

Review of the Transitional Restrictions Maintained by New Member States on the Acquisition of Agricultural Real Estate

Final Report

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Executive Summary

Efficient land transactions and a functioning land market play an important role in economic development and growth. The exchange of land, including the purchase of land by foreigners, will improve productivity, enhance access to capital, technology and knowledge, and, hence, stimulate economic development. These insights underpin the principle that accession to the EU implies the integration of the accession countries into a single free market, also with respect to land.

However, during the accession negotiations, candidate countries requested the possibility to maintain existing national provisions restricting the acquisition of agricultural land or forests by foreigners. They considered these derogations necessary in order to protect the socio-economic agricultural structure of the countries from shocks that might arise from the differences in land prices and income with the rest of the Union, and the problems in the local rural credit markets. The combination of these factors was expected to lead to a massive sale of land to foreigners.

The Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland and Slovakia (the seven new Member States, or NMS7, hereafter) were granted transitional periods during which they could maintain existing provisions of their legislation restricting the acquisition of agricultural land or forest, in derogation to the freedom of capital movement. In that context, a mid-term review of the transitional measures was stipulated, to determine whether the transitional periods should be shortened or terminated.

This study reviews these transitional measures and their impacts.

The following **restrictions** are in place:

- After accession to the European Union, foreigners can generally not purchase agricultural land for a transitional period in the NMS7.
- The transitional period is 7 years for the Czech Republic, Estonia, Hungary, Latvia, Lithuania and Slovakia; and 12 years for Poland.
- There are differences between the NMS7 in the implementation of these restrictions, for example in the way ‘foreigners’ are defined in the legal restrictions, and in the conditions that foreigners have to fulfil in order to (exceptionally) obtain ownership of agricultural real estate.
- There are several exceptions. For example in Lithuania, land ownership by foreign companies is not restricted. In several NMS7 there is no restriction on foreign ownership of land for intensive animal husbandry.
- There are generally no restrictions on renting agricultural land by foreigners.

This study puts the analysis of the land ownership restrictions into a broader perspective by addressing two questions.

1. To what extent are the restrictions on foreign ownership affecting the efficiency of land exchanges and of land allocations, and of productivity growth?

2. To what extent are the factors underlying the NMS7 concerns – that there would be a massive take-over of NMS7 land by foreigners if these restrictions would not be in place – still important?

The study **concludes** the following:

1. Restrictions on foreign ownership have affected the efficiency of land exchanges and land allocation, and productivity growth. However, the impact is mitigated because of several factors.

First, the restrictions do not fully constrain activities by foreign citizens in NMS7 agricultural and rural land markets, because there are exceptions on the restrictions on foreign ownership of agricultural land and these exceptions differ by country. Further, in several countries informal arrangements have emerged. Although it is difficult to obtain representative information on these, they appear to be more important than officially purchased land by foreigners, and to differ strongly by region. Most importantly, there are no restrictions on renting land to foreigners. This is a major factor since land renting is very important in the NMS7, as well as in the EU15, and is most important for larger family farms and for corporate farms in the NMS7, which are the type of farms where one would expect foreign investment to occur.

Second, the restrictions are only one factor constraining the functioning of the land market in the NMS7. There are several other impediments which affect the development of the land market. In most NMS7, privatisation of state-owned land and/or the finalisation of the land reform process is still continuing and the development of the land market is still constrained by high transaction costs.

Third, while the restrictions have constrained direct benefits from foreign investment, NMS7 agriculture has benefited extensively from large foreign investments in the food industry and agribusiness. These had important positive spill-over effects on the farms, as foreign companies introduced technology, know-how and capital in the food chain, which has contributed to growth in investment, productivity and product quality in NMS7 agriculture.

Fourth, there has been major growth in productivity in NMS7 agriculture and in NMS7 land exchanges and reallocation, despite the restrictions. It is unclear how much more growth in productivity and in land markets would have resulted from liberalising foreign ownership in NMS agricultural land.

2. The factors underlying the NMS7 concerns, that there would be a (massive) takeover of NMS7 land by foreigners if restrictions would not be in place, have become less important, but have not fully disappeared.

First, the gap between NMS7 and the EU15 in terms of income, productivity, and land prices has declined significantly over the past years.

Second, there still remains, however, a significant gap between NMS7 and the EU-15 in terms of land prices, income and CAP subsidies. Despite the marked increase, NMS7 land prices remain significantly below EU15 land prices. The same holds for average income per capita and value added per worker in agriculture.

Third, the evolution of social attitudes and political opposition vis-à-vis foreign ownership restrictions appears to be mixed. For example, surveys indicate that in Poland the negative attitude towards foreign ownership diminished considerably over the past years; but that in Hungary there is still strong opposition to fully liberalised land markets.

Based on the analysis in this report, the study draws the following **final conclusions**:

If full liberalisation of land turns out to be politically impossible in the mid-term review process, there are some, more moderate, changes that could be considered. The most effective proposals for changes would be those that have limited effect on the social and political considerations, and be most effective in stimulating economic benefits.

Two suggestions are to increase the minimal size of the agricultural land that foreign citizens and legal entities can acquire without restrictions and to allow foreign citizens and legal entities to acquire farm buildings and the land on which they are built without restrictions.

Both proposals should have minimal effect on the size of the land owned by foreigners in the NMS7, since it would still prevent the purchase of large areas by foreigners, but could result in important positive economic effects because it would allow those foreign citizens and legal entities interested in investing in NMS7 agriculture to do so by combining renting and owning land in their farm operations, as many farms do in the EU15 and in the NMS7.

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**Submitted to the European Commission
Directorate-General for Internal Market & Services**

**Johan F.M. Swinnen
and
Liesbet Vranken**

1 Introduction

During the accession negotiations, candidate countries requested the possibility to maintain existing national provisions restricting the acquisition of agricultural land or forests by foreigners. They considered these derogations necessary in order to protect the socio-economic agricultural structure of the countries from shocks that might arise from the differences in land prices and income with the rest of the union, and to be able to pursue an effective agricultural policy. The derogations were also deemed necessary due to an unfinished process of privatisation and restitution of agricultural land to the farmers in some countries. Some candidate countries provided detailed arguments justifying the transitional periods in the framework of the Common Positions expressed by the Council during the negotiations.

The Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland and Slovakia (the 7 new Member States or NMS7 hereafter) were granted transitional periods during which they could maintain existing provisions of their legislation restricting the acquisition of agricultural land or forest, in derogation to the freedom of capital movement enshrined in Art. 56 of the EC Treaty, as detailed in Annexes V, VI, VIII, IX, X, XII and XIV of the Act of Accession of 2003. In that context, a mid-term review of the transitional measures was stipulated, to determine whether the transitional periods should be shortened or terminated.

The objective of this study is to review these transitional measures and their impacts. To that effect, the study analyses the agricultural sectors in the seven new Member States and their evolution since the period of negotiation and accession; compares these findings with the situation in the Union, and in particular with the situation in the 'old' Member States; takes stock of the transitional restrictions effectively maintained by the seven new Member States; reviews conditions that led to an agreement on transitional measures at the time of accession; analyses their effect on the sector; and draws

conclusions on their relevance and usefulness, and the necessity or not to maintain them throughout the transitional periods.

2 Conceptual Framework

Efficient land transactions and a functioning land market play an important role in economic development and growth, for several reasons. First, they provide access to land for the farmers who are the most productive but own less land than they require. Second, they allow the exchange of land as the off-farm economy develops. Third, they facilitate the use of land as collateral to access credit markets.¹

These insights underpin the principle that accession to the EU implies the integration of the accession countries into a single free market, also with respect to land. The exchange of land, including the purchase of land by foreigners, will improve productivity, enhance access to capital, technology and knowledge, and hence, stimulate economic development in the NMS7 – and in the EU as a whole. Hence, in this framework, restrictions imposed by the NMS7 that constrain land exchanges and the optimal functioning of the land market will also inhibit the positive development effects that could result from land exchanges.

On the other hand, proponents of the restrictions claimed that their early removal would result in unfavourable short-term outcomes, in particular if large parts of NMS7 rural land were acquired by foreign citizens or companies, because of structural imbalances at the moment of accession. Such structural imbalances concern in particular a) the large income differences between EU15 and NMS7; b) the large differences in land prices between EU15 and NMS7; and c) the problems in the rural credit markets in NMS7. The combination of these factors was expected to lead to a massive sale of NMS7 land to foreigners.

To understand the current and future impact of the land ownership restrictions from these two perspectives, we need to put these issues into a broader perspective by addressing two questions.

1. **To what extent are the restrictions on foreign ownership really affecting the efficiency of land exchanges and land allocations, and productivity growth?** To address this question, it is important not only to study the effectiveness of current restrictions on foreign ownership of land, but also to put those restrictions in the broader perspective of a variety of other factors that affect the functioning of land markets in the NMS7.
2. **To what extent are the factors underlying the NMS7 concerns, i.e. that there would be a massive takeover of NMS7 land by foreigners (if these restrictions were not in place), still important?** To address this question it is necessary to assess how land market prices have changed, how the income gap has changed and how capital markets have developed.

¹ See Deininger & Feder (2001) for a review of these issues.

As a general basis for addressing these questions, it is essential to initially identify the restrictions that are in place in the NMS7 and to address the problem of obtaining relevant data describing the concerned developments. More in detail, the approach used in this study to address the key questions consisted of the following steps:

1. Systematic documentation and comparative analysis of the regulations in the NMS7 on the land transition restrictions (see section 3);
2. Identification of other factors that affect land transactions besides legal restrictions, such as constraints and imperfections in other markets, transaction costs in land markets and imperfect property rights (see section 4);
3. Documentation of foreign investments in the agricultural and food sectors in the NMS7 and a discussion of their implications (see section 5);
4. Analysis of the impact of EU accession on the NMS7 rural land markets indirectly, i.e. through other channels than access to agricultural land (see section 6);
5. Survey of how the land market (both in terms of transactions and in terms of prices and values) has developed over the past years in the NMS7 based on a collection of basic information/data and the construction of a comparative dataset and relevant indicators (see section 7); and
6. Analysis of key indicators of agricultural performance in the NMS7 over the past decade (both before and after accession) and a comparison of these to EU15 indicators. The data have been drawn from EUROSTAT, complemented by other data sources when necessary (see section 8).

The final section summarises the key conclusions coming out of the analysis. It is important to point out, however, that a major contribution of this study is the collection of basic information and data on what is happening in the land markets in the NMS7 and the processing of these data into a comparative (to the extent possible) dataset. Annex I provides more detailed information on the data sources and the construction of the indicator variables.

3 Legal restrictions maintained by the new member states on the acquisition of agricultural real estate by foreigners

3.1 General nature of the restrictions

1. Even after accession to the European Union, foreigners can generally not purchase agricultural land for a transitional period in the NMS7.
2. The transitional period is seven years for the Czech Republic, Estonia, Hungary, Latvia, Lithuania, and Slovakia; and 12 years for Poland.
3. There are differences between the NMS7 in the implementation of these restrictions, for example in the way ‘foreigners’ are defined in the legal restrictions, and in the conditions that foreigners have to fulfil in order to (exceptionally) obtain ownership of agricultural real estate. These differences

stem from the fact that the various restrictive regimes existing before accession were generally permitted to be maintained during the transitional periods.

4. There are generally no restrictions on renting agricultural land by foreigners.

Table 1. Legal restrictions regarding the acquisition of agricultural land in the NMS*

	Czech Republic	Estonia	Hungary	Latvia	Lithuania	Poland	Slovakia
Can EU citizens buy agricultural land despite the restriction?	Yes, o if married with Czech partner o if s/he has been staying and farming in the country for at least 3 years, then s/he can buy any parcel in the country.	<u>Plots < 10 ha:</u> Yes. No additional conditions have to be fulfilled. <u>Plots > 10 ha:</u> Yes o if married with Estonian partner o if s/he has been staying and farming in the country for at least 3 years, the particular plot that s/he has been renting can be bought.	Yes, o if married with Hungarian partner o if s/he has been staying and farming in the country for at least 3 years, the particular plot that s/he has been renting can be bought.	Yes, o if s/he has been staying and farming in the country for at least 3 years, the particular plot that s/he has been renting can be bought; o if married with Latvian partner, but only as co-owner	Yes, o if married with Lithuanian partner o if s/he has been staying and farming in the country for at least 3 years, then s/he can buy any parcel in the country.	<u>Plot < 1 ha not located in border zones:</u> Yes, o if residing in Poland for at least five years o if married to a Polish citizen <u>Other plots:</u> o if married to a Polish citizen o if s/he has been staying and farming in the country for at least 3 years, the particular plot that s/he has been renting can be bought.	Yes o if married with Slovakian partner o if s/he has been staying and farming in the country for at least 3 years, the particular plot that s/he has been renting can be bought.
Can a legal entity buy agr. land?	Yes	Yes	No	Yes	Yes	Yes	Yes
Can a legal entity that is registered in the country but owned by foreigners, buy agr. land?	Yes, if minority of shares is owned by foreigners	Yes	No	Yes, if minority of shares is owned by foreigners	Yes	Yes, if minority of shares is owned by foreigners	Yes

* The table provides a broad overview of the main rules. For details, including discretionary permits by the authorities, see the main text.

3.2 Country-specific restrictions

Table 1 summarises the differences between the NMS7 in legal restrictions regarding the acquisition of agricultural land.

Poland

After the 1st of May 2016, nationals of the EU Member States or a state that is part to the European Economic Area will be allowed to purchase agricultural land without restriction, while the rules laid down in the Act of 24 March 1920 on the acquisition of sale of agricultural real estate will be maintained for foreigners from outside the EU or European Economic Area.

During the transitional period, sales to foreigners are subjected to a specific procedure whereby special permission needs to be granted by the Ministry of Interior and Administration (MIA) and the Ministry of Agriculture and Rural Development (Act of 24 March 1920 on the acquisition of real estate by foreigners, Art. 1(1)). However, even then, the Agricultural Property Agency has the pre-emption right to purchase the land that was offered for such transaction (Act of formation of the agricultural system, Art. 3(4)). The same rules apply if a foreigner aims to purchase shares or take over stocks in the company owning or perpetually using real estates in Poland and if the company, as a result of this purchase, will become a company controlled by foreigners or if the company is controlled by foreigners and the purchaser is not a share or stockholder in the company (Act of 24 March 1920 on the acquisition of real estate by foreigners, Art. 3e).²

Legal restrictions forbidding foreigners from acquiring agricultural real estate apply not only to natural persons having non-Polish citizenship, but also to corporate bodies based abroad, partnerships of natural persons not holding Polish citizenship and corporate bodies based abroad (irrespective of whether they hold legal status), and to corporate bodies based in Poland but controlled by natural persons having non-Polish citizenship, by corporate bodies based abroad, or a partnership of both.

However, there are some exceptions where permission by the Ministry of Internal Affairs and the Ministry of Agriculture and Rural Development is not needed. Foreigners can acquire agricultural real estate if they are married to a Polish citizen and after, in addition, they have been residing in Poland for at least two years and on the condition that purchased property will become the joint property of wife and husband. Moreover, foreigners can acquire land if they have been residing in Poland for at least five years after they have obtained permanent resident status (Act of 24 March 1920 on the acquisition of real estate by foreigners, Art. 8(1)). However, it is important to note that these exemptions do not hold for land located in border zones as well as for parcels of agricultural land exceeding 1 ha (Act of 24 March 1920 on the acquisition of real estate by foreigners, Art 8(3)). Finally, the transitory period does not apply to EU or EEA citizens who decide to purchase real estate once they have rented it for three years in the regions of Lubelskie, Łódzkie, Małopolskie, Mazowieckie, Podkarpackie,

² Published in Dziennik Ustaw 2004, Nr 167, poz. 1758.

Podlaskie, Śląskie and Świętokrzyskie, or for seven years in the regions of Dolnośląskie, Kujawsko-pomorskie, Lubuskie, Opolskie, Pomorskie, Warmińsko-mazurskie, Wielkopolskie and Zachodniopomorskie (Act of 24 March 1920 on the acquisition of real estate by foreigners, Art. 2a). In this case, the rental contract should have been made with a certified date and the foreigners should have personally used the land for agricultural production and have legally stayed in Poland. The rental period preceding the purchase of land shall be calculated individually for each national of a Member State or of a state that is part of the EEA who has been renting land in Poland from the certified date of the original rental agreement. Self-employed farmers who have been renting land as legal persons can transfer the rights of the legal person under the rental agreement to themselves as natural persons. For calculating the rental period preceding the right to purchase, the rental period of the contracts as legal persons shall be counted. Rental agreements by natural persons can be provided with a certified date retroactively and the entire rental period of the certified contracts will be counted. There shall be no deadlines for self-employed farmers to transform their current rental contracts into contracts as natural persons or into written contracts with a certified date. The procedure to transform rental contracts shall be transparent and shall under no circumstances form a new obstacle.

The documents that a foreigner is obliged to submit to purchase agricultural real estate comprise, among others, a statement of a seller that s/he is willing to sell his property, an extract from the zoning plan and, in a case where the foreigner is not a natural person, proof of his or her financial situation. This last requirement aims to check if the purchaser is able to finance the purchase of a given real estate and refers both to bank account statements as well as the purchaser's creditworthiness. Therefore, buying land with credit should not count against the purchaser.

Czech Republic

In the Czech Republic foreigners, defined as physical (natural) persons not having the Czech nationality or as legal entities based abroad, cannot acquire agricultural land until 2011 (Collection of Laws Act nr 219/1995).³ However, there are some exceptions. First, foreigners can acquire land if they have the Czech citizenship or if they married a Czech partner. In addition, foreigners can acquire land through heritage or if they exercise their pre-emptive rights which emerge from co-ownership. Moreover, they can acquire land if the land can not be separated from another asset that is already owned by the foreigner or in exchange for domestic land.

Finally, EU citizens-farmers can also acquire agricultural land if they are registered as self-employed farmers and if they have been permanently staying in the Czech Republic for at least 3 years. This means that physical (natural) persons permanently staying and farming for at least 3 years in the Czech Republic on rented land, as well as Czech legal entities combining Czech and foreign capital, are eligible to buy agricultural private

³ Collection of Laws (1995), Act nr. 219/1995 establishing the rights and obligations of Czech nationals and foreigners with regards to capital ownership and other financial transactions" The Foreign Exchange Law", Volume 60, Amended by 159/2000 Col., 362/2000 Col., 482/2001 Col., 126/2002 Col., 257/2004 Col. 354/2004 Col., 444/2005 Col.

land. The farmers have to prove their integrity, professional knowledge in farming and knowledge of the Czech language (Collection of Laws Act nr. 252/1997).⁴ No other special procedures or conditions are required for the eligibility, except to be officially registered as a farmer or a Czech company and to use the purchased land in ‘a proper way’ according to the Land Protection Law (Collection of Laws (1992), Act nr. 334/1992).⁵ There are no limits on the amount of land that can be bought by eligible foreigners, but it is important to note that only physical (natural) persons are eligible to buy state land.

In 2007, the Czech government adapted a proposal to amend the Foreign Exchange Law (and subsequently also the Law on Land Privatisation)⁶ to ease the eligibility conditions for foreigners who want to buy private and state land. According to the amendments, the requirement to permanently stay and to farm at least three years in the Czech Republic and other conditions (professional knowledge of farming and knowledge of the Czech language) are abolished. The only condition for the purchase of land is the official registration of a foreign physical (natural) person as a farmer. However these proposed amendments have not yet been approved by the Parliament.⁷

Finally, there are no restrictions on EU citizens to rent and use land in the Czech Republic.

Estonia

While there are restrictions related to the acquisition of agricultural land by foreigners until 2011, there are some exceptions (Restrictions on Acquisition of Immovables Act).⁸ First, the law does not forbid foreigners to acquire agricultural land if the plot of land is less than 10 ha. Only the acquisition of agricultural land of more than 10 ha is restricted for foreigners.

Second, restrictions to buy more than 10 ha are not fully applicable to an EU citizen who has permanently resided in Estonia for at least the last three years, who is a sole

⁴ Collection of Laws (1997), Act nr. 252/1997 about agriculture and its role in society "Agricultural Law", Volume 85, Amended by 62/2000 Col., 307/2000 Col., 128/2003 Col., 85/2004 Col., 317/2004 Col., 94/2005 Col. 441/2005 Col.

⁵ Collection of Laws (1992), Act nr. 334/1992 about agricultural land and its protection "Law Protection Law", Volume 68, Amended by 10/1993 Col. 98/1999 Col., 132/2000 Col., 76/2002 Col., 320/2002 Col. 444/2005 Col. 186/2006 Col. 222/2006 Col.

⁶ Collection of Laws (1999), Act nr. 95/1999 about transmission of agricultural and forest land owned by state on other persons "Law on Land Privatisation", Volume 36, Amended by 253/2001 Col., 253/2003 Col., 354/2004 Col., 94/2005 Col., 342/2005 Col., 179/2005 Col., 178/2006 Col., 186/2006 Col.

⁷ As of October 2007.

⁸ Riigi Teataja (= State Gazette) I 2003, 23, 145, entered into force 1 April 2003, and amended by the following Acts: 17.05.05 entered into force 18.06.06 – Riigi Teataja I 2005, 26, 192; 15.06.05 entered into force 01.07.05 – Riigi Teataja I 2005, 37, 284; 17.12.03 entered into force 01.01.04 – Riigi Teataja I 2003, 88, 591.

proprietor entered in an Estonian register and has been engaged in farming⁹ during at least the last three financial years, nor to a legal entity that is entered in the Estonian commercial register or register of non-profit associations and foundations and that has been engaged in farming in Estonia during at least the last three fiscal years. The same applies for subsidiaries of EU companies if the subsidiary is registered in Estonia. These individuals or legal entities are allowed to buy agricultural land that they have been renting for three years prior to the acquisition.

Third, if the person or the legal entity does not meet the requirements stated above, s/he can acquire land but only after receiving consent from the County Governor. The decision to grant consent is based on the business plan of the applicant for the use of the land and its accordance with agricultural and forestry requirements, the (financial) assets of the applicant and his/her experience in agricultural production and forestry. The Governor can issue permission only if the applicant has been in Estonia for at least six months or has experience in agricultural production for at least one year.

Finally, any person who is not an Estonian citizen or a legal person of Estonia is prohibited from acquiring agricultural land in the following small islands and border areas:

- 1) the sea islands, except Saaremaa, Hiiumaa, Muhu and Vormsi;
- 2) in the county of Ida-Virumaa: the cities of Narva, Narva-Jõesuu and Sillamäe and the rural municipalities of Alajõe, Iisaku, Illuka, Toila and Vaivara;
- 3) in the county of Tartumaa: the rural municipalities of Meeksi and Piirissaare;
- 4) in the county of Põlvamaa: the rural municipalities of Mikitamäe, Orava, Räpina and Värskä; and
- 5) in the county of Võrumaa: the rural municipalities of Meremäe, Misso and Vastseliina.

The government may grant authorisation for the acquisition of agricultural land in above-mentioned areas also to other persons for reasons significant to the state.

