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The consequences of changes of ownership for agricultural land use in Central European countries following the collapse of the Eastern Bloc

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ABSTRACT

One of the key factors shaping contemporary land use in Central and Eastern Europe has obviously been change of ownership, with the collapse of the nationalised sector and restitution of farmland to owners giving rise to such changes. The work presented here therefore considers the main directions to ongoing changes in land use in the above region, under the influence of the processes of privatisation affecting the agricultural sector. Specifically, analyses conducted entailed assessment of the influence ownership processes have exerted on the area and structure of agricultural land, the size structure characterising farms and the situation on the market for land. The work took in five countries of the former Eastern Bloc, i.e. the Czech Republic, Hungary, Poland, Romania and Slovakia.

1. Introduction

The collapse of the communist system in countries of the so-called Eastern Bloc was followed by dynamic processes of transformation that took in all spheres of social and economic life. Particularly far-reaching were the changes affecting the system of ownership, which in general entailed a dispensing with state- or cooperatively-owned assets in favour of private ownership (Cox and Mason, 1999; Lipton and Sachs, 1990; Mejstrik, 1997; Smith and Pechota, 1994). A key indicator of changes in ownership being achieved lay with areas of land, above all agricultural land, which had to a very great extent been in the nationalised sector pre-1989 (Bański, 2014).

To be exact, the agricultural part of the economy in communist countries pre-1989 had been characterised by three main forms of land management, i.e. the cooperative and the state-owned (together capable of being regarded as "nationalised"), as well as the private, which was mostly of limited significance to agricultural land-use structure. The collectivisation of land – by force – succeeded in almost all of the countries required to take up a centrally-planned economic model (Iordachi and Bauerkamper, 2011; Swain, 1985; Turnock, 1989). The ownership of land, and above all the land belonging to the largest farms, was subject to nationalisation, while owners of small farms were mostly compelled to collectivise, by way of membership of a farm cooperative.

Only in Poland and the former Yugoslavia did individual-level farming persist throughout the entire communist era, indeed with this form continuing to have a majority of the area of agricultural land at its disposal, and therefore playing a leading role in the supply of the food economy in these countries (Bański, 2011; Hartvigsen, 2013; Brouwer et al., 1991). In the case of Yugoslavia, this was mainly a reflection of the different model of communism that country was left free to adopt, under which individual-level farming and private ownership continued to be accepted. In contrast, in Poland, collectivisation was attempted, but met with strong resistance on the part of farmers. The main factors holding the process back were attachment to land – which had not in fact come into the ownership of peasant families that long before; as well as a lack of experience with joint/collective management. Thus, when communism in Poland was at its peak, 76% of all agricultural land continued to be under the management of private farms (Bański et al., 1999).

In the new socioeconomic reality post-1989, farmland came under strong pressure from other sectors of the economy in need of new land for development. As a result of urban sprawl, and above all the associated development of single-family housing and warehousing, as well as technical infrastructure, the area of land subject to agricultural management declined markedly (Bicik and Jelecek, 2009; Balteanu and Popovici, 2010; Janku et al., 2016; Toth-Naar et al., 2014). Moreover, in line with the weakened position of the agriculture sector in the economies of post-communist countries, large areas of the poorest land were now designated for afforestation (Bański and Garcia-Blanco, 2013).

One of the key factors shaping contemporary land use in rural areas has obviously been change of ownership. The collapse of the nationalised sector, with farmland passing over into private hands or also being the subject of successful claims for restitution, gave rise to changes in agricultural land-use structure, setting in train a process whereby

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further fragmentation took place (Giovarelli and Bledsoe, 2001; Hartvigsen, 2013; Lerman et al., 2004; Swinnen et al., 1997). For example, in Czechia pre-1989 almost 95% of the land was in the utilisation of large cooperative or state farms, yet – as a result of the twin processes of privatisation and restitution – almost all of that passed over into the hands of small-scale private owners. Similar processes took place in Romania, Slovakia and Hungary, with the consequence that a change in the farming system as a whole was made possible, with a key role now being played by the family farm (Benedek, 2000; Kovacs, 2005; Rusu et al., 2011; Toth-Naar et al., 2014; Zadura, 2009). In turn, in Poland, given that the nationalised sector only held 25% of the agricultural land, changes of ownership were of a rather different nature and of relatively limited scale, as well as being differentiated from one region to another (Bański, 2011).

More than 25 years have now passed since the fall of the old Eastern Bloc. This would therefore seem a good moment – even high time – to compare and assess the phenomena of a fundamental nature that have been ongoing over this period, where the use of agricultural land in the countries of Central Europe is concerned. Above all, the aim here is to point to the main directions to the changes that have been ongoing in land use, under the influence of processes of privatisation affecting the agricultural sector. The analyses conducted to that end have entailed assessment of the influence exerted by ownership processes on the area and structure of agricultural land, the size structure characterising farms and the situation where the market for land is concerned.

2. Materials and objectives

The subject of the research detailed here was land in use agriculturally. This definition extends to (but also distinguishes between) land put to direct use in farm production, i.e. producing crops or serving the process of livestock rearing; as well as land that contributes to farming indirectly, for example taking the form of access roads, land on which farm buildings and yards stand, and so on. It is naturally on land in the first category that the author's attention has mainly focused, this being generally known as farmland.

That said, it is clear that there is no one, universally-accepted definition of "farmland" or "agricultural land", so what is included under the term does seem to vary from one country to another. According to the OECD and FAO, "agricultural land" (or an "agricultural area") includes cropland/arable land, land under long-term cultivation and agricultural grassland (Glosary of Statistical Terms, 2003; FAOSTAT, 2013). This kind of definition is also adhered to in the present study. However, it needs to be stressed that data at the level of the individual countries in Central Europe were gathered by their statistical offices in line with separate principles, rules and methodologies. Moreover, accessibility varies, and there are certain categories of data that can be found in the statistical offices of one country, but not others (Hartvigsen, 2013; Swinnen and Mathijs, 1997). This leaves it quite possible that the statistical material analysed here does not quite relate to land defined and classified in the same way. In fact, this study primarily makes use of statistical material published by *Eurostat*, which is deliberately designed to allow for comparison at a very general level. For this reason, the differences alluded to above should not distort the results of these analyses too severely.

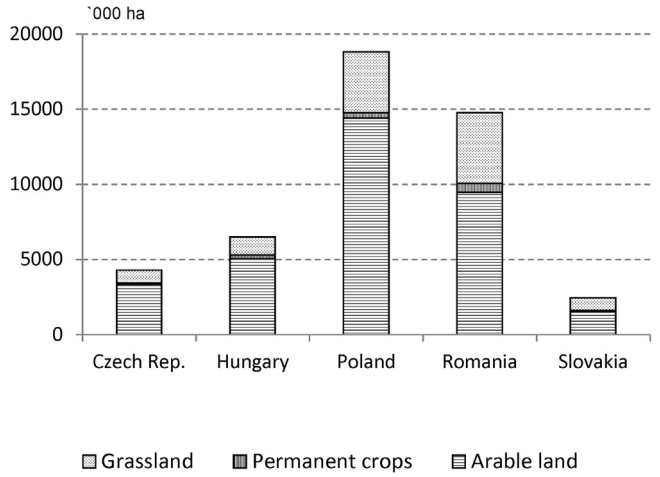

Fig 1. Agricultural land-use surface and structure in countries of Central Europe (Hungary, Poland and Romania – 1989; Czech Republic and Slovakia – 1993).
Source: Eurostat.

The work took in five countries of the former Eastern Bloc, i.e. the Czech Republic, Hungary, Poland, Romania and Slovakia. These together form a contiguous area of Central Europe in which the conditioning as regards both physical geography and history over the last several decades is relatively comparable. In fact, considerations of post-Communist Central Europe often expand the comparative study to the Baltic States (Latvia, Lithuania and Estonia), the eastern *Länder* of Germany once forming the German Democratic Republic, Bulgaria, and the countries emerging from the collapse of the old Yugoslavia. However, these were not taken account of in the work described here, because the historical or socioeconomic conditioning shaping their current development was considered too different, to say nothing of geographical locations likely to ensure different kinds of development of farming.

3. The situation at the outset, and ongoing processes of land privatisation

All of the countries studied have land under agricultural management as the dominant category in their land-use structure. As the transformation process began, the share of the state's area accounted for by agricultural activity was largest in Hungary (at ca. 70%), followed by Romania (62%), Poland (60%) and the then Czechoslovakia[1] (53%).

In Central Europe's agriculture it is plant production that plays a key role, above all the growing of cereals and industrial crops. This accounts for the prevalence of cropland within the broader category of agricultural land use (Fig. 1). Only in Romania is there a relatively large share of agricultural grasslands, reflecting the presence of large areas of mountain land in which extensive use is made of meadows and pastures.

The changes of ownership ensuing post-1989 in former Soviet-Bloc countries were of different kinds and dynamics. In Czechoslovakia, the communist period brought almost total nationalisation of land. For example, within the borders of today's Czech Republic, agricultural holdings were under the management of cooperatives (to the tune of 65%) or state farms (the other 35%).[2] The result of the collectivisation process was an increase in the size of individual fields cultivated, making the use of very large items of agricultural machinery possible and appropriate. The structure of holdings did not change much as such, but the rural landscape did – and the change in question was negative from the ecological point of view, not least thanks to the major reduction in biodiversity it brought about (Janku et al., 2016).

Post-1989, the new authorities of Czechoslovakia, and then the Czech and Slovak Republics separately, recognised that private ownership of land had simply been suspended over the 1948–1989 period,

[1] It was on January 1st 1993 that the place of Czechoslovakia was taken by two new and separate states – of the Czech Republic and Slovakia.

[2] In the case of the former Czechoslovakia, a distinction needs to be drawn between the concepts of land ownership and land use. In the communist era, private owners of land were not able to make use of it, given that it was managed and utilised by cooperatives or state farms. Owners of this kind were "naked", in the sense that their land was made use of without any compensation for loss being offered (Bandlerova and Marisova, 2003). In what is today Slovakia, as much as 65% of all communist-era farmland was treated as state-owned, but was actually in private hands.

with this denoting a legal basis for restitution. Permanent residents of the then Czechoslovakia could seek the return of up to 150 ha of farmland, providing they had been the owners of such land as of 1948, or else were the heirs thereof. Where it no longer proved possible for given assets to be returned, other land was offered, or else compensation in the form of Treasury Bonds. As a result of the process of privatisation, around 3.4 million ha of farmland found its way back into private hands, with only 400.000 ha left at the disposal of the state (Bicik and Jelecek 2009). The state-owned land administered by the State Land Fund is used by private farmers, companies and cooperatives alike, and from 1999 land could also be made available for purchase by individuals not permanently resident in the Czech Republic.

Similar processes got underway in Slovakia, with land restitution made problematical by a means of dividing up fields that defied economic logic. The first decade of the new state's existence saw right of ownership conferred on or restored to around half of all agricultural land. The remainder was put under the administration of the Slovakian Land Fund. The unowned part of the remaining land was nationalised, before being transferred to local authorities for their use. Overall, however, the far-reaching change of ownership has not changed the fact that a marked majority of all land is actually utilised by former cooperatives, following the direct transformation of these into companies established under commercial law.

In Hungary, post-War agricultural reform initially favoured an increase in numbers of private farms, until this trend was overtaken by a collectivisation process gathering strength from 1948, and completed by 1962. This involved private ownership of land giving way to management by the newly-founded state farms and production cooperatives. Overall, the great majority of land effectively came into the hands of the state, with small farmers then in essence forced to form up into cooperatives – in a process that gained both economic and administrative support from the state. At the peak moment of the process, around 75% of agricultural land was under the management of cooperatives, of which there were 1500 in operation in Hungary in 1990. The number of state farms at that point was 124 (Kovacs, 2005).

The reprivatisation reform in Hungary was pursued in the years 1992–1996, entailing compensation amounting to the value of property lost (it was coupons capable of being bought and sold on the market that were issued to achieve this). Farm cooperatives were also transformed, while the state farms were made subject to privatisation. A total of some 2,700,000 ha were designated to meet the needs of reprivatisation claims, while remaining land was distributed among former members of cooperatives, or else sold off to new private owners, as well as ex-personnel of state farms. An estimated 1.5 million people obtained land that had been under joint ownership previously, while 500.000 had land returned to them, and another 500,000 "golden crown" land[3] (Kovacs, 2005).

As a result of the privatisation and restitution process there was a complete change of ownership structure. By 2011, around 80% of farmland was already in private hands (Toth-Naar et al., 2014). As a result, two main types of farm came into existence, i.e. farm enterprises (cooperatives or commercial companies in agriculture) or else farmer-owned farms. According to 2013 data from the Hungarian Central Statistical Office, the first type comprised almost 8800 farms making use of 2,122,000 ha of agricultural land, while the second had 482,500 farms with 2,468,000 ha of land. Among the private owners, a clear majority have small farms of just a few hectares each; while agricultural enterprises are dominated by those with several hundred hectares at least.

In Romania, the communist authorities nationalised what had belonged to the Church and the Royal Family, as well as any estate otherwise in private hands exceeding 50 ha in area. The process of the collectivisation and nationalisation of agriculture was pursued in the 1950s – at such an intensity that, by the beginning of the following decade, just 15% of farmland remained in private hands, with this in general being of poor quality and often in mountainous locations. As of 1989, the main form of land tenure was the production cooperative (of which there were 3776 spread across 59% of all agricultural land), as well as the state farms (411 of which managed nearly 30% of all agricultural land – Balteanu and Popovici, 2010).

The Romanian model for the privatisation of the land used in agriculture was based around the 1991 Land Fund Act, which foresaw the return of up to 10 ha of farmland to each former owner forced to put land under cooperative management. The Act limited the possibilities for rights of ownership over this category of land to be transferred, laying down a maximum permitted farm area of 100 ha. In subsequent years, further Acts were adopted to liberalise the regulations on rights of ownership, with the result that transformations saw over 9 million ha of land returned to former owners. With a view to state agriculture being privatised, a State Property Agency was set up, enjoying the right to sell and lease land of companies founded in accordance with commercial law (Table 1).

In Poland, the entire period under communism could not dislodge private owners from their dominant position where areas of held agricultural land were concerned. Admittedly, the family-run farms in question were mainly very small units indeed – of just a couple of hectares. Furthermore, it was even typical for "farms" of this kind to represent merely a supplementary place of work and source of income for owners (who were for example employed in industry).

