land in the overall structure of the agricultural enterprises exceeds 93% (Popov, 2018) [14]. Such leased lands may include land parcels of both private and state ownership. The average size of the state-owned land parcels is 87.9 hectares (Statistical Yearbook, 2016) [18]. It is obvious that the use of the leased land parcels requires their special accounting within the agricultural enterprise as well as their state registration.

The registration of the land parcels and the rights to them as an integral part of administrating the land is one of the main conditions for guaranteeing the rights to land, ensuring property security and up-to-date information about the land tenure and land transactions for the business activity and the land market. The registration of the land transactions usually bears the costs associated with fees and stamp duty, as well as other transaction costs. It does not matter whether the registration system is obligatory or not, in order for it to be successful, these costs should be low enough to make the registration process viable for the landowners and the land users. Otherwise, there will be alternative or shadow markets, and unofficial transactions will become widespread.

Undoubtedly, the existence of a large number (6 million) of landowners makes the agricultural production in Ukraine more expensive as it brings additional costs to the agricultural producers associated with the registration of the leased land parcels. Recognition of the time and costs needed for the registration will help to identify the reasons for delays and the problems associated with it. This article is devoted to land fragmentation (LF) of agricultural enterprises, and the land administration system (LAS) is considered in the context of registration land parcels and lease rights.

2. Brief Literature Review

The exploration of scientific literature has shown that today the manner of LF has to be determined in each case. The analysis of literature (Bentley, 1987; Demetriou et al., 2013; Hartvigsen, 2014; King & Burton, 1982; McPherson, 1982; Sabates-Wheeler, 2002; Sklenicka & Salek, 2008; van Dijk, 2003, 2003a) [3; 6; 9; 11-12; 16-17; 21-22] makes it possible to distinguish four main types of LF. They are the fragmentation of land ownership, the fragmentation of land use, the internal fragmentation (within the farm) and the distinction between land ownership and land use. The land fragmentation ownership refers to a situation when the ownership of the agricultural land is divided among many owners in terms of small and often irregular shaped land parcels. The land use fragmentation refers to a number of land users who are not landowners. The internal fragmentation is the fragmentation within the farm, when the farm is divided into many small non-contiguous land parcels that are often located in different places at large distances from the farmstead and between the parcels. The discrepancy between land ownership and land use involves a situation with a small number of landowners who use their lands.

The above-mentioned types of LF are not characteristic under the Ukrainian conditions. The main problem in the use of agricultural land in Ukraine is viewed as a discrepancy between ownership and use (Popov, 2017) [13]. Since the excessive lease of agricultural land by large agricultural enterprises (agroholdings) made it possible to form a good structure of the land use (fields); other types of LF have no significant negative consequences. However, in the context of LAS, the new type of LF for Ukrainian conditions is required, namely the ownership fragmentation in the land use. The ownership fragmentation in the land use occurs when a separate agricultural enterprise (farm) consists of a significant number of the adjacent land parcels that are in its use (lease, emphyteusis, etc.), a larger proportion of which does not belong to it by the rights to the ownership. This form of fragmentation represents a problem mainly for the lessee since they have to conclude lease contracts with hundreds and even thousands of the landowners and this bears certain additional expenditures. In this article, we will examine the problem of LF from this position.
The problem of LF in the context of the registration of lease rights to land parcels directly concerns the cadastre and the land registration in the matters of the land rights security. Thus, the land administration as the state system for the registration and management of the rights to land has a direct bearing on the issues related to LF. The concept of land administration as the basis of good governance in the Ukrainian scientific community has not yet received sufficient support and a single understanding of it.

In this context the article considers the definition of LAS as the one which is generally accepted by the world community (Bennett et al., 2012; Bogaerts & Zevenbergen, 2001; Enemark et al., 2005; Van der Molen, 2002; Williamson, 2001) [2; 4; 8; 20; 27], namely, it is a set of measures aimed at recording the tenure rights (e.g., land registration), valuation and taxation and regulated spatial planning. Thus, the system of land administration affects the development of legal security (which is the main requirement for the investors), the access to the credit (the mortgage), spatial planning (to support economic and ecological development) and the efficient and effective land taxation (De Zeeuw & Salzmann, 2011) [5].