Hungary

In Hungary, exceptions to the restrictions relate to EU nationals who want to establish themselves as self-employed farmers and who have been legally staying and farming in Hungary for at least three years continuously (Act LV of 1994, Acquisition of Ownership of Arable Land, Section 7).¹⁰ These EU nationals are not be subject to any rules and procedures other than those to which nationals of Hungary are subject and the upper limit on the amount of land the foreigners can acquire is the same as for domestic

⁹ The sole proprietor should be engaged in the manufacture of agricultural produce within the meaning of paragraph 6 of the Rural Development and Agricultural Market Regulation Act in Estonia.

¹⁰ 2004. évi XXXVI. Törvény a termőföldről szóló 1994. évi LV. törvény módosításáról (Act XXXVI of 2004 on amendment of Act LV of 1994 on Arable Land), Magyar közlöny (Official Journal of Hungary), Magyar Hivatalos Közlönykiadó (Hungarian Official Journal Publisher), Budapest, 2004. évi. 61. szám, 2004. május 1, pp. 6408-6410.

private persons (300 ha). Pre-emptive rights in the acquisition of ownership also apply to foreign individuals.

EU nationals are required to provide proof of eligibility for acquiring agricultural land in the form of official certificates. In particular, they have to obtain the following official certificates:

- Official certificate issued by the immigration authority to verify that he has been legitimately residing in Hungary for three consecutive years or for any EU national, who does not have a permanent residence permit, the authorisation to reside in the country, or a certificate as proof of having submitted an application for such authorisation.
- Certificate from the county agricultural bureau verifying that the applicant has been engaged in agricultural activities in Hungary in his own name and at his own risk for three consecutive years prior to the acquisition of ownership. The certificate shall be supported by an environmental study consisting of the examination of the agricultural activities.

There are two further exceptions applying to the ownership of farmsteads (i.e. the farmhouse and the land it is built on) and farm buildings for intensive livestock breeding, as follows:

- Foreign nationals may acquire a farmstead formed as an independent real property (parcel of land) of 6,000 m² or less, in accordance with the provisions of specific other legislation on other real properties not classified as arable land.¹¹
- Non-resident legal entities or private individuals may acquire real estate that is not qualified as arable land so that they can acquire farm buildings necessary to set up intensive livestock breeding production systems. EU nationals and legal persons and unincorporated entities established in any Member State of the European Union, in a Member State that is a party to the Agreement on the European Economic Area, or in other similar States may acquire non-agricultural land under the same conditions applicable to resident persons (without special permission).¹²

Latvia

Latvia has a number of restrictions on citizens and legal entities of EU member states wishing to acquire agricultural and forest land. Foreigners are also not allowed to acquire non-agricultural land in the area of state borders, nature reserve areas or in

¹¹ Source: Act LV of 1994 on Acquisition of Ownership of Arable Land, Section 8, Official Journal of Hungary, Hungarian Official Journal Publisher, Budapest, No. 69. June 27 2004, pp. 2533-2545.

¹² Source: Act LV of 1994, Transitional Provisions Pertaining to State Property and to the Acquisition of Ownership by Foreign Entities, Section 88/A and its Amendment in Act XXXVI of 2004 on amendment of Act LV of 1994 on Arable Land, Official Journal of Hungary, Hungarian Official Journal Publisher, Budapest, 2004. No. 61., May 1 2004., pp. 6408-6410.

territories of other nature parks, land of the Baltic Sea and of Riga's bay beach dune's protective zones, land of public waters protective zones, excluding territories for the purpose of construction according to the territorial plans of municipalities, and land of public federal mines. These restrictions are described in the law on land privatisation in the countryside (April 3, 2003).¹³

However, there are some exceptions to these restrictions.

First, EU citizens can buy agricultural land provided they have been farming and living in Latvia for at least three years without interruption. In addition, they are only allowed to acquire that particular parcel of agricultural land that they have been renting for at least three years prior to the acquisition. However, before actually receiving ownership rights, they need to obtain consent from the local municipality.

Furthermore, legal entities of EU Member States cannot obtain agricultural and forest land during the transitional period. However, there is no restriction on ownership of agricultural land by legal entities provided that at least 51% of the share capital is owned by citizens of Latvia, the state of Latvia or a Latvian municipality.

Finally, it is worth mentioning that in practice there is no official investigation regarding the practical application of the above-mentioned legal norms in land transactions so that foreigners can buy agricultural land with hardly any restrictions.

Lithuania

Lithuania was also granted a transitional period during which foreigners could not acquire agricultural real estate (Provisional law on acquisition of agricultural land 2004-07-15, No: IX-2406).¹⁴

However, there are exceptions for those foreigners¹⁵ who have been permanently living and farming in Lithuania for at least three years. In that case, he/she can buy not only the parcel s/he has been renting, but any parcel in the country. Since 2003, the same exemption applies to foreign legal persons and other foreign organisations that have set up representative offices or branches in Lithuania (Constitutional Law on

¹³ The law "On Land privatization in rural areas" entered into force since 01.09.1992 and is published in the official journal "Ziņotājs" No.32/34 – 20.08.1992. Amendments of the law "On Land privatization in rural areas" regarding restrictions of purchasing of rural land entered into force since 15.04.2003 and is published in the official journal (LV) "Latvijas Vēstnesis", No.58 (2823).

¹⁴ The Provisional Law on Acquisition of Agricultural Land 2004-07-15, No: IX-2406; and amendments to this law were published in: Valstybės žinios, 2003, Nr. 15-600; Valstybės žinios, 2004, Nr. 124-4490; Valstybės žinios, 2006, Nr. 182-3259. (*Valstybės Žinios* is the Latvian Official Journal).

¹⁵ The derogation holds for foreigners who meet the European and Transatlantic integration criteria, referring to nationals of Member States of the European Union, the Organisation for Economic Co-operation and Development, the North Atlantic Treaty Organisation of states who signed the European Economic Area Agreement.

Implementation of 3rd part of article No. 47 of the Constitution of Lithuanian Republic 2003-03-20, No:I-1381).¹⁶

A Lithuanian company may buy agricultural land only if its income from agricultural activities during the last two years constitutes at least 50% of its total income. It is also worth noting that there are no restrictions on the foreign ownership of such land-owning companies.

Foreigners who marry a Lithuanian citizen cannot formally own the land unless s/he becomes a Lithuanian citizen him/herself. However s/he can be a ‘co-owner’ in joint ownership and can claim for compensation for the land parcel in case of divorce.

Slovakia

In Slovakia, there is a restriction on ownership of agricultural land by foreigners, defined as a fiscal person who has no permanent residence in Slovakia, or legal person who is not established in Slovakia (Foreign Exchange Act No 312/2004 Coll. Article 2 and Article 19a).¹⁷

However, there are important exceptions and practical limitations.

First, foreigners with a residence permit in Slovakia who rent and farm the land for at least three years after Slovakia’s EU accession¹⁸ can buy and own land in Slovakia (Foreign Exchange Act No 312/2004 Coll. Article 19a).¹⁹ In that case, a rental contract between the landowner and the tenant (foreign individual) duly signed by both parties is necessary. In addition, foreigners can acquire agricultural land through inheritance and by exercising pre-emptive rights in the case of co-ownership (Civil Code No. 40/1964 Coll.²⁰ as amended by later regulations; and Foreign Exchange Act No. 312/2004 Coll). On the other hand, foreigners from non-EU Member States cannot own agricultural land in Slovakia (Foreign Exchange Act No 312/2004 Coll. Article 19a).

Furthermore, foreigners can establish legal persons (Joint Stock Company, Limited Liability Company) registered in Slovakia and buy land through that legal person. According to Act No. 513/1991 Coll.²¹ as amended by later regulations of the Commercial Code, the procedure and requirements for setting up a legal entity in Slovakia are the same for Slovak and foreign individuals. A legal person registered in Slovakia and owning land in Slovakia can later sell that land without any restrictions to

¹⁶ The Constitutional Law on Implementation of 3rd part of article No: 47 of the Constitution of Lithuanian Republic 2003-03-20, No: I-1381, and the amendment to this law were published in: Valstybės žinios, 1996, Nr. 64-1503; Valstybės žinios, 2003, Nr. 34-1418.

¹⁷ Zbierka zákonov (Official Journal) 2004, Čiastka (Section) 131, p. 2974-2984.

¹⁸ Additionally, other standard documents are necessary when buying land in Slovakia (e.g. buying agreement, ID card, etc.) but these do not differ between a Slovak and a non-Slovak buyer.

¹⁹ The same holds if a foreigner is married to a Slovak citizen.

²⁰ Zbierka zákonov (Official Journal) 1964, Čiastka (Section) 19, pp. 1-40.

²¹ Zbierka zákonov (Official Journal) 1991, Čiastka (Section) 98, pp. 1- 84.

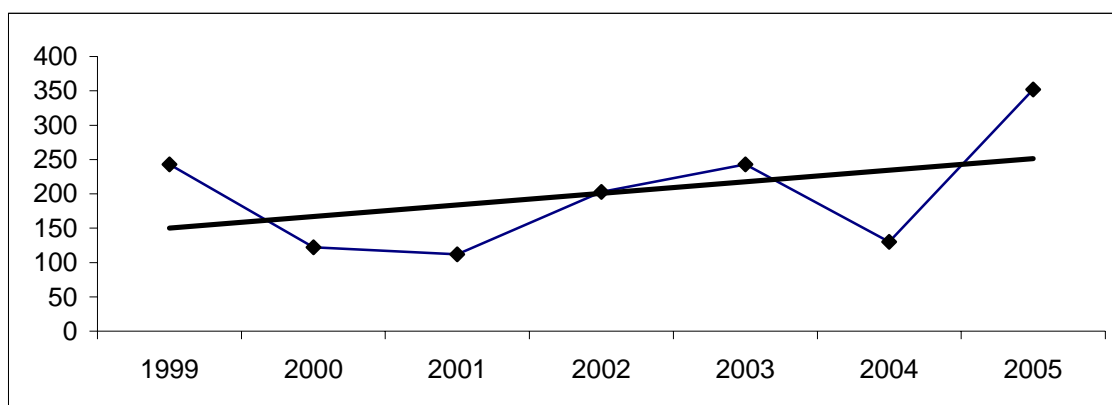
a company registered in another country (Act No. 220/2004 – Act on Protection and Use of Agricultural Land).²²

3.3 Actual Foreign Land Ownership

Since there are differences between the NMS7 in the implementation of these restrictions, it is worth looking to what extent foreigners have actually been able to buy agricultural land.²³

In Poland, where we observe a rather strict implementation of the restriction, around 1,400 hectares have been sold to foreigners between 1999 and 2005, and the amount of land transacted on a yearly basis has increased slightly (Figure 1). This represents by far less than 1% of total agricultural land. However, it should be taken into account that these figures represent only the official statistics and these are likely to underestimate the actual demand and foreign ownership for agricultural land. There are undocumented reports of foreigners buying land by using Polish citizens as intermediary in order to avoid the restriction regarding the acquisition of agricultural land by foreign owners. In addition, there are important regional differences as foreigners are more active in the Western regions of Poland.

Figure 1. Agricultural land (ha) sold to foreign investors in Poland between 1999 and 2005*



* Regional data on land sold to foreigners in Poland can be found in the Annex (Table A3).

Source: Sprawozdania Ministra Spraw Wewnętrznych i Administracji z realizacji ustawy 24 marca 1920 r. o nabywaniu nieruchomości przez cudzoziemców z lat 1999-2005.

In Hungary, only 700 hectares of agricultural land were bought by foreigners between 2005 and 2006 and this represents less than 0.2% of the total turnover. Foreigners are slightly more important when it comes to buying farmsteads: between 1% and 1.5% of the farmsteads that changed ownership were bought by foreigners. This low shares seem to indicate that foreigners are not really threatening land purchase opportunities for Hungarian farmers. However, it should be taken into account that the above figures only refer to official statistics. Many agricultural land parcels are sold using so-called ‘pocket

²² Zbierka zákonov (Official Journal) 2004, Čiastka (Section) 96, pp. 2278- 2315.

²³ There are no official data nor estimates on this for Estonia.

contracts', which are illegal but still used.²⁴ According to land experts, around 400,000 ha or around 6% of agricultural land is currently owned by foreigners (including land bought by foreigners in an unofficial way).

In Slovakia, where foreigners can buy agricultural land relatively easily by setting up a legal entity, approximately 20,000 ha or 1% of the utilised agricultural area is owned by foreigners.

According to a survey done by the Czech Union of Agricultural Businesses 90,000 ha of agricultural land or 2.1% of total agricultural land is owned by foreigners and around 400,000 ha of agricultural land corresponding to 9.5% of total agricultural land is rented by foreigners in 2006.

In Lithuania, official statistics indicate that 30,000 ha of agricultural land, corresponding to 1% of agricultural land, is used by foreign natural persons or legal entities. Experts estimate that foreigners own 12,000-15,000 ha of agricultural land, i.e. around 0.5% of agricultural land, in 2007; and that around 30 foreign legal persons own 10,000-12,000 ha and around 20 natural persons own 1,000-3,000 ha.

In Latvia in 2005 and 2006, a foreign party was involved in respectively 427 and 512 land sales transactions, according to the state unified computerised land register. These figures correspond to approximately 2% of the sales transactions that took place in those years. In the first eight months of 2007, a foreign party was involved in 341 land sales transactions, which also corresponds to 2% of all transactions in that period.

4 Ownership restrictions and land markets

The first question we have to address is **the extent to which these restrictions on foreign ownership, as described in section 3, are really affecting the efficiency of land exchanges and land allocations, and of productivity growth.** To address this question, it is important to put the effect of restrictions on foreign ownership of land in the broader perspective of a variety of factors that affect the functioning of land markets, in general and in the NMS7 more specifically. In particular, two (sets of) factors are important to take into consideration:

- a. The restrictions that have been imposed by the NMS7 concern restrictions only on *ownership* of agricultural land by foreigners. They *do not constrain land transactions in the form of renting land.*
- b. Other factors that affect land transactions (besides legal restrictions on foreign ownership) include mainly constraints and imperfections in other markets, such as (rural) capital markets, insurance markets and other input markets. Transaction costs in land markets and imperfect property rights can also play an important role.

²⁴ Pocket contracts are signed sales contracts that are not recorded in the land register so that, although the official record shows that a Hungarian citizen owns the land, in practice, a foreign person owns the property.

In the rest of this section we explain how these other factors can affect land transactions and hence how this would affect the impact of the transitional restrictions imposed in the NMS7. We start with comparing renting versus sales transactions and discuss the second set of factors afterwards.

4.1 Land sales versus rental transactions

The restrictions that have been imposed by the NMS7 concern restrictions on ownership of agricultural land by foreigners. They do not constrain foreigners in accessing land through renting land.

Land renting is a very important form of agricultural land transaction in many developed countries, including the US and several EU15 countries, where sometimes more than half of all agricultural land is rented by the farms, although there are large differences between countries. Table 2 presents aggregate indicators of the importance of renting as a share of total land used. Among the EU15 Member States, we observe an important variation in the importance of land renting. For example, in Belgium, where tenants are highly protected by the land rental policy, almost 70% of the cultivated land area is rented, while in Italy, where the policy is aimed at stimulating owner-cultivation, only 26% of the cultivated land is rented.

Land renting is also very important in NMS7 agriculture, and with even larger variation among countries. In the Slovak and Czech Republics, e.g., around 90% of the cultivated land area is rented. In Hungary, Estonia and Lithuania, between 50% and 60% of the cultivated area is rented. In Latvia and Poland, this number decreases to around 25%.

Table 2. Share of rented land in total land used (%), 2003 and 2005

	Share of rented land in total utilised agricultural area 2003	Share of rented land in total utilised agricultural area 2005
Slovakia	95	91
Czech Republic	89	86
France	71	73
Belgium	68	68
Germany	65	64
Hungary	56	59
Estonia	57	54
Lithuania	54	53
Sweden	45	40
Netherlands	39	39
Greece	34	36
Finland	33	34
Norway	32	34
United Kingdom	35	31
Spain	31	31
Portugal	29	30
Slovenia	24	30
Austria	26	29

Italy	29	26
Latvia	26	24
Poland	na	22

Source: Eurostat.

4.2 The efficiency of land sales and rental transactions

Does the form of these land transactions (rental or sales) matter for efficiency? The sale of land is often considered a superior form compared to land rental. The arguments supporting the optimality of land sales are that a) land sales transfer full rights to the new user, b) they are more likely to increase access to credit as owned land can be used for collateral purposes and c) they provide optimal incentives for investment by providing permanent security of rights (Binswanger et al., 1995).

However, these conclusions rely on a number of simplifying assumptions that are not always consistent with reality, and especially not with reality in transition countries – or in the EU for that matter.

Imperfections in input, product, credit and insurance markets all affect the functioning of land markets. Credit or capital market imperfections play a particularly important role, and particularly so for land sales transactions.

Capital market imperfections may constrain the efficiency of land sales markets in several ways. First, where capital markets work imperfectly, land purchases typically have to be financed out of own savings. Second, where financial markets do not work well, or where confidence in money as a repository of value is low, land may be used to store wealth and may be acquired for speculative purposes. Third, land may be purchased, or held on to, as a hedge against inflation, or as an investment asset in the absence of alternative investments or hedging options. Fourth, with constrained access to credit, investment in land ties up much needed capital in land, and prevents farmers from using these savings for investment in technology, equipment or quality inputs. Finally, people hold land for many other reasons than production, such as prestige value, lifestyle value and family traditions, leading wealthy and politically connected households to accumulate large tracts of land. Some of these factors also make the sale price of land typically higher than the productive value of land.

Moreover, transaction costs in land sales can be large. This does not only refer to notary fees, etc., but also to the costs of enforcing property rights and obtaining access to the necessary documents and approval from local officials, which may be costly for reasons of corruption or inefficient administration. Transaction costs not only imply that a premium needs to be paid by the buyer, but also that significant losses can be incurred by buying and re-selling land, and hence prevent flexible adjustments of land use through land sales.

All this has important implications for efficiency. An efficient land market would transfer land from less to more productive users of the land. The arguments raised above imply that it is expensive and difficult for efficient producers to buy land; they also reduce the attraction for less efficient producers to sell their land. These factors imply that land markets require a premium over their expected production value to be included

in the sales prices. As these constraints on the land market limit the transfer of land from less efficient to more efficient users, efficiency losses are incurred. For example, as transaction costs in land sales are large, owners and farmers have a difficult time adjusting their land to their other production factors, and to changed market conditions. This leads to sub-optimal land allocation. Similarly, as owners hang on to land for reasons of speculation, insurance or wealth hoarding, land will not be used in the most productive way.²⁵

In such environments, land renting may have advantages over sales:

- it allows more flexible adjustments of the land area used with relatively low transaction costs;
- it requires only a limited capital outlay, thereby leaving more liquidity available for productive investments rather than locking it all up in land;
- it facilitates easy reallocation of land towards more efficient users than the current owners; and
- it could provide a stepping stone towards increased land use and ownership by the poorest.

These factors were highly relevant for the NMS7 in the 1990s. Transaction costs for land sales were very high during the transition period, if sales were permitted at all. Also, flexible exchange options were particularly important in conditions of uncertainty. During the transition, farms and land owners were often uncertain about how market conditions would evolve, and how institutions and laws would evolve. In such conditions flexible and short-term rental contracts may be better choices than sales or long-run contracting – for both sides of the transaction.

However, rental markets are not perfect. There can be problems with a) investment incentives because of the lack of long run security, b) access to credit as one cannot use rented land as collateral, and c) segmentation of land rental markets with insecure property rights.

Several of these potential problems depend strongly on the nature of the rental contracts, on the institutional environment affecting property rights and enforcement costs, and on government regulation of rental contracts. For example, in several West European countries, governments have therefore introduced legislation to guarantee a minimum length of rental contract of several years in order to guarantee tenants sufficient security of land operation. However, problems of overregulation have occurred (Swinnen, 2002).²⁶

²⁵ It should be noted that these constraints on land sales markets are not only important for the efficiency of the land market, but also for equity and poverty reduction. In many cases, the poor are disproportionately affected by imperfect credit and insurance markets. Also, the role of land as a source of hedging and wealth is more important for them. As a consequence, these imperfections tend to reduce disproportionately the benefits that poor people could obtain from participation in the land markets.

²⁶ In most West European countries, the extensive regulation of land rental contracts has created tensions as it constrained dynamic use of the land and growth. Moreover, it has led to perverse

The investment disincentive effect depends importantly on the nature of the required investments, and one should expect the length of the investment depreciation to be correlated to the length of tenure security required. This is one factor that explains why farms may prefer a combination of owned land and rented land.

One of the main advantages of rental rather than sales transactions in capital-intensive agricultural systems – such as in the EU and the US – is that with the possibility of using other assets as collateral, farms prefer to invest in new technology and farm-specific assets rather than tying up large sums of capital in land purchases. Many farms use both owned land and rented land in their operations. According to the US Department of Agriculture, commercial farms rent on average about half of the land they use in the US. In Western Europe, many farms both own and rent land, and the proportion of such mixed land use increases with the size of the farm (Feenstra, 1992). In this way, farms in these countries combine tenure security (with their assets and long-term investments concentrated on owned land) and flexibility in land allocation on the one hand, with freeing up capital for other investments (by renting additional land rather than buying) on the other hand.

We find evidence that the same is occurring in the NMS7. Data from Hungary (see Figure 2) suggest that farms combine buying and renting of land as their preferred strategy: larger family farms in Hungary both buy and rent more land.

An important point to emphasise in this discussion is that the larger farms are presumably the type of farms in which foreigners would most likely be investing, and that precisely the vast majority of agricultural land used for these farms is rented, rather than owned. That said, most farms would prefer combining renting and owning, and the balance between renting and owning is likely to depend on the nature of the farm activity.

Figure 2. Land rented and owned (hectares) by farm size (quintiles) – Hungarian family farms



Note: Class 1: 0-0.1ha; Class 2: 0.1-0.3; Class 3: 0.3-1; Class 4: 1-3; Class 5: >3.

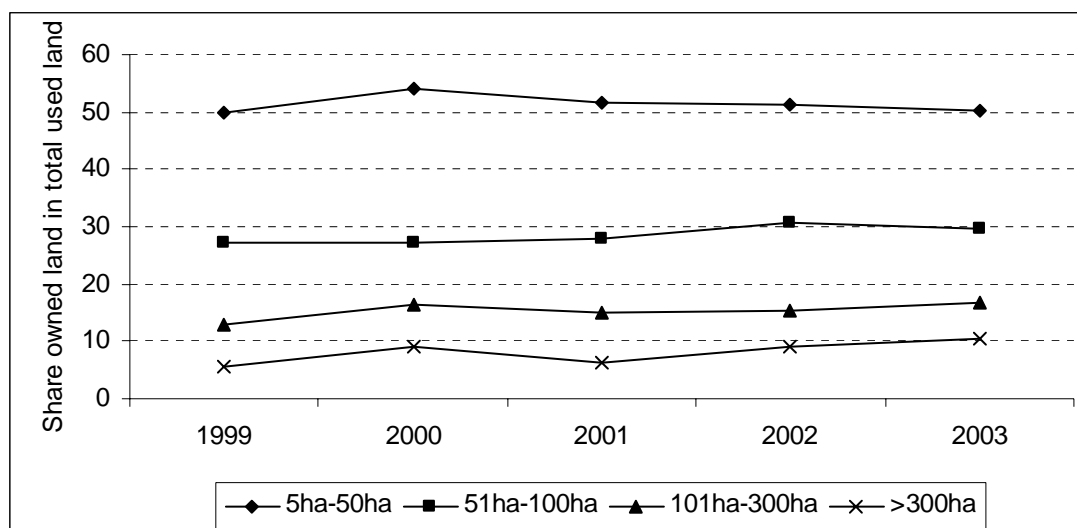
Source: Leuven ACE Survey Datasets.

effects as landowners were no longer interested in renting land to farmers and preferred to sell it (see Swinnen et al. (2006) for an overview of these regulations).

4.3 Land Tenure and Farm Structures

Data from the Czech Republic suggest that there is a limit to this combination of buying and renting of land. Renting becomes more important if the farms get (much) larger: Figure 3 shows how renting increases from around 50% of the used land for farms between 5 and 50 ha to more than 90% for farms of more than 300 ha.

Figure 3. Share of owned land in total amount of land used, Czech Republic, 1999-2003 (%)



Source: VUZE

This observation that renting increases with farm size captures two effects: the one we just described above that capital constraints shift farms to prefer land renting over buying beyond a certain size, and a second effect which is due to a combination of the history of land relations in the NMS7 and transaction costs in land markets.

There is a strong correlation between the importance of land renting at the country level and the importance of corporate farms in total land use. While corporate farms own little land, they use a lot of land in some countries, almost all of which is rented. In the Czech and Slovak Republics, 75% of the total agricultural land area or more is used by corporate farms (see Table 3). Also in Hungary, corporate farms still use around half of all land. The presence of high transaction costs reduces the incentive for land owners to change the allocation of a plot so that a large share is still rented to the former transformed cooperatives and state farms. The strong correlation between the share of corporate farms in land use and the importance of land renting is demonstrated in Figure 4.

The land reform process in the 1990s in the NMS created a class of new, sometimes absentee, land owners while land is used by a mixture of smaller individual farms and large-scale corporate farms. These corporate farms continue to use large parts of the land for a variety of reasons. An important reason is that historically the large-scale

farms were the users of the land. New owners of the land may face significant transaction costs if they want to withdraw their land from the farms and reallocate it.²⁷

Table 3. Percentage of used agricultural area used by a 'single holder' (individual or family farms)

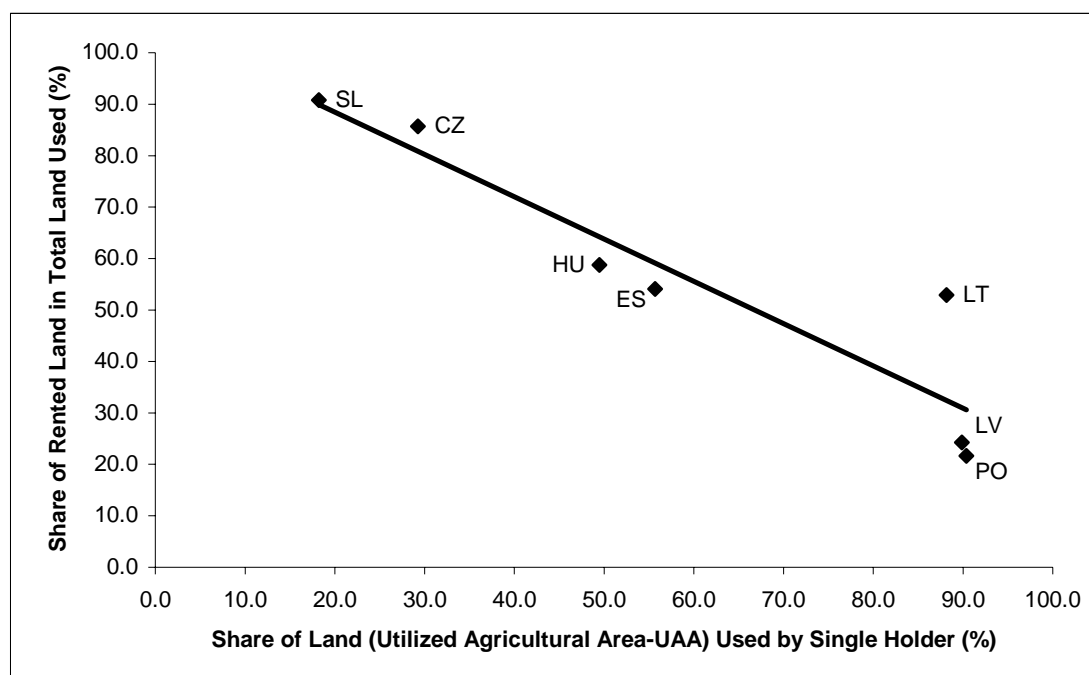
	2003	2005
Ireland	100	100
Greece	100	100
Luxembourg	100	100
Denmark	97	98
Slovenia	94	95
Norway	96	95
Cyprus	93	93
Malta	92	93
Belgium	92	92
Netherlands	92	92
Finland	93	92
Latvia	89	90
Poland	88	90
Lithuania	88	88
United Kingdom	89	85
Austria	83	83
Italy	88	82
Sweden	81	82
Portugal	77	75
Germany	69	69
Spain	69	69
Estonia	59	56
France	54	50
Hungary	50	49
Czech Republic	27	29
Slovakia	13	16

²⁷ While the withdrawal procedure is usually stipulated by law, it is also determined by the willingness of the corporate farms to implement it (Mathijs & Swinnen, 1998). Interviews with country experts confirm that the difficulty to withdraw land is highly dependent on the location of the plot. Withdrawal of a plot that is located in a consolidated field makes the process more difficult and more costly. The cooperative farm and the landowners have to agree on the physical demarcation of the plot. If the plot is located in the middle of a consolidated field, they will typically try to agree on a comparative parcel at the border of the field. In that sense, it is important that farm management is cooperative on the withdrawal procedure. According to the legislation, corporate farms have no right to block such withdrawals. However, in practice they are not always that supportive. While difficulties between withdrawal of physical land plots and land shares are not that dissimilar, there are indications that the withdrawal of land shares is even more difficult, especially for land owned by individuals not related to the corporate farms (non-members/non-partners). In general, these problems increase the costs for the landowner, since s/he can be deterred from withdrawal by being offered a plot located far from his operation or a plot of lower soil quality.

Source: Eurostat and Country Statistical Offices.

Corporate farms managers typically had more information than landowners about the economic situation of the farm and about regulations governing local land transactions.²⁸ This is especially true for landowners who have not been involved in agriculture, or who are living outside the village where their land is located, or for pensioners. For example, in Hungary ‘passive owners’ (this category includes village-based pensioners, landowners who are not active in the co-operatives and those living outside of the village where their land is located) received around 71% of privatised agricultural land (Swain, 1999).

Figure 4. Correlation between land renting and the importance of corporate farms in the NMS7



Source: Swinnen et al. (2006).

Not surprisingly, the domination of large corporate farms in the land market leads also to imperfect competition. Large farm corporations use their market power in local or regional land markets to influence land prices and rental contract conditions in their favour. For example, in countries like Slovakia, in some villages, almost the entire village is renting to a single corporate farm.

In Hungary there is an important additional reason why there is such a high correlation between renting and corporate farms: legal restrictions on land ownership. Legal restrictions in that country not only prohibit land purchase by foreigners (as explained in section 4) but also by corporate farms (see section 5.4.5). Only Hungarian family farms can own agricultural land.

²⁸ For example, Swain (1999) describes how pensioner-members of co-operatives in Slovakia were ‘forced’ to rent the land to the co-operative under the threat of losing their pension.

Box 1. Causes of differences in farm structures in NMS7

Why does the share of corporate farms differ so strongly among countries? This question is somewhat beyond the scope of this report, and has already been the topic of several studies (e.g. Lerman et al., 2004; Mathijs & Swinnen, 1998; Rozelle & Swinnen, 2004). Key factors are relative factor endowments (corporate farms have disappeared in labour-intensive agricultural systems), commodity characteristics (scale economies being larger in grains than in vegetable and dairy production, for example), market imperfections (family farms face disadvantages in accessing inputs and output markets if supporting institutions are not present), and the nature of the land reform (restitution and share distribution have helped corporate farms to survive, while land distribution in kind (plots) has contributed to their disappearance).

Different land reforms in transition countries resulted in different ownership structures. The most important land reform choices were: restitution, distribution in kind (actual plots), distribution of land shares or a combination (first distribution in shares, then in kind) (Swinnen, 1999). These differences can have important implications for the role of rental markets in these countries. An important difference between restitution of land to former owners and the distribution of plots or shares to farm workers and rural households is that with restitution (such as in the Czech and Slovak Republics, Bulgaria, the Baltic states and large parts of Romania and Hungary) a significant share of the land is (potentially) allocated to individuals who are not (or no longer) active in agriculture. They may be retired or living in urban areas. This has several implications for the development of land markets. First, there is probably more need for an exchange of land, since retired and urban households are less likely to use land than rural households who are active in agriculture. Second, restitution is more likely to lead to a consolidation of the large-scale farming structures (collective and state farms in the past, now corporate farms) because corporate farm management, which was the historical user of the land, has transaction cost advantages in dealing with the new owners (Mathijs & Swinnen, 1998). For both reasons, restitution of land is associated with more land exchanges, including renting.

All these factors have, often indirectly, had a major impact on the development of land rental markets.

4.4 Property rights imperfections, transaction costs and (other) legal restrictions

In addition to market imperfections, there are other constraints that impede both land sales and rental transactions, and hence reduce the potential to transfer land from the least to the most productive users and prevent the efficient allocation of agricultural land.

It is well known that property rights imperfections as well as transaction costs related to the identification and delineation of land plots, the enforcement of land rights, etc. are significant constraints on the development of land markets. In fact, the NMS7 are well-known examples of how these factors have affected land markets in the 1990s.

Property rights on most of the land in NMS7 were privatised in the 1990s. While these land reform processes have been mostly finalised, this does not necessarily mean that all land reforms are completed and that all the property rights problems have been solved. There are several cases where problems with property rights and transaction costs continue to affect land markets.

4.4.1 *Unfinished privatisation*

In the NMS7 a substantive share of agricultural land is still owned by the state and may be the subject of future privatisation and restitution. The current decision-making and the uncertainty on the future ownership affects the (lack of) transactions of this land and its use.

This is for example the case in Poland where the Agricultural Property Agency of the State Treasury, which was later replaced by the Agricultural Property Agency, took over 4.72 million ha of agricultural land of which 1.58 million ha was sold by the end of 2005. This means that around 3 million ha of agricultural land, corresponding to circa 19% of all agricultural land in Poland, is still owned by the Agricultural Property Agency. Sales by the Agency are still to some extent limited by restitution claims. Since 1997 there exists a ban on the sale of state property claimed by former owners or their successors, with the result that around 0.5 million ha, or 18% of the agricultural land owned by the Agency, are withheld from the sales market.

In the Czech Republic, up to 0.34 million ha (or approximately 10% of the Czech utilised agricultural area) had been privatised by 2006 by the Land Fund, the institute that administers state agricultural land. By the 1st of January 2007, about 0.45 million ha (or 13% of the Czech utilised agricultural area) were still under the administration of the Land Fund, although around 0.26 million ha of this will be privatised in the near future. Not surprisingly, this sale of state agricultural land has an important impact on the average land sale price, as the administrative prices, which are used for privatisation, are considerable lower than the market price. Due to the increased supply of land for sale, the latter price decreased in the last years.

In Lithuania, the share of privately owned land increased by more than 60% from 2000 to 2006. About 1 million ha has been privatised from 2002 till 2006. By 2011 an additional 0.9 million hectares will be privatised by restoring ownership rights or selling state-owned land to its users.

In Slovakia, 13,816 ha, or 7% of the utilised agricultural area, was owned by state and the owners of 437,665 hectares, or 23% of the utilised agricultural area, were not known in 2006. Land of unknown owners and state-owned land are managed by the Land Fund and might be subject to restitution or privatization. State-owned land might also be subject to sale, while this is not the case for land of unknown owners.

In Hungary, 2 million ha or around 22% of total agricultural land is owned by the state in 2006. Currently, it is managed by the national land fund, which rents it out on a long-term basis, but according to the land policy it might be subject to privatisation.

In Latvia, ongoing land privatisation programmes have no or hardly any influence on the agricultural land sales market. The state and municipalities own respectively 30.1% and 4.8% of total agricultural land. State and municipality land is used by forest organisations, educational and research institutions, the army and other governmental institutions. This type of land is of minor importance for the agricultural sector, and it is very unlikely that this land will be subject to any privatisation process in the near future. Around 0.2% of the total agricultural area is 'free' state and municipality land. This refers to rural land upon which the ownership rights were not restituted during the land reform. This free land was either transferred into private ownership or into long-term

lease to either natural persons or legal entities and it might still be the subject of privatisation in the future.

In Estonia, the land reform and privatisation process is basically finished. However, this does not mean that all restitution and privatisation transactions have already been entered in the cadastre. The cadastral register has information on 83% of the total agricultural area. According to the information currently available in the cadastre, around 40% is owned by the state or municipalities, but it is unlikely that this land will be the subject of privatisation processes in the near future. As a consequence, this has little impact on the development of the land market.

4.4.2 *Unknown ownership and co-ownership*

Other problems follow from co-ownership of land and the problem of unknown owners. In many NMS, land ownership registration was poorly maintained, if at all, and in many areas land consolidation was implemented, wiping out old boundaries and relocating natural identification points (such as old roads and small rivers). The loss of information on registration and boundaries produced a large number of unknown owners in some transition countries (Dale & Baldwin, 2000). In addition, unsettled land inheritance within families during the socialist regime caused a strong land ownership fragmentation and a large number of co-owners per plot of land.

For example, according to the OECD (1997), in 1993 approximately 9.6 million plots were registered in Slovakia, roughly 0.45 hectares per plot, and each plot was owned by on average 12 to 15 people. As Dale and Baldwin put it, “a single field of twenty hectares may have hundreds of co-owners.” In the Czech Republic, there were 4 million ownership papers registered in 1998 for 13 million parcels, with an average parcel size of 0.4 hectares.²⁹ Many of these co-ownership issues have not yet been resolved today.

Not surprisingly, all this raises the costs of land exchanges, both for sales and rentals, as land withdrawal from the corporate normally requires agreement from co-owners. While as far as we know there is no systematic evidence on the effects of these ownership problems in the NMS7, a study we did in Bulgaria is likely to provide relevant information: in a detailed and survey-based study of co-ownership problems in Bulgaria (where 50% of the plots were co-owned in some regions, we (Vranken et al. 2007) find that co-owned plots of land are more likely to be used by corporate farms, and less likely to be used or rented out to other farms, that the probability of land being used by a cooperative or being abandoned increases with the number of owners, and that the impact of co-ownership depends on whether co-owners are living in or outside the village. Coordination problems are higher when co-owners are living farther away.

²⁹ Also in Bulgaria, another NMS but not the focus of this study, a recent study found that 50% of the plots were co-owned, often by several people (Vranken et al., 2007). The average number of co-owners was more than two (excluding husband and wife co-ownership). Some co-owners were unknown, some were no longer living in the country, and some had moved to other villages and cities throughout the country.

4.4.3 Transaction costs

Several studies document that land markets in the transition countries, even the most advanced such as in Central Europe, were characterised by the existence of significant transaction costs in the rural land markets, constraining land exchanges in the years leading up to EU accession (Dale & Baldwin, 2000; Lerman et al., 2004). Transaction costs include: bargaining costs, costs of enforcement of withdrawal rights, costs related to asymmetric information, costs related to co-ownership and unknown owners, and unclear boundary definitions. Uncertainty and high costs in the identification of land property rights may lead to important transaction costs and constraints on land transactions.

While there is no good evidence on how important transaction costs are or how they have changed over the past years, indirect evidence, based on data on differences in land prices paid by different farms in the Czech and Slovak Republics, also suggests that the importance of land transaction costs has reduced significantly over the past years. Table 4 shows how the difference in rental prices between corporate farms and individual farms – which one could consider an indicator of transaction costs (see the discussions above) – has fallen from 73% in 1997 to 15% in 2005 in the Czech Republic and from 229% in 2001 to 45% in 2005 in Slovakia. The country study on the Czech Republic concludes that land transaction costs have fallen due to improved awareness and information of owners and land consolidation which has led to more rental transactions and increased prices for owners.

Table 4. Agricultural land rental prices by legal form (euro/ha)

	1997	2001	2005
<i>Czech Republic</i>			
Individual farms (euro/ha)	16	23	35
Corporate farms (euro/ha)	9	17	30
Price gap in euro - ($P_{IF}-P_{CF}$)	7	6	5
Price gap in % - $(P_{IF}-P_{CF})/P_{CF}$	73	37	15
<i>Slovakia</i>			
Individual farms (euro/ha)		18	24
Corporate farms (euro/ha)		6	17
Price gap in euro - ($P_{IF}-P_{CF}$)		13	7
Price gap in % - $(P_{IF}-P_{CF})/P_{CF}$		229	45

Source: FADN for Slovakia; VUZE for Czech Republic.

Nevertheless, Czech and Slovak land experts indicate that important barriers still hamper a well-functioning land market. First of all, there are considerable problems with the ownership identification of parcels, especially in the Czech border regions, where German citizens were expelled after World War II and where the special allotment system was applied for newcomers. Second, problems due to the lack of physical identification of parcels continue. After 1970, during the formation of the

large-scale state and collective farms, agricultural land parcels were merged into extremely large fields and this erased almost all natural physical boundaries making physical demarcation of and physical access to the small parcels assigned to the former and new owners difficult.

4.4.4 Other costs

Other costs related to land transfers include notary fees, taxes and other administrative charges. For instance, the studies on Poland, Bulgaria, Lithuania and Romania estimate these costs at between 10% and 30% of the value of the land transaction (OECD, 2000; Prosterman and Rolfes, 2000; World Bank, 2001).

4.4.5 Other legal restrictions

As already explained above, in some NMS7 there are other legal restrictions on land ownership. For example in Hungary, legal restrictions not only prohibit land ownership by foreign natural persons (as explained in section 4) but also by legal entities (both domestic and foreign). Resident legal persons and unincorporated organisations, with the exception of the State of Hungary, local governments, and public organisations, may not acquire title of ownership of arable land. Exceptions to this rule are church organisations with legal personality that acquired land ownership titles by virtue of testamentary disposition or on the basis of a contract of donation. A mortgage loan company may also acquire ownership of arable land for a limited period (Act on the acquisition of ownership of arable land, section 6).

In several countries, there is also an upper limit for the amount of land that can be owned by one person (e.g. 300 ha in Hungary, 500 ha in Lithuania).

4.4.6 Summary

Transaction costs and imperfections in property rights, although they have been reduced over the past decade, remain important and still have a significant impact on the allocation of land.

Note that problems with property rights are not only a problem for sales markets, but also for rental markets. Weak property rights – often in combination with the absence of reliable conflict resolution mechanisms may cause substantial costs for owners to enforce their rights on the land once they rent it out to tenants. This reduces the incentives for owners to rent out their land.

The impact of capital constraints on land markets also remains significant. With growth in the NMS7 in the 2000s and accession to the EU, more credible institutional environments and the development of capital and insurance markets, these constraints and their effects have reduced in importance. However, these effects remain important even in well developed economies, which is reflected by the fact that both in the US and in several EU15 countries agricultural land-renting remains very pronounced; and this is more so the case for larger farms in the US – which is also consistent with observations that land renting is more important for large corporate farms in the NMS7.

5 Foreign investment, market imperfections, and land

Foreign investment in agriculture could have important impacts on agriculture and the functioning of land markets in NMS. Foreigners interested in investing in NMS7 agriculture are most likely less credit constrained and probably have better access to general market information and technology than some of the local farms from whom they would take over the land. This direct effect would enhance the average productivity of local agriculture.

Indirectly, investments in agriculture through land purchases of investors with less capital constraints than current farmers may improve productivity of agriculture by increasing land values, thereby reducing capital constraints for all farms (as increased land values would improve farm valuation and collateralisation options), and by horizontal spillovers (e.g. for technology and information) for agriculture as a whole.

To address the importance of this issue, it is crucial to understand a) how important foreign investment (FDI) in farming (directly) is/could be, b) how important the impact on NMS7 agriculture and its performance is, and c) how important other forms of FDI (which affect NMS7 agriculture directly or indirectly through spillover effects) are in comparison with FDI in farming (directly) and its performance.

FDI inflows have been very important in NMS7 over the past 15 years, but not in all sectors. Table 5 shows the stock of FDI in those countries by 2004. One has to be careful in drawing conclusions from these data since the restrictions on foreign ownership of land are likely to have affected these numbers. Still, there are some interesting observations that are relevant for our study.

Table 5. FDI stock in NMS in 2004 (€ million)

	Total	Food industry*	Agriculture**
Czech Republic	42,035	1,799	79
Estonia	7,381	181	39
Hungary	40,397	2,093	179
Lithuania	4,690	484	37
Latvia	3,358	100	61
Poland	62,687	3,778	284
Slovakia	10,272	499	44

* Food products, beverages, and tobacco.

** Agriculture, hunting and forestry.

Source: WIIW Database on FDI in Central, East and Southeast Europe (May 2006).

First, the inflow of FDI in the NMS over the past 15 years is large. Table 5 shows how the stock of overall FDI had grown to around €200 billion investment in the NMS7 by 2004.

Second, less than €1 billion have gone into agriculture and forestry. This number is much smaller than the amount of FDI that has gone into the food industry.

However, at the same time FDI in agriculture is quite substantive, and much more than one would expect given the restrictions on land ownership that have been imposed. For example, in Poland, the country with the strictest restrictions on foreign land ownership, FDI in agriculture and forestry still amounts to almost €300 million.³⁰

Third, a much larger amount, around €10 billion, was invested in the food industry and agribusiness. It is well known by now that FDI in the food industry and agribusiness in the NMS7 has had major positive vertical spillovers on the farms. Vertical spillover effects have come through the improvement of access to inputs, technology, credit and to output markets as a result of FDI and restructuring of the NMS7 food sector. All this has resulted in higher investment, productivity growth, and enhanced competitiveness of the NMS food chain as a whole, including the farm sector.³¹

In summary, given the fact that the observed FDI flows are themselves likely affected by the ownership restrictions, one should be careful drawing conclusions from these data. However, the data suggest that there has been a substantial inflow of FDI in agriculture despite the restrictions on land ownership. In addition, while some of the positive FDI effects (directly and indirectly through horizontal spillovers) in NMS agriculture may have been constrained due to the land ownership restrictions, there have been extensive vertical spillovers from FDI in the food industry and agribusiness, resulting in higher investment, productivity growth, and enhanced competitiveness of the NMS food chain as a whole, including the farm sector.

6 EU accession and NMS7 land markets

EU accession was to affect land markets directly by freeing the land markets and integrated them into the single EU market. While this has been constrained with the ownership restrictions, EU accession has had several other effects on NMS7 land markets.