Nationalised farm management in Poland was mainly a matter of the large estates in the west and north, which had become owner-less at the end of the War, in the light of large-scale expulsions of Germans from newly-Polish territory in the west. As of 1989, Poland had 1666 state farms, mostly loss-making (Zgliński, 2003). The process by which agricultural land in Poland was privatised thus took a different course from those in other countries, being mainly focused on areas once run as state farms. Restitution of land assets was not as widespread in Poland as in other countries of Central Europe, which is not to say it did not occur at all; but if it did the associated legal proceedings were usually very drawn out.

Furthermore, while the Czech and Slovak solutions (rightly) assumed that former state farms would serve as a base upon which large commercial holdings might be established, the measure winning over in Poland involved the total closure and abolition of farms in this category. Poland's last state farms closed in 1994 and – while the great majority were indeed unprofitable – there were some that were managing quite well enough in the new economic reality (Bański, 2011; Zgliński, 2003). To take on land in the State Land Fund, as well as the former state farms, the Treasury Agricultural Property Agency (APA) was set up, only to convert in 2003 to the Agricultural Property Agency. Land first and foremost passed into the hands of legal persons (mainly capital companies), and only to a lesser extent natural persons. Furthermore, it was the norm for companies to buy relatively large parcels of land (100 ha and more), while natural persons (mainly individual farmers) only purchased smaller areas.

4. Analysis of changes in agricultural land use

4.1. Area and structure of different kinds of agricultural land

All of the analysed countries in Central Europe are characterised by a decline in the area of agricultural land. This is a long-term process in fact extending back to the beginning of the last century and being a reflection of socioeconomic development, including urbanisation and industrialisation in the communist era. Following the collapse of the old Eastern Bloc, the most major absolute changes in agricultural land area characterised Poland and Romania, though this is a simple and obvious result of these countries being large and thus in possession of large areas in this category of use. It is worth noting that the scale of changes

[3] This being the unit used historically to denote high-quality Hungarian farmland.

Table 1
The place of the nationalised sector (state farms and cooperatives) in the ownership structure of agricultural land in countries of the former Eastern Bloc.
Source: Historia Polski w liczbach (1991).

Country	The share of agricultural land in the nationalized sector (%)	
	1960	1988
Bulgaria	91,0	89,9
Czechoslovakia	88,0	93,9
Yugoslavia	14,0	15,7
GDR	92,4	90,2
Poland	13,1	22,8
Romania	94,2	90,5
Hungary	95,5	85,8
USSR	99,0	98,2

has indeed been very large. In the period 1993–2013 alone, the studied countries "lost" 6,563,000 ha of farmland, which is more than the combined area of agricultural land in Czechia and Slovakia.

Other than in the Czech Republic, where the share of land used agriculturally in overall land-use structure has actually been in rather slow decline, the region's countries have seen declines of around 10% on average. However, in the 1990s, the change in area of agricultural land was still not great – a fact that needs to be linked with the economic crisis experienced as the Eastern Bloc lost cohesion, and growth in the new market economies was sluggish, or not present at all. Only as the old millennium came to a close did very dynamic change set in (Fig. 2). To generalise, the intensity of the phenomenon of farmland loss grew as the countries began to prepare for EU membership, and the dynamic characterising social and economic processes began to accelerate.

In the case of Czechia, the more stable structure to land use resulted from the fact that a high level of urbanisation and development of technical infrastructure had already been achieved there some time before. Nevertheless, even there, regions differed markedly as regards the scope of changes in land use. The greatest loss of agricultural land characterised the zone impacted upon most directly by Prague, in which housing construction and associated technical infrastructure developed. In contrast, the fertile plains were characterised by stability.

The most marked decline in the share of a state accounted for by farmland was that noted in Poland, and this for a variety of different reasons. One such was an urban sprawl process mainly involving the development of housing in suburbs and satellite towns and villages. This phenomenon gathered pace markedly as the new century and millennium began. Agricultural land was also taken over by large-scale new developments in transport, most especially motorway-building and the modernisation of transport networks in metropolitan areas. In turn, the pursuit of environmental and sustainability programmes resulted in the (re)afforestation of low-quality farmland, on which farming had long proved unprofitable. The loss of agricultural land in Poland may also be linked with unfavourable demographic processes, notably population ageing in rural areas, as well as the migratory outflow of the young and active. Areas affected by these processes are not developing, and farms there (often non-viable economically) close down. Similar processes are to be identified in marginal areas in Czechia (in northern Bohemia and northern Moravia) and the other countries studied, with low profitability of agricultural output giving rise to migratory outflows to other regions of the country (Bicik and Jelecek, 2009; Gajdos, 2005; Balteanu and Popovici, 2010). Noteworthy for this reason within the framework of development policy is the stimulation of other sectors of the economy and the multifunctional development of rural areas – a measure that obviously impacts upon the system of land use. What is involved here, among other things, is the adaptation of farms to meet the needs of tourism and recreation, as well as the cultivation of things like herbs and plants used in the production of cosmetics, and crops that can be used to generate energy. Arable land of the lowest quality is also converted for other agricultural uses, notably as grassland (Havránek et al., 2007).

The loss of agricultural land has been associated with structural change as regards its three main components, i.e. arable land, grassland and areas under permanent cultivation (Fig. 3). That said, the changes that have taken place are varied. In Slovakia and Hungary an increase in the share of arable land has occurred, at the cost of areas under permanent cultivation, as well as meadows and pastures. In Romania, in turn, both permanent cultivation and arable land have made way for the two kinds of grassland. Notable in these countries is the reduced significance of the more permanent forms of cultivation (in vineyards and orchards). This attests to a more extensified production structure, and an attendant abandonment of more highly-specialised forms of cultivation (Takacs, 2008). A factor undoubtedly underpinning such phenomena is ownership change, and the associated eschewal by small-scale farmers of forms of cultivation that are labour- and capital-intensive, and may also demand modern technologies. Phenomena of this kind are confirmed as at work in detailed research based around CORINE Land Cover data for Romania (Feranec et al., 2000; Popovici et al., 2013; Soukup et al., 2016). It results from these that the 1990–2000 period did indeed see farmers resign from more intensive kinds of cultivation. In some regions the new owners of land even gave up on cultivation altogether, given a lack of funds to invest and/or a lack of proper training or education. Similar studies carried out in other

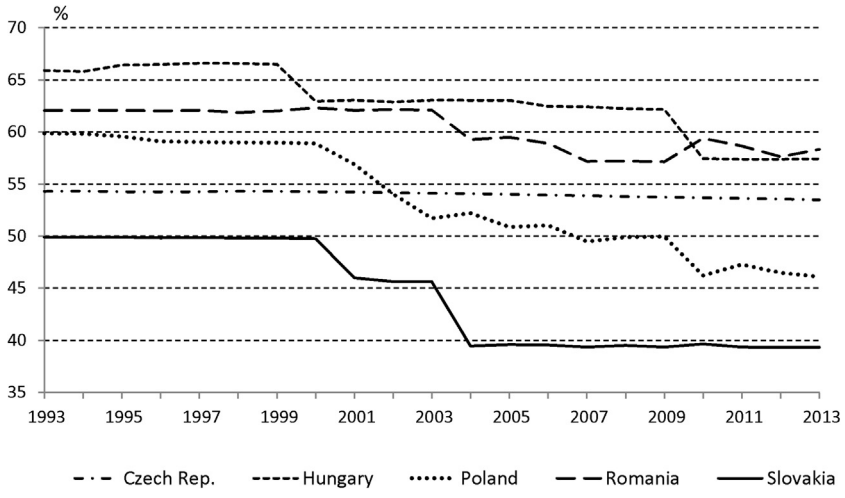

Fig. 2. Changes in the share of agricultural land in the total land of Central European countries.
Source: *Eurostat*.

