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**Working Paper**

## Patterns of Land Market Developments in Transition

LICOS Discussion Paper, No. 179

**Provided in Cooperation with:**

LICOS Centre for Institutions and Economic Performance, KU Leuven

*Suggested Citation:* Swinnen, Jo; Vranken, Liesbet (2007) : Patterns of Land Market Developments in Transition, LICOS Discussion Paper, No. 179, Katholieke Universiteit Leuven, LICOS Centre for Institutions and Economic Performance, Leuven

This Version is available at:

<https://hdl.handle.net/10419/75039>

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**LICOS Discussion Papers**

Discussion Paper 179/2007

**“Patterns of Land Market Developments in Transition”**

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# **Patterns of Land Market Developments in Transition**

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*DRAFT :*  
*Version September 12, 2006*

## **Abstract**

Transition countries provide a natural experiment to study the development of land markets. This paper provides survey-evidence of the variation in the development of land markets, identifies a series of patterns, and provides a set of hypotheses to explain these variations in land market development.

The authors thank the World Bank, the Flemish Fund for Scientific Research (FWO-Vlaanderen), the Research Council of the Catholic University of Leuven and the European Commission for funding parts of this research. We are grateful to Gavin Adlington, Benoit Blarel, John Bruce, Malcolm Childress, Csaba Csaki, Klaus Deininger, Karen Macours, Zvi Lerman, Cora Shaw, Iain Shuker, Bill Sