During the period of about 15 years, there were several attempts to regulate the process of land tenures forming in Lithuania by changing the procedure of land acquisition and imposing some restrictive measures for the acquisition of agricultural land. This research aimed to determine the impact of those restrictive measures on the land market. This article represents the analytical results of the statistical data on agricultural land privatisation and market sales in respect of changes in legal acts. According to the analysis, changes in land acquisition procedure had no negative effect on land privatisation and volumes of land sales nor on land sale prices during the transitional period of limited access for foreign buyers in 2004–2014. The volatility of land sales during the transitional period can be explained by the natural market cyclicality, while the steady growth of prices indicates that the land market has not yet reached its long-run equilibrium.

The new regulative provisions adopted in 2014 after the transitional period was over were intended to prevent land concentration and had a positive, yet momentary, effect on the supply of private agricultural land. A significant increase in land prices after introducing those provisions was caused by the ceased supply of state land and some other causes that were not analysed in this paper.
1 INTRODUCTION

Legal acts usually serve as the main instrument for the government of any country to harmonise the relationship between various groups of interests in the society by systematising those interests or social phenomena and establishing a legal framework of various institutions and procedures for their interaction with other entities. Making some minor adjustments to those legal acts is a common practice when trying to improve their performance. Still, significant amendments are usually issued only when some structural changes happen in the legal system or the society, e.g. in the structure of ownership, in the political system, in the economics or in the face of some scientific innovations. Some of those legal acts are intentionally made provisional since they are intended to regulate some transitional situations or relationships, just like the acts that regulate the acquisition of agricultural land in Lithuania.

Most of the Central and Eastern Europe (CEE) countries faced changes in the political and economic system in the last decades of the 20th century. One thing in common for those countries was the significant changes in agricultural land ownership structure. Most of those countries undertook large-scale privatisation schemes or some land reforms, the implementation of which sometimes lasted for decades. Another major event for those countries was the European Union (EU) accession in 2004. Besides the changes in legislation for its conformance to the EU rules, CEE countries had to rearrange their markets by giving access to them for a wide range of investors residing outside their economies. Although this is a key element for the integration of different economies, some economic sectors, which are related to agriculture and employment of the rural population in CEE countries, could not be recomposed instantly due to the on-going land reforms with their aims and to the large-scale rearrangements of land ownership related to the on-going processes of land tenures building in some countries. In this respect, it is understandable that some outside entities express a strong willingness to take part in these processes. Yet, it is unjustifiable to treat it as a maulbltter of market integration because this is instead a land management issue of each country, as long as those processes have not levelled out. Acknowledging this, the EU agreed upon the transitional period for the EU citizens’ access to national agricultural land markets, which eventually had lasted till 2014 for most of the new member states.

Swinnen and Vranken (2009) did the first large-scale study of the transitional restrictions applied by the new member states on acquiring agricultural real estate in 2009, i.e. after five years of the EU accession by those states. The study was carried out considering the coming end of the agreed transitional period of 7 years for the restrictions for the EU citizens to buy agricultural land, and the possibility to have it prolonged for three more years till 2014. Economic data, land sales and rental prices, as well as data on farm structures and their behaviour in the land market, were analysed, giving an obvious picture of the situation in all seven new member states, who have agreed upon the transitional period for the land acquisition by foreigners. The authors concluded that the restrictions, in general, have affected the efficiency of land exchanges and land allocation and productivity growth, but not that much because of several reasons they have explained. On the other hand, they have also discovered that a concern of the new member states about the possible massive takeover of land by foreigners diminished slightly, i.e. this issue became less important for them.