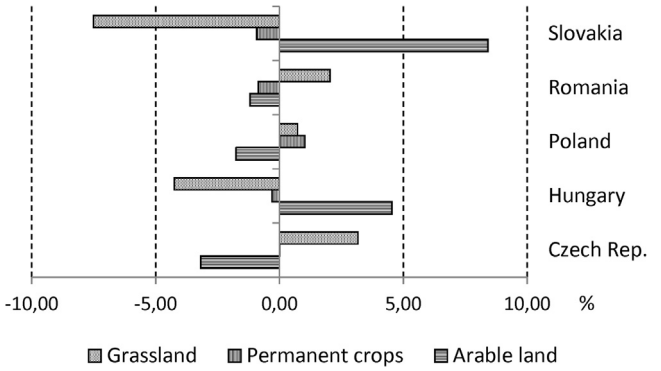

Fig. 3. Changes in the structure of agricultural land in the 1989–2013 period (1993–2013 in the cases of the Czech Republic and Slovakia).
Source: Eurostat

countries of Central Europe (Ferenec et al., 2000; Ference et al., 2016).

In Poland, the structure as regards agricultural land use was characterised by a reverse process, though one that is hard to associate with changes of ownership. The increase in the share accounted for by permanent forms of cultivation attests to an intensification of production, with fruit and fruit products coming to represent more and more important exports from Poland. Furthermore, accession to the EU saw Polish farmers receive larger direct payments in the case of certain species of fruit tree, hence an incentive for (not-always-justified) planting in areas not boasting either an orchard-cultivation tradition, or in fact suitable conditions therefor. An example here might be nut-growing in Pomerania. In the latter case, changes of ownership can be invoked as causal factors. Reports in the media suggest that the plantations of nut-trees were a venture embarked upon by investors (better, "speculators") previously lacking any experience of agriculture whatever, but seeking to grow rich rather rapidly on the basis of payments flowing in from the European Union. The first step in that direction was needless to say the purchase of land, mostly low-quality land going at bargain prices.

In Czechia there has mainly been an increase in share accounted for by grasslands, *i.a.* as a result of the closure of state farms in mountainous and upland areas characterised by less-favourable agroecological conditions. A lack of state support for the farming sector led to the eschewing of certain low-profitability crop-growing, with the land involved being converted back into meadows and pastures, or else planted with trees. Furthermore, the decline in domestic levels of consumption of beef, milk and cheese caused changes in the system of raising cattle. The system prevailing in the 1990s – a closed one in which fodder was grown on arable land, was replaced by grassland grazing for 7–8 months of the year (Bicik and Jelecek, 2009).

4.2. The agrarian structure of farms

According to *Eurostat* data, as of 2013, the studied countries of Central Europe retained more than 5.7 million "agricultural holdings".[4] However, very marked spatial differentiation in numbers was to be observed readily enough. Taking account of the situation in the EU as a whole, the number of farms in the Czech Republic and Slovakia can be seen as relatively small, while Hungary, Romania and Poland are at record levels. Thus the total number of farms in Poland, Romania and Hungary (around 5.7 million) is greater than in all remaining EU Member States put together (5.1 million). Poland has at least 55 times as many farms as the Czech Republic. A further consequence of such differences lies in marked disproportions in farm size. While the average farm in Czechia has more than 130 ha of farmland at its disposal, the comparable figure for Romania is below 4 ha (Table 2).

The privatisation and restitution of land gave rise to a dramatic increase in numbers of individual users of farmland, in Hungary and Romania above all. For example, in Hungary in the mid-1990s there were more than 1.4 million farms (Harcsa et al., 1998). However, as time passed the numbers plummeted. Around 30% of farms are estimated to have been lost in the 1990–2000 period, and around 50% over the 2000–2010 period. This phenomenon's several causal factors above all include the limited commercial viability of much farm production, the self-supplying nature of many farms; and at the same time the capacity of owners to find work in other sectors of the economy, plus the circumstance of an ageing society (Sadowski and Takacs-György, 2005; Toth-Naar et al., 2014). A simultaneous increase in the number of large farming enterprises was to be observed.

In the case of Romania, the numbers of farms grew greatly, but then with only a slower subsequent reduction. A negative consequence of the restitution of ownership rights was the division of the old communist-era cooperatives into small parcels of land. The result of the systemic transformation was thus for the number of users of agricultural land to increase to around 4 million (Benedek, 2000). It is estimated that more than 60% of the farmers obtaining land at that point were elderly, with the farms handed on to heirs becoming subject to yet-further division. After a brief period of stabilisation, the number of Romanian farms fell – to around 3.5 million by 2013.

Interesting conclusions are supplied by an analysis of farm size structure (Fig. 4). While a lack of comparable data for the earlier years precludes relevant study, the picture for 2010 does support earlier conclusions, to the effect that the transformation in the agricultural sector in the Czech Republic and Slovakia largely maintained the size structure that had been in place previously, with only the legal/administrative form of activity changing. In contrast, in Hungary and Romania a marked fragmentation of ownership took hold, with the result that fragmentation of land use took place. In Poland, the process of privatisation was more regional in impact; with central and southern parts experiencing only limited change, while the north lost its large state farms, with their places being taken to some extent by individually-owned farms that did manifest size increases over time.

4.3. The market for land and leasing

Processes of privatisation and the restoration of ownership increased the opportunities to buy and sell land. However, at the outset that market for farmland was rather dormant – for a series of reasons. There was spatial differentiation, as well as conditioning reflecting specific legal solutions and the general socioeconomic situation in the countries of the region. For example, in Czechia in the years 1992–2002 only 174,000 ha of agricultural land changed hands on the market (Zadura, 2005). Most often this was located in areas attractive from the tourism point of view, or else in the vicinity of large urban centres. It was thus probable that the purchasers were seeking to achieve a change of designation from agricultural to (housing) construction-related. A similar phenomenon was observed in other countries of Central and Eastern Europe. For example, in Romania, the years 2000–2006 brought a 42,000-ha increase in built-up areas in close proximity to cities.

Limited buying and selling of land was also to be noted in Poland, but the premise in this case was different, i.e. limited supply, as well as the existence of restrictions on purchases of land by foreigners. The greatest activity on the market for land concerned the areas left in the wake of the closure of the state farms. In the 1996–2004 period, some 100–190,000 ha of land were sold each year. In early years, a low level of sales activity was also linked to a privatisation programme that was prepared inadequately from the formal and legal point of view (survey divisions and delimitations of boundaries were lacking, hence the

[4] *Eurostat* makes use of the term "agricultural holdings", denoting a single unit, in both technical and economic terms, operating under single management, which undertakes agricultural activities within the economic territory of the EU, either as its primary or secondary activity (source: *Eurostat Glossary*).