EU accession affected the NMS7 rural land markets indirectly, through various interactions. Most importantly, EU accession affected the NMS7 land markets through the following channels:

- It improved the functioning of other factor markets (including credit and technology) and of output markets. As explained in section 5, these other market imperfections were major constraints on the functioning of land markets in NMS7. With improvements in these other markets, farms' productivity, investments and profits grew, leading to an increase in land demand and land values in NMS7.
- It stimulated foreign and domestic investments in the food industry and agribusiness, with important spillovers on farming and land. As explained in

³⁰ There are no data on the specific nature of the FDI in agriculture and forestry, e.g. on whether or not this investment has gone into farming in general, or into capital-intensive activities (e.g. hog and chicken farms) and technology-intensive activities.

³¹ See e.g. Gow & Swinnen (1998), Dries & Swinnen (2004), World Bank (2006), and Swinnen (2007) for evidence on this.

section 6, these spillover effects implied major positive impacts on productivity, investments, and competitiveness of the whole agri-food chain, including agriculture.

- It led to a strong increase in subsidies for NMS7 farmers through the Common Agricultural Policy (CAP). While NMS7 farms only get part of the subsidies that EU15 farms get for a transition period (Table 6),³² the subsidies were an important share of NMS7 farm incomes. Moreover, since most of the subsidies are either linked to output or to land, they land prices to rise.³³ Theoretical analyses show that, even in the presence of land market transactions and imperfect competition, most of the subsidies that are linked to land would ultimately go to land owners through increased land prices (Ciaian & Swinnen, 2006). Moreover, if there are important credit market imperfections, the increase in land prices may even be larger than the increase in land subsidies.³⁴

*Table 6. Direct payments per hectare in 2005 (€/ha)**

	2005
Austria	200
Belgium	330
Denmark	339
Finland	213
France	261
Germany	294
Greece	478
Ireland	281
Italy	273
Luxemburg	218
Netherlands	288
Portugal	146
Spain	181
Sweden	209
UK	Na
EU15	265
Czech Republic	59
Estonia	25

³² NMS7 farms get the same price support as EU-15 farms, but only received 25% of the equivalent amount of the EU-15 farms for direct payments (which make up an increasing share of the CAP subsidies) at the time of accession (2004). This share increases every year, in a linear way, and reaches 100% by 2013. In addition, NMS7 governments are allowed to ‘top up’ these subsidies with national payments for another (additional) 30%, but the combined subsidies cannot be larger than 100%.

³³ Price support is linked with output and drives up the demand for land indirectly, as land is an input in the farm production. Direct payments are linked to land use in NMS7 (which is different from the current implementation of the DPs in the EU-15) and thereby directly increase the demand for land.

³⁴ In the presence of credit constraints, land subsidies will not only drive up demand directly (by subsidising land use) but also indirectly (by increasing productivity). In combination this leads to an even stronger increase in land prices (Ciaian & Swinnen, 2007).

Hungary	54
Latvia	14
Lithuania	29
Poland	44
Slovakia	43
<u>NMS7</u>	<u>38</u>

* Direct payments per hectare are calculated as total direct payments by country divided by the total utilised agricultural area (UAA) by country.

Note The calculated values may be lower than the actual payments per hectare because, first, the calculated direct payments per hectare do not include top-ups (for the NMS7), and, second, not all land qualifies for area payments.

Sources: Total direct payments (in euro) from European Commission (2006). *Allocation of 2005 EU expenditure by Member State*, DG Budget; and UAA from Eurostat.

The impact of the CAP subsidy system on the incentives for local farmers and foreigners to purchase agricultural land in the NMS is mixed. The CAP subsidies received by farmers in the NMS are only a fraction of the payments received by the EU15 farmers. Table 6 illustrates that the NMS got on average a direct payment of €38 per ha, while farmers in the EU15 get on average €265 per ha. If NMS farms have credit constraints, this difference in subsidies affects their competitiveness in the land market.

However, a substantial part of these subsidies ultimately go to the land owners, by increasing land demand and thus land values. This may provide an additional incentive for investors to purchase agricultural land. In the short run, since the subsidies are lower in the NMS, for a given price differential between NMS and EU15 land prices, the incentive for EU15 farmers to buy agricultural land in the NMS is lower than if the amount of subsidies would be equal. However, potential EU15 investors are generally less credit-constrained than NMS farms and investors and know that the magnitude of the direct payments will continue to increase in the NMS and this may make buying agricultural land in the NMS an attractive investment in the longer run.

The combination of these factors led to a strong increase in farm incomes, in land transactions and land prices with EU accession. These evolutions are documented in the next sections with data.

7 Evolution of land markets in NMS7 (and comparison with the EU-15)

In this section we first analyse the evolution in terms of volume of land sales and land rentals in seven new Member States. Next, we analyse changes in prices and contract terms, and compare price evolutions with those in the EU15.

7.1 The development of land sales and rental markets

One can identify the following main trend in the land market in the NMS7:

The amount of land that is exchanged through land rental is considerably higher than the amount of land that is exchanged through land sales.

Earlier, in section 4, we already showed that renting of land is important in all NMS7, and particularly so in Slovakia, Hungary, the Czech Republic, Estonia and Lithuania,

where the share of total agricultural land rented by farms is more than 50%. Only in Latvia (24%) and Poland (22%) is it less.

We will now look in more detail at the evolution of sales and rental transactions.

7.1.1 Evolution of land sales

In some of the NMS7, the land sales market has been strongly affected in recent years by public sales under ongoing land privatisation programmes. This is particularly the case in Poland, Czech Republic and Lithuania, but less or not so in the other NMS7.

In Poland, about half the area sold over the period 1994 to 2005 was through public sales, accounting for around 10% of the total agricultural area, and equivalent to an annual turnover of around 0.9% of agricultural land – which is similar to that of private sales. The number of public sales has been rather constant over this period (see Figure 5).

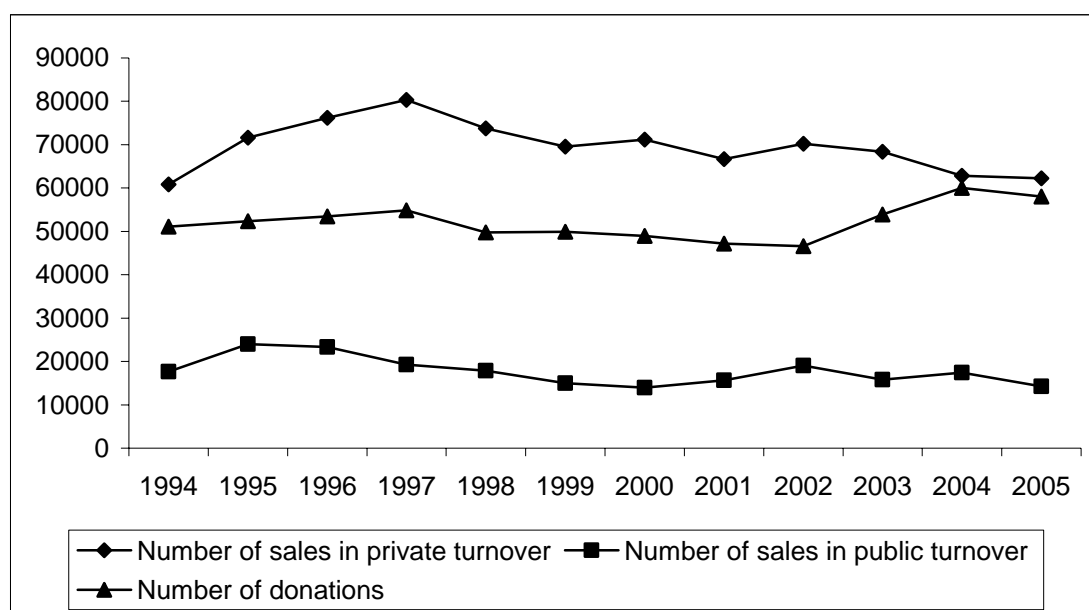
In the Czech Republic there is an increase in the number and volume of public sales in recent years (in addition to increasing private sales). The increase in public sales was due to the privatisation of remaining state land which started in 2000. Especially since 2002, a large amount of state land has ‘entered’ the market (annually about 70,000 ha or about 1.7% of the Czech Agricultural Land Fund (ALF)³⁵ and it represents a fairly important segment on the Czech land market at present.

In Lithuania, the area of land in private ownership increased strongly over the past years due to the privatisation process which is still ongoing. The area in private ownership increased by 60% (on average 8.5% per year) between 2000 and 2006.

The recent impact of privatisation on land sales is much smaller in the other NMS. As explained in section 4.4.1, land privatisation is largely finished in Estonia and Latvia, and while public land may still be privatised in the future in Hungary and Slovakia, it is currently not significantly affecting the land sales market.

Figure 5. The number of land sales transactions in Poland

³⁵ According to the Czech Cartography Authority, the sum of the parcels amounts to about 4.3 million ha of agricultural land. This area is defined as the Czech Agricultural Land Fund (ALF).



Source: ANR, IERiGŻ.

Private sales of land vary over time and between countries.

In Poland, the country where a large part of the land was always in private ownership, more than 100,000 transactions of agricultural land ownership occurred per year in the period 1994-2005. In that same period, private land sales in Poland covered 1.7 million hectares. This corresponds to 10% of the total agricultural area or an average annual turnover of 0.8% of the agricultural land through private sales. However, interestingly, the number of private sales of agricultural land have decreased consistently since 1997, and the number of land sales transactions in 2005 was almost 40% less than in 1997.

In the Czech Republic, the total amount of land that was exchanged through private land sales increased in recent years. The annual turnover of private purchased land amounted to about 0.2 – 0.3% of the total agricultural area during the period of 1993-2001. However, from 2002 to 2004, the annual turnover of private land increased to 1.5% and even to 3.3% in 2005. This strong increase in the most recent years was among others due to the implementation of mortgage loans supported by interest subsidies through the SGFF.³⁶

In Slovakia, the overall size of the land sales market remains small. The share of land sales in total agricultural land was less than 1.5% in the 1990s (Dale & Baldwin, 1999), but seems to have grown since, albeit with some important variations: sales of agricultural land have decreased between 2001 and 2003 and increased again since 2004 (see Table 7). Arable land sales have been stable over the 2001-03 period, but increased strongly with enlargement: the number of hectares sold more than doubled over the 2003-05 period.

³⁶ In the period of 2004-05, nearly 21,000 ha of agricultural private land were sold under the programme.

Table 7. Number of hectares of land transacted through sales in six representative Slovakian regions

	Agricultural land	Arable land
2001	2110	822
2002	1451	962
2003	912	874
2004	1853	1476
2005	2754	1899

Source: VUEPP.

In Hungary, a bit less than 3% of the productive land changed owner in 2004, but only half of the land transfers, which corresponds to 1.5% of the productive land, occurred through sales. The majority of sales occurred by persons exercising their pre-emption rights.

In Lithuania, the number of sales of privately owned land was constant over the 2000-03 period, with around 3% of privately owned land being transferred either through sales or donations. There was a strong increase since 2004, the year of EU accession, with the share of private land being transferred up to 5-7% (Table 8). The strongest increase was in 2005 and there has been a reduction since.

Table 8. Evolution of land sales in Lithuania

	Area of land transferred through sales or donations/gifts (thousand ha)	Private agricultural land (thousand ha)	Change in private agricultural land (2000=100)	Percentage of private land that has been transferred through sales or donations/gifts
2000	58	1706	100	3
2001	58	1930	113	3
2002	59	2089	122	3
2003	59	2269	133	3
2004	127	2538	149	5
2005	169	2605	153	7
2006	139	2727	160	5

Source: State Enterprise Centre of Registers.

Other forms of transfer of land ownership, such as donations, inheritance and land swaps, are important forms of private land transfers (at least in the NMS for which we have data on the various forms of transfer).

In Hungary, land ownership transfers through other ways than sales, such as land swaps, donations or inheritance, were almost equally important as land sales: they accounted for 1.5% of the change in productive land in 2004.

Also in Poland the number of land donations was close to the number of private land sales over the period 1994-2005, and the gap has been decreasing since 2003. The number of transactions through private sales and donations was almost equal in 2004 and 2005.

7.1.2 Evolution of land renting

Land renting remains very important in almost all NMS7, although it has declined slightly in recent years. In some NMS7 (such as Poland and the Czech Republic) the number of rental agreements involving public land decreased with continued progress in the land privatisation process.

Renting of land is important in all NMS7, and particularly so in Slovakia, Hungary, the Czech Republic, Estonia and Lithuania, where the share of total agricultural land rented by farms is more than 50%. Between 2003 and 2005, the share of land renting in total land use declined slightly (1%-4%) in all countries except in Hungary where it grew by 3% (see Table 2).

In Poland, more than one million ha of public agricultural land were transacted on the land rental market in 1994 and this number decreased to less than 100,000 ha in 2005 with the continuing privatisation of public agricultural land.

The annual volume of farmer-to-farmer rentals remained fairly stable from 1994 to 2002 and its range was between 320,000 to 375,000 ha. In 2003 however, it decreased to 230,000 ha (Figure 6). This means that between 1994 and 2002, the average annual turnover of agricultural land through private rentals was slightly more than 2% and that the turnover through rentals decreased to 1.4% in 2003. Clearly, between 1994 and

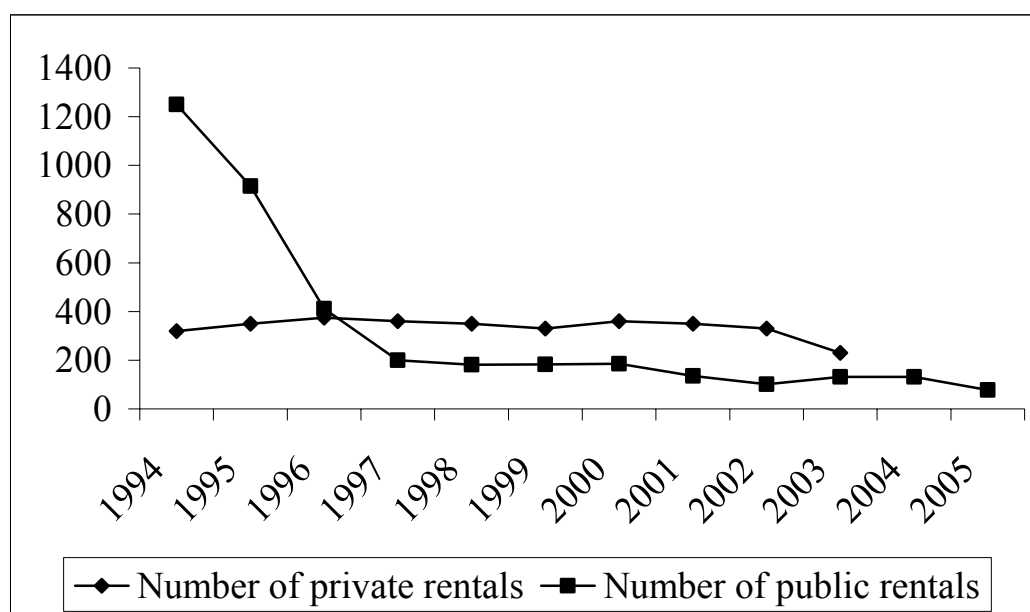
2005, the annual turnover of land through private sales (0.8%) is substantially smaller than through rental (1.9%).

In the Czech Republic, 90% of the utilised agricultural area, or approximately 3.3 million hectares, is annually exchanged through rental. A considerable amount of land in the Czech Republic is still owned by the state, but even if we look only at private land rentals, it becomes clear that 74% of the utilised agricultural area is rented out by private individuals.

In Slovakia, more than 90% of the utilised agricultural area is rented. Corporate farms rent slightly more of the UAA than individual farms and there was no significant change in this respect after EU accession.

In Hungary, more than half of the cultivated land was rented by farmers. Between 2001 and 2003, the share of rented land decreased by 4.2%, but it increased again by around 3% by 2005. On average, more than 3 million hectares were exchanged through rental, which is 30 times the amount of land that was exchanged through sales.

Figure 6. Number of land rental transactions in Poland*



* ANR rentals are rentals of public land.

Source: ANR, IERiGŻ.

7.2 The evolution of land prices

The evolution and comparison of land prices is summarised in Tables 9 and 10. Key findings are presented below.

Land prices have increased significantly over the past years, for both sales and rental.

Between 2000 and 2005, sales prices of agricultural land increased in real terms (i.e. deflated by the CPI) by around 50% in Poland and Lithuania, and by almost 250% in Latvia. Similarly, real rental prices increased by more than 50% in Czech Republic between 2000 and 2005 and by more than 90% in Slovakia between 2001 and 2005.

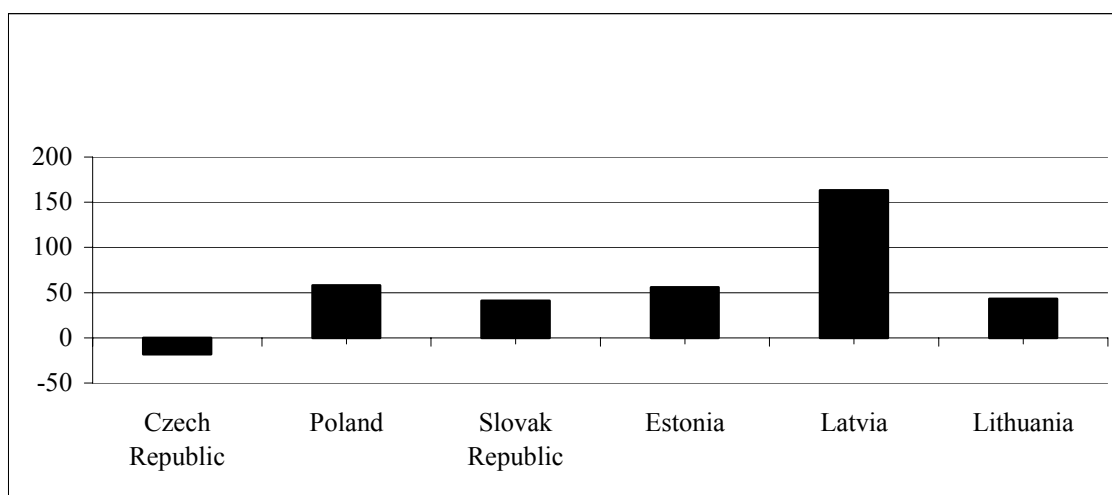
The exception to these strong price increases is in the Czech Republic, where land sales prices actually declined after 2001. The most important reason for this decline in land sales prices – which contrasts strongly with the simultaneous increase of the land rental prices – is that after 2001 there was a substantial increase in public sales due to the privatisation of remaining state land which started in 2000. Especially since 2002, a large amount of state land has ‘entered’ the market and increased the supply of land for sale, thereby pulling down average land prices, since this land was sold on administratively set prices below the market prices, and because it was less attractive.³⁷

The increase in land prices was particularly strong around the time of EU accession.

If one compares prices just before accession (2003) with those one year after accession (2005), sales prices had increased in real terms by 35% in Poland, 21% in Slovakia, 50% in Estonia, 31% in Lithuania, and 143% in Lithuania. Over the same period, rental prices increased by between 15% to 45% in Hungary, Czech Republic, Poland, Slovakia and Lithuania. (The changes are similar when measured in euro/ha terms, as is illustrated by Figures 7 and 8.)

The striking impact of EU accession is illustrated in Figure 10, which presents the evolution of sales prices in real terms in Poland, Latvia and Lithuania. The figure illustrates that in each of these countries, real sales prices were relatively constant during the years preceding enlargement, but increased strongly with enlargement in 2004.

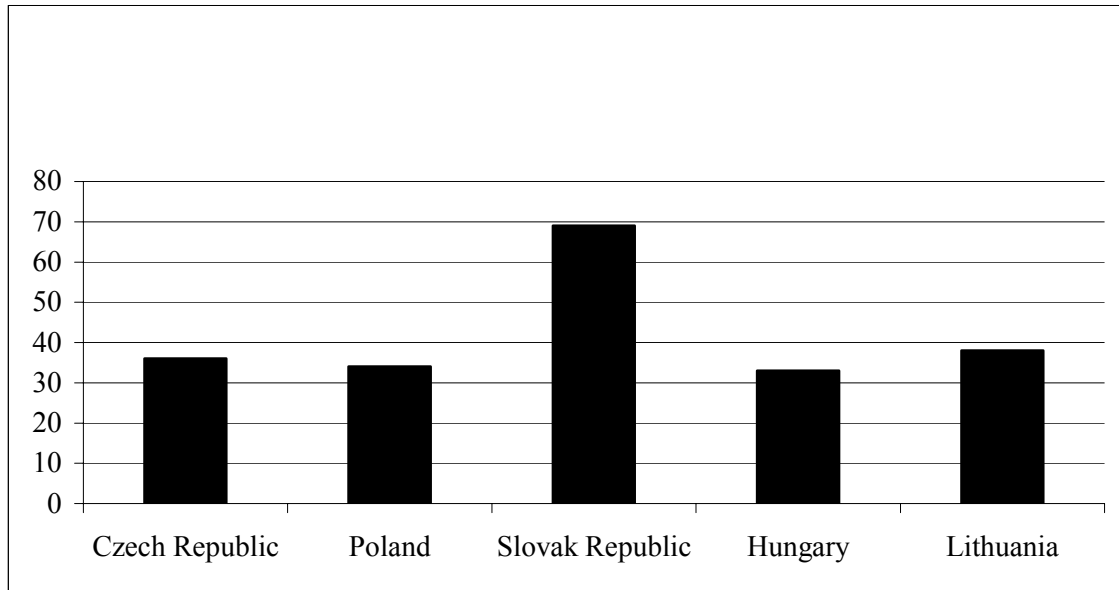
Figure 7. Change in land sales price (€/ha) between 2003 and 2005 (%)



Source: See Table 9.

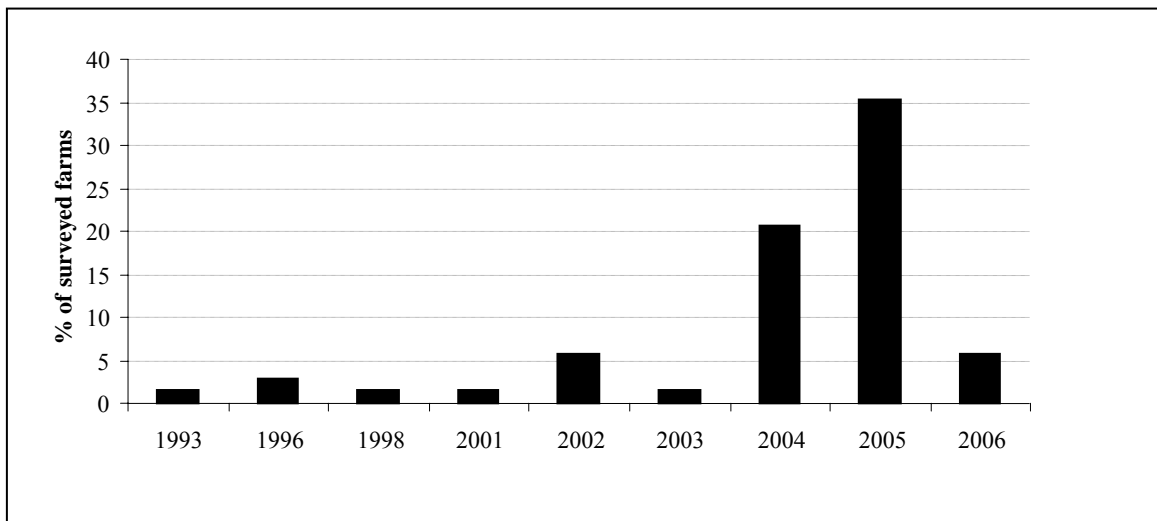
³⁷ The average market price of privatised land was 35,400 CZK/ha (€1,264) in the period 2001-05. The lower price reflects the fact that privatised state land is on average ‘less attractive’ than private purchased land in the sense it is more often used for agricultural purposes; while some of the other land may be used for non-farming purposes.

Figure 8. Change in land rental price (€/ha) between 2003 and 2005 (%)



Source: See Table 10.

Figure 9. Share of farms that increased land rental price by year



Source: VUEPP (based on a survey in 2006).

Table 9. Evolution of land sales prices in the NMS7

Sales		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Nominal price	Czech Republic (CZK/ha)	134800	164700	196000	182600	280100	318400	254200	271200	348500	212400	239000	195900	184300	
	Poland (PLN/ha)		2021	2187	2901	3655	4119	4265	4584	4857	4700	5375	6211	7753	
	Slovak Republic (SKK/ha)									80935	141407	148022	195402	193907	
	Hungary (1000 HUF/ha)													168	196
	Estonia (EEK/ha)									3417		4647			7255
	Latvia (Lats/ha) ^a								111	114	133	170	195	487	558
	Lithuania (LTL/ha)								1200	1300	1400	1400	1500	2000	2500
Real price ^b	Czech Republic (CZK/ha)	134800	145238	156842	132474	187462	191805	148960	156573	191803	113714	126813	100430	93826	
	Poland (PLN/ha)		2021	1709	1922	2126	2157	2105	2108	2159	2044	2328	2584	3144	
	Slovak Republic (SKK/ha)									80935	135188	135160	168324	163121	
	Hungary (1000 HUF/ha)													168	192
	Estonia (EEK/ha)									3417		4543			6793
	Latvia (Lats/ha) ^a								111	112	126	156	167	379	390
	Lithuania (LTL/ha)								1200	1304	1403	1416	1477	1861	2172
Euro	Czech Republic (Euro/ha)	3945	4823	5649	5299	7796	8832	6892	7618	10230	6895	7505	6143	6188	
	Poland (Euro/ha)		748	690	848	984	1052	1009	1144	1323	1218	1222	1372	1927	
	Slovak Republic (Euro/ha)									1869	3312	3568	4882	5024	
	Hungary (Euro/ha)												676	742	
	Estonia (Euro/ha)									218		297		464	
	Latvia (Euro/ha) ^a								198	203	229	266	293	700	801
	Lithuania (Euro/ha)								325	363	405	405	434	579	724

Notes: Czech Republic and Lithuania: Price for agricultural land in private turnover; Poland: Price for arable land in public and private turnover; Slovak Republic, Hungary, Estonia and Latvia: Price for agricultural land in private and public turnover.

^a Price of agricultural land parcels larger than 3 ha.

^b The basis year for each country is always the earliest year for which land sales price information was available.

Sources: VUZE for Czech Republic; GUS, ANR and Zagorski for Poland; VUEPP for Slovakia; FADN for Hungary; Estonian Land Board for Estonia, State Land Service for Latvia; for Lithuania: 2000-02 from State Enterprise Centre of Registers; 2003-04 from Lithuanian Institute of Agricultural Economics; 2005-06 from State Enterprise Centre of Agricultural Information and Rural Business.

Table 10. Evolution of Land Rental Prices in selected new member states

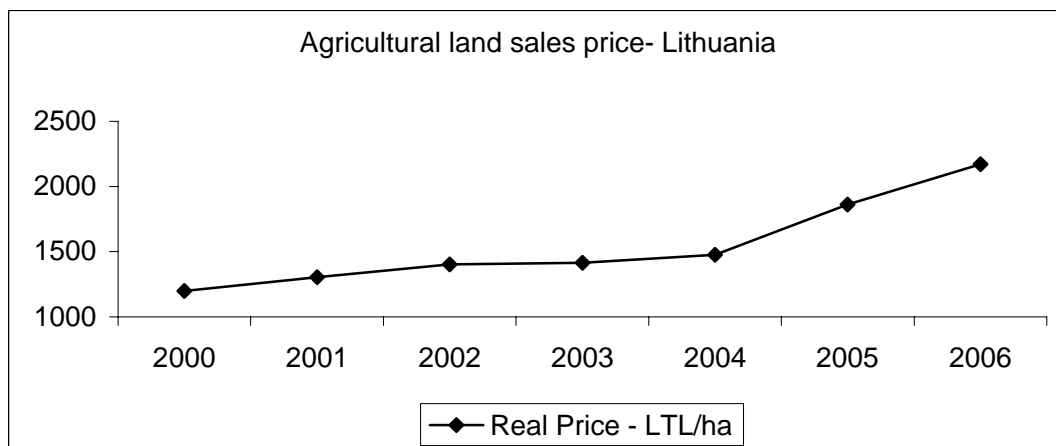
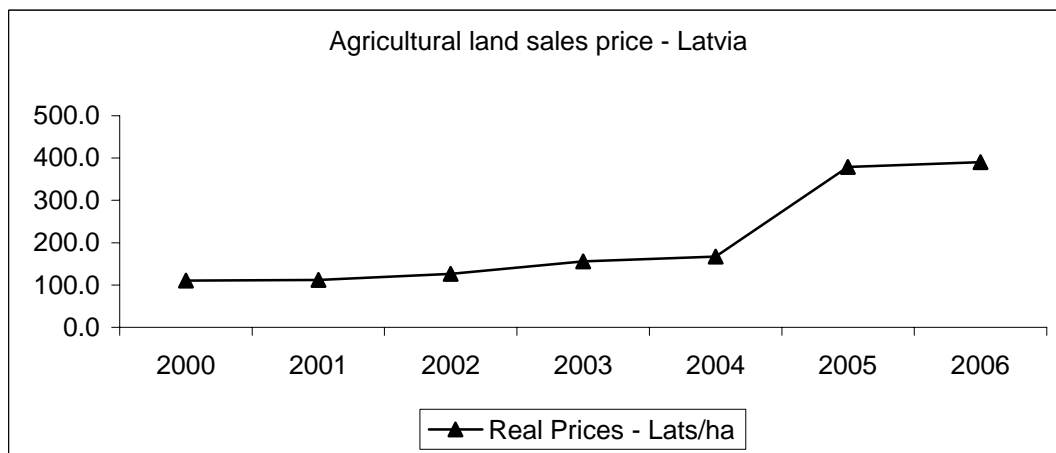
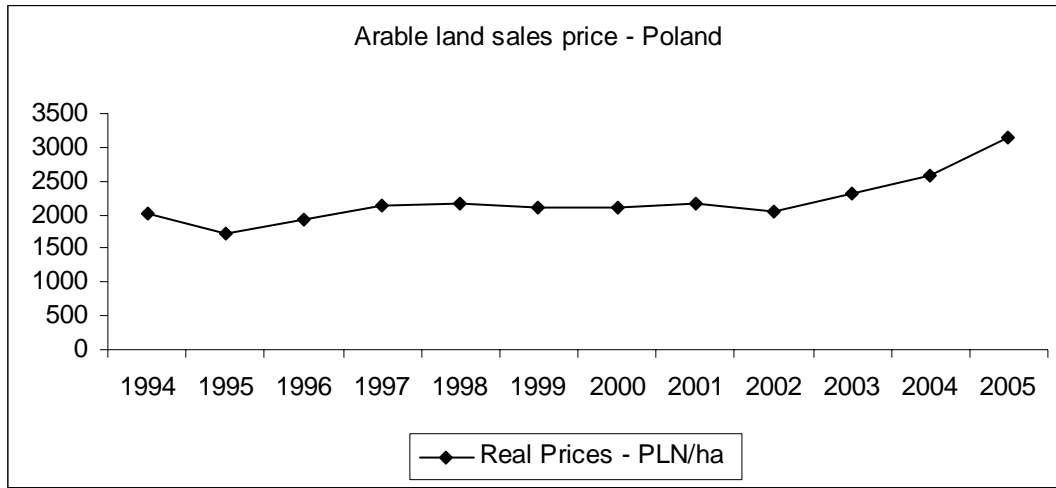
Rental		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Nominal price	Czech Republic (CZK/ha)					442	460	496	543	678	732	756	853	960	960
	Poland (PLN/ha)		57	71	104	92	96	68	115	96	95	115	196	141	166
	Slovak Republic (SKK/ha)									297	386	434	547	684	
	Hungary (HUF/ha)											10574	12861	13712	14807
	Lithuania (LTL/ha)										65	65		90	120
Real price ^a	Czech Republic (CZK/ha)					442	414	434	468	558	585	600	653	731	731
	Poland (PLN/ha)		57	55	69	54	50	34	53	43	41	50	82	57	66
	Slovak Republic (SKK/ha)									297	369	396	471	575	
	Hungary (HUF/ha)											10574	12331	12888	13526
	Lithuania (LTL/ha)										65	66		84	104
Euro	Czech Republic (Euro/ha)					12	13	13	15	20	24	24	27	32	32
	Poland (Euro/ha)		21	22	30	25	25	16	29	26	25	26	43	35	41
	Slovak Republic (Euro/ha)									7	9	10	14	18	
	Hungary (Euro/ha)											42	51	55	56
	Lithuania (Euro/ha)										19	19		26	35

Notes: Czech Republic, Slovak Republic and Hungary: Price for agricultural land in private and public turnover; Poland: Price for agricultural land in public turnover; Lithuania: Price for agricultural land in private turnover.

^aThe basis year for each country is always the earliest year for which land rental price information was available.

Sources: VUZE for Czech Republic; GUS, ANR and Zagorski for Poland; VUEPP for Slovakia; Central Statistical Office for Hungary; for Lithuania: 2002-03 from Lithuanian Institute of Agricultural Economics; 2005-06 from State Enterprise Centre of Agricultural Information and Rural Business.

Figure 10. Evolution of land sales prices in Poland, Latvia and Lithuania (NAC/ha – Real prices)



Source: See Table 9.

Land prices vary strongly within the NMS7.

The land prices in euro in Tables 9 and 10 allow us to compare prices across NMS7. These show major differences between NMS. In 2005, the most recent year for which NMS prices are available, the lowest rental prices were in Slovakia (€18 /ha in 2005) and rental prices in Lithuania (€26 /ha) were somewhat below those in Poland (€35 /ha) and in Czech Republic (€32 /ha). The highest rental prices were in Hungary (€56 /ha).

Remarkably, a comparison of sales prices yields very different results. In 2005, land sales prices in the Baltics (less than €700 /ha) were much lower than in Poland (€1,900 /ha), and only a fraction of the sales prices in Czech and Slovakia (more than €5,000 /ha). The fact that there is such a difference between the relative sales prices and relative rental prices (in particular e.g. for Slovakia) suggests that there are some structural differences in rental and sales between the countries.

There are two possible hypotheses:

First, some of the agricultural land which is sold is being bought for non-farm purposes, which is thereby increasing prices. For example, Table 11 presents data for different types of ‘agricultural land sales’ in Lithuania. These data show, first, that there was a strong increase in agricultural land prices between 2003 and 2006, irrespective of the plots’ purpose. Second, the prices of agricultural land that can easily be converted for non-agricultural use are considerably higher than the prices of land that is purchased for long-term farming. Third, this price comparison also shows that the price for (long-term) farmland is considerably lower, but it increased much stronger with accession, which is consistent with the expected impact of EU subsidies on the NMS7 land market.

Similarly, prices for larger plots are much lower in Slovakia and in Czech Republic, suggesting that at least partly differences in purposes of sale versus rental in these countries may affect the price ratios (see Box 2 on plot size and price).

Second, the average rental prices in Slovakia are a mixture of land rented by farming companies, cooperatives and individual/family farms.³⁸ The corporate farms, and in particular the cooperatives, pay much less rent. Since farming companies have the vast majority of the rented land, the low average rental prices in Slovakia may reflect these factors (see Box 2).

³⁸ Differences in land rents may also reflect differences in the owner rather than the user. In Lithuania, as in some other NMS, rents paid for state-owned land are significantly lower than the land rental price paid to private land owners. Depending on the productivity of the soil, the annual amount of agricultural land rents is between 30 and 50 Lt/ha. Private land owners receive a rental payment between 200 and 205 Lt/ha for good quality land and between 50 and 100 Lt/ha for bad quality land. For meadow and pastures the price fluctuates between 30 and 180 Lt/ha depending on the quality.

Table 11. Agricultural land market prices in Lithuania, 2003-06, (1000 LTL/ha)

Indicators	Year			
	2003	2004	2005	2006
Land purchased for long-term farming:				
1) close to administrative centres	2-4	2-4.5	3-5	3-8
2) in the districts of fertile soil	1.5-2	2-3	2-3.5	2.5-4
3) in the lands of average productivity	0.9-1.5	1.0-1.5	1.5-2	1.5-2.5
4) in the lands of low productivity	0.6-0.9	0.7-1	0.7-1	0.7-1.5
Land bought to use for the construction of residential and economic-commercial purpose:	300 -1500	300-1500	300-1500	300-1500
1) close to major cities				
- with installed infrastructure;	10-200	10-200	20-200	30 -300
- in other locations.				
2) other locations suitable for construction				
Land bought for recreational construction:				
1) prestigious locations	20 -50	20 -50	20 -70	40 -100
2) other locations	4 - 20	5 - 20	10-20	10- 40

Source: LAEI.

The gap in land prices between NMS7 and EU15 has diminished, particularly for the Central European NMS7

Table 12 clearly indicates that the gap in land prices between the new and old Member States is gradually diminishing over time. Particularly the land sales prices in the Central and Eastern European countries are getting close to those in for example France and East Germany. However, we should keep in mind that in the Czech Republic and Slovakia the price of agricultural land differs strongly with parcel size (see Box 2). If we compare the price of plots larger than 5 ha in Czech Republic or Slovakia with the sales prices in Western European countries, we still observe considerable differences (Figure 11).

The land prices in the Baltic states are still much below the level of for example East Germany, France or Italy. However, when we compare the land prices in the Baltic states with those in Sweden, an EU15 country located much closer to the Baltic states, the gap becomes considerably smaller.

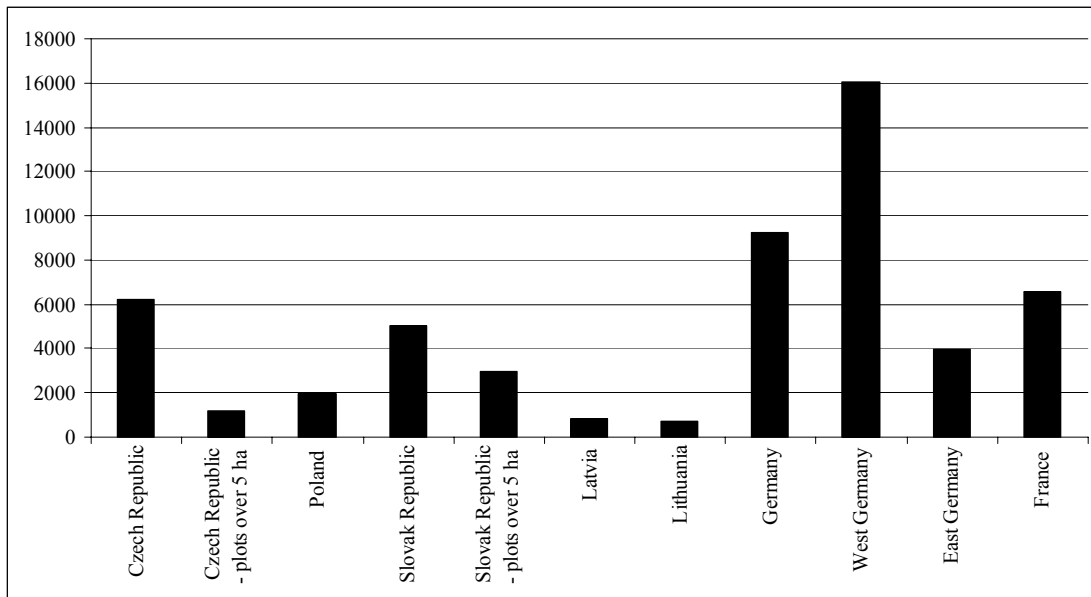
Table 12: Evolution of land sales and rental prices in the new and old Member States (€/ha)

Sales	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Czech Republic	3945	4823	5649	5299	7796	8832	6892	7618	10230	6895	7505	6143	6188	
Poland		748	690	848	984	1052	1009	1144	1323	1218	1222	1372	1927	
Slovak Republic									1869	3312	3568	4882	5024	
Hungary												676	742	
Estonia									218		297		464	
Latvia								198	203	229	266	293	700	801
Lithuania								325	363	405	405	434	579	724
Germany	11309	11168	10880	10394	9908	9500	8938	9081	9427	9465	9184	9233		
West Germany	15227	15402	16452	16285	16458	17194	16530	16830	17246	16966	16489	16035		
East Germany	4255	3836	3610	3310	3240	3254	3421	3631	3811	4014	3831	3944		
France		3768	3621	3857	3826	4157	4593	4913	5384	5778	6079	6567		
Italy	12198	12639	13238	13548	13961	14481	14921	15587	16354	17113	17805			
Sweden								1989	1988	2019	2127	2455	3351	
Rental														
Czech Republic					12	13	13	15	20	24	24	27	32	32
Poland		21	22	30	25	25	16	29	26	25	26	43	35	41
Slovak Republic									7	9	10	14	18	
Hungary											51	55	56	
Lithuania										19	19		26	35
Germany	143		147		150		158		164		174			
West Germany	217		216		218		221		225		261			
East Germany	77		85		90		97		104		116			
France		112	114	115	118	121	124	124	123	124	123	122		
Italy									377	387	397			
Sweden								107	104	108	110	110		
Austria				251	245	243	244	236						

Notes: Czech Republic and Lithuania: Sales Price for agricultural land in private turnover; Poland: Sales Price for arable land in public and private turnover; Slovak Republic, Hungary, Estonia and Latvia: Sales Price for agricultural land in private and public turnover; Germany: Sales Price for arable land and pasture; France: Sales Price for agricultural land larger than 0.5 ha; Sweden, Italy, Austria: Sales Price for agricultural land. Czech Republic, Slovak Republic and Hungary: Rental Price for agricultural land in private and public turnover; Poland: Rental Price for agricultural land in public turnover; Lithuania: Rental Price for agricultural land in private turnover. Germany, France, Italy, Sweden and Austria: Rental Price for all agricultural land.

Source: VUZE for Czech Republic; GUS, ANR and Zagorski for Poland; VUEPP for Slovakia; Central Statistical Office for Hungary; Estonian Land Board for Estonia, LAEI for Lithuania, State Land Service for Latvia. Idema, 2006 and Eurostat for OMS.

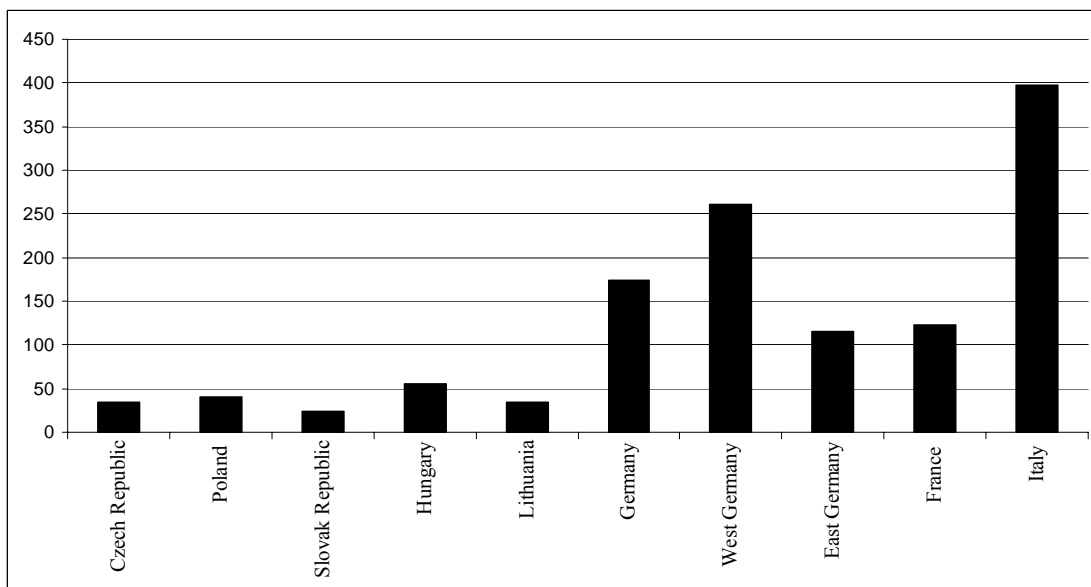
Figure 11. Agricultural land sales prices in €/ha (EU15-2004 & NMS-2005-06)*



* 2006 for Latvia and Lithuania; 2005 for Czech Republic, Poland and Slovak Republic; and 2004 for Germany and France.

Source: See Table 12.

Figure 12. Agricultural land rental prices in €/ha (EU15-2003 & NMS-2005-06)*



* 2005 for Slovak Republic and Hungary; 2006 for Czech Republic, Poland and Lithuania; 2004 for Germany, France and Italy.

Source: See Table 12.

Box 2. Plot size and price

Small parcels are more expensive than larger parcels and their price increased considerably more than the price of larger parcels.

While one should be careful in interpreting the relationship between plot size and prices (which may be jointly determined – see further), the differences in price evolution between plot size are remarkable. For example, in the Czech Republic, the prices of parcels smaller than one hectare increased almost four-fold compared to 10 years ago and their price is currently 10 times as high as the average price of a parcel between 1 ha and 5 ha, and 30 times higher than the average price of a parcel of 5 ha or more. The price of the larger parcels hardly increased over the last 10 years (see Table 3 and Figure 4).

In Slovakia, the price of a parcel smaller than 1 hectare is more than 60,000 SK/ha, while the price for a parcel of a size between 1 ha and 5 ha fluctuates between 40,000 SK/ha and 20,000 SK/ha. The largest parcels (of 5 ha or more) are by far the cheapest: the average price is 10,000 SK/ha or less (Figure 5).

