Evaluation of agricultural land market development in Lithuania based on Kaunas district land survey

The article seeks to determine agricultural land market functioning and development opportunities in a period of market recovery with respect to the impact of economic environment for the analysed market. The research presents views of land market analysts on the land market and its operating principles, identifies factors determining the development of land market, examines the opportunities for land market research, evaluates the development of agricultural land market development in Lithuania, and identifies factors influencing land sales.

Keywords: land market development, agricultural land market, real estate.

Introduction

The relevance of the research is determined by the importance of effectively functioning land market in national economy. A well-functioning land market provides clear benefits for governments, individuals, companies, and investors. Also, many production activities require the land, thus the developing and burgeoning national economy is in the need for a mechanism at ensuring the production sector to make effective use of land resources. In addition, the real estate market, as well as the land market promote the transition to a fully market-based economy and create new source of capital, encouraging greater economic growth.
An analysis of scientific literature reveals an overwhelming consensus between scientists that the land like any other commodity is certain combination of purely natural features and human capital investments. The main differences between the land and other economic commodities arise due to the fact that land by its very nature is not physically transferable and virtually indestructible, although, again, its qualitative features may vary (Marks-Bielska, 2013; Simanavičienė et al., 2012; Floyd, Marcus, 2011; Ambrose, 2008; Aleknavičius, 2007, McKenzie, Betts, 2006; Brzeski et al., 2006; Szymanska, Wielicki, 2005; Galinienė, 2004; Dale, Baldwin, 1999; etc.). Meanwhile, the effective functioning of the land market as a mechanism ensuring the exchange of commodities between market participants, undoubtedly influences on the entire national economic performance, due to the explicit interaction between land market and the capital and finance markets. However, the functioning of land market is complicated because of a numerous legal restrictions and complex evaluation of the land as a commodity comprising economic and social potential.

Therefore, it is appropriate to carry out regular assessment of land market development efficiency and feasibility, the results of which would allow market participants to take appropriate actions in a constantly changing economic environment. Scientists (Marks-Bielska, 2013; Kvedaravičienė, 2009; Aleknavičius, 2008; McKenzie, Betts, 2006; Pagourtzi, Assimakopoulos, 2003; Fanning, et al., 1994; etc.) propose different methodology which enables the evaluation of land market. E. Pagourtzi, V. Assimakopoulos, (2003), M. Aleknavičius (2008) point out that land market analysis might be accomplished using comparative analysis of prices, profit and return of investment. Authors say that the comparative analysis of prices is used more usually than other methods, because of the easier and more objective access to statistical data. Therefore an evaluation of agricultural land market development in Lithuania based on Kaunas district land survey will be carried out in this article.

**Scientific problem** – how to evaluate agricultural land market functioning and development opportunities in a period of market recovery.

**The object of research** – the development of agricultural land market.

**The aim of research** – to evaluate agricultural land market functioning and development in Lithuania.

**Objectives of research:**
- to reveal the theoretical aspects of agricultural land market;
- to discuss the methodology of the land market development valuation;
- to carry out the research of the agricultural land market development in Kaunas district;
- to evaluate the agricultural land market development in Kaunas District and in Lithuania, revealing the fundamental and speculative factors which influence the market.

**The methods of research.** The article employs the method of scientific and practical literature research, comparative and logical analysis. Research was carried out using the methods of comparative analysis, case analysis and graphical analysis. The data are processed using MS Excel mathematical functions.
Theoretical aspects of land market effectiveness

In the recent period few would doubt that the real estate market, which is extremely dependent on processes in the land market, is an important precondition for effective development of national and regional economy. Under the situation of high interaction between individual sectors and markets (i.e., real estate, capital and finance), the processes operating in and affecting the real estate market become relevant to the majority of national businesses and the public, particularly in Lithuania, where the majority of the public have ownership rights of the real property, i.e., individual real estate objects. Thus, if some of the real estate market participants, depending on their specific activity, e.g., legal entities, distinguish production functions of the real estate as a priority in their interaction with the real estate, other real estate market participants, e.g., individuals, may emphasize legal and/or social functions in their interactions with the real estate and its market.

Scientists (Simanavičienė et al., 2012; Floyd, Marcus, 2011; Aleknavičius, 2007, McKenzie, Betts, 2006; Brzeski et al., 2006; Galiniene, 2004; Dale, Baldwin, 1999; etc.) nearly unanimously point out that the real estate, including land, as an economic commodity is unique, due to its usually distinguished physical, economic and legal characteristics of the real estate as the commodity. Immovability, heterogeneity and indestructibility are attributed to the physical characteristics of the land. Economic characteristics of the land as the real estate property include the rarity, modification, investment durability, preferred location and proximity to other important economic and social centres, and stability (Simanavičienė et al., 2012; Aleknavičius, 2008). Ch. F. Floyd et al., (2011), B. Galiniene (2004) in addition to the economic characteristics of the land identify the dependence of the land use from the land purpose, long term obligations and high value transactions, whereas legal and social characteristics of the real estate include normative regulation as well as impact of cultural and traditional environment.

The analysis of scientific literature shows that the most important characteristics defining the real estate as well as the land as an economic commodity are identified as the economic characteristics of real estate. However, the dividing line between physical and economic characteristics of real estate is sometimes difficult to assess. The reason is that physical aspects of the real estate have a significant impact on personal economic approach to that property.

Since the land, in addition to its perception as a commodity, is also appreciated as a natural factor of production, R. Marks-Bielska (2013) distinguishes three unique features of the land as a factor of productions: first, the total land supply is inelastic in the short term and insensitive to price change; second, if properly used, it cannot be used in the production process, but over a long period the arable land might be reduced or due to improper use, might deteriorate its quality; and third, the land is immobile. The necessity of land in agricultural production raises its value, but the immovability gives a lower profit.

A finite resource of the land increases the value of this commodity. Scientists often affirm that the supply of land is inelastic in the short term for the same reason, due to the fact that the supply of land, and more specifically the resources, are finite, particularly in terms of the specific spatial land sub-market (Aleknavičius,
Brzeski et al., 2006; Szymanska, Wielicki, 2005; Dale, Baldwin, 1999; Fanning, et al., 1994) and/or functional land sub-market (Aleknavičius, 2008). However, this view contradicts M. Aleknavičius (2007), arguing that in fact it is only an economic abstraction, applied depending on the context. In his own opinion, it might be accepted that in any case these are the limited resources and the amount of land is finite, yet not all the land is involved in the production, and not because of the fact that it would not have the demand, but due to the fact that land has a number of competitive alternatives for its use.

In addition to the fact that perception of the land as an economic commodity is complex the land market also has its own exclusivities. Typically, the land market is defined as a factor of production, which consists of land buyers and sellers, and which collects and publishes information about land supply and demand, and price incentives necessary for decision making (Čiapaitė, 2006). Land market can also be described as a mechanism to facilitate the exchange of real estate, and is subject to political and economic intervention by the government in the market space, as well as the needs of market participants (Rutkauskas, 2001). It is worth paying attention to the understanding and interpretation of spatial land market, on the basis of which the real estate market as a spatial category is perceived as a certain territory, dominated by the particular real estate marketing conditions. The emphasis here is on the stability of the land market, because the buildings can be dismantled and relocated, but the land cannot change its geographical coordinates (Dale et al., 2006).

Generally, the feature of any market is an effective exchange of market-related goods and/ or services between market participants. Effective market tends to move towards the point of equilibrium, i.e., ensure a smooth exchange for an objective (the lowest possible) price. However, scientists (Van der Krabben, Buitelaar, 2011; Marks-Bielska, Žukovskis, 2011; Szymanska, Wielicki, 2005; Galinienė 2004, etc.) nearly unanimously underline that the real estate market, as well as the land market in terms of effectiveness does not correspond to the level of other markets, which are considered to be operating effectively.

Land market is often oligopoly market because of its specific, distinctive location (Tilford, 2009), because of operating a small number of buyers and sellers, the competition is not high, and the transactions are mostly confidential, therefore obtaining the public information is complicated (Galiniene, 2004). In essence, this approach is not opposed by D. J. McKenzie et al. (2006) noting that the real estate market, also including the land market, is a market of imperfect competition, because market participants have a little awareness about on-going trends in the market at any given period, as well as the land as a commodity is indeed specific for each land plot uniqueness, price volatility, and the liquidity of land.

In the land market, as in any other market, particular importance has the processes influencing the supply and demand. Summarizing the scientific literature analysed in this article, it can be stressed that factors influencing the supply and demand of land exist and may be classified into physical, economic, social, and legal (Figure 1).

Scientists (Aleknavičius, 2008, Bardhan et al., 2007, Geltner et al., 2007) agree that the most important factors influencing land market are economic ones. According to these authors, the demand in the real estate market, and also in the land market,
increases because a number of factors not related to the physical characteristics of the property: economic growth, decline in loan interest rates, salary increase and the reduction in unemployment, demographic changes, national or foreign investments, transport and infrastructure improvements, and so on. The price of land, which is attributed to the general factors influencing all markets, depends largely on whether it can be used not only for farming, but also for other purposes: commercial, residential housing, recreation (Čiapaitė, 2006). Land prices in the major cities and in the territories suitable for commerce and recreations are much higher and may exceed local average even dozens of times. The land for farming is often purchased in the areas which are not very valuable from commercial or recreational perspective and with greater distance from large cities.

An analysis of scientific literature suggests that land market is a mechanism that enables the exchange of land between market participants. And despite a numerous factors influencing the land market such as social, legal, economic, political, demographic, etc., the analysed authors unanimously agree that the greatest impact on the land market and the demand of land as an economic commodity have such economic factors as the rarity, modification, investment sustainability, preferred location and proximity to other important economic and social centres, and stability.

Notwithstanding the specific characteristics of the land market, it is also influenced by the demand, supply and pricing factors as in the other markets.

**Methods of land market development evaluation**

Land market research might be pursued in order to accomplish different needs of real estate market participants as market analysis is essential for economic decision-taking. It means that there is a need to make reasonable choices in a competitive environment under the constraint of limited resources within the market.

E. Pagourtzi, V. Assimakopoulos, (2003) point out that land market analysis might be accomplished using comparative analysis of prices, profit and return of investment. Authors say that the comparative analysis of prices is used more usually than other methods, because of the easier and more objective access to statistical data. I. Kvedaravičienė (2009) affirms that real estate market (instead of land market) might be analysed in different ways: analysing the tendencies/changes of market activity or analysing factors that may influence the market during given time in given geographic area. A. Aleknavičius (2008) suggests even more methods of land market analysis: analysis of (local) economic environment; analysis of (local)
land market; analysis of investment return. M. Aleknavičius (2007) points out different methods of market analysis which might be applied in the market research, according to geographic dissemination of the market. Author suggests that land market analysis at the local level might be accomplished analysing the models of land prices, market intensity and significant supply and demand market performance relationships and causality. S. F. Fanning et al. (1994) state that in a real estate context, market analysis involves the examination of the productive attributes of a property vis-à-vis the relationship of supply and demand delineating the market in which the property competes. B. Galinienė (2004) suggests the complex evaluation methodology for real estate market analysis and points out that it should be accomplished in two steps: first, analysing statistic data of the market; second, evaluating the impact of factors which influence the market.

Scientists affirm that the diversity of factors that influence land market is very high. These factors influencing land market (and real estate market) might be classified in different groups of factors, e.g., microeconomic and macroeconomic (Jasinskas, Simanavičienė, 2008; Jacobus, 2007 Vanichvatana, 2007), fundamental (rational) (Azbainis, Rudzišienė, 2011; Pierdzioch, 2011; Stevenson, 2008; Bilelinskaja, Rutkauskas, 2007; Vanichvatana, 2007; Hu et al., 2006) and speculative (non-rational) (Stevenson, 2008) or derivative (Rudzišienė, Azbainis, 2012) factors. The scientists distinguish fundamental (rational) factors which influence real estate and land markets into macroeconomic such as income level, migration rate, inflation, sum of granted loans, and microeconomic such as market equilibrium, purchase price level, rent price level, income, capital value, profit rate of real estate developers, etc.

Generally, speculative factors are defined as macroeconomic factors such as GDP, interest rate, unemployment rate, and also the factor of market expectations, which is usually referred by tendencies of changes of real estate prices (and values).

Due to a large number of factors that are influencing real estate (and land) market, scientific literature usually argues that some factors influencing land market are more important than others. A deep analysis of real estate market researches has shown that researches usually include a limited number of land market factors. Several fundamental and speculative factors can be distinguished such as sum of granted loans, interest rate, GDP, income level of households, and even inflation. The scientists underline that these factors have major influence on the development tendencies of the real estate and land markets.

It is important to note that heterogeneity of land market complicates the research of market tendencies and dynamics (Aleknavičius, 2008; McKenzie, Betts, 2006; Galinienė, 2004; Fanning, et al., 1994) because the land market is quite (sometimes even „very“) local and there is a few number of land sites (objects) that can be comparable in the market.

The fact of land market locality and heterogeneity limits possibilities of complex land market analysis as each local (sub)market of land is different either in quantitative, or in qualitative characteristics from other land (sub)markets in other geographic areas.

Summarising scientific literature and land market researches the scheme (logics) of land market development research may be proposed in Figure 2.