A well-organised system of land registration is an important condition for the effective use of land, including agricultural land, which can secure the property rights to land and transaction procedures. Today, there is not a single scientific work by Ukrainian researchers which would comprehensively cover the consequences of the ownership fragmentation in the land use in the context of LAS, such as registration of land parcels and rights to them.

The article deals with some basic concepts and it is necessary to explain these concepts to avoid their misunderstanding and confusion.

A land parcel is a part of the earth’s surface with set boundaries, having a specific location and fixed rights to it.

An agricultural enterprise is defined as an independent business entity that has legal personal rights and carries out a productive activity in agriculture.

Land use is a territory of an agricultural enterprise which is based on the combination of the ownership, lease or emphyteusis, or any one of them.

Land-use planning documentation is textual and graphical materials regulating the use and protection of lands of state, communal and private property, approved in accordance with the established procedure.

3. Purpose
The empirical research, presented in this paper, is aimed at analysing the correspondence of the modern land administration system with the demands of the land fragmentation and, in the second turn, at revealing the problems, which the agricultural enterprises face while concluding the lease contracts under the conditions of the land fragmentation.

4. Results
The Ukrainian legislation (VRU, 1998; VRU, 2004) [23-24] determines that the lessor carries out the transfer of the land parcel to the lessee within the terms and conditions specified in the lease land contract (the lease contract). The validity period of a lease contract cannot exceed 50 years and cannot be less than 7 years. Having come to an agreement as for all the essential terms of the lease contract, the owner of the land parcel and the lessee draw up and sign a written contract. After that, it is obligatory to carry out the state registration of the lease rights in the State Register of Property Rights to Real Estate (the Real Property Register). Both the lessee and the lessor can apply to the state registration of the lease rights, but the majority of the lessees undertake registration costs without charging the rent payment of the lessor.

In the case of lease of the private land parcels the average agricultural enterprise with a total area of 1,570 ha (Popov, 2018) [14] concludes about 365 lease contracts for the area of about 1,460 ha (the difference is 110 hectares of the land belonging to the founders of the enterprise). Regardless of the size of the land parcel, the minimum administration fee for the state registration of the lease rights (within five working days) is 0.05 of the living standard for the able-bodied population - 3.73 USD (VRU, 2004; VRU, 2018) [24; 26]. However, lessees have the right to choose a shorter period of state registration of the lease right and, in this case, an administration fee for one lease contract will be: a) USD 35.82 within two working days; b) USD 71.64 within one working day; c) USD 179.10 in the term of 2 hours (VRU, 2004; VRU, 2018) [24; 26]. Thus, the total value of the state registration of the lease rights to the private land parcels for an...
average agricultural enterprise will be from USD 1,361.45 to USD 65,371.50 per 1,460 ha of the leased lands (Table 1).

In the case when the agricultural enterprise leases the state land parcels the costs on the lease rights registration are 22 times less than the corresponding costs of the private parcels registration (Table 2). This is due to the fact that about 22 land parcels of the private ownership (with an average size of 4 hectares) accounts for one state-owned land parcel (average size of 87.9 hectares).

1,457,177 lease rights to the agricultural land parcels were registered in the Real Property Register at the end of 2016 (Statistical Yearbook, 2018) [19] and according to the approximate computation, the administrative fee for the lessees amounted up to about USD 3,992,265. These costs do not give a prospective benefit to any of the participants in the lease relationships, including the lessor, the lessee, and the State because these operating expenses are only for the payment of services for the administration of the leased land and are not aimed at increasing the profitability of the enterprise.

Another item of costs is the time for the registration of lease rights. Large and medium-sized agricultural enterprises with an area of 1,000 ha or more often face the problem when the registration of the lease rights to all land parcels in their use takes several months or even years. Thus, an average agricultural enterprise can spend from 3 months to 5 years on such a procedure (Table 3), and it can spend from 65,371.50 USD to 1,361.45 USD (Table 1). Moreover, it is without taking into account the other delays in time that may arise during the state registration due to the lack of the cadastral numbers of the land parcels, documentary non-compliance and the contradictions between the declared and already registered lease rights, etc.

In this sense, the leasing of state land by the agricultural enterprise is more profitable because the timeframe for the registration of their lease rights is by 22 times less compared with the time registration of private land parcels (Table 4).

Our research shows that in the vast majority the lessees of large and medium-sized agricultural enterprises apply to the state registrars and notaries to register their lease rights in the terms not exceeding two working days. Thus, the average fee for the registration of the lease rights to the state land parcel is 0.41 USD/ha, and the registration of the private parcels (land shares) is 8.96 USD/ha for the same area of 87.9 ha.