Table 2
Numbers of entities using farmland (holdings with an area utilised in agriculture). Source: Eurostat.

Country/Year	2005	2007	2010	2013
Czech Republic	41 180	38 490	22 580	25 950
Hungary	662 370	565 950	534 020	453 090
Poland	2 465 830	2 380 120	1 498 660	1 421 560
Romania	4 121 250	3 851 790	3 724 330	3 563 770
Slovakia	66 360	66 520	23 720	22 050

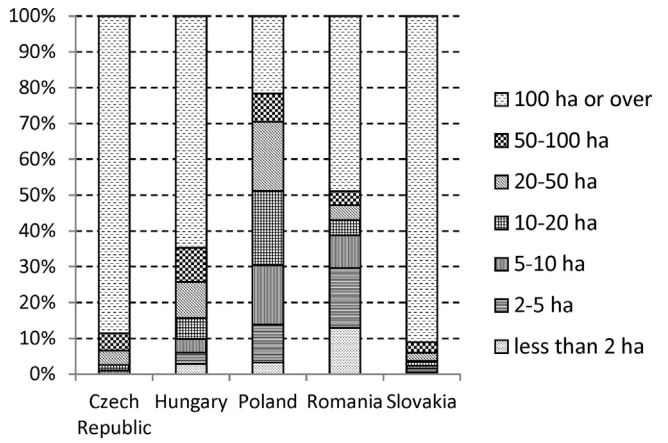

Fig. 4. Share of agricultural land in 2010 by farm size.
Source: *Eurostat* Fig. 5. Examples of average prices of 1 ha of agricultural land in selected countries of the European Union in 2002 (Czech Republic – 2004; Germany – 2001)

critical need for land registration to be updated, or even started from scratch).

Up to 2003, potential purchasers of agricultural land in Poland were all natural persons, who were entitled to buy any amount of land. However, by virtue of a relevant 2003 Act, farmland is to be purchased by those with an agricultural education at primary level, or any secondary or higher education, or else by those experienced at work in agriculture. In turn, farm size is limited to 500 ha. Similar principles designed to preserve appropriate agricultural land-use structure are also present in the countries of Western Europe (Granberg et al., 2001).

A separate matter concerns the restrictions imposed on the purchase of land by foreigners. In Poland, for example, EU accession in 2004 resulted in a lifting of many restrictions where real estate was bought by European Union citizens, but with a 12-year transition period having application in the case of agricultural and forest land. In other countries joining the Union at the same time as Poland (like the Czech Republic, Lithuania, Latvia, Estonia and Slovakia), the period of this kind was shorter – at just 7 years (Burger, 2006).

Prices of farmland in Central Europe are very low when set against those applying in Western countries, though they have increased dynamically through the entire transformation period (Fig. 5). According to Eurostat data, the average price of agricultural land in Czechia rose through the years 2000–2009 from €1555 to €2249 per ha. In Slovakia, the corresponding change in the same period was from €895 to €1256. In the case of Romania, the 2000–2005 period brought an increase from €351 to €879 per ha. Particularly marked changes in land prices followed given countries' accession to the EU. Moreover, Romania, Hungary and Poland noted some of the greatest increases in agricultural land prices anywhere, even from a global point of view.

The prices of land are very much dependent on location, size of plot and designation. In 2011, prices in Czechia were in the range €260–5500 per ha,[5] albeit with an average value around €2000 per ha (Strelecek et al., 2011). The price of a small (≤1 ha) plot, whose designation is mainly non-agricultural was at a 2007 level of €5900 per ha, rising by 74% in the period after the year 2000. In turn, the price of more than 5 ha of land with an agricultural designation was €1324/ha on average, in fact falling in the analogous period by around 15%. In Hungary, the increase in prices of land resulted above all from the anticipated EU accession, and the linked possibility of real estate being purchased by foreigners, as well as subsidies for agriculture to be taken advantage of (Popp and Stauder, 2003).

In Poland, the average price of a hectare of farmland put up for private sale in 1992 was €298, while the corresponding figure for 2016 was €9169 (Fig. 6). The whole period under a market economy has been associated with a steady increase in the mean price of agricultural land. The EU accession in particular gave rise to an abrupt rise in prices, in connection with a limited supply on the one hand, and the possibility of receiving direct payments on the other. Record prices were also noted in the case of land close to large cities and major transport routes, with purchases being made in the expectation of changes of designation in local physical development plans: away from farming in the direction of construction or recreational functions. Interesting in this respect are the greatest price hikes of all (even 20% in the course of year) characterising land least suitable for agricultural production. Land of this kind is easy to obtain a change of designation for, mainly meeting the needs of new housing construction (Wasilewski and Krukowski, 2004). Following a change of designation, the price of a piece of land may even increase 10–20-fold. Plots are then divided up for building, and sold off at very favourable prices. For example, in the Warsaw or Kraków areas, building plots can sell for more than 100 euros per m^2. The development of housing in still-rural areas on the margins of the large agglomerations was the factor doing most to boost the prices of land (Ihlanfeldt, 2007; Mayer and Somerville, 2000).

Where regions are concerned, it is farmland in southern Poland that fetches the best prices, the fragmentation of agriculture there being associated with very low levels of farm income. Land prices are also influenced by the widespread practice of family land being handed on to the next generation, with the result that supplies of land on the market are very limited. Moreover, the possession of land there has a safety-net function in the event of paid work outside agriculture proving impossible to find or hold on to.

Worthy of particular attention is the issue of the leasing of land, the accounting for which can explain a great deal of the modification or even distortion seen to characterise the actual agricultural land-use structure. On the one hand, leasing activity is often achieved by means of informal agreements that largely preclude accurate and detailed analysis. On the other, the low costs linked with leasing are seen to limit turnover on the market for land.

Among the countries analysed, such a form of management of land is most popular in Czechia, Slovakia and Hungary. In the first of these countries the beginning of the century brought an estimate that around 95% of all agricultural land was subject to leasing. From among the 3.5 million owners of agricultural land with 0.44 ha of agricultural land on average at their disposal, less than 1% had taken up activity in agriculture (Bicik and Jelecek, 2009). The remaining owners of land were not engaging in farming, with their land actually leased out to production companies or small groups of farmers. Leasing is regulated by law and is set at a rate equal to 1% of the official price of land, albeit with owner and leaseholder permitted to agree on some other value. This depends on the location of land and quality of agroecological conditions (i.e. possibilities vis-à-vis particular kinds of cultivation). The work by Strelecek et al. (2011) pointed to a strong relationship between the cost of leasing and the price of land. In contrast, in Hungary, the price of leasing land is correlated with its quality (Toth-Naar et al., 2014). Around 93% of agricultural land managed by food producers in Hungary is theirs by dint of leasing.

In Poland, leasing is estimated to apply to every fifth hectare of agricultural land, though there is a lack of measurable data, since the process as it applies to agriculture at the level of the individual is

[5] In line with an exchange rate of 100 CZK = 3.7 euros.

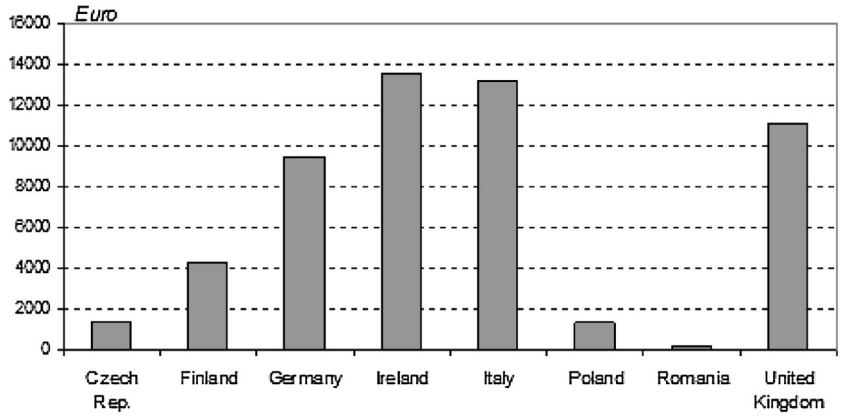

Fig. 5. Examples of average prices of 1 ha of agricultural land in selected countries of the European Union in 2002 (Czech Republic – 2004; Germany – 2001).

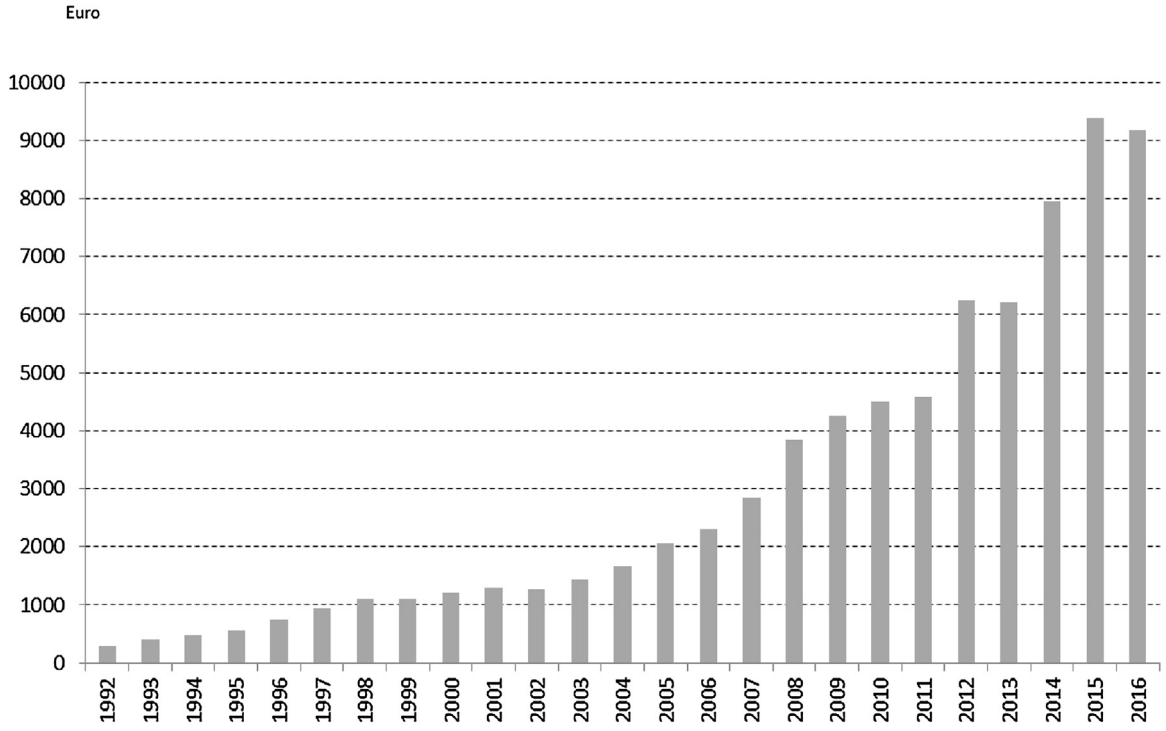

Fig. 6. Change in the average price of arable land in Poland (Euro/ha).
Source: Takacs-György et al., 2011 and author's own calculations based on CSO (GUS) data.

usually of an informal nature, with the provisions as regards price limited to word-of-mouth understandings. This leaves it difficult to estimate the fees charged for leasing land, though information supplied by the Central Statistical Office suggests that this might be around €200 Euro per ha on average. In the case of land leased from the Treasury, the rent is usually established by reference to market principles, by means of tendering. The level is thus determined in line with the current and averaged prices of wheat announced by the CSO.

5. The overall nature of change – discussion

The last quarter-century has brought major change in the agricultural sectors of Central European countries. These have reflected efforts to privatise the state farms and cooperative farms, and to achieve restitution of assets taken from their original owners during the communist period. The most visible result was a further fragmentation of land, that, as Hartvigsen (2014) emphasises, concerned both ownership and utilisation. In the subject literature addressing agriculture's spatial organisation, the phenomenon of fragmented land use is widely recognised as a serious problem (Bentley, 1987; King and Burton, 1982; Dijk van, 2003). Excessive fragmentation generates extra costs and expenditure of time linked with gaining access to a plot. At the same time the use of large machines is precluded, with work in the fields hindered in this way; while the boundaries between plots are extended in length and boundary zones left uncultivated, and there is a need to develop a dense network of access roads. Land registration is also complicated, with conflicts between owners of land even tending to arise.

Considering form of ownership and form of use of land, it is possible to distinguish three categories of relationship, i.e. a) where the owner of the land is not its user, b) where the owner of land also utilises it; and c) where the user leases land (Fig. 7). From the theoretical point of view, there are several scenarios via which the fragmentation of land might take place. The first of these entails fragmentation of ownership and fragmentation of utilisation at one and the same time (i.e. an increase in frequency of phenomena a, b and c). In turn, the second scenario foresees a division of ownership, but with a land-use structure that remains unchanged, for example thanks to the phenomenon of leasing

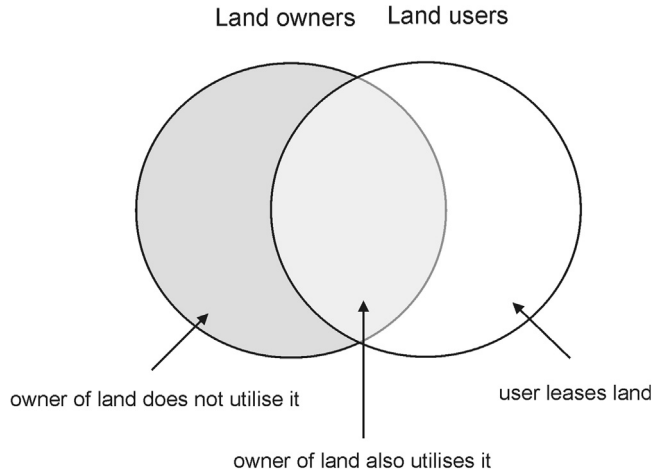

Fig. 7. Schematic representation of relations between ownership and land use (after Dijk van, 2003).

(and hence an increase in frequency of a and b). It is also possible to envisage a lack of fragmentation of ownership, alongside a simultaneous fragmentation of use (and hence increase in the frequency of b and c).