Applying this method the land market
research and its evaluation in Lithuania was carried out based on Kaunas district case under market research logics given here below: 1) data collection and analysis of the dynamics of land market transactions over the period of 2006 - 2011; 2) identification of factors influencing land market dynamics; 3) submission of variations in agricultural land value; 4) identification of factors influencing the changes in agricultural land market value. Due to the fact that land market is very complex, heterogeneous, local and should be strictly segmented and geographically defined for an accurate agricultural land market analysis in Lithuania, and the data of land market is very fragmented as well as the information about the market is scarce, Kaunas district survey was used to represent a full image of agricultural land market development in Lithuania. Selection of Kaunas as a research object was due to a very good geographic position of Kaunas district (located in the centre of Lithuania), which is not distant to the main cities of Lithuania. The situation of Kaunas district agricultural land market reflects a general situation of agricultural land market development in Lithuania. The analysis of all districts of Lithuania at the given time could make the research more superficial and the analysis of reasons of the land market dynamics would be inadequate.

A comparative market analysis and analysis of the land market dynamics over the period of 2006 - 2011 is valid enough (the data of 2012 is scarce). Given the fact that evaluation of land market is complicated, the prognosis and evaluation of land market dynamics might be carried out mostly by the observation of the passed period of land market development.

**Agricultural land market activity analysis**

The activity in land market in Kaunas district over the period of 2006 - 2011 was quite dynamic (Table 1). There was a significant land sales volume increase in 2007 (by 20 %), followed by sharp and sudden land sales decrease in 2008 (by -31 %). Furthermore, a drop in land market sales
in 2009 reached a record low when sales dropped by 37 % comparing to previous year. Since 2010 land market in Kaunas region has become more active and its activity increased from 8 % (in 2010) to 26 % (in 2011) by one year.

It is obvious that land market activity is influenced by global economic crisis the first signals of which were seen in Lithuania since 2008. Since 2009 great recession in land market has slightly ended and land sales increased by 25.9 % in 2011. It is important to note that economic crisis has not only affected sales activity in the land market, its consequences were also seen in all real estate market. But on the contrary, land market was less affected by economic crisis than other real estate markets (or sub-markets).

Table 2 represents the dynamics of activity in agricultural land market in different regions of Kaunas district. The most active agricultural land market over the period of 2006 - 2011 is in Kaunas region, least active agricultural land market is in Birštonas region.

<table>
<thead>
<tr>
<th>Land and agricultural land plot sales dynamics in Kaunas district</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Table 1" /></td>
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</tbody>
</table>

Source: State Enterprise Centre of Registers.

<table>
<thead>
<tr>
<th>Municipalities</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tbody>
<tr>
<td>Land sales (units)</td>
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<tr>
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<td>983</td>
<td>591</td>
<td>641</td>
<td>1064</td>
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<tr>
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<td>1104</td>
<td>1043</td>
<td>785</td>
<td>802</td>
<td>1178</td>
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<tr>
<td>Jonava region</td>
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<td>513</td>
<td>398</td>
<td>216</td>
<td>262</td>
<td>370</td>
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<tr>
<td>Kaišiadorys region</td>
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<td>838</td>
<td>636</td>
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<td>408</td>
<td>542</td>
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<tr>
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<td>469</td>
<td>405</td>
<td>224</td>
<td>349</td>
<td>435</td>
</tr>
<tr>
<td>Birštonas region</td>
<td>78</td>
<td>50</td>
<td>29</td>
<td>15</td>
<td>21</td>
<td>44</td>
</tr>
<tr>
<td>In total at Kaunas district</td>
<td>4141</td>
<td>4258</td>
<td>3494</td>
<td>2239</td>
<td>2483</td>
<td>3633</td>
</tr>
<tr>
<td>Change in annual agricultural land sales, ±%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaunas region</td>
<td>x -6.1</td>
<td>-23.4</td>
<td>-39.9</td>
<td>8.5</td>
<td>66.0</td>
<td></td>
</tr>
<tr>
<td>Kėdainiai region</td>
<td>x 4.6</td>
<td>-5.5</td>
<td>-24.7</td>
<td>2.2</td>
<td>46.9</td>
<td></td>
</tr>
<tr>
<td>Jonava region</td>
<td>x -1.9</td>
<td>-22.4</td>
<td>-45.7</td>
<td>21.3</td>
<td>41.2</td>
<td></td>
</tr>
<tr>
<td>Kaišiadorys region</td>
<td>x 33.2</td>
<td>-24.1</td>
<td>-35.8</td>
<td>0.0</td>
<td>32.8</td>
<td></td>
</tr>
<tr>
<td>Prienai region</td>
<td>x -4.1</td>
<td>-13.6</td>
<td>-44.7</td>
<td>55.8</td>
<td>24.6</td>
<td></td>
</tr>
<tr>
<td>Birštonas region</td>
<td>x -35.9</td>
<td>-42.0</td>
<td>-48.3</td>
<td>40.0</td>
<td>109.5</td>
<td></td>
</tr>
<tr>
<td>In total at Kaunas district</td>
<td>x 2.8</td>
<td>-17.9</td>
<td>-35.9</td>
<td>10.9</td>
<td>46.3</td>
<td></td>
</tr>
</tbody>
</table>