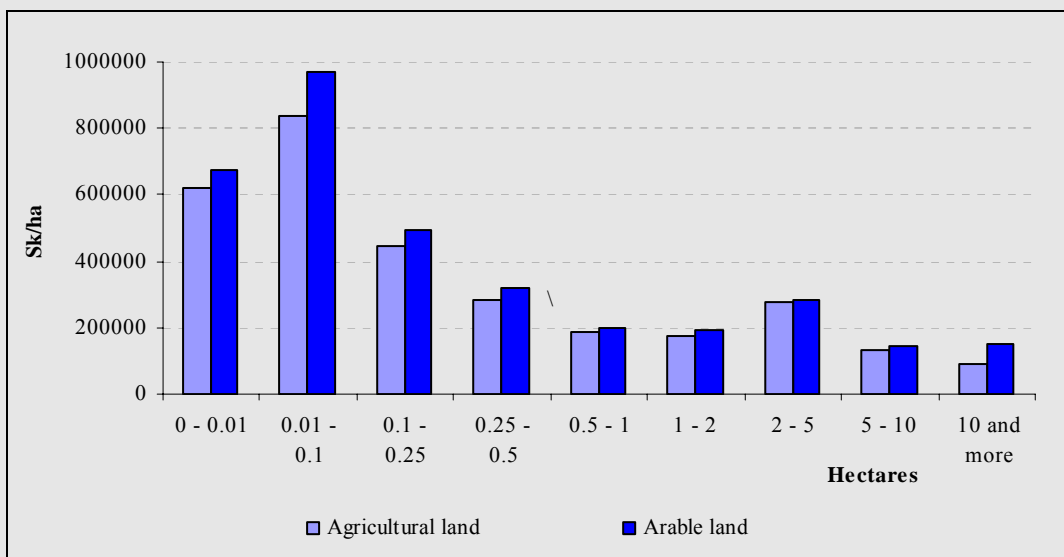
Several agricultural sector specialists claim that, in the NMS7, land fragmentation is a major impediment for the development of the agricultural sector in general and especially for the efficient allocation of land. Therefore one would expect that larger plots are more in demand and that this would push up the purchase price. However, if we look at the data, we can assume that the demand for small parcels is considerably higher, for several reasons.

Land sales prices by plot size in the Czech Republic (CZK/ha – real prices)

	< 1 ha	1 to 5 ha	over 5 ha	Total
1993	275000	129600	36800	134800
1994	305908	142416	33422	145238
1995	435556	112750	37290	156842
1996	322987	110637	26916	132474
1997	836184	97981	43703	187462
1998	614089	104939	24698	191805
1999	465573	56255	38500	148960
2000	531956	78517	24248	156573
2001	598689	109798	30655	191803
2002	520064	69063	18203	113714
2003	619105	70198	18942	126813
2004	534394	69875	19225	100430
2005	484555	48517	18226	93826

Source: VUZE.

First, the purpose of the purchase is important. Small parcels of agricultural real estate are often purchased to convert the land for other purposes, in particular for more lucrative non-agricultural use, and this is incorporated in the price. For example, Buday (2006) stresses the non-agricultural use of small parcels as a reason behind their higher demand and hence the higher price. Also Bandlerova (2006) writes that agricultural land sales are often driven by non-agricultural demand, usually by foreign investors. Most of the land transacted on the sales market is converted to non-agricultural use (industrial parks, construction of factories) and is located near large cities. This may also explain why EUROSTAT reports much lower agricultural land prices in Slovakia than VUEPP. EUROSTAT reports prices of around 37447 Sk/ha (€877 /ha) in 2002 and 37905 Sk/ha (€982 /ha) in 2005, which is respectively 4 and 5 times smaller than the price reported by the VUEPP. This difference may be due to the fact that land sales prices of VUEPP do not distinguish for what purpose land is used after the purchase.

Land sales prices by size of parcel in 2005 in Slovakia (Sk/ha)

Source: VUEPP.

Second, the high demand for small parcel and the resulting high price might be due to capital market imperfections. In particular small family farms still have limited access to capital and credit markets. These credit constraints limit their demand to smaller plot sizes. As a consequence, the demand for small parcels may be considerable higher.

Finally, the land market in transition countries is characterised by important transaction costs. These costs rise particularly when a land owner wants to withdraw a parcel from large-scale farming enterprises which are typically the direct successor organisation of the former collective and state farms and which are still using the majority of land in several new Member States (see below). Many plots are located in (the middle of) large consolidated fields so that costs may occur due to problems with the physical identification and physical access to the plot. Furthermore, several plots are owned by more than one owner which raises the cost to change the allocation and/or physically identify the plot. Since many of these costs are fixed, it is logical that it has a particularly higher impact on the absolute price per hectare of the smaller plots.

7.3 Evolution of land contract terms

Rent is sometimes paid in kind, rather than in cash, and more likely so by corporate farms.

In Poland, more than 20% of the contracts involving private rentals in 2005 were paid in kind (goods and services) rather than in cash. This was particularly the case in regions with high land fragmentation where agriculture is an additional source of income. Nevertheless, the likelihood of paying rent in kind decreases over time: in 2000 the share of land rental contracts paid in cash was still 30%.

In Slovakia, only half of the farms reported paying rent exclusively in cash, while the other half of the farmers reports to pay part of the rent in cash and part of the rent in kind.

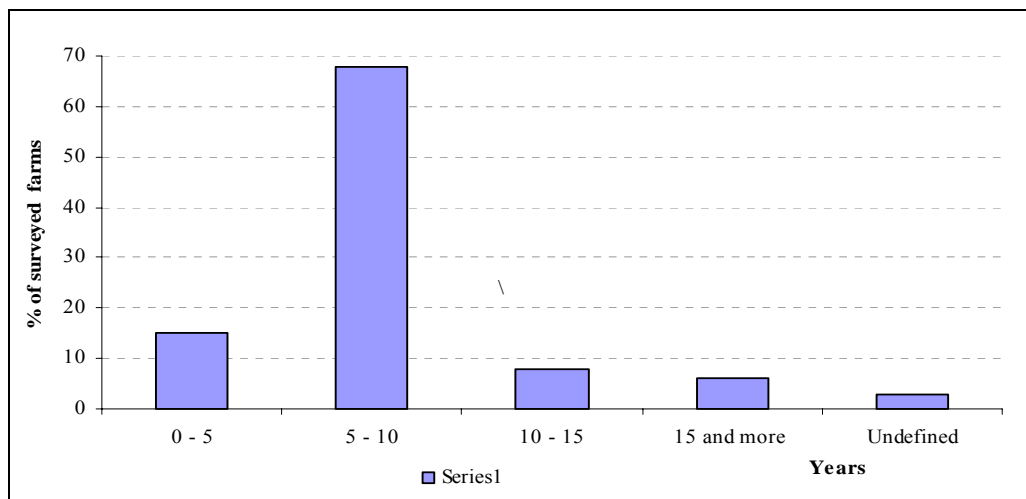
There is some evidence that corporate farms reduce payments by paying in kind instead of in cash and these in kind payments used by corporate farms are less transparent. These in-kind payments often depend on yields, which are difficult to control by the land owners, and may result in lower effective rent payments. In several countries, experts indicate that less productive corporate farms often do not pay rents as contractually agreed upon.

With accession to the European Union, the duration of the land rental contracts increased.

In Slovakia, contracts with duration between five and ten years dominate (68% of surveyed farms by VUEPP in 2006) followed by five years contracts (15%) (Figure 13). Before EU accession contracts tended to be shorter, up to five years. After accession contracts became longer to allow farms to use European funds such as funds for rural development (but not for direct payments). Renting of land for at least five years is one of the requirements imposed by European funds in Slovakia. This motivates farmers to sign contracts with longer duration, up to 10 years.

A significant increase in the number of long-term contracts involving private land has been observed in Poland in recent years (Table 13). Compared to the 1990s, when around 50% of rental contracts were for up to five years, there has been substantial decrease in short-term transactions. At the same time the number of undefined or hereditary tenancies has substantially decreased. These latter forms of rental transactions have been used especially in regions with high land fragmentation and income coming mainly from non-agricultural sources.

Figure 13. Duration of contracts in 2006, Slovakia



Source: VUEPP (based on a survey in 2006).

Table 13. Length of rental contracts in 2000 and 2005 (% of monitored transactions) - Poland

	Up to 2 years	2-5	5-10	10 and more	For an indefinite period of time
2000	8,2	25,1	42	4,2	20,5
2005	4,9	24,2	58,3	7,8	4,8

Source: IERiGŻ surveys.

8 Socio-economic structure of the agricultural sector: Evolution and comparison with the EU

8.1 Unemployment and GDP

If we look at some general economic indicators, we see that the unemployment level in most of the new Member States is comparable with the unemployment rate of the EU15, except for Poland and Slovakia. In the latter countries, the unemployment rate is almost twice as high (Figure 15). The difference between the employment rate in the EU15 and the NMS7 decreased considerably since 2001. Especially, the unemployment rate in the Baltics improved a lot and is now even smaller than the EU15 average.

The GDP of the new member states is still lower than in the old Member States. However, the gap is decreasing over time. Especially, the difference in GDP between the Baltic states and the EU15 is rapidly decreasing over time. In 1998, the GDP of the Baltic states was around 30% of that of the EU-15 and by 2005 it was already 50% or more of the GDP of the EU15.

8.2 Share of agriculture in employment and gross value added

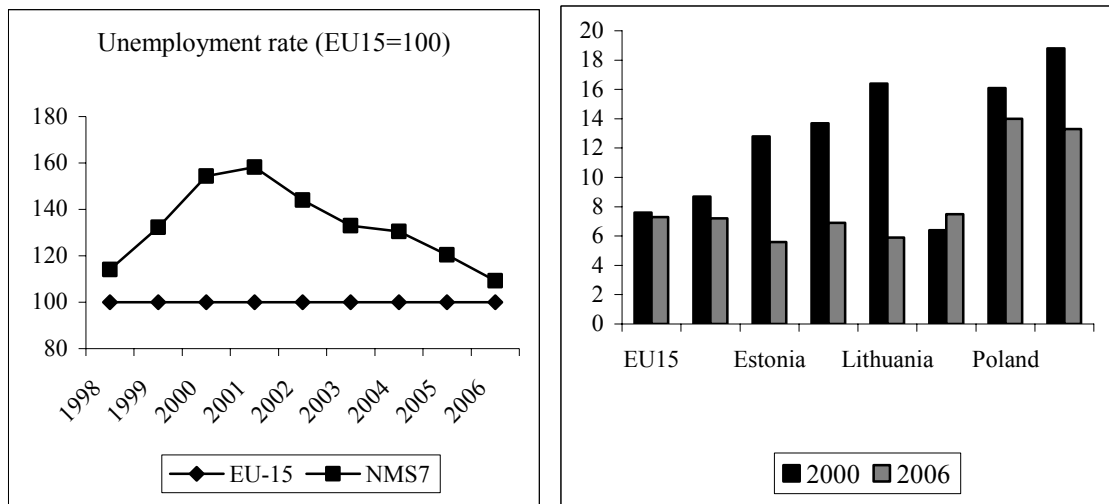
The share of agriculture in total employment and in total gross value added in the NMS7 decreased in the last decade and is now approaching the level in the EU15.

In the middle of the 1990s, the share of agriculture in total employment was much higher in the 7 new Member States than in the EU15. In Estonia, the share of agriculture in employment was 10%, in Latvia 18%, and in Lithuania and Poland it was 19%. In the Czech Republic, Hungary and Slovakia these shares were smaller than 10%, but they were still larger than in the old Member States where it equalled 5% in 1995. Ten years later, the share of agriculture in total employment decreased significantly in all new Member States and in the Czech Republic, Estonia, Hungary and Slovakia, its magnitude is comparable to the old Member States (Figure 16).³⁹

³⁹ According to Eurostat, the share of agricultural employment did not change in Poland between 1994 and 2004, while they do report that the absolute number of agricultural employment decreased with 5%. According to the national statistics, the absolute number of agricultural employment decreased even by 30% between 1994 and 2004. This would mean that

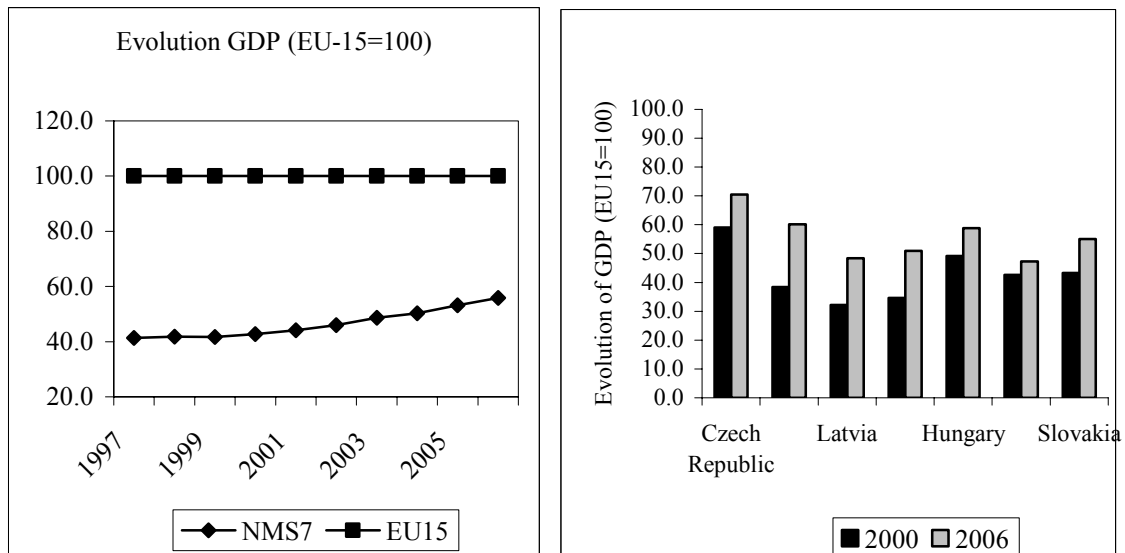
A similar evolution is observed for the share of gross value added of agriculture, including hunting and fishing, in total gross value added. In the new Member States, the share of agriculture in gross value added is larger than in the old Member States, but the difference is diminishing. In 1995, the share of agriculture in gross value added equalled 2.7% in the EU15, while it equalled 5% in the Czech Republic and 5.7% in Lithuania, which are respectively the countries with the lowest and highest share of agriculture in gross value added. By 2005, these shares were 1.8% in the EU15, and 2.9% in the Czech Republic and 5.7% in Lithuania (Figure 17).

Figure 14. Unemployment rate in the NMS7 relative to the EU15



Source: Eurostat.

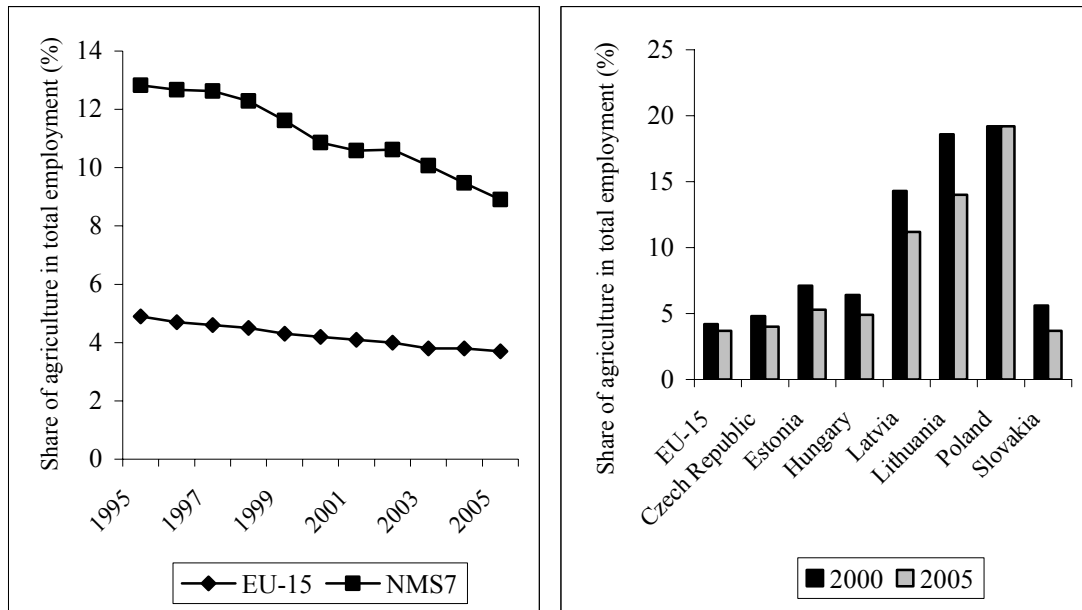
Figure 15. GDP in the NMS7 and the EU15



Source: Eurostat.

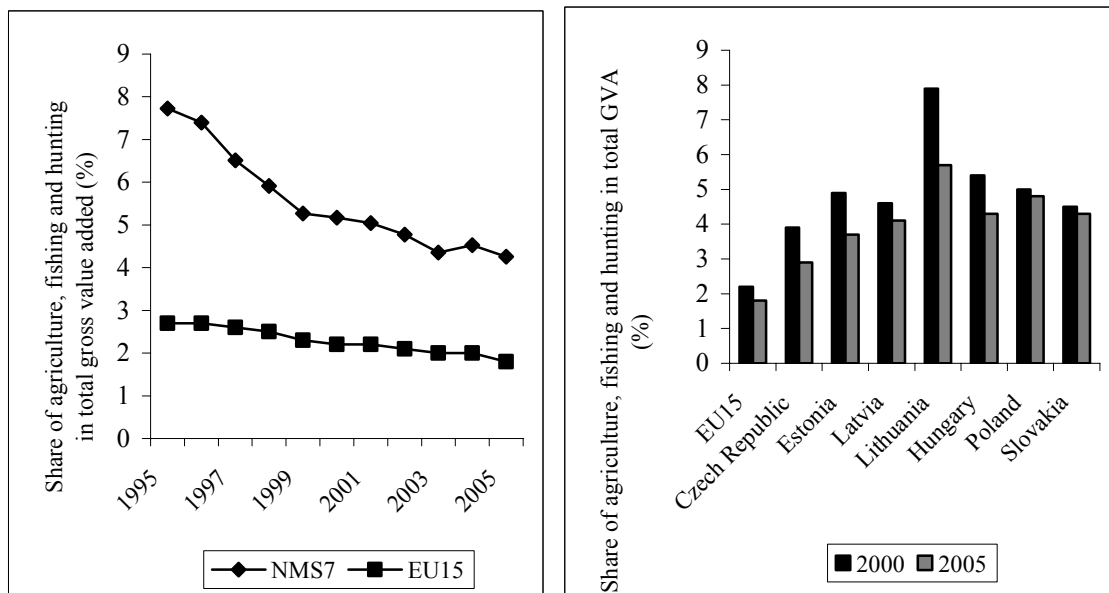
the share of agricultural employment decreased to 18.3% or to 13.6% depending on whether the absolute number of agricultural employment reported by Eurostat or by national statistics is used to calculate these figures.

Figure 16. Share of agriculture in total employment in the EU15 and NMS7



Source: Eurostat.

Figure 17. Share of gross value added of agriculture, fishing and hunting in total gross value added (%)



Source: Eurostat.

8.3 Labour productivity

Agricultural labour productivity (ALP) is measured as output per farm worker. Changes in ALP since the start of transition are summarised in Figure 18. As most productivity indicators, ALP evolutions differ among the NMS7.

Despite strong falls in aggregate output (see Figure 19), output per worker rose strongly over the first decade of transition in NMS such as Hungary, the Czech Republic, and Slovakia. The dramatic reduction in the use of agricultural labour drives the rise of ALP in these NMS (see Figure 20). Official employment data show an average reduction of labour use of 35% during the first five years of transition. The strongest reductions occur in Hungary (57%) and the Czech Republic (46%). The same process occurs in Estonia, an early and radically reforming country, where labour use declines by 58% within the first five years of reform, also causing an increase in ALP.

In other NMS, such as Poland, Latvia, and Lithuania, ALP fell immediately after reform, but recovered and rose after the first four years. Since then labour productivity growth has been consistently positive.

In recent periods, ALP growth continues in the NMS7 with further outflow of labour from agriculture. In some countries, such as Hungary, Slovakia, Czech Republic, Estonia and Lithuania, labour productivity growth is very strong (between 7% and 20% average per year). Notice that all these countries have a significant part of their agriculture organised in large-scale farming companies.

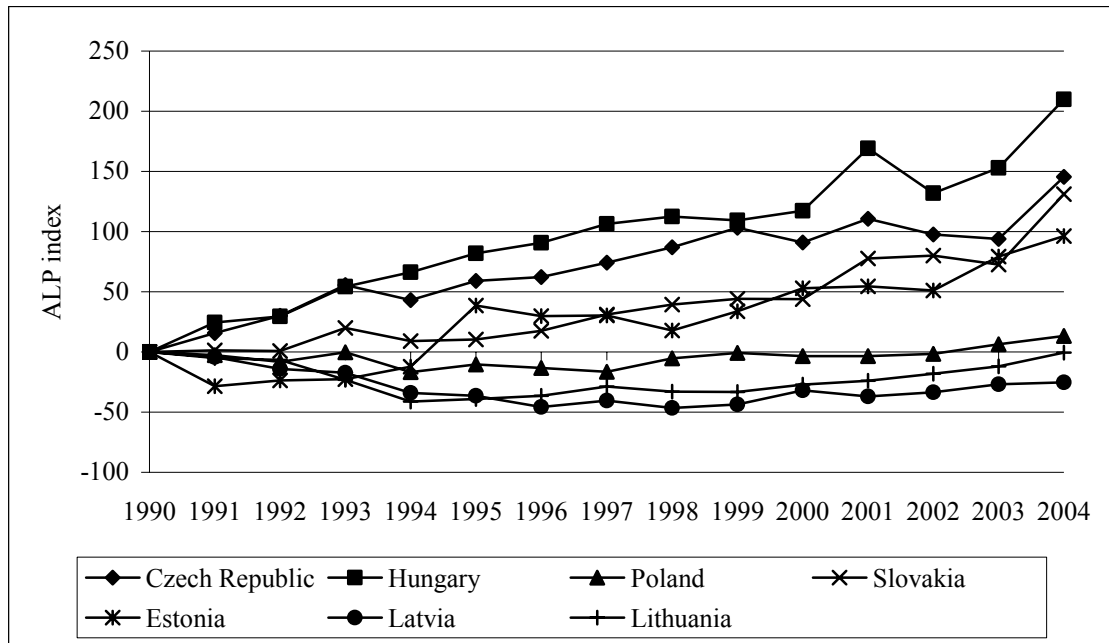
In countries dominated by individual farms, such as Poland and Latvia, labour productivity growth is much smaller – reflecting very different labour governance models on both types of farms (see e.g. Dries & Swinnen, 2002 and Swinnen et al, 2005).

Comparison with the EU15

In the Baltic States and in Slovakia, the gross value added per employee was only 7% of the level of the old Member States in 1995. The situation was slightly better in the Czech Republic and in Hungary where in the middle of the 1990s the gross value added per employee was respectively 12% and 21% of the EU15 level. In Poland, a country dominated by individual farmers, the gross value added per employee was 70% of the level of the old Member States.

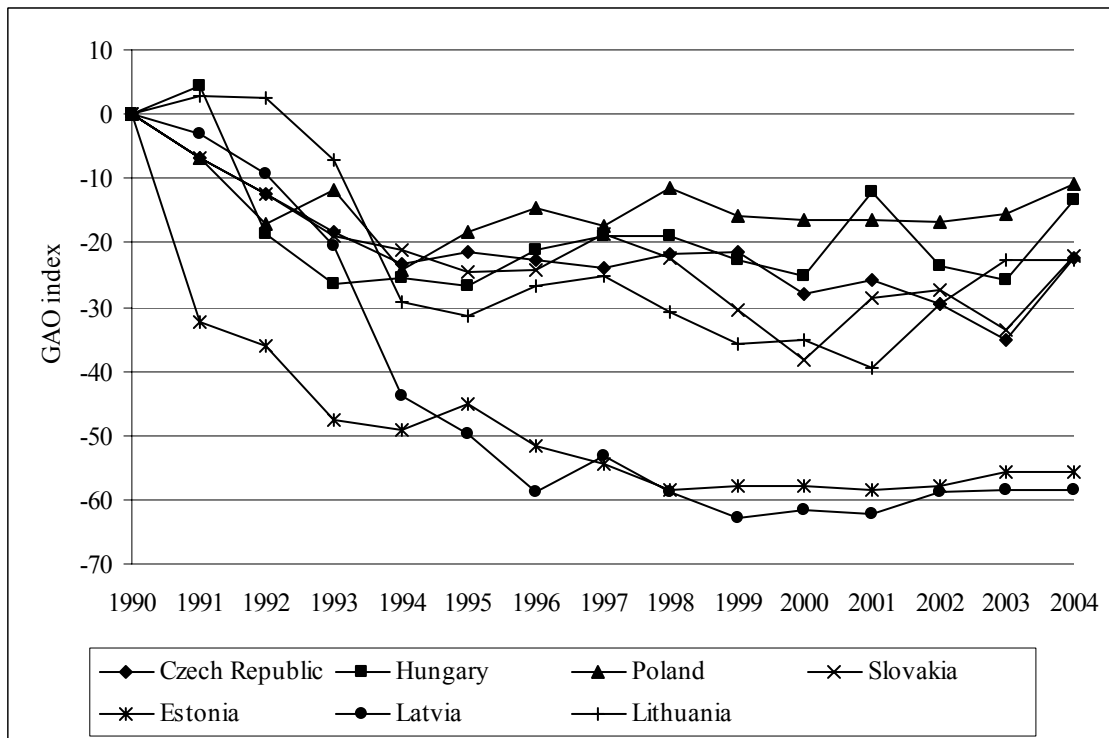
The gap between the value added per employee in the old and in the new Member States is decreasing. However, we can still observe large differences. In the Baltic states and the Czech Republic, the share of value added per employee was still less than 20% of the EU15 level by 2005. The situation was slightly better in Hungary and Slovakia, where it was respectively 46% and 29% of the level of the old EU15.

Figure 18. Changes in agricultural labour productivity (output per farm worker)



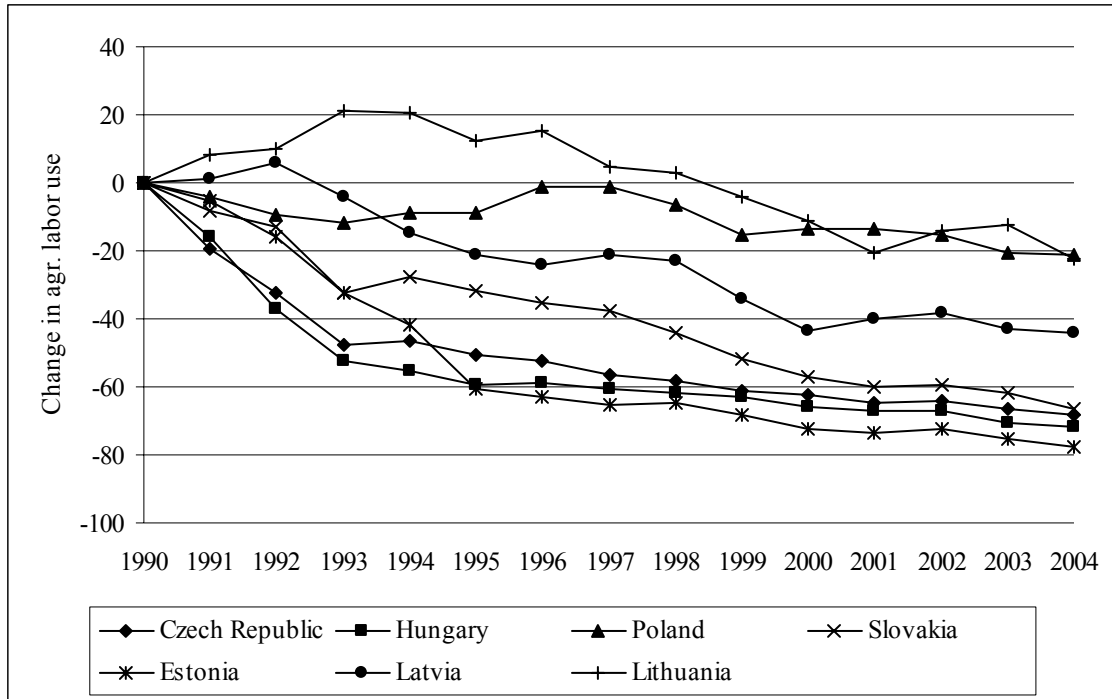
Sources: National statistics, ILO, World Bank and FAO.

Figure 19. Changes in gross agricultural output



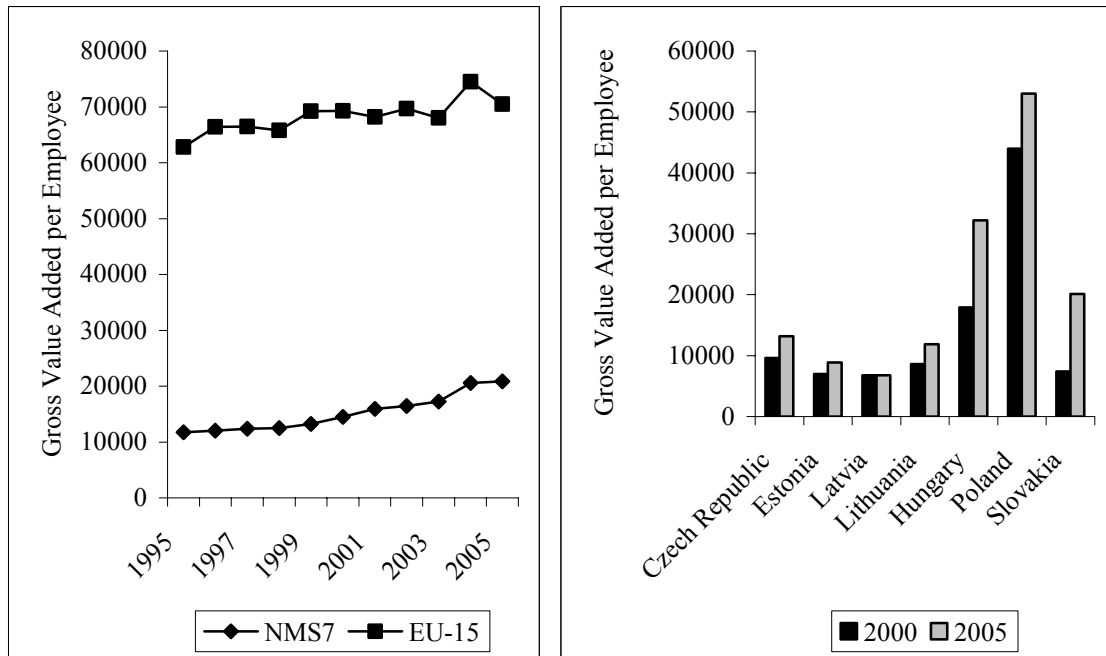
Source: FAO.

Figure 20. Change in agricultural labour use



Sources: National statistics, ILO and World Bank.

Figure 21 Gross value added per employee at basic prices



Source: Eurostat.

8.4 Yields and Land Productivity

The changes in yields are reported in Table 14 for three five-year periods. The numbers in the tables are summaries of yield evolutions for selected commodities: grains, sugar beet and milk.

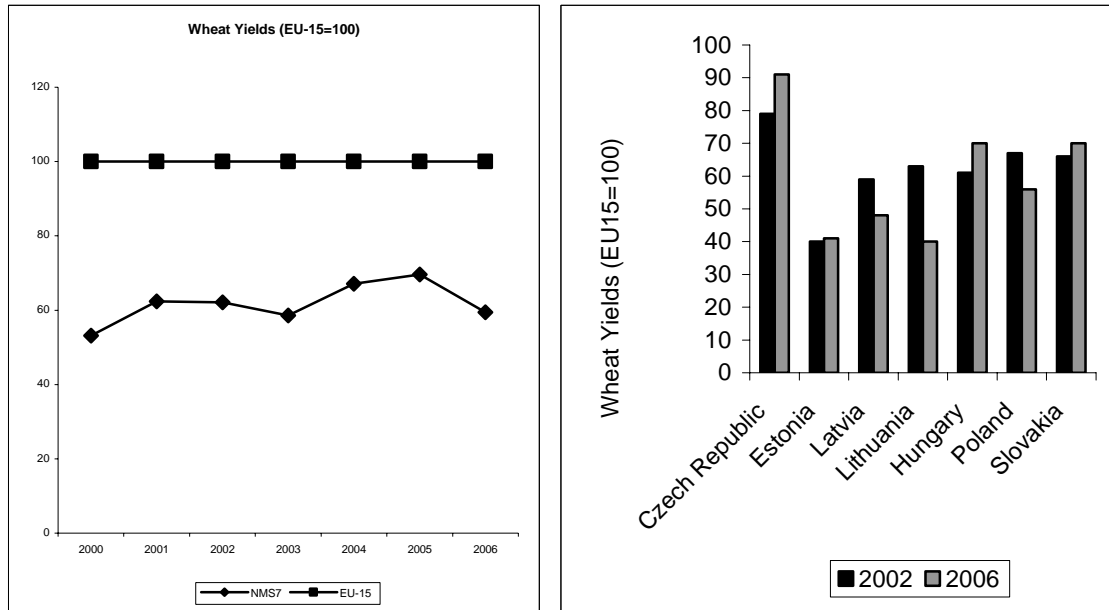
Average yields fall during the first few years after reform in all NMS7. As in the case of labour productivity, after the initial post-transition years, yields begin to recover fast (generally from the third year of transition onward). Agricultural yields increase, on average, by 3.2% annually in the second half of the 1990s in Central Europe. A similar, but more pronounced, yield pattern can be observed in the Baltic States. Average yields in the Baltics dropped initially to almost 25% below their pre-reform levels. In the second half of the mid-1990s, however, they recovered, rising by an average of 3.8% annually. After 1999 yields are still improving in the new Member States, albeit at different growth rates. Yields growth is somewhat higher (3.6% average annually) in Central Europe, while it is somewhat less (3.1%, down from 3.8% in the previous period) in the Baltic states.

Comparison with the EU15

By 2006, the yields in the Baltic states were less than 50% of the EU15 level. However, the Central European countries, and particularly Czech Republic, Hungary and Slovakia, manage to reach higher yields. This is not surprising given the fact that in these countries a large proportion of the agricultural land is still utilised by large-scale farming corporations which are typically the direct successors of the former collected and state farms. These large-scale farms mainly specialise in cultivation of land intensive products such as cereals to minimise the moral hazards they face and to benefit from economies of scale in mechanised production. In the Czech Republic, the wheat yields are even 91% of the EU15 level and this means that the average wheat yield is better than in Austria (Figure 22).

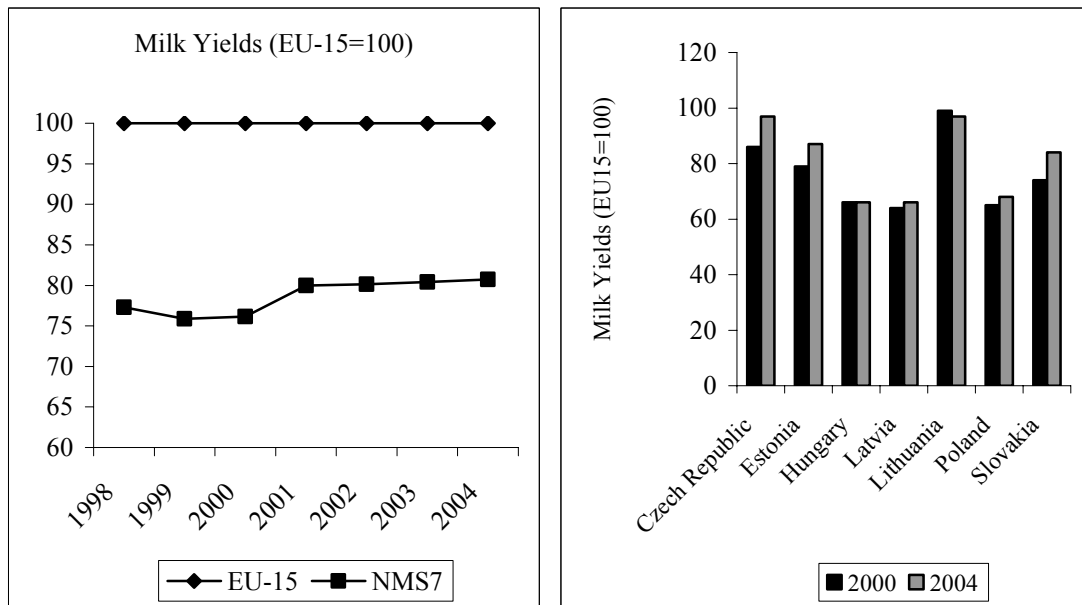
The milk production per cow is in all NMS7 very close to the average partial productivity in the EU15. Not only are the Central European countries relatively efficient producers in comparison to the EU15, but also the Baltic states are doing very well. In Estonia and Lithuania, the milk yields equal respectively 87% and 97% of the average yield in the EU15 (Figure 23). The relatively high production of milk per cow is particularly important for the Baltic states given the importance of the dairy sector in their national agricultural sectors.

Figure 22. Wheat yields indices – EU15=100



Source: Eurostat.

Figure 23. Milk yields indices – EU15=100



Source: Eurostat.

Table 14. Growth of index of agricultural yields in ECA countries (Index = 100 in first year of reform)

	Total grains ^a			Sugarbeet			Milk			Average agric. yields ^b			Average agric. yields/yr		
	5	10	15	5	10	15	5	10	15	5	10	15	0-5	5-10	10-15
Central Europe															
Czech Republic	87.0	89.0	112.4	102.1	128.8	142.2	99.8	126.1	135.7	96.3	114.7	130.1	-0.7	3.7	3.1
Hungary	72.3	82.7	103.4	72.3	100.9	128.9	95.3	110.3	112.9	80.0	98.0	115.1	-4.0	3.6	3.4
Poland	79.7	93.3	110.0	85.7	99.4	125.9	95.7	107.7	128.4	87.1	100.1	121.5	-2.6	2.6	4.3
Slovakia	88.9	88.5	95.3	99.1	118.2	132.1	89.5	115.6	151.9	92.5	107.4	126.4	-1.5	3.0	3.8
Baltics															
Estonia	69.0	88.1	111.2	102.7	na	na	86.2	111.9	131.9	86.0	100.0	121.6	-2.8	2.8	4.3
Latvia	71.3	94.0	118.0	88.3	107.4	128.8	89.4	116.5	129.6	83.0	105.9	125.5	-3.4	4.6	3.9
Lithuania	60.7	89.9	95.7	99.6	111.7	133.4	81.0	92.6	81.5	80.5	98.0	103.5	-3.9	3.5	1.1

^a Grains include wheat, rice (milled weight) and coarse grains.

^b Average agricultural yields are calculated as a simple average of the yields of grains, sugar beet/cotton and milk.

Sources: USDA for grains; sugar beet yields are from FAO for Central Europe. Milk yields are from ZMP and FAO.

Table 15. Agricultural Output

Value at producer price (€ million)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
EU15	240100	250804	250763	245326	243516	252646	261582	256341	255610	263450	256512	262490
Austria	4890	4861	4773	4695	4741	4814	5085	4865	4847	4956	5019	5214
France	53054	54672	54757	55756	54372	55270	56058	55272	53961	55240	54160	56046
Germany	40357	40793	40218	38017	37447	39034	41162	39521	36661	39975	38677	39765
Czech Republic	:	:	:	2924	2549	2819	3219	3237	2856	3394	3286	3272
Estonia	304	347	358	323	256	332	376	372	379	410	456	434
Latvia	:	:	:	432	361	425	501	498	465	529	612	641
Lithuania	834	1101	1282	1216	1052	1124	1137	1147	1169	1191	1355	1312
Hungary	:	:	:	4506	4344	4643	5437	5694	5185	6001	5558	5718
Poland	:	:	:	12167	10575	12176	14546	13042	11489	13306	13997	14659
Slovakia	1423	1559	1682	1516	1297	1262	1420	1469	1440	1604	1520	1477
Change in agricultural output – 1998=100				1998	1999	2000	2001	2002	2003	2004	2005	2006
EU15				100	99	103	107	104	104	107	105	107
Austria				100	101	103	108	104	103	106	107	111
France				100	98	99	101	99	97	99	97	101
Germany				100	99	103	108	104	96	105	102	105
Czech Republic				100	87	96	110	111	98	116	112	112
Estonia				100	79	103	116	115	117	127	141	134
Latvia				100	84	98	116	115	108	122	142	148
Lithuania				100	87	92	94	94	96	98	111	108
Hungary				100	96	103	121	126	115	133	123	127
Poland				100	87	100	120	107	94	109	115	120
Slovakia				100	86	83	94	97	95	106	100	97

Source: Eurostat.

8.5 Summary

There has been major growth in incomes and agricultural productivity in the NMS7, despite the restrictions. Yields and labour productivity increased strongly over the past years in NMS7 agriculture. Productivity, incomes and profits in NMS7 agriculture are considerably higher now than they were five years ago, before accession.

The rise in agricultural productivity and incomes is due to a combination of factors, such as improved factor markets, improved institutions, investment in the food chain, spillover effects of growth of the general economy, etc.

The gap between NMS7 and the EU15 in terms of income and productivity has also declined significantly over the past years. Various socio-economic indicators, such as, for example, agricultural productivity, unemployment, overall GDP, the share of agriculture in GDP and employment, show that the differences between the NMS7 and the EU15 are diminishing over time, and, for some of these, rapidly so.

The reduction in the gap between NMS7 and EU15 has been strongest in yields. For some commodities, such as grains in Central Europe and in dairy throughout the NMS7, the average NMS7 yields are close to the EU15 average.

In contrast, despite a marked increase, there still remains a significant gap in terms of income per capita and labour productivity in agriculture (value added per worker) between NMS7 and the EU15.

9 Conclusions

Restrictions on foreign ownership have affected the efficiency of land exchanges and land allocation, and productivity growth. However, the impact is mitigated because of several factors.

First, the restrictions do not fully constrain activities by foreign citizens in NMS agriculture and rural land markets, because:

- There are exceptions on the restrictions on foreign ownership of agricultural land. In general foreigners who married a citizen of the respective NMS or who stayed and farmed in the country for at least three years are allowed to purchase agricultural land. However, some exceptions differ by country. For example in Lithuania, Slovakia and Estonia, land ownership by foreign companies is not restricted. In Hungary, there is no restriction on ownership of land for intensive animal husbandry (i.e. the physical infrastructure and the land it is on, without the surrounding land), but land ownership by legal entities is forbidden.
- In several countries ‘informal arrangements’ have emerged. Although it is difficult to obtain representative information on these, they appear to be more important than officially purchased land by foreigners, and to differ strongly by region.
- Most importantly, there are no restrictions on renting land to foreigners. This is a major factor since land renting is very important, not only in the NMS7 but also

in the EU15. Moreover, land renting is most important for larger family farms and for corporate farms in the NMS7. These are exactly the type of farms where one would expect foreign investment to occur.

Second, the restrictions are only one of a set of factors constraining the functioning of the land market in the NMS7. There are several other impediments, besides the restriction, which affect the development of the land market and hence its potential to transfer land from the least to the most productive users. Other important factors include:

- Privatisation of state-owned land and/or the finalisation of the land reform process is still continuing. In almost all seven new member states, a considerable share of agricultural land is still owned by the state and is subject to planned privatisation and restitution processes. Therefore, it remains often locked in a certain, sometimes inefficient, land use pattern.
- The development of the land market is still affected by high transaction costs related to changes in plots allocation and transfer of the ownership title, because of co-ownership problems, high costs to withdraw land from large-scale corporations that are cultivating the land and which stem from problems to physically access the land and to identify the physical boundaries.

Third, while the restrictions have constrained direct benefits from foreign investment, NMS7 agriculture has already benefited extensively from large foreign investments in the food industry. Foreign investment in agriculture (and the associated benefits) has been seriously constrained through the restrictions on foreign land ownership. However, there have been large foreign investments in the NMS7 food industry and agribusiness. These had important positive spill-over effects on the farms, as foreign companies introduced technology, know-how, capital in the food chain, which has contributed to growth in investment, productivity and product quality in NMS7 agriculture.

Fourth, there has been major growth in productivity in NMS7 agriculture and in NMS7 land exchanges and reallocation, despite the restrictions. It is unclear how much more growth in productivity and in land markets would have resulted from liberalizing foreign ownership in NMS agricultural land.

- In all seven new Member States, we observe a strong increase in agricultural land prices (both rental and sales) since 2000 and EU accession reinforced this effect.
- EU agricultural subsidies, besides productivity increases, have induced a strong increase in NMS7 land prices.
- Small parcels are more expensive than larger parcels and their price increased considerably more than the price of larger parcels, probably due to non-farm purposes.
- Rental markets remain the dominant form of land exchange. While the number and volume of private land sales is still relatively small, especially with the accession to the European Union, the transfer of land through private sales and donations increased considerably, while the number and volume of public land sales decreased over time.

- Yields and productivity increased due to a combination of factors, such as improved factor markets, improved institutions, investment in the food chain, spillover effects of growth of the general economy, etc.

The factors underlying the NMS7 concerns that there would be a (massive) take-over of NMS7 land by foreigners [if restrictions would not be in place] have become less important, but have not fully disappeared.

First, the gap between NMS7 and the EU15 in terms of income, productivity, and land prices has declined significantly over the past years.

- Various socio-economic indicators, such as, for example, agricultural productivity, unemployment, overall GDP, the share of agriculture in GDP and employment, show that the differences between the NMS7 and the EU15 are diminishing over time, and rapidly so.
- Productivity, incomes and profits in NMS7 agriculture are considerably higher now than they were five years ago, before accession. Also subsidies have been increasing in the NMS7.
- Also land prices are increasing rapidly in the NMS7, reducing the gap with the EU15.

Second, there still remains, however, a significant gap between NMS7 and the EU-15 in terms of land prices, income and subsidies. Despite the marked increase, NMS7 land prices remain significantly below EU15 land prices. The same holds for average income per capita and value added per worker in agriculture.

Third, the evolution of social attitudes and political opposition vis-à-vis foreign ownership restrictions appears to be mixed.