The result of the fragmentation of ownership in the countries studied was a polarisation in farm size that gave rise to a series of other phenomena where agricultural land use was concerned. On the one hand, a large group of small and uncompetitive farms came into existence, while on the other the transformation finished with the hitherto-existing cooperatives, establishing instead farm companies or other legal entities of considerable production potential. A good example of this is provided by the size structure characterising farms in the Czech Republic, where – as of 2007–more than 66% of farms had areas not exceeding 10 ha, though taken together these accounted for just 2.2% of agricultural land in the country as a whole. On the other hand, farms of areas greater than 500 ha represented just 3.8% of the total, while making use of more than 72% of the overall area of the country deemed agricultural (Basek and Divila, 2008).

Thus the main phenomenon characterising the transformation of Czech agriculture was the privatisation of large agricultural holdings, initially at the economic cost of the food-supply sector. This was associated with a reduction in the level of use of fertilisers and plant protection agents, a lack of cohesive land management and an increase in the area of fallow land. After 50 years in state hands, land was given back to owners, or else made available to new private entities; while a certain part of the state-owned land was leased out. The process of privatisation has thus played a very important role where the contemporary land-use situation is concerned, given that the consequence has been economic and organisational change; also with some farms occupying just small areas in cultivation being inefficient and most likely destined for eventual liquidation. On the other hand, cooperatives have most often transformed into commercial-law companies, allowing them to maintain large commercial dimensions.

The fragmentation of ownership occurring in Czechia and Slovakia also gave rise to fragmented land-use features, if to just a limited extent, not actually posing any threat of dysfunction in the agricultural sector overall. The processes of privatisation also posed the threat of land use becoming fragmented, but it emerged that the optimal and most rational form by which to organise production is the large farm enterprise. In this context, the decision to close down the state farms existing in Poland looks to have been done in excessive haste, in a manner not properly thought through. According to supporters of the Polish policy, the farms of this kind – as a product of the communist system – were incapable of shaping up in the circumstances of the free market. In fact, though, some of the farms were in good enough condition economically, and could – if reformed – have competed successfully on the market for food. Despite claims to the contrary, state farms did possess some specialised and well-educated personnel, as well as machinery and technical infrastructure. And of course they managed large areas of agricultural land. This is to say nothing of the important social, safety-valve functions they served, contributing to stability in rural areas – not least, but not only on the labour market. Following their collapse, areas afflicted by social exclusion took shape, with levels of unemployment and social ills both very high.

In Hungary, a clear polarisation of farm types has taken place. On the one hand, there are small farms of several hectares, and on the other large commercial holdings. Farms of the first category have very limited resources of land and play a rather limited commercial role, if representing an important social element in rural areas, given the way they stabilise the labour market and safeguard minimal levels of income. A similar role is played by small "social" farms in Poland or Romania, of which a large proportion are engaged in production to meet their own needs. The second category of farms includes a very small number of units compared with the family holdings, but it nevertheless accounts for more than 70% of all agricultural land. The significance of such farms should increase, as they have own means for investment at their disposal, and apply modern methods of production and management. Such a direction to development is confirmed by data on the use of EU agricultural subsidies. In the first years of membership of the European Union, around 90% of the direct payments paid out in Hungary went to just 100 legal entities (Land concentration, land grabbing and people's struggles in Europe, 2013). Small farmers did not take advantage of EU subsidies – indeed, it is estimated that 93% of them were excluded automatically. In this category many farms went bankrupt. By 2009, the situation had only improved somewhat, with 8.6% of farms receiving 72% of the total sum paid out. This example combined with the dynamic process of farm disappearance recounted above to attest to growing size-related and economic differentiation among farms.

The transformations of ownership ongoing in Romania were characterised by marked fragmentation of ownership and an equally marked dividing-up of fields and plots among different land uses. On the basis of the large state-sector farms in operation pre-1990, in excess of four million farms were founded. A great majority of these were in a poor condition economically, lacking means for on-farm investment and thus characterised by limited commercial viability or activity, or even a total focus on output to meet own needs. As in the case of Hungary, the numbers of such farms have been on the decrease – a fact that may attest to a concentration of land in larger units, albeit progressing only rather slowly. While the process by which the numbers of farms in the smallest categories declines should accelerate, a factor hindering that might well be the very major increase in prices of agricultural land. A rationalisation of the farm size structure should be achieved by land consolidation programmes. However, it emerges that only Poland, the Czech Republic and Slovakia among the countries studied were able to make national land-consolidation programmes of this kind ready (Hartvigsen, 2014). Notwithstanding the great need for Hungary and Romania to improve their land-use structures in terms of farm size, these countries lack programmes of this kind in the wake of the more recent changes of ownership.

In Czechia, Slovakia and in part Hungary, it is possible to speak of marked disparities between land ownership and land use. This is to say that most areas of agricultural land are managed by large business entities, even if they are owned by a large group of small-scale owners. The scenario anticipating fragmented use did not pan out because of the widespread opportunities for land to be leased out (Doucha et al., 2005). A general conclusion to be drawn here is that large-scale farms are correlated with the share of leased land, in the sense that, the larger the role of large farms in the land-use structure, the greater the proportion of land leased.

It is worth noting that, other than in Poland (where the system has long been based around family farms), the CEECs have largely failed to

restore or much increase the role of farms run by small farmers. The reactivation of small, individually-run farms has tended not to succeed. On the market for food products the dominant significance is that of different organisational forms of agricultural producers, be these holdings, cooperatives or companies, but all with large areas of farmland at their disposal. This is all confirmed by the work of Zadura (2009), whose results make it clear that the lack of success with private activity in the agricultural sector is not just down to technical and social factors, but is also a result of the disappearance of entrepreneurship at the level of the private farmer. Beneficiaries of the restitution process that lacked professional qualifications sought to sell their land on as quickly as possible, with the result that it was in oversupply, thereby ensuring a stabilisation – or even a fall – in prices of land, as well as an increase in the area of land left fallow.

Indirectly, privatisation processes also induced a decline in the area of agricultural land. For example, in Romania new owners of land abandoned its cultivation, given the limited profitability of output, lack of money for investment and existence of activity more capable of generating income. A similar phenomenon was to be observed in Hungary. Account should also be taken of the fact that a large group of farm-owners in Romania consist of elderly people, who simply (continue to) resign from any more active involvement in the farming sector. Moreover, the closure of the cooperatives was associated with a degradation of technical infrastructure (given a lack of proper maintenance, modernisation and management), with the result that capacities to produce were impaired. For example, according to Balteanu and Popovici (2010), the more than 20% of agricultural land in Romania brought within the irrigation system as of 1989 could be compared with a figure of just 3% by 2006. The droughts taking hold in the year 2000 were sufficient to reduce grain output by 40% compared with 1999, and this was a phenomenon encouraging a great many farms to resign from crop-growing altogether.

Ownership processes freed up the flow of land in the farming sector, but also between sectors. Thus changes of designation of land for non-agricultural purposes took place, above all on land around towns and cities, or where agroecological quality was lower. In the first case, the owners availed of the chance (following a period prohibiting the sale of land) to sell it at a high price. In the second case, they resigned from agricultural production and set the land aside for tree-planting or abandoned farmland. It was possible to anticipate that privatisation in agriculture might raise the dynamic where the market for the buying and selling land was concerned. As compared with the communist era, there was now considerable freedom on that market, while prices in Central and Eastern Europe were far lower than analogous ones in Western countries. In the event, however, the profitability of farm production was also very limited, disfavouring attempts to enlarge farms, while changes of designation were guarded against by very restrictive regulations. Also contributing to stagnation on the market for agricultural land was the low cost of leasing. For example, in Czechia this stood at about 1.5% of the official price of land,[6] or a level low enough to discourage those leasing land from actually buying it. The sale of land was also curtailed by a major increase in land prices in the period immediately prior to EU accession, as well as subsequently. For many years the purchase of land by foreigners was also forbidden. In Poland, the market for farmland was always shaped markedly by the supply side. This means that numbers of transactions have continued to depend mainly on owners of land being inclined or disinclined to sell. A high rate of unemployment and uncertainty regarding employment only increased people's need to feel they had security and safeguards, hence a general reluctance on the part of farmers to dispense with land, given its role as a good place to locate capital.