We understand that the data shown in Table 3 cannot be considered representative because the data only reflect the legally established norms. It is obvious that nobody prohibits the lessee to apply for the registration of his/her lease rights to several notaries and other state registrars. In this case, the timeframe for the registration of lease rights to land parcels by an agricultural enterprise is more profitable because the timeframe for the registration of the lease rights is by 22 times less compared with the time registration of private land parcels (Table 4).

### Table 1:
**Administration fee for state registration of lease rights to private land parcels**

| Acreage of the leased land, ha | Leased land parcels, number | Size of the administration fee for the registration of one lease right, USD: | Total size of the administration fee for the lease rights registration, USD: |
|--------------------------------|----------------------------|-------------------------------------------------|-------------------------------------------------|
| 1,460                          | 365                        | up to 5 days                                   | up to 5 days                                   |
|                                |                            | up to 2 days                                   | up to 2 days                                   |
|                                |                            | up to 1 day                                    | up to 1 day                                    |
|                                |                            | up to 2 hours                                  | up to 2 hours                                  |
| 3,73                           | 35.82                      | 71.64                                           | 179.10                                          |
| 1,361.45                       | 13,074.30                  | 26,148.60                                      | 65,371.50                                      |

Source: Compiled by the authors

### Table 2:
**Sizes of administration fee for state registration of lease rights to land parcels of private and state ownership**

| Form of ownership | Acreage of the leased land, ha | Leased land parcels, number | Size of the administration fee for the registration of one lease right, USD: | The total size of the administration fee for the registration of lease rights, USD: |
|-------------------|-------------------------------|-----------------------------|-------------------------------------------------|-------------------------------------------------|
| State             | 87.9                          | 1                           | up to 5 days                                   | up to 5 days                                   |
|                   |                               |                             | up to 2 days                                   | up to 2 days                                   |
|                   |                               |                             | up to 1 day                                    | up to 1 day                                    |
|                   |                               |                             | up to 2 hours                                  | up to 2 hours                                  |
| 3.73              | 35.82                         | 71.64                       | 179.10                                         | 179.10                                         |
| 82.06             | 788.64                        | 1,576.08                    | 3,940.20                                       | 3,940.20                                       |

Source: Compiled by the authors

### Table 3:
**The timeframe for registration of lease rights to land parcels by an agricultural enterprise**

| Normative time limits for registration of lease rights | Leased land parcels, number | Total timeframe for registration of lease rights, days |
|-------------------------------------------------------|-----------------------------|-------------------------------------------------------|
| Up to 5 days                                          | 365                         | 1,825                                                 |
| Up to 2 days                                          |                             | 730                                                   |
| Up to 1 day                                           |                             | 365                                                   |
| Up to 1 hour                                          |                             | 92                                                    |

Source: Compiled by the authors
regard, one can apply to the state registrars regardless of the land parcel location, but if the lease contract is certified by the notary, then the registration of lease rights can be done only by the notary who carried out that notarial act. In any case, it imposes the additional financial and time costs on the lessee. This is one of the reasons why not all lessors and lessees want to register the lease right or certify this right notarially, and they usually conclude lease contracts in the so-called simple written form (i.e. without registration).

In addition, the attention should be paid to the moment of conclusion the lease contract and the moment of registration of the lease rights which arises thereon, because they have fundamentally different legal consequences. Thus, signing a lease contract does not mean that the lessee can already use the land parcel. He/She has the right to use land from the moment of registration of the lease rights. Therefore, according to such a legal norm, the investigated agricultural enterprise does not have the right to use the leased land for at least 3 months (Table 3). Of course, the compliance with such a law in agricultural production is equivalent to a catastrophe, since the basic production processes in agriculture cannot be delayed in time; it has to be performed in clearly fixed terms and in a certain sequence. In practice, due to this reason the lessees begin to use their leased parcels immediately after signing the lease contract without waiting for the registration of these rights.