- In Poland the negative attitude towards foreign ownership diminished considerably over the past years. Surveys show that in 1999, almost 90% of the farmers felt that foreigners should not be given the right to buy agricultural land. However, by 2004, only 30% opposed foreigners to be allowed to buy land without restrictions. This suggests that in Polish rural areas there is still opposition to foreign land ownership, but considerably less than before.
- In contrast, a farm survey in Hungary in 2007 revealed that there is still strong opposition to fully liberalised land markets as more than 90% of the interviewed farmers wanted to extend the ban on acquisition of agricultural land by foreigners because they consider Hungarian farmers as less competitive than foreigners and they argue that lifting the ban would increase the land prices driving Hungarian farmers out of business.

If full liberalisation of land turns out to be politically impossible in the mid-term review process, there are some, more moderate, changes that could be considered. The most effective proposals for changes would be those that have limited effect on

the social and political considerations, and be most effective in stimulating economic benefits.

Two suggestions are:

- Increase the minimal size of the agricultural land that foreign citizens and legal entities can acquire without restrictions. One could think of using the ‘Estonian model’ where foreigners can now buy up to 10 hectares without restrictions.
- Allow foreign citizens and legal entities to acquire farm buildings and the land on which they are built without restrictions.

Both proposals could result in important economic effects because it would allow those foreign citizens and legal entities interested in investing in NMS7 agriculture to do so by combining renting and owning land in their farm operation, as many farms do in the EU15 and in the NMS7. They can acquire land for their long-run investments (such as stables, farmhouses, greenhouses, etc.) and rent the rest of the land.

Both proposals should have minimal effect on the size of the land owned by foreigners in the NMS7, since it would still prevent them from purchasing hundreds or thousands of hectares.

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Annex I. Data Sources

I.1 Data problems

The data problems encountered in addressing the key issues in this report were very substantial. Ideally, we would have developed a complex econometric model using cross-border (both EU15 and NMS7) representative household and company survey data and panel-estimates. However, hardly any of the data and information required to estimate such models on these issues were available at the start of the study.

Information about land markets and prices is limited in Eurostat, not just for the NMS7 but also for the EU15 (see Tables A1 and A2 below). Harmonised data were missing to an important extent and there was no full coverage for the period under study).⁴⁰ The lack of harmonised land price and land market data was an important constraint for our comparative analysis.

Key data have been collected as part of this study. In fact, a major contribution of this study is the collection of basic information and data on the land markets in the NMS7 and the processing of these data into a comparative dataset.

The country teams have collected national and – to the extent possible – disaggregated regional data (see also Annex II) on land rental and sales prices for different land use and quality categories and the evolution of these prices over the period of up to 10 years prior to enlargement and the years following enlargement.

Data were collected by the country teams from official sources such as the national statistical institute and institute for agricultural economics. This has been complemented by interviews with local experts. For reasons of consistency we decided not to mix different data sources.

The land sales and land rental prices collected by the national experts are presented in the tables and figures in the main part (e.g. in the summary Tables 9, 10 and 12) and used in this report for the analysis.

I.2 Comparison with EUROSTAT data

Tables A.1 and A.2 present the available Eurostat data on land sales and rental prices. A comparison with Tables 9 through 12 in the main report shows:

1. It would have been impossible to do the analysis based on the Eurostat data only. It was crucial to get longer time series data, and more recent data, to assess the impact of accession, and data for more countries.
2. The dataset we have collected through our national experts and local sources is considerably more comprehensive than the Eurostat dataset; both in terms of country coverage (data from more countries) and in terms of the period covered (longer time series), both going back in time and in more recent years.

⁴⁰ For example, the Eurostat datasets do not contain either land sales or rental data for Czech Republic and Estonia; no land sales data for Hungary; and no land rental price data for Latvia.

3. Where the data that we collected through our country experts and the Eurostat data overlap, the data are generally consistent and show the same levels and trends. Differences were generally small (with two exceptions which we discuss below).

For example, Figure A1 illustrates the similarity between Eurostat data and our data for land sales prices in Poland, for the period where they overlap. The Eurostat data are only available for the period 2000-05, while the data provided by the country team cover the period 1994-2005. For the overlapping period (2000-05), the Eurostat data and the data provided by the country team are very close and indicate the same trend. The minor differences between both sources may be due to different weighting in calculating averages. In this study we use a weighted average of the land price for land in public and private turnover with the number of transactions being the weighting factor.

4. The two exceptions (referred to above) where the price differences are large are for land sales prices in Slovakia and Latvia. In both cases it is due to different samples.

In the case of land sales prices in Slovakia, our average price data series is for all agricultural land parcels. The average prices are much higher than those of Eurostat since Eurostat excludes the smallest plots because sales of plots smaller than 1 hectare are argued to be for other purposes than agricultural production. However we do have data for some years on how the prices differ by plots. In Box 2 we analyse the variation of sales prices by size and we find that prices of small plots (especially those less than 0.5 hectare) are considerably higher (up to 5 times) than those larger than 1 hectare, which may indeed reflect their use after sales. For this reason we have used both the average sales prices (for all agricultural land) and the average sales prices for plots larger than 5 hectares in our comparative analysis – see e.g. Figures 11 and 12. [And we did the same thing for the Czech Republic where similar differences were observed.]

Both data series are consistent in that they show a substantial increase in sales prices of agricultural land in Slovakia with EU accession.

Finally, it is important to emphasise that in Slovakia land sales are limited and the vast majority of transactions is through rental markets (over 90% of agricultural land is rented). The data series on land rental prices are much more consistent as the price differences between our series and the Eurostat data are relatively small. [A similar comment applies to the Czech Republic, although Eurostat has no land price data on the Czech Republic.]

In the case of land sale prices in Latvia, our data series is for agricultural land parcels larger than 3 hectares, because this is the series for which we could obtain consistent price data for a longer period. The prices are considerably larger than the sales price data in the Eurostat dataset (about 30-40% difference), which is most likely due to the fact that the Eurostat data also include smaller parcels. Both price series show a dramatic increase in the sales price (100%-130%) around the time of EU accession in Latvia, but according to our data this

jump occurred in 2005, while the Eurostat data have the increase occurring already in 2004.

In conclusion, we emphasise that the conclusions drawn in this report do not depend on the differences in these data series; and in fact make use of the variation in the data where we can explain them to strengthen the arguments and insights.

Figure A1. A comparison of land sales price data from Eurostat and from the country team. (Poland)

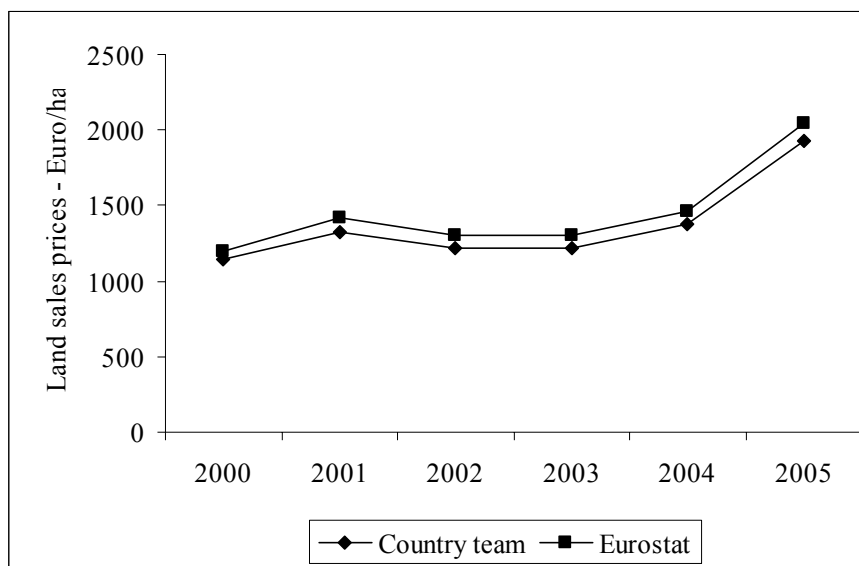


Table A1. Eurostat data on 'Market value of agricultural land' (€/ha at current exchange rates)

		2000	2001	2002	2003	2004	2005
Czech Republic							
Estonia							
Hungary							
Latvia	Agricultural land			551	527	1044	
Lithuania	Agricultural land	315	333	469	390	406	
Poland	Arable land	1194	1415	1307	1308	1463	2049
Slovakia	Agricultural land	895	878	888	912	945	982
France	Arable land			3860	3970	4100	
Italy		13654	14266				
Sweden	Agricultural land	1989	1988	2019	2127	2455	3351

Source: Eurostat.

Table A2. Eurostat data on 'Rents for Agricultural land' (€/ha at current exchange rates)

		2000	2001	2002	2003	2004	2005
Czech Republic							
Estonia							
Hungary	Agricultural land		45.48	52.99	57.1		63.4
Latvia							
Lithuania	Agricultural land	9.54	12.41	13.44	13.5		
Poland	Arable land						68.9
Slovakia	Agricultural land	13.43	13.16	13.33	13.67	14.18	14.7
France	Arable land	131.16	130.84	131.49	130.71	130.31	
Italy							
Sweden	Agricultural land	106.57	103.94	107.85	109.7	109.93	

Source: Eurostat.

Annex II. Additional Tables

Table A1. Land prices in public turnover in selected Polish regions, 1999-2006 (PLN/ha)

	1999	2000	2001	2002	2003	2004	2005	2006 I	2006 II
Dolnośląskie	3 389	4 253	3 107	3 765	3 692	4 683	5 941	8 781	8 130
Kujawsko-pomorskie	4 336	4 253	4 298	5 347	5 853	6 268	7 643	9 055	8 775
Lubelskie	2 303	2 501	1 760	2 267	2 735	4 214	5 464	5 520	6 159
Lubuskie	2 722	2 879	2 904	3 210	3 516	3 729	4 250	5 586	5 584
Łódzkie	3 209	3 770	3 846	3 586	4 693	5 723	6 208	7 533	8 043
Małopolskie	5 035	7 047	7 743	3 829	3 858	5 683	7 749	7 952	7 393
Mazowieckie	8 283	11 451	3 950	6 513	4 409	5 663	7 393	5 599	5 990
Opolskie	4 600	3 754	5 216	5 083	5 818	6 364	7 466	8 284	7 757
Podkarpackie	2 150	2 302	2 665	2 424	3 432	3 338	4 583	5 090	4 780
Podlaskie	2 061	1 660	2 128	2 324	2 404	3 083	4 500	4 509	4 829
Pomorskie	3 631	3 146	3 389	3 760	3 724	4 038	6 243	6 851	7 049
Śląskie	3 094	7 543	6 046	6 499	7 598	7 701	8 300	8 843	7 824
Świętokrzyskie	2 150	2 560	2 665	2 797	2 715	4 421	4 862	8 405	6 453
Warmińsko-mazurskie	3 798	3 197	3 104	2 893	3 035	3 927	4 405	5 278	6 123
Wielkopolskie	5 013	4 975	4 634	5 137	5 046	7 432	8 295	10 496	11 450
Zachodniopomorskie	3 980	2 916	3 547	3 019	3 740	4 131	5 731	5 704	6 120
Average in Poland	3 684	3 554	3 414	3 438	3 736	4 682	5 607	6 519	6 645

Source: ANR.

Table A2. Prices of arable land in private turnover in selected Polish regions, 1999-2006 (PLN/ha)

	1999	2000	2001	2002	2003	2004	2005	2006 I	2006 II
Dolnośląskie	3 735	3 940	4 319	4 062	4 868	4 875	6 941	7 340	8 525
Kujawsko-pomorskie	5 053	5 385	5 744	5 587	6 549	7 721	12 209	13 684	15 058
Lubelskie	3 968	4 187	4 478	4 155	4 963	5 386	6 361	6 978	7 114
Lubuskie	2 606	2 959	3 160	2 950	3 092	3 561	4 364	4 452	4 887
Łódzkie	3 839	4 221	4 684	4 711	5 339	6 820	8 982	9 645	9 893
Małopolskie	6 651	7 069	7 719	7 163	7 269	8 451	8 644	8 939	10 043
Mazowieckie	4 345	4 917	5 524	5 517	6 717	7 805	9 557	9 895	11 175
Opolskie	5 813	6 209	6 372	5 603	5 454	6 262	7 100	7 512	8 026
Podkarpackie	3 119	3 431	3 883	3 818	4 249	4 522	4 318	4 430	4 867
Podlaskie	4 032	4 494	4 796	5 078	5 575	6 697	9 410	10 412	11 560
Pomorskie	3 157	3 533	4 120	4 854	5 488	6 906	9 137	8 865	10 452
Śląskie	3 828	4 343	5 007	5 264	7 273	8 416	8 224	8 630	9 589
Świętokrzyskie	4 792	5 190	5 674	4 879	5 406	5 950	6 062	6 246	6 312
Warmińsko-mazurskie	2 978	3 240	3 485	3 291	3 499	4 691	5 737	6 771	6 917
Wielkopolskie	5 237	5 776	6 287	6 276	7 457	8 568	13 107	15 319	15 201
Zachodniopomorskie	2 830	3 235	3 780	3 658	4 073	4 901	5 057	5 978	6 142
Average in Poland	4 390	4 786	5 197	5 042	5 753	6 634	8 244	8 953	9 339

Table A3. Area of agricultural land and forests sold to foreign investors in Poland – regional perspective (ha)

	2000	2001	2002	2003	2004	2005	In total
Dolnośląskie	7	12	43	62	35	16	175
Kujawsko-pomorskie	3	4	1	1	2	1	12
Lubelskie	0	1	0	3	1	10	15
Lubuskie	0	11	2	3	6	42	64
Łódzkie	5	4	23	4	4	7	47
Małopolskie	4	2	2	2	8	11	29
Mazowieckie	24	27	16	18	12	24	121
Opolskie	15	7	10	63	10	13	118
Podkarpackie	0	4	0	46	3	2	55
Podlaskie	0	2	1	0	0	3	6
Pomorskie	11	16	3	2	4	96	132
Śląskie	22	4	64	5	31	7	133
Świętokrzyskie	1	1	5	7	2	23	39
Warmińsko-Maz.	19	9	12	1	1	15	57
Wielkopolskie	11	6	4	4	9	15	49
Zachodniopomorskie	0	1	15	24	1	67	108
Total	122	111	201	245	129	352	1160

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Table A4: Average prices of agricultural land in Latvia (€/ha), 2000-2006

	2000	2001	2002	2003	2004	2005	2006
Aizkraukles region	228	163	256	285	306	405	811
Aluksnes region	171	49	78	170	170	327	284
Balvu region	121	64	106	57	164	206	306
Bauskas region	313	327	355	405	491	1565	1351
Cesu region	213	178	241	320	256	804	1138
Daugavpils region	156	114	170	227	270	604	611
Dobeles region	320	362	334	370	426	1231	2163
Gulbenes region	100	142	106	135	263	448	185
Jekabpils region	128	164	156	156	170	455	420
Jelgavas region	341	362	356	413	415	1330	2419
Kraslavas region	100	171	121	149	157	292	349
Kuldigas region	142	178	228	270	256	626	624
Liepajas region	156	249	306	299	320	804	946
Limbazu region	185	249	242	291	249	768	1032
Ludzas region	107	121	100	142	135	306	462
Madonas region	128	64	121	277	377	391	455
Ogres region	199	313	370	362	441	782	612
Preilu region	185	164	171	163	149	292	199
Rezeknes region	213	178	163	163	242	334	562
Rigas region	426	398	562	839	612	2234	1750
Saldus region	199	256	192	228	306	690	1010
Talsu region	170	341	241	228	228	697	647
Tukuma region	185	178	249	306	362	968	1110
Valkas region	206	170	241	156	178	356	306
Valmieras region	263	178	220	228	327	633	384
Ventspils region	170	170	277	228	325	669	675
Territory of Latvia	198	203	229	266	293	700	801

Table A5. Share of agriculture in total employment

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EU15	4.9	4.7	4.6	4.5	4.3	4.2	4.1	4	3.8	3.8	3.7
France	4.6	4.5	4.4	4.3	4.1	4	3.8	3.7	3.7	3.6	
Germany	2.9	2.6	2.5	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.2
Czech Republic	6.4	6.1	5.9	5.6	5.2	4.8	4.6	4.3	4.2	4	4
Estonia	10.1	9.7	9.1	8.8	8	7.1	6.8	6.8	6.1	5.8	5.3
Hungary	8.2	8.4	8	7.6	6.9	6.4	6.2	6.1	5.4	5.1	4.9
Latvia	17.7	17.2	21	18.7	16.5	14.3	14.8	15.1	13.3	12	11.2
Lithuania	19.3	20.1	17.6	19.1	19.3	18.6	17.2	17.8	17.8	15.8	14
Poland	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
Slovakia	8.9	8	7.6	7	6.2	5.6	5.3	5	4.5	4.4	3.7

Source: Eurostat

Table A6. Share of gross value added of agriculture, hunting and fishing in total gross value added

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EU (15 countries)	2.7	2.7	2.6	2.5	2.3	2.2	2.2	2.1	2	2	1.8
Austria	2.7	2.4	2.4	2.3	2.2	2.1	2.1	2	1.9	1.9	1.6
France	:	:	:	:	3	2.8	2.9	2.7	2.5	2.5	2.2
Germany	1.3	1.3	1.3	1.2	1.2	1.3	1.4	1.1	1.1	1.2	1
Czech Republic	5	4.7	4.2	4.2	3.9	3.9	3.9	3.3	3.1	3.3	2.9
Estonia	8	7.6	7.1	6.5	6	4.9	4.7	4.2	3.7	3.8	3.7
Latvia	9.1	7.4	5.1	4	3.9	4.6	4.5	4.6	4.1	4.4	4.1
Lithuania	11.4	12.5	11.4	9.8	8.3	7.9	7.1	7	6.4	5.8	5.7
Hungary	6.7	6.6	5.9	5.5	4.8	5.4	5.3	4.7	4.3	4.8	4.3
Poland	8	7.5	6.6	6	5.2	5	5.1	4.5	4.4	5.1	4.8
Slovakia	5.9	5.5	5.3	5.4	4.8	4.5	4.7	5.1	4.5	4.5	4.3

Source: Eurostat

Table A7. Wheat yields indices - EU15=100

	2000	2001	2002	2003	2004	2005	2006
EU-15	100	100	100	100	100	100	100
Austria	76	96	86	83	95	87	84
France	121	121	129	118	121	121	116
Germany	124	144	119	123	131	129	124
Czech Republic	72	89	79	77	93	87	91
Estonia	36	41	40	41	40	53	41
Latvia	46	49	59	53	47	62	48
Lithuania	57	56	63	68	64	65	40
Hungary			61	50	82	78	70
Poland	55	65	67	64	68	68	56
Slovakia	53	74	66	57	76	74	70

Source: Eurostat.*Table A8. Milk yields- EU15=100*

	1998	1999	2000	2001	2002	2003	2004
EU-15	100	100	100	100	100	100	100
Austria	74	78	85	91	90	92	91
France	99	97	98	97	99	97	97
Germany	104	104	102	103	103	104	103
Czech Republic	85	89	86	92	98	96	97
Estonia	82	78	79	87	85	83	87
Hungary	69	67	66	66	64	66	66
Latvia	63	59	64	64	64	63	66
Lithuania	97	96	99	102	101	104	97
Poland	66	66	65	67	65	67	68
Slovakia	79	76	74	82	84	84	84

Source: Eurostat.

Table A9. Gross value added per employee at basic prices and relative to the EU15

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EU-15	62800	66400	66500	65800	69200	69300	68200	69700	68000	74500	70500
Austria											153000
France					105300	105700	105100	112500	95300	115700:	
Germany	44800	48800	50400	46800	52400	53400	56900	53600	51600	61300	61000
Czech Republic	7300	7100	6200	7100	8500	9600	9700	10700	11800	13400	13200
Estonia	4400	4900	5500	6000	6600	7000	7500	8200	8700	9100	8900
Latvia	4100	4500	5300	5200	5500	6800	6300	5800	6000	7300	6800
Lithuania	4100	5900	7200	6700	6400	8600	10100	10100	11500	12600	11900
Hungary	13500	13000	13800	13100	14500	17900	20900	18900	18800	31800	32200
Poland	44300	44400	43100	43400	44900	44000	48300	50400	51800	55200	53000
Slovenia	37300	38900	40600	40900	43300	45900	46100	54100	47200	59300	58300
Slovakia	4400	4600	5500	5900	6400	7400	8700	10900	12300	14800	20100
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EU-15	100	100	100	100	100	100	100	100	100	100	100
Austria											217
France					152	153	154	161	140	155	
Germany	71	73	76	71	76	77	83	77	76	82	87
Czech Republic	12	11	9	11	12	14	14	15	17	18	19
Estonia	7	7	8	9	10	10	11	12	13	12	13
Latvia	7	7	8	8	8	10	9	8	9	10	10
Lithuania	7	9	11	10	9	12	15	14	17	17	17
Hungary	21	20	21	20	21	26	31	27	28	43	46
Poland	71	67	65	66	65	63	71	72	76	74	75
Slovakia	7	7	8	9	9	11	13	16	18	20	29

Source: Eurostat

Table A10. Euro/ECU exchange rates - Annual data

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Czech Koruna	:	:	:	34.2	34.2	34.7	34.5	35.9	36.0	36.9	35.6	34.1	30.8	31.8	31.9	29.8	28.3
Estonian Kroon	:	:	:	15.5	15.4	15.0	15.3	15.7	15.7	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
Latvian Lats	:	:	:	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Lithuanian Litas	:	:	:	5.1	4.7	5.2	5.1	4.5	4.5	4.3	3.7	3.6	3.5	3.5	3.5	3.5	3.5
Hungarian forint	130.5	142.2	172.8	107.6	125.0	164.5	193.8	211.7	240.6	252.8	260.0	256.6	243.0	253.6	251.7	248.1	264.3
New Polish Zloty	2.0	2.0	3.0	2.1	2.7	3.2	3.4	3.7	3.9	4.2	4.0	3.7	3.9	4.4	4.5	4.0	3.9
Slovak Koruna	:	:	:	36.0	38.1	38.9	38.9	38.1	39.5	44.1	42.6	43.3	42.7	41.5	40.0	38.6	37.2

Source: Eurostat.*Table A11. Price deflator gross domestic product at market prices (National currency; annual percentage change)*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Czech Republic	36.2	12.4	21	13.4	10.2	10.3	8.4	11.1	2.8	1.5	4.9	2.8	0.9	3.5	0.7	1.7
Estonia				39.7	31.4	24.3	10.4	8.9	4.5	5.4	5.3	3.8	2.3	2.1	6.8	6.1
Latvia	162.6	932.2	64.8	36.2	15.1	14.9	7	4.6	4.8	3.8	1.7	3.6	3.6	7	10.2	11.1
Lithuania	227.9	943	306.2	61.6	46.4	20	12.6	4	-0.9	0.5	-0.3	0.1	-0.9	2.7	5.8	7.1
Hungary		20.3	21.3	19.5	26.7	21.2	18.5	12.6	8.4	9.9	8.4	7.9	5.7	4.3	2	2.9
Poland	55.3	38.6	30.6	37.2	28	17.9	13.9	11.1	6.1	7.3	3.5	2.2	0.4	4.1	2.6	1.3
Slovakia			15.6	13.4	9.9	4.6	4.6	5.1	7.5	9.7	5	4.6	4.7	6	2.4	2.7

Source: Statistical Annex of European Economy; Spring 2007; DG General Economic and Financial Affairs.