Source: State Enterprise Centre of Registers.
Agricultural land market activity is affected by economic crisis, but less than other land market segments (residential, commercial, industrial, etc.). Since 2006 to 2007 the land market slightly increased, but over the period since 2008 to 2010 it was significantly affected by the changing and worsening economic situation in Lithuania and in the world. It is strange to observe the higher increase in agricultural land market after economic crisis, as other land markets stagnate, but this increase might be explained by the fact that agricultural land market is perceived as quite stable land (sub) market, because of its very specific purpose and functions. Moreover, land is a global commodity in the market, so, if a land is more expensive in neighbouring countries (e.g., Poland, Germany, Scandinavian countries) than in Lithuania (the farmland prices in Lithuania remain about 3 times lower, even compared to neighbouring Poland), the business tends to invest profitably and decides to invest in agricultural land market in Lithuania. Changes in legislative regulations (elimination of restrictions on land purchases by foreigners) in agricultural land market influence the increase of demand (and prices) in the market as well.

In summary, the results of the analysis of agricultural land market activity show that the agricultural land market begins to recover after the economic crisis and this increase of activity might be explained by the growing economy and investors' interest in agricultural land and by following fundamental and speculative factors:

- Relatedness of land market to other economic sectors;
- Production function that land plots carry out, because it might be and is used to produce agricultural products;
- Possibility to rent agricultural land to local farmers;
- Ability to produce agricultural products and sell it to “new”/local farmers;
- Land tax changes to land owners;
- Small prices to investors;
- End of restrictions on purchases by foreigners to foreign investors.

The market activity growth in the whole land market is less significant, therefore the conclusion that agricultural land market stimulates the whole market would not be wrong. The agricultural land sales-purchase analysis has shown that land market recovers after the crisis mainly due to agricultural land sales.

Analysis of agricultural land value dynamics

The land markets are generally considered inefficient, because of retarding market information about market activities. Land plots’ valuation enables the functioning of land market in a more organized manner as market participants receive objective information about the valuation of land plots in the land markets. Valuations are used in order to get more objective and professional information about the (market) value of objects (land plots).

Therefore, the investigation of land plots’ evaluation in agricultural land market in Kaunas district was conducted for the period of 2007 - 2011. The year of 2006 was not included in the research period because of the lack of data. Land value survey (Table 3) was carried out employing mass assessment method established according to the valuation models used by Centre of Registers, and taking into account only local land factor and at the same time evaluating corrections of value through ratio,
i.e., suitable values for each zone. Given the value maps of each municipality, there has been chosen to investigate these land values in the zone which were most distant from the cities (where agricultural activities are usually developed). It is necessary to mention that agricultural land value is oriented to the purchase-selling price in each zone. Thus the agricultural land value is somewhat equivalent to the actual price of the agricultural land in the zone. Therefore it makes sense to investigate land value when carrying out the research of land market development, as the price of land may vary independently of the land value due to additional human factors which might influence land price every time the transaction of land plot is carried out. The price of land transaction is a matter of agreement between the buyer and the seller and may vary and be „inflated“ due to buyer’s excessive desire to acquire the chosen land plot, and vice versa, or due to the seller’s desire to sell quickly, regardless of land market value. Also, the price of land depends on the ability to negotiate, the buyer’s knowledge of the property as well as the buyer’s financial situation.

A survey of agricultural land value dynamics shows that agricultural land value increased starting from 2007 to 2008. The percentage of the value increase was not equal, but this increase has shown market tendencies to boost. Despite the fact of the worldwide crisis, the increase of agricultural land value in the year 2008 (and even 2009) has shown positive signs in this market. The delay of decrease of agricultural land value had a tendency to decrease, it influences the increase of activity in agricultural land market in Kaunas district since 2010 (situation in Kaunas district represents the situation in Lithuanian agricultural land market).

<table>
<thead>
<tr>
<th>Municipalities</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<td></td>
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</tr>
<tr>
<td>Kaunas region</td>
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<td>12060</td>
<td>10914</td>
<td>9006</td>
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<tr>
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<td>9487</td>
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<tr>
<td>Jonava region</td>
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<td>3753</td>
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<td>3440</td>
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<tr>
<td>Birštonas region</td>
<td>1181</td>
<td>1900</td>
<td>2914</td>
<td>2520</td>
<td>2314</td>
</tr>
</tbody>
</table>