The difference between the dates of signing the lease contract and the registration of the lease rights contributes to the emergence of various problems and speculations. First of all, this is due to the fact that by 2013 the land lease contracts were registered in the State Land Cadastre (SLC) (subordinated to the State Service of Ukraine for Geodesy, Cartography and Cadastre of the Ministry of Agrarian Policy and Food of Ukraine), and, from the beginning of 2013, the lease rights to the land parcels began to be registered in the Real Property Register (subordinated to the Department of State Registration and Notary of the Ministry of Justice of Ukraine). In practice, there is the situation that the lease contracts concluded before 2013 were not included in the new register. At the same time, not all the data concerning the land parcels have been transferred to the electronic database. All these things created the basis for the double registration of the lease rights to the same land parcel. As a result one land parcel may have two lessees who often by force begin to contend for the right to cultivate the land and reap the harvest. Thus, 10-15% of the land is under attacks of the raiders (AgroPolit, 2018) [1]. Also, there are some cases when dishonest lessors are trying to conclude several lease contracts before the registration of the lease rights. Often, after signing the lease contracts (but prior to their registration), the landowners themselves or on the advice of the potential new lessees make the relevant applications to the registrar in order to cancel the contract and with the request not to carry out the registration of the lease contracts.

In December 2017, in order to solve the above-mentioned problems, an online service for the registration of agricultural land lease contracts was introduced. During such registration, there will be an online exchange of information between SLC and the Real Property Register, which will make it possible to avoid the registration of the double lease contracts. The timeframe for the online registration is 5 working days. The sum of the administration fee is USD 7.09. Online registration of the lease contracts has no chance to accelerate the registration period to 2 hours and rises in price by 1.9 times in comparison with the common registration (direct application by the applicant to the registration office or notary).

As we can see, agricultural enterprises (lessees of the land parcels) should keep control over the issue of lease contracts and the registration of lease rights all the time. Due to a large number of such operations, the enterprise should support additional employees who will be responsible for the accounting of the lease contracts, their state registration, and communication with the lessors. Thus, medium-sized and large enterprises are forced to create separate land departments with a diversified system of workers, which requires the additional costs on wages and material supply in the amount of several thousand USD per year (Hrab, 2016) [10].

### Table 4:
The timeframe for registration of lease rights to private and state land parcels

| Normative time limits for registration of lease rights | Leased land parcels: |
| --- | --- | --- |
| | private | state |
| Ha | Number | Ha | Number |
| Up to 5 days | 87.9 | 22 | 87.9 | 1 |
| Up to 2 days | 44 | 2 |
| Up to 1 day | 22 | 1 |
| Up to 2 hours | 5.5 | 0.25 |

Total timeframe for registration of lease rights, days

| Lease rights, days |
| Private parcels | State parcels |
| --- | --- |
| 110 | 5 |
| 44 | 2 |
| 22 | 1 |
| 5.5 | 0.25 |

Source: Compiled by the authors
It should be noted that the registration of the lease rights to the land parcels is carried out after the state registration of the (physical) land parcel (not the rights) in SLC (VRU, 2004; VRU, 2011) [24; 25]. The survey conducted among lessees indicates that approximately 10% of the leased land parcels (in some areas more than 30%) are not registered in the SLC (Hrab, 2016) [10]. Often, these procedures become the subject of trouble for the lessees since the procedure of the land registration, as well as the registration of land rights, is usually a significant bureaucratic and financial burden for the landowner. It should be noted that most lessees assume these costs without charging the rent payment of the lessor.

Assuming the fact that the above described (virtual) agricultural enterprise has only 10% of unregistered land parcel, it would constitute 39 land parcels. Taking into account that the preparation of technical documentation for the land registration costs from USD 55.97 and more per one land parcel, depending on the region, then the corresponding costs for the registration of 39 parcels will be USD 2,175.81. The timeline for these works is from 14 days to 4 months, together with the registration in the SLC. The registration of the land parcel in the SLC is carried out by parcel location, so the registration can be made only in the area or the city where the land parcel is geographically located. Then the land parcel must be registered in the Real Property Register (the time limits and costs have already been given in Tables 1 and 3), and only after that it is possible to conclude the lease contracts and to register the lease right. It should be noted that the state-owned land parcel is leased through an auction; it has the ready-made technical documentation and registration and, therefore, does not require additional costs.