Another research was carried out by scientists in the Economics and Econometrics Research Institute (EERI) in Brussels in 2016 (Ciaian et al., 2016). It was focused on analysing changes in the land market regulation system in the new member states after all the restrictions for foreigners were waived in 2014.
or 2016 (in Poland). The study involved only three out of the seven countries which were analysed in the previous research, namely Slovakia, Poland and Latvia, all from the EU expansion in 2004, and also Romania, a country that joined the EU a bit later in 2007. The comparison of after the transitional period newly introduced regulative rules in the new member states between themselves and the old member states showed that the regulative provisions in the analysed new member states are similar to those in the old member states despite the different underlying goals. At the same time, all those measures differ among those analysed countries, both old member states and new. The authors considered Romania to be the most liberal and Slovakia the most restrictive in this respect among the analysed new member states. Based on this comparison, the authors also provide their insights about the possible impacts of new regulations for those countries; based only on institutional analysis and not on empiric data, they are a bit speculative. Concluding the study, the authors emphasise that the main element of those new regulations in all countries was the introduction of preemptive rights and the increase of transaction costs to market participants and the increased market transparency as a result of those new introductions. No calculations were made, however, to evaluate the negative effects of that cost increase.

Many other researchers, such as Raugalaitė (2012) or Humblet (2013), and the researchers they cite, were also focusing on the problem of agricultural land ownership by foreigners when the restrictions were put on it. However, all those studies focus more on legal aspects and the problem of compliance with those restrictions on the principle of free movement of capital and readiness to waive them in the nearest future. Even after those restrictions were waived, Ciaian et al. (2016), in their research, insist that newly adopted regulations were also indirectly aimed to discourage foreign buyers from accessing the agricultural land market. Analysis of land acquisitions by foreigners could be problematic if researchers do not trust the official statistics data if it somehow contradicts the unofficial data sources, like in the case of Ciaiain et al. (2016). However, there are studies that rely on the official data; for instance, Marks-Bielska and Zielińska (2015) analysed land acquisition by foreigners in Poland in 2000–2013.

A more contemporary problem in the sense of possible new land market regulations in CEE countries after the transitional period is the problem of so called ‘land grabbing’, or land concentration in the hands of a small group of subjects. Zoomers (2010) notices a global nature of this phenomenon, apparent in many countries in Africa, Asia and Latin America, and accentuates its seven driving processes, namely, (1) offshore farming, (2) foreign direct investments in non-agricultural commodities and biofuels, (3) development of nature protected areas, (4) investments in special economic zones, large-scale infrastructure works or in urban extension, (5) large-scale tourist complexes, (6) residential migration abroad after retirement, (7) land purchases by emigrants to more developed countries. Nevertheless, the phenomenon of land concentration is also present in European countries, as in the new member states and in Ukraine, so in the old member states, too (Franco and Borras, 2013). Ciaiain et al. (2016), in their analysis, also admit that the new regulations of the land market in the new member states were most likely intended to deal with land grabbing. Hence, one of the criteria to evaluate the overall performance of new regulations could be a success in dealing with the problem of agricultural land concentration.

However, if we are more interested not in the outcome but in the process itself and want to be aware of all the changes in the market that it might involve, monitoring the land market development over time provides the necessary data. Researchers often pay more attention to the price development of land sales
and rental prices and neglect land market activity indicators. The reason is that in many old EU member states, the extent of land transfers in land sale markets are rather low (0.5–2 % of the utilised agricultural area) and do not change much for a long time. Ciaian, Kancs, and Swinnen (2010) distinguish only three older member states, namely, Finland, the Netherlands and the UK, where the intensity of land market during the whole period of 15 years since 1992 featured more significant fluctuations. Economic theory suggests that such a situation of low intensity of land sales is more likely to happen in countries where the distribution of land ownership, as well as land use, is close to optimal. Yet, in the new member states, we face quite the opposite situation, where land reforms are not yet complete and land use is not optimal. Speaking about the land market, politicians often emphasise land sale prices and how their decisions might affect them. However, the land is a non-producible asset. Hence the main function of the agricultural land market is not a supply of land parcels for the market to fulfil the demand, but it is rather a provision of possibilities for the redistribution of land resources and maintaining the value of land assets. In this sense, market activity indicators or market intensity are more important than prices since they allow assessing the land redistribution process’s performance and efficiency. This is especially important to know in the new member states, where land use is not yet optimal, as mentioned before.

Although theoretical models, which are sometimes used to support political decisions, explain the interaction of various players in a market or their behaviour in a society, they are not suitable for forecasting. Namely, they do not consider the economic and social surroundings of the specific market and its multiple linkages with other markets and forces of influence, which can not be only local but also national or global. Nevertheless, the empiric models might be pretty accurate. For instance, modelling of land sales intensity in Lithuanian municipalities performed by Aleknavičius (2003) using the empiric data before the EU accession revealed its dependency on (1) share of private agricultural land in the municipality, which was continually increasing, (2) livestock production, (3–4) density of registered farmers and all rural inhabitants, and (5) share of commercial crops in arable land. Despite the heterogeneity of land use and farming in those municipalities, the model's goodness of fit was ~62 %.

The intensity of the land market could be affected by various external factors such as direct payments under the common agricultural policy (CAP), economic cycles, fluctuations of prices in markets of agricultural production and in the other real estate related markets, such as the housing market, or the influence of various global financial crises like that in 2007–2008. The duration of market cycles, as well as their current phase, is also important. No studies concerning the duration of cycles in Lithuania's agricultural land market have been done yet, but there were researchers who were examining cycles in the housing markets. In most countries, including the Baltic States, housing markets, which are more exposed to the financial markets situation than the agricultural land markets, reached their peaks at the end of 2007. However, in some countries, like in Poland, Slovakia or Russia, the peak was reached a bit later, i.e. in 2008 (Igan and Loungani, 2012). According to that study, till the end of 2009, the average duration of the cycle in housing markets in Lithuania took 2.5–2.75 years. However, Jadevičius and Parsa (2014) examined the prices in the Lithuanian housing market. They noticed that the duration of cycles there kept growing over time, and in the middle of 2013, it could make as much as about 3–4 years.

The fluctuations of prices in the market of agricultural land are less responsive to the moods of potential buyers than in the housing market since they are driven more by the rational expectations of buyers who are directly involved in farming. Hence, it is even possible to apply mathematical-statistical methods
in this market to estimate price development. Aleknavičius (2011) showed the possibility of modelling land market sale prices with acceptable accuracy at a nationwide level in the EU countries, using the descriptive economic data from the official statistics of 2000–2008 in 18 different EU countries. The models revealed direct dependency of those prices on the indicators describing (1) the overall economic performance of a country (GDP per capita in PPS), (2) use of agricultural labour over the utilised agricultural area, (3) costs of production, which were irrelevant for the old member states, and (4) the time factor, representing the annual growth of land prices. Analysis performed by Kriščiukaitienė, Namiotko, and Jedik (2011), showed that at least the first two indicators were strongly affected by the financial crisis in 2008–2009 in all 14 member states, which were analysed. According to their study, the Lithuanian agricultural sector suffered the most in comparison to the other countries. However, the use of labour in agriculture has increased, unlike in other countries. Those findings could be critical while looking for an explanation of why Lithuania's agricultural land prices have not decreased much during the crisis.

The aim of this research has been to examine the possible impacts of legal acts regulating land acquisition on the performance of the agricultural land market in Lithuania in 2001–2017. To achieve this goal, the following tasks were set:

1. To determine the possible impacts of legal acts regulating the agricultural land acquisition on the privatisation of agricultural land in Lithuania.
2. To determine the possible impacts of legal acts regulating the agricultural land acquisition on the volumes of agricultural land sales, both private and state land.
3. To determine the possible impacts of legal acts regulating the agricultural land acquisition on the sale prices of private agricultural land.

2 METHODOLOGY OF RESEARCH AND MATERIALS

The following methods were used in this paper: the analysis of legal acts amendments in time and the time series analysis of land sales data and land stock data.

Firstly, the analysis of the main legal act, i.e. Law on an acquisition of agricultural land (28/01/2003, No. IX-1314) and all of its seven amendments, was performed on a time scale basis to determine the key turning points in the regulation of acquisition of agricultural land in Lithuania.

Secondly, a time series analysis of land stock data was implemented to determine the land ownership structure's key turning points due to the on-going land privatisation in Lithuania. The data sources for the development of land stock volumes over time were the annual reports of the state enterprise Registry centras (Eng. Centre of Registers), which manages the real property register.

Finally, a time series analysis of agricultural land market activity was performed, which involved the construction and graphical representation of agricultural land sales volumes both for private and state land, as well as the extent of land purchased by legal persons, and the sale prices of private agricultural land. The time span of the analysis is 17 years (2001–2017). The main data sources for the land sales volumes or their estimations were quarterly reports of Registry centras. Due to the data inconsistency, sales volumes of agricultural land in the private market for some years (2004–2014) were estimated by own calculations based on the ratio of the sold land area of all land types to all private land transfers. Land prices for 2001–2013 are based on the own observations and analyses, while the rest of them (2014–2016) is from the reports of the Institute
of Agricultural and Food Economics – National Research Institute (IAFE-NRI) in Poland. In these reports, figures for Lithuania, most likely, are based on data from the state enterprise Žemės ūkio informacijos ir kaimo verslo centras (ŽŪIKVC) (Eng. Agricultural Information and Rural Business Centre) in Lithuania.

3 RESULTS AND DISCUSSION

During the whole period of study, Law on acquisition of agricultural land, i.e. the main legal act regulating the agricultural land acquisition, since its adoption at the beginning of 2003 till 2018, was changed seven times (Table 1).

Table 1: Amendments to the “Law on an acquisition of agricultural land”.

| No. | Type of act | Date of adoption | Validity |
|-----|-------------|------------------|----------|
| 1.  | The original act marked as provisional in the title (28/01/2003, No. IX-1314) | 28/01/2003 | 24/02/2003–29/05/2003 |
| 2.  | Amendment | 20/05/2003 | 30/05/2003–06/08/2004 |
| 3.  | Major amendment | 15/07/2004 | 07/08/2004–03/04/2006 |
| 4.  | Amendment | 13/07/2006 | 27/07/2006–30/12/2010 |
| 5.  | Amendment | 22/12/2010 | 31/12/2010–31/12/2013 |
| 6.  | Major amendment | 27/06/2013, 02/07/2013 | 01/01/2014–30/04/2014 |
| 7.  | Comprehensive revision intended for the permanent law | 24/04/2014 | 01/05/2014–31/12/2017 |
| 8.  | Amendment | 23/11/2017 | Since 01/01/2018 |

Initially, this law was created for two reasons. The first one was a need to regulate the land tenure forming process and land use in land restitution and privatisation. As the area of privately owned agricultural land exceeded the area of state-owned land, which happened about 1.5 years ago, land exchanges became more active. The preconditions arose for the emergence of a permanent, rather than sporadic, land market throughout the country’s whole territory, and it was necessary to guide the direction of its development by a separate law. The second reason was even more important. It was related to the preparation for the upcoming EU accession in about 1.5 years, knowing that after the accession, it wouldn’t be possible to involve any additional encumbrances for land market players if they contradict the EU regulations, even if they were needed. By the time of adoption of this law, it was unclear what impact those regulations would have on the agricultural land market since the market itself passed its initial forming stage just at the end of 2000, i.e. just two years before the regulations were introduced.

The end of this initial forming stage was reached when those agricultural structures, which had survived the restructuring of agriculture, i.e. various agricultural companies established based on former collective farms, recovered their land tenures to the extents featured in 1993 by leasing land back from the private owners and the state, as they could not yet legally own agricultural land. At the same time, the share of agricultural land in private ownership of natural persons was approaching 50 % of the total area of such land.

The next stage in agricultural land market development started in 2001, featuring a sharp increase in the number of land sales by more than a third. It was preceded and partially encouraged by changes in the legislation which provided financial support to legally registered private farmers for running their business. For the following two years market retained similar levels of activity up till the EU accession in 2004, which coincided with the start of a new market burst.
Regulations provided in 2003 in the Law on acquisition of agricultural land and its further amendments have basically opened the land market for the legal persons and capacitated the privatisation of vacant state-owned land, which was not intended to be restituted to its previous owners or be granted as a replacement in the process of restitution of their property rights. Additionally, there were introduced preemption rights for various groups of subjects in cases when private or state-owned land was sold, and the maximal limits for the amount of agricultural land that could be purchased from the state or could be overall owned. Later on, starting with edition No.3 of this law, there were installed provisions on state support for the acquisition of agricultural land, which were removed only after the transitional period was over, i.e. in 2014, in edition No.7 (see Table 1).

Due to a rush or a failure in practice, or for some other reasons, some newly adopted amendments were changed once again within several months after their adoption, like in 2003 (No.1) or 2014 (No.6). However, the major amendments were just two (not taking into consideration No.6), namely edition No.3 adopted in 2004, prior to the EU accession, and edition No.7, which came into force in 2014, after the transitional period was over. Edition No.3 was the basis for some minor adjustments during the whole transitional period that were oriented to the adjustment of maximal limits of land which can be owned (up to 500 ha) or to the composition of groups of preemptive right holders. Edition No.7, however, was aimed at prevention of land concentration or ‘land grabbing’; thus, it has established more complex procedures for legal persons or professional farmers and, especially, for associate companies or family members who were treated as if they all were one person, but it has simplified the procedure for non-farming individuals to buy land, although at a very limited amount (up to 10 ha). In addition to this, new provisions were included in this amendment, which was intended to ensure the agricultural use of acquired land plots and discourage its neglect. The new provisions have also restricted further privatisation of vacant state-owned land, other than in cases of land granted for personal farming, land needed for the exploitation of agricultural constructions and small land plots located in between of landholdings of a potential buyer.

Looking at the time span of changes in regulations on agricultural land acquisition (Figure 1a) we may notice its close relationship to significant transformations in the land market functioning or in the economics (Figure 1b). Those transformations in the given period of time were the following: (1) the EU accession, (2) the end of the first transitional period of land market access restrictions for foreigners, (3) the end of the prolonged transitional period, (4) adopting euro as the national currency. All of them, except for No.4, were preceded by the changes in regulations on the acquisition of agricultural land.
Very similar time points denoting different stages of land privatisation could be observed in changes of the area of private agricultural land over time (Figure 2). The main changes here have also occurred in 2004 and in 2015.

Figure 2: Area of private agricultural land in Lithuania at the beginning of each year, in 2000–2018 (Data source: Registry centras).

Although it seems like the curve changes its slope and slows down only in 2007, the restitution has actually slowed down earlier, in 2004. However, the privatisation of state land allowed preserving the former rate of growth in 2005–2007. By the end of 2006, the restitution of property rights on agricultural land for their previous owners was complete by ~95%, hence since 2007, the growth of the area of private agricultural land was mostly driven by the privatisation of state-owned land.

Similarly, by the end of 2014, after the adoption of new law provisions that have restricted the privatisation of vacant state land, the area of private agricultural land was approaching 3.5 million ha, i.e. very close to the volume which was initially intended to be privatised during the land reform. This explains why during the last three years of the research period (2015–2017), the increase of private agricultural land was mostly driven by the privatisation of state-owned land.

The volume of land sales (Figure 3), however, developed not that smooth as the process of land privatisation. We can observe cyclic fluctuations in the market’s behaviour. Private land market activity was peaking throughout 2005–2007 and 2013, while the volumes of sold state-owned land reached their highs in 2006 and 2013. Thus we might think about cycles of ~7 years duration from peak to peak with a troughs happening in three years after the peak, like in 2009, which coincided with a financial crisis, and, most likely, another in 2016 or the whole period of 2015–2017. However, the situation in 2016 seems different due to the new regulations on land acquisition that came into force just a year and a half ago, in 2014, and due to the ceased supply of state land for sale.

After the volume of sales in the private land market has levelled in 2015–2017, we may notice that the amount of sold land is similar to that of 2004 (or 2009 if we reckon in the state land), which can be explained by the natural market cyclicality. This means that those newly introduced regulations against land concentration had no effect on sales volumes in the market. However, those regulations had a great impact on the behaviour of legal persons in the market. Volumes of agricultural land bought by legal
persons dropped dramatically right after the new regulations came into force in May 2014. Moreover, by the end of the year, the total land area owned by legal persons has decreased, as some of them were forced to sell out their land to comply with the new regulations. This land complemented the existing supply, giving farmers a chance to keep on forming their land tenures.

![Figure 3: Agricultural land sales structure in 2004–2017 in Lithuania (Data source: Registrų centras, own calculations).](image)

Looking at the buying activity of legal persons, we may notice its close correlation with sales of state-owned agricultural land and even similarities in the extent, especially in the first 5 years of the transitional period, starting from May 2004, and in 2015–2017, i.e. after the transitional period was over and the new regulations on land acquisition came into force. A correlation coefficient between those two data sets was 0.80 for 2004–2008 and 0.72 for 2009–2015. This infers that a significant decrease in volumes of land purchased by legal persons in 2015–2017 is more related to the ceased supply of state land for sale rather than to the other reasons.

Some of the legal persons acquired their first own land parcels from private persons even earlier, in 2003, right after the law has allowed for it, but during the whole period 2004–2017, they were buying from the state the land which they were actually using. Natural persons also took part in this process, but their actions were more noticeable in the last six years of the transitional period, starting from 2009.

Nevertheless, the land market intensity, which could be expressed as the ratio of land that was sold during the year to the area of all private land, amounted to 3.7 % even in 2017; this was after the market has calmed down and it is 2–8 times more than in the old member states. In the years when the market was peaking, i.e. in 2006–2007, and in 2013, the land market intensity was even higher and amounted to 6.3–6.5 % and 5.8 %, respectively.

Despite the fluctuations of market activity, the average market prices of private agricultural land kept instantly growing over the entire period of investigation starting from 2005, i.e. the following year after the EU accession, with the exception of 2009, when the prices decreased by 5.4 % (Figure 4). Having in mind that this has occurred in the time of the global financial crisis of 2008–2009, this was just a small market correction in comparison to the drop of GDP per capita by 14.8 % that year.
Nevertheless, after this pause, land prices had fully recovered to their former trend line only in 2013. One of the reasons for this was the privatisation of large volumes of state-owned agricultural land in 2009–2014, which has satisfied a significant part of the demand for such land. The absence of cyclical fluctuations in market prices development indicates that Lithuania’s agricultural land market has not yet reached its long-run equilibrium. The land tenure building process is not complete for most farmers. Hence, they will pay a higher price for the right parcel even when the market is in a downturn.

Before the new regulations restricting access to the agricultural land market for non-farming investors were introduced, there were speculations that the absence of those buyers on the demand side would force land prices down. That did not happen. On the contrary, after those regulations came into force, market prices boosted by more than 40% in 2015 and kept increasing in the following years faster than before.

We might think about several reasons for this. Firstly, it was the narrowing supply of agricultural land due to the privatisation of state land, which almost ended in 2015, and due to the activity of farmers in forming their land tenures based on their own land. As long as a farmer keeps on farming, the land stays in his land tenures and is not offered for the market, thus narrowing the adequate supply. The second group of reasons might be related to the continuous growth of the national economy, which has a direct influence on the agricultural land market prices, as proved by Aleknavičius (2011), and, most likely, to the adoption of the euro as the national currency in 2015, since this was the major economic event which affected all sectors of the economy in the forthcoming years.

4 CONCLUSIONS AND PROPOSALS

Our main conclusions are as follows.

1. Regulations on an acquisition of agricultural land did not have a negative effect on the land privatisation process, but, on the contrary, maintained the steady pace of privatisation during the entire transitional period during which the access to the agricultural land market was restricted for foreign buyers.
2. During the entire transitional period and after it, when new regulations were adopted, the imposed restrictions did not have a negative impact on land sales intensity in the market, while its volatility was the result of natural market fluctuations.

3. New restrictions of 2014, which to a certain extent have restricted market access for non-farming buyers, have had a momentary positive impact on the market supply of agricultural land as some amount of land was returned to the market. Although market players’ number and capabilities on the demand side have decreased, this has not affected market prices.

4. A significant decrease in volumes of agricultural land bought by legal persons after adopting new regulations in 2014 was determined not by the restrictions on the maximum size of land holdings for the entire group of associate companies but rather by the ceased supply of state agricultural land.

5. Cyclical fluctuations in the agricultural land market had a minimal effect on the development of sales prices for land throughout the entire transitional period, which means that the market’s long-run equilibrium has not yet been reached. After the end of the transitional period, when the privatisation of agricultural land was over, and the share of land offered in the market has decreased, land sales prices began to increase faster than before.

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