**Table 3**

**Agricultural land value dynamics**

<table>
<thead>
<tr>
<th>Municipalities</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
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<tr>
<td><strong>Agricultural land value, LTL/ha</strong></td>
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<td></td>
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</tr>
<tr>
<td>Kaunas region</td>
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<td>10914</td>
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<td>1181</td>
<td>1900</td>
<td>2914</td>
<td>2520</td>
<td>2314</td>
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</tbody>
</table>

**Annual change in agricultural land value LTL/ha., ±%**

<table>
<thead>
<tr>
<th>Municipalities</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaunas region</td>
<td>x</td>
<td>3.3</td>
<td>-9.5</td>
<td>-17.5</td>
<td>-22.0</td>
</tr>
<tr>
<td>Kėdainiai region</td>
<td>x</td>
<td>61.2</td>
<td>-10.3</td>
<td>-12.1</td>
<td>-12.4</td>
</tr>
<tr>
<td>Jonava region</td>
<td>x</td>
<td>20.4</td>
<td>28.5</td>
<td>-2.7</td>
<td>-10.3</td>
</tr>
<tr>
<td>Kaišiadorys region</td>
<td>x</td>
<td>30.6</td>
<td>38.8</td>
<td>-10.6</td>
<td>-6.5</td>
</tr>
<tr>
<td>Prienai region</td>
<td>x</td>
<td>8.3</td>
<td>29.6</td>
<td>-11.5</td>
<td>-19.6</td>
</tr>
<tr>
<td>Birštonas region</td>
<td>x</td>
<td>60.9</td>
<td>53.4</td>
<td>-13.5</td>
<td>-8.2</td>
</tr>
</tbody>
</table>

**Source:** State Enterprise Centre of Registers.
Evaluation of agricultural land development and its rationalisation

A comparative analysis of purchase-sale of agricultural land market in Kaunas district over the period of 2006 - 2011 has shown that market activity was not consistent. The most active land market was observed in Kaunas region municipality, the least active market remained in Birštonas municipality. From 2006 to 2007, agricultural land sales grew strongly reaching sales peak in 2007. In 2008, there was a sharp decline in sales, which is influenced by the 2008 - 2009 global economic crisis. The year of 2009 can be named as the darkest period in land market, as compared to 2006, sales in agricultural land market decreased by almost 50 %. Despite the sharp drop in sales in 2008, the agricultural land market recovered from the stagnation in 2010 and remained active until now. Land market specialists point that agricultural land market was the market that revived the whole land market, because despite of the decline of a number of transactions in agricultural land, it was one type of the real estate that depreciated the least. In 2011, a number of agricultural land transactions reached the situation that occurred in the land market in 2008 and it continues to grow. This increase of agricultural land purchases activity might be explained by the following factors influencing decisions of agricultural market investors:

• Land is considered to be the best investment (for the purpose to own and/or use (rent) especially in times of crisis;
• Agricultural sector was the sector that increased during the crisis, therefore it attracted new participants to the sector;
• Ecological farming becomes a life style and a business opportunity;
• Changes in land taxation activated the market;
• Existing possibility to change the land purpose (usually from agricultural purpose to residential purpose);
• Low prices of agricultural land plots;
• Speculative intentions to sell it to foreign investors, after the restrictions for them to buy agricultural land, will be eliminated (it is expected to be in 2014).

An analysis of dynamics of agricultural land values during the analysed period has shown that the average value of agricultural land has changed (decreased), but this change did not match with the beginning of the drop of agricultural land market activity. If in 2008, there was a sharp decline in agricultural land market sales, which was influenced by the 2008 - 2009 global economic crisis, the agricultural land value started to decrease only from the year of 2010 with the exception to the land market value situation in Kaunas (drop by 9.5 %) and Kėdainiai (drop by 10.3 %) regions, where the decrease of agricultural land value was observed one year before (in 2009). This imbalance was due to the differences in land value: agricultural land values in Kaunas and Kėdainiai regions were almost 3 times higher than the average of land value in Kaunas district (Kaunas, Kėdainiai, Jonava, Kaišiadorys, Prienai, Birštonas regions). Since 2010, in all municipalities of Kaunas district the average agricultural land market value decreased, while agricultural land purchase-sale activities were seen to rebound. It means that decline of land value enhanced the activity of land market participants’ as investment to land plots was seen as a stable investment. Currently (in 2012 - 2013) analysts of land market observe the slow increase of land market value. But the increasing
value of agricultural land does not affect the activeness of agricultural land market as it remains increasing. According to the specialists, the drop of agricultural land values (and prices) in the near future is unlikely due to the strong agricultural land demand which is influenced by the factors listed here above as well as by:

- Low agricultural land values;
- Speculative expectations of buyers (and sellers);
- Growing expectations of land market participants that direct payments of the European Union to farmers will increase.