An unfavourable result of processes of privatisation ongoing in Central Europe was the assuming of ownership by members of the old *Nomenklatura*. These Party-approved individuals ("apparatchiks" would seem a suitable term), who had managed cooperatives and state farms under the old system readily found the necessary resources to succeed as tendering was carried out, in part also because they had the *savoir faire*, connections and experience to take over the newly-privatised farms. Indeed, it was very typical for bonds or shares in the privatised farms to be bought up quickly from the ordinary personnel of the old farms to whom they had been distributed. In that way, those most representing the old-system and its structures not only avoided being dispensed with as communism fell, but actually benefited further from that fall, acquiring large commercial farms for themselves with considerable ease. The economic system might be new, but the advance of the "Old Guard" proved entirely possible, and indeed typical. A further knock-on effect was for local networks and coteries of people enjoying close connections to take shape, not only on the commercial side of things, but also in society, and crucially in local government as well.

6. Conclusions

Up to the beginning of the 1990s the farm-economy sectors in selected countries of Central and Eastern Europe other than Poland were dominated by the nationalised sector, i.e. by state farms and cooperatives, with agriculture at the level of the individual being of marginal significance at best. However, in the years that followed, implementation of the process of privatisation, together with returns of assets appropriated in the communist era, gave rise to a diversification of agricultural land use, in terms of both ownership and forms of utilisation.

A very generalised assessment would hold that the analysed countries adopted relatively similar concepts where privatisation and the restitution of land was concerned, albeit with the results of those processes being somewhat more varied. The privatisation of agricultural land took place in line with the "Western" model of organising agriculture, in line with which a basic role in the farming system was to be played by the family-run farm. However, the ultimate results did not confirm this trend, with Czechia, Slovakia and in part also Hungary retaining – as apparently most efficient – large agricultural enterprises, albeit ones in which the management methods did change.

In all of the countries studied, the onset of the transformation period caused drastic fragmentation of agricultural land, followed by activity focused on the reversal of that process, i.e. on land consolidation (Rembold, 2003; Sabates-Wheeler, 2002). This was not universally successful. The changes of ownership above all led to a dynamic increase in the number of individual farms. This process has been ongoing in all five of the countries studied, albeit at greatest intensity in Hungary and Romania. It emerges that the appearance of such a large number of small farms of very limited commercial viability was an irrational processes; such that – for more than a decade now – it has been possible to observe a decline in numbers of farms in these countries, as well as an increase in the significance of large production enterprises. In turn, in the Czech Republic and Slovakia, notwithstanding the privatisation of land, these remain under the management of large holdings and production companies. To generalise, it can be suggested that all the countries other than Poland have seen a dominant role assumed by large farms operating on an industrial scale and in fact representing the post-communist successors of state farms and cooperatives.

Fig. 8. Models for the relationship between ownership and land use, as a consequence of changes of ownership in agriculture in Central European countries. The size of the circle represents the scale (significance) of the phenomenon.

Other than in Poland, the changes of ownership ongoing in the studied countries were of a "total" nature, meaning that communist-era enterprises disappeared, while a large number of private owners appeared. In Czechia and Slovakia, those with small parcels of land

[6] The price takes climatic conditions, relief and soil quality into account.

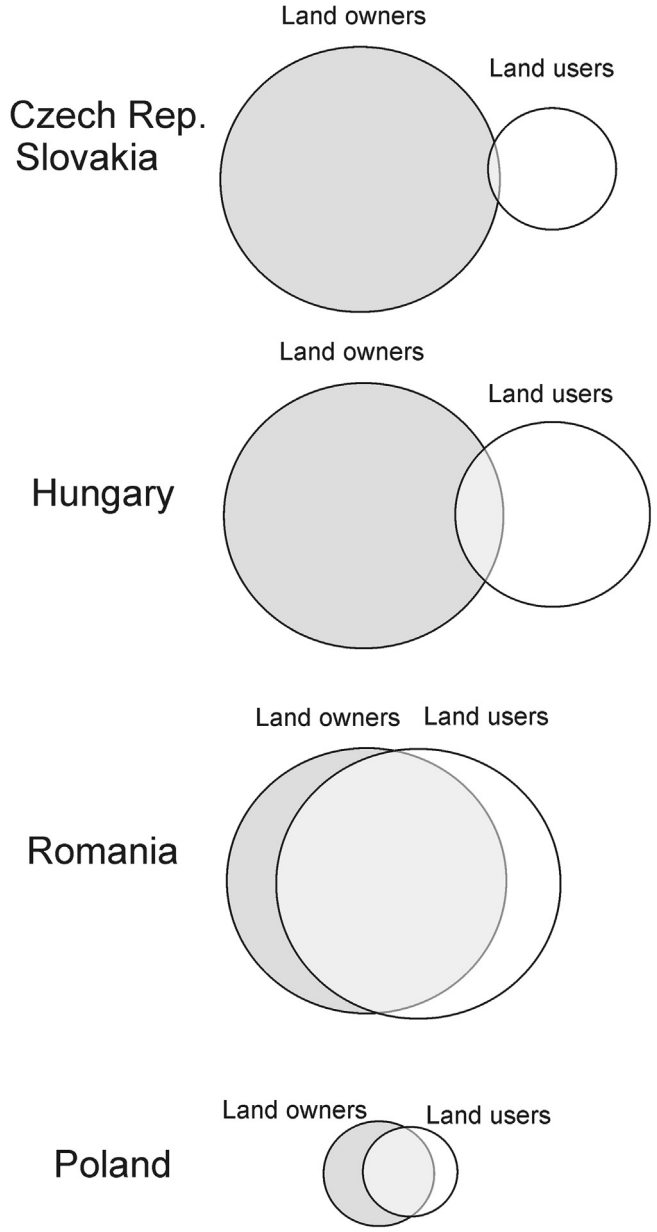

Fig. 8. Models for the relationship between ownership and land use, as a consequence of changes of ownership in agriculture in Central European countries. The size of the circle represents the scale (significance) of the phenomenon.

have tended to hire them out to large commercial holdings, with the result that fragmented ownership has not given rise to fragmentation of land use. A similar situation applies in Hungary, though there the emergence of a relatively large group of family farms has been such that it is reasonable to refer to a degree of fragmentation of land use greater than in Czechia. In contrast, in Romania, a very marked degree of fragmentation of ownership and land use has arisen, with the efficiency and competitiveness of agriculture there lowered as a result. In Poland, in turn, the analogous changes have been very regional in character, only taking in around 20% of parcels of agricultural land overall. The effect of these has been to fragment both ownership and use, if not to the extent noted in Romania.

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