During the above-mentioned procedures, the additional difficulties might arise due to technical errors in the data of the SLC. A very common problem is the overlapping of the land parcels and the discrepancy between the land parcel boundaries (the shape and size) indicated in the legal document and its actual boundaries (the shape and size) (Figure 1). In accordance with the Cadastre Law (VRU, 2011) [25], this is one of the reasons why the land registration is refused, which automatically deprives the owner of the possibility to dispose of his land parcel (for example to

![Figure 1: Example of technical errors in the database of State Land Cadastre](Source: Public cadastral map of Ukraine)
lease) until the error is corrected. Thus, the presence of the land parcels of an agricultural enterprise with technical errors makes impossible the registration of the lease rights, which leads to their «shadow» using.

The current legislation established a mechanism for the correction of errors in the SLC based on drawing up various land-use planning documentation. The correction of even one error may lead to the changes in the neighbouring land parcels. Also, it can change all the parcels within a field (Figure 1). Therefore, to make changes in the characteristics of the land parcels the consent of all landowners and land users who will be involved in it are necessary. As practice shows, the owners of the neighbouring parcels do not always agree to change the boundaries, and therefore the solution of the problem can be only an appeal to the court.

Correction of the technical errors in the SLC is a time-consuming and expensive process. In addition to the time and monetary expenditures associated with drafting a new land-use planning documentation and providing a new registration of the land parcel in the SLC and in the Real Property Register; it will also be necessary to pay an administration fee for the correction of the technical error in the SLC. The size of this fee is USD 8.55 (VRU, 2018) [26], and this procedure takes 2 working days from the date of registration of the corresponding application.

The land registration in the SLC is a one-time procedure and the registration of the lease right takes place at least once every 7 years (the minimum term of the lease). 10% of leased land parcels require other various operations (land registration in the SLC and in the Real Property Register, re-registration of the lease rights, etc.) which are carried out during the lease period.

Summarising these facts it is possible to simulate the potential expenditures for the average agricultural enterprise on the registration of the lease rights to the land parcels in its use. The expenses on correction of the technical errors in SLC concerning the land parcels were not taken into account, as there is no official statistics as for the number of such parcels in the structure of the agricultural enterprises. The costs for the majority of the lessees of the medium-sized and large agricultural enterprises, who apply to the state registrars and notaries for the lease rights registration in a timeframe not exceeding two working days, are given in Table 5. To estimate the costs associated with drafting the land-use planning documentation and the registration in the SLC, we take the mean values.

It turns out that the costs on the registration of the lease right (the average size of land parcel is 4 ha) with an appeal to the state registrar or notary for the one land lease contract will cost the lessee USD 44.79, or USD 11.20 if one uses the online service, the expenditures will be USD 16.06 or USD 4.01 per one hectare, respectively. Thus from Table 5, the online registration of the lease rights will cost five times lower in comparison with the common one (an appeal to the state registrar or notary), yet it takes 2.5 more time. So, the heads of the agricultural enterprises are faced with the dilemma: whether to spend more money and use the leased land parcel according to the legislation or to pay less money and use the land parcels during the registration period without the official (legal) registration (confirmation). Every head takes the final decision himself/herself.

Certainly, those costs are the average ones and may be higher for some agricultural enterprises and lower for the others. It depends on the location of the leased land parcels, the rate of the agricultural enterprise development, the activity of expanding its land bank and on the communication with the landowners, as well as on the size of the «shadow» operations with the land.

Thus, according to the calculations of the Ukrainian Agribusiness Club, the size of the above-given unofficial payments may exceed 50% of the cost of the lease contract for 1 ha (Hrab, 2016) [10].

Table 5:
Costs of average agricultural enterprise on registration of lease right to land parcels

| Leased land parcels | Number, pieces | Area, ha | Costs on registration of lease right USD | Costs on drafting the documentation and registration in SLC USD |
|---------------------|----------------|----------|----------------------------------------|--------------------------------------------------|
| Registration through the state registrar or notary | | | | |
| Parcels registered in SLC | 326 | 1,304 | 11,677.32 | 652 |
| Parcels requiring registration in SLC | 39 | 156 | 1,396.98 | 78 |
| Total | 365 | 1,460 | 13,074.30 | 730 |
| Online registration | | | | |
| Parcels registered in SLC | 326 | 1,304 | 2,311.34 | 1,630 |
| Parcels requiring registration in SLC | 39 | 156 | 276.51 | 195 |
| Total | 365 | 1,460 | 2,587.85 | 1,825 |

Source: Compiled by the authors

Popov, A., Koshkalda, I., Kniaz, O., & Trehub, O. / Economic Annals-XXI (2019), 176(3-4), 80-90
Based on the results obtained earlier, we can assume that the costs on the registration of the lease rights will be USD 67.19 in the case of the common registration or USD 16.80 per one hectare, and it will cost 24.09 USD or USD 6.02 per one hectare in the case of the online registration.