Therefore, it might be stated that fundamental and speculative factors are influencing agricultural land market development in Kaunas district as well as in Lithuania. The tendencies of economic growth increase the impact of speculative factors on agricultural land market.

In conclusion, it should be noted that the changes in agricultural land market activity and the dynamics in agricultural land values are natural stages of the land market development. During the growth period (stage) of economic cycle the land values (prices) are blowing up. When the stage of economic cycle changes to recession stage, values of the land come back to the values based on rational expectations and speculative bubbles in such market collapse. In the short term period it is hard to imagine that agricultural land market (sales and values) might decline, as the improving country’s economic life, eliminated restrictions to foreigners to buy land, the growth of the volumes of export of agricultural products, etc., maintain and increase the interest of market participants’ in agricultural land plots. Therefore agricultural land market is quite stable market, comparing it to other land markets (residential, commercial, etc.) and the decision-making here is based more on rational expectations then speculative ones. This stability of the market creates preconditions to further growth of agricultural land market in Kaunas district and in Lithuania.

Conclusions

An analysis of scientific literature reveals an overwhelming consensus between scientists that the land like any other commodity are certain combination of purely natural features and human capital investments. The main differences between the land and other economic commodities arise due to the fact that land by its very nature is not physically transferable and virtually indestructible, although, again, its qualitative features may vary. Meanwhile, the effective functioning of the land market as a mechanism ensuring the exchange of commodities between market participants, undoubtedly influences on the entire national economic performance, due to the explicit interaction between land market and the capital and finance markets. However, the functioning of land market is complicated because of a numerous legal restrictions and complex evaluation of the land as a commodity comprising economic and social potential.

In general scientists agree that heterogeneity, locality of land market and lack of information about the processes, complicate the research of market tendencies and dynamics. Therefore the evaluation of land market dynamics might be carried out mostly by the observation of the past period of land market development. Therefore, the land market research may be performed in the following logic: analysis and evaluation of the dynamics of land
market transactions over the period of 2006 - 2011; identification of factors influencing land market dynamics; submission of variations in agricultural land value; identification of factors influencing the changes in agricultural land market value.

A comparative analysis of purchase-sale of agricultural land market in Kaunas district over the period of 2006 - 2011 has shown that market activity was not consistent. The most active land market was observed in Kaunas region municipality, the least active market remained in Birtonas municipality. From 2006 to 2007, agricultural land sales grew strongly reaching sales peak in 2007. In 2008, there was a sharp decline in sales, which is influenced by the 2008 - 2009 global economic crisis. Despite the sharp drop in sales in 2008, the agricultural land market recovered from the stagnation in 2010 and remained active until now. Land market specialists point that agricultural land market was the market that revived the whole land market, because despite of the decline of a number of transactions in agricultural land, it was one type of real estate that depreciated the least.

An analysis of dynamics of agricultural land values during the analyzed period has shown that the average value of agricultural land changed (decreased), but this change did not match with the beginning of the drop of agricultural land market activity. Since 2010, in all municipalities of Kaunas district the average agricultural land market value decreased, while agricultural land purchase-sale activities were seen to rebound. It means that decline of land value enhanced the activity of land participants’ as investment to land plots was seen as a stable investment. Currently (in 2012 - 2013) analysts of land market observe the slow increase of land market value. But the increasing value of agricultural land does not affect the activeness of the agricultural land market as it remains increasing.

An analysis of agricultural land market activities over the period of 2006 - 2011 helped to identify factors influencing agricultural land market: land is considered to be the best investment (for the purpose to own and/or use/rent) especially in times of crisis; agricultural sector was the sector that increased during the crisis, therefore it attracted new participants to the sector; ecological farming becomes a life style and a business opportunity; changes in land taxation activated the market; existing possibility to change the land purpose; low prices of agricultural land plots; speculative intentions to sell it to foreign investors, after the restrictions for them to buy agricultural land, will be eliminated.

Despite the fact that the land market is quite cyclic, the changes in agricultural land market activity and the dynamics in agricultural land values are natural stages of development of the land market. During the growth period (stage) of economic cycle the land values (prices) are blowing up. When the stage of economic cycle changes to the recession stage, values of the land come back to the values based on rational expectations and speculative intentions in such market collapse.

In the short term period it is hard to imagine that agricultural land market (sales and values) might decline, as the improving country’s economic life, eliminated restrictions to foreigners to buy a land, the growth of the volumes of export of agricultural products, etc., maintain and increase the interest of market participants’ in agricultural land plots.
References

Žemės ūkio paskirties žemės rinkos plėtotės vertinimas Lietuvoje: Kauno apskrities rinkos atvejis

Žemės ūkio paskirties rinkos vystymosi vertinimo aktualumą lemia efektyviai veikiančios žemės rinkos svarba šalies ekonomikai. Efektyviai veikiant žemės, tai yra ir žemės ūkio paskirties, rinka suteikia akivaizdžią naudą šalies vyriausybėms, gyventojams, verslo kompanijoms, bei investuotojams. Taip pat daugeliui gamybos sektorių reikalinga žemė, todėl vystantis ir klestinti šalies ekonomikai, reikalingas mechanizmas, užtikrinantis gamybos sektoriui galinę efektyviai naudotis žemės resursais. Be to, nekilnojamojo turto rinka, taip pat ir žemės rinka, skatina perėjimą į visiškai rinka pagrįstos ekonomikos, bei sukūrus naują kapitalo šaltinį, skatindama didesnį ekonomikos augimą.

Mokslinė problema – kaip įvertinti žemės ūkio paskirties žemės rinkos funkcionavimo bei plėtotės galimybes Lietuvoje rinkos atsigavimo laikotarpiu.

Tyrimo objektas – žemės ūkio paskirties žemės rinkos plėtote.

Tyrimo tikslas – ištirti ir įvertinti žemės ūkio paskirties žemės rinkos plėtote Lietuvoje, žemės rinkos atsigavimo laikotarpiu, atsižvelgiant į ekonominės aplinkos daromą poveikį nagrinėjamai rinkai.

Tyrimo uždaviniai: atskleisti žemės ūkio paskirties žemės rinkos plėtote teorinius aspektus; pristatyti žemės rinkos plėtotes vertinimo metodiką; atlikti žemės ūkio paskirties žemės rinkos plėtotes tyrinę Kauno apskritį; įvertinti žemės ūkio paskirties žemės rinkos plėtote Lietuvoje, atskleidžiant ją veikiančius fundamentalius bei spekuliacinius veiksnius.

Atliktis mokslinės literatūros žemės rinkos sampratos bei žemės rinkos plėtotos tematika analizė padėtė, jog mokslininkai vieningai sutaria, jog žemė, kaip ir bet kuri kita prekė yra tam tikras grynaus gamtinių savybių ir žmogaus kapitalinių įdėjimų derinys. Tuo tarpu žemės rinkos kaip mechanizmo, užtikrinančio prekių tarp rinkos dalyvių mainus, efektyvus veikimas yra įvairių atvejų analizėse vertinimo galimybes, dėl neabejotino žemės rinkos susietumo su kapitalo ir finansinėmis rinkomis. Tačiau žemės rinkos veikimas yra sudėtingas dėl daugybės teisinių apribojimų bei žemės, kaip prekės, ekonominio, bei socialinio potencialo kompleksinio vertinimo. Todėl, remiantis išanalizuotais moksliniaisiais darbais, žemės rinkos plėtotos vertinimo metodikų, kurios pagrindu atlikta žemės ūkio paskirties žemės rinkos plėtotos efektyvumo ir galimybių vertinimas Lietuvoje, remiantis Kauno apskrities žemės rinkos rodiklių dinamikos įtakos analizei ir vertinimu. Tyrimas atliktas naudojant mokslinių bei praktinių straipsnių sisteminimą, lyginantį analizės. Tyrimui atlikti panaudoti palyginamosios analizės, atvejo analizės metodai. Duomenys apdorojami naudojant MS Excel matematinėms funkcijoms.

Atlikus žemės ūkio paskirties žemės rinkos plėtotes tyrimą Kauno apskritį, paaškėjo, jog žemės
ūkio paskirties žemės rinka Lietuvoje, nors yra ci-
kliška, iš esmės veikia nuosaikiai ir reaguojà į eko-
nominès bei politinès aplinkos pokyèius. Taip pat
svarbùs ir spekuliaciniai veiksmai, mat tikimasi, jog
pasibaigus draudimo įsibgtyti žemès ūkio paskirties
žemà Lietuvoje laikotarpiui, žemès paklausa Lietu-
voje augà, o kartu su ja augà ir žemès vertè bei kai-
na. Net jeigu ir užsienio investuotojà susidomëjimas
žemès ūkio paskirties rinka neiàaugtà (galimybës įsi-
gyti šios paskirties žemà egzistavo visada), nepaste-
bint neigiamà pokyèiù šalies ekonomikoje bei žemès
ûkio sektoriuje, blogàjanèios žemès rinkos padeties
tikètis neverta, bent jau artimiausiù laikotarpù. Šio
tyrimo rezultatai iš esmës reprezentuoja žemès ūkio
paskirties žemès rinkos plëtotës (paklausos ir vertës
pokyèiù) tendencijas Lietuvoje.