The above-given sums of the costs are only those that we can calculate approximately based on the legal fees. However, this is far from the final sum that the agricultural enterprises pay for the existing ownership fragmentation in land use.

In practice, there are quite a lot of cases of the unofficial payments for the registration of land parcels and lease rights, which remain invisible to the landowners and the State. As a rule, such payments are due to the time-consuming procedure or even to a deliberate delay in the registration of the land rights or to the provision of certain services that are not prohibited but are not critically necessary and the cost of which is overestimated. As a result, in the registration systems (both land and rights), there is a large number of agents who solved all these difficulties for the additional fee, the size of which is impossible to calculate.

It is also impossible to calculate the costs spent on the exchange of the land parcels between the lessees in order to form an integral field (without the inclusion of the land parcels of another landowner or land user). Usually, the fact of such an exchange is not fixed by any legal documents and exists only in the form of verbal agreements, and the landowners remain uninformed about such operations. The motivation payments to the landowners in order to extend the lease contract for a new term are also impossible to calculate. Of course, Ukraine is not the only country facing these problems. It is inherent by each leasing activity in agriculture. Therefore, further studies may be aimed at finding ways to solve the above-mentioned complications based on international experience.

Under the existing land policy, the costs of registration of the land parcels and rights to them will yet increase, since the problem of LF is only becoming deeper. 23% of all owners of the private land parcels are of the pensionable age. These lands will be inherited in the near future. Subsequently, the heirs will have all the legitimate reasons to physically divide the land parcel between them, and the lessee will have to register two or more lease contracts instead of one (of course in the case when the heirs have agreed to lease land to one lessee). Accordingly, it increases the costs per one hectare. Under the conditions of the current moratorium on the sale of agricultural land, there is no possibility to form the private land parcels of a larger size.

The present ownership fragmentation in the land use within a single field and the existing mistakes in the registration create additional opportunities for the raiders. There are numerous cases when the raiders redeem the lease rights in the middle of the field that deprives the agricultural producer of the possibility to cultivate it effectively and he is forced to buy back this right at a higher price.

The modern LAS with its dualistic system of registration of land parcels and property rights complicates the process of registration for agricultural enterprises (lessees) because of the differences in data of the two register systems. And the current ownership fragmentation in the land use makes this process time-consuming and expensive due to a large number of the leased land parcels. Thus, in the international rating of Doing Business, Ukraine took the 63rd place in the category «Registering Property» when registering the property rights by one physical or legal entity (The World Bank Group, Doing Business, 2019) [7]. It should be understood that when registering the hundreds of land parcels by one lessee (as in the case of the lease rights registration), the situation will be much worse.

The financial obligations arising from the registration of the land parcel and the lease right to a certain extent deprive agricultural enterprises of the desire to apply for the registration. Accordingly, it has a negative effect on the size of budget revenues. Therefore, about 10% of the leased rights are not registered. It is obvious that under such conditions agricultural enterprises are interested in signing long-term lease contracts (10 years and more) in order to lessen the above-mentioned problems.

6. Conclusions

The LAS in Ukraine has indications of transparency and efficiency due to the clear requirements for the registration documents and their listing, time limits, the size of the fees for the registration procedures and the mechanism of electronic service. Along with the positive achievements, the current LAS also has the main disadvantages. They include dualistic and time-consuming system of registration of the land parcels and rights to them; the discrepancy between the data of the SLC
and the Register of Property Rights; discrepancy between the land parcel boundaries indicated in the legal document and its actual boundaries; land registration according to the parcel location; the procedure for the registration of the land parcels and the rights to them for agricultural enterprise is a long-lasting one.

The abovementioned disadvantages of the LAS are reinforced by the existing ownership fragmentation in the land use that complicates land administration by the medium-sized and large agricultural enterprises because:

1. The lease of hundreds, and in some cases thousands, of land parcels, requires large financial (about USD 11.20 per one hectare) and time costs (from 3 months or more) on registration of the lease rights;
2. The availability of the unofficial payments leads to an increase in the registration costs of lease rights by 50%;
3. The time-consuming procedure of registration force the lessees to use the leased land illegally during the registration procedure;
4. The dualistic system of the land and rights registration creates conditions for the occurrence of various errors and uncertainties.

All those circumstances create conditions for fraud, corruption and raiding and, accordingly, an increase in the transaction costs. It has been established that the costs on the registration of the lease right to the state-owned land parcel are much lower in comparison with the registration of private parcels in terms of per unit area. This is because the state-owned land parcels have a larger area and there are no additional operations.

One of the ways to reduce the cost of registration of land parcels and rights to them is to decrease the level of the land fragmentation by increasing the size of the land parcel per one landowner, thus reducing the number of the leased parcels in the structure of the agricultural enterprise. However, it is impossible to do this in Ukraine because of the existing moratorium on the sale of agricultural land and the lack of the land consolidation procedure. Therefore, it is convenient to introduce a special administrative service for the registration of lease rights for the agricultural enterprises that would ensure the simultaneous registration for all land parcels within the time limits fixed by the legislation (up to 5 working days). It will help to reduce the costs and time consumption. We consider it appropriate to fix the provisions of the Law of Ukraine «On Lease Land» regarding the fact that the lease contract comes into force from the moment of its signing, and not from the moment of state registration of the lease right.

References

1. AgroPolit.com (2018). In the area of raider risk - 10-15% of all land lease contracts. Retrieved from https://agropolit.com/news/8243-v-zoni-reyderskogo-riziku-10-15-vsh-dogovoriv-orendi-zemli (in Ukr.)
2. Bennett, R., Rajabifrad, A., Williamson, I., & Wallace, J. (2012). On the need for national land administration infrastructures. Land Use Policy, 20(1), 208-219. doi: https://doi.org/10.1016/j.landusepol.2011.06.008
3. Bentley, J. W. (1987). Economic and ecological approaches to land fragmentation: in defence of a much-maligned phenomenon. Annual Review of Anthropology, 16, 31-67. doi: https://doi.org/10.1146/annurev.an.16.100187.000335
4. Bogaerts, T., & Zevenbergen, J. (2001). Cadastral systems - alternatives. Computers, Environment, and Urban Systems, 25(4-5), 325-337. doi: https://doi.org/10.1016/S0198-9715(00)00051-X
5. De Zeeuw, K., & Salzmann, M. (2011). Cadastral innovation driven by society: evolution or revolution? Bridging the Gap between Cultures: proceedings of the FIG Working Week, May 18-22, 2011. (pp. 1-11). Marrakech, Morocco. Retrieved from http://www.fig.net/pub/fig2011/papers/ts01b/ts01b_dezeeuw_salzmann_4873.pdf
6. Demetriou, D., Stillwell, J., & See, L. (2013). A new methodology for measuring land fragmentation. Computers, Environment and Urban Systems, 39, 71-80. doi: https://doi.org/10.1016/j.compenvurbsys.2013.02.001
7. The World Bank Group (2019). Doing Business 2019. Economy Profile of Ukraine (16th edition). A World Bank Group Flagship Report. Retrieved from http://www.doingbusiness.org/content/dam/doingBusiness/country/u/ukraine/UKR.pdf
8. Enemark, S., Williamson, I., & Wallace, J. (2010). Building modern land administration systems in developed economies. Journal of Spatial Science, 50(2), 51-68. doi: https://doi.org/10.1080/14498596.2005.9635049
9. Hartzigen, M. (2014). Land reform and land fragmentation in Central and Eastern Europe. Land Use Policy, 36, 330-341. doi: https://doi.org/10.1016/j.landusepol.2013.08.016
10. Hrab, R. (2016, November 23). The price of sharing, or how much the tenant pays. Vox Ukraine. Retrieved from https://voxukraine.org/uk/cina-rozpauvannya-ua (in Ukr.)
11. King, R., & Burton, S. (1982). Land fragmentation: Notes on a fundamental rural spatial problem. Progress in Human Geography, 6(4), 475-494. doi: https://doi.org/10.1177/030913258200600401
12. McPherson, M. F. (1982). Land fragmentation: A selected literature review. Development Discussion Paper, No. 141. Cambridge, MA: Harvard Institute for International Development, Harvard University.
13. Popov, A. (2017). Assessment of land fragmentation of agricultural enterprises in Ukraine. Economic Annals-XXI, 164(3-4), 56-60. doi: https://doi.org/10.21003/ea.V164-13

Popov, A., Koshkalda, I., Kniaz, O., & Trehub, O. / Economic Annals-XXI (2019), 176(3-4), 80-90
14. Popov, A. S. (2018). *Institutional Foundations of Agricultural Land Consolidation: Theory, Methodology, Practice* (Doctoral Dissertation). Kharkiv National Agrarian University named after V. V. Dokuchayev. Kharkiv. Retrieved from http://www.inau.edu.ua/inau/attachments/5163_dis.pdf (in Ukr.)

15. The Cabinet of Ministers of Ukraine (2019). *Some issues of improvement of management in the field of use and protection of agricultural land of state ownership and disposal by them. The Cabinet Decree No.413, in edition as of June 25, 2019.* Retrieved from https://zakon.rada.gov.ua/laws/show/413-2017-%D0%BF (in Ukr.)

16. Sabates-Wheeler, R. (2002). Consolidation initiatives after land reform: responses to multiple dimensions of land fragmentation in Eastern European agriculture. *Journal of International Development, 14*(7), 1005-1018. doi: https://doi.org/10.1002/jid.905

17. Sklenicka, P., & Salek, M. (2008). Ownership and soil quality as sources of agricultural land fragmentation in highly fragmented ownership patterns. *Landscape Ecology, 23*(3), 299-311. doi: https://doi.org/10.1007/s10980-007-9185-4

18. Nizalov, D., Ivinska, K., Kubakh, S., Nivyevskyi, O., & Prokopenko, O. (Eds.) (2016). *Monitoring of land relations in Ukraine in 2014-2015. Statistical Yearbook.* Kyiv: School of Economics Retrieved from http://www.kse.org.ua/download.php?downloadid=451 (in Ukr.)

19. The State Service of Ukraine for Geodesy, Cartography and Cadastre (StateGeoCadastre) (2018). *Monitoring of land relations in Ukraine in 2016-2017. Statistical Yearbook.* Retrieved from http://land.gov.ua/wp-content/uploads/2018/10/monitoring.pdf (in Ukr.)

20. Van der Molen, P. (2002). The dynamic aspect of land administration: An often-forgotten component in system design. *Computers, Environment, Urban Systems, 26*(5), 361-381. doi: https://doi.org/10.1016/S0198-9715(02)00009-1

21. Van Dijk, T. (2003). *Dealing with Central European Land Fragmentation: A Critical Assessment on the Use of Western European Instruments* (Doctoral dissertation). Delft: Uitgeverij Eburon. Retrieved from https://repository.tudelft.nl/islandora/object/uuid:eb4e1e43-499c-46eb-8322-38c1dceb9d52?collection=research

22. van Dijk, T. (2003). Scenarios of Central European land fragmentation. *Land Use Policy, 20*(2), 149-158. doi: https://doi.org/10.1016/S0264-8377(02)00082-0

23. The Verkhovna Rada of Ukraine (1998). *On the Land Lease.* Law of Ukraine, in edition as of January 1, 2019. Retrieved from https://zakon.rada.gov.ua/laws/show/161-14 (in Ukr.)

24. The Verkhovna Rada of Ukraine (2004). *On the State Registration of Property Rights to Real Estate and their Restrictions.* Law of Ukraine, in edition as of February 4, 2019. Retrieved from http://zakon.rada.gov.ua/laws/show/1952-15 (in Ukr.)

25. The Verkhovna Rada of Ukraine (2012). *On State land cadastre.* Law of Ukraine, in edition as of January 1, 2019. Retrieved from http://zakon.rada.gov.ua/laws/show/3613-17 (in Ukr.)

26. The Verkhovna Rada of Ukraine (2018). *On the State budget for 2019.* Law of Ukraine, in edition as of March 23, 2019. Retrieved from https://zakon.rada.gov.ua/laws/show/2629-19 (in Ukr.)

27. Williamson, I. P. (2001). Land Administration «Best Practice» Providing the Infrastructure for Land Policy Implementation. *Land Use Policy, 18*(4), 297-307. doi: https://doi.org/10.1016/S0264-8377(01)00021-7

**Abbreviations:**

RCMU - The Resolution of the Cabinet of Ministers of Ukraine

VRU - The Verkhovna Rada of Ukraine (The Parliament of Ukraine)

*Received 10.03.2019*

*Received in revised form 29.03.2019*

*Accepted 5.04.2019*

*Available online 20.08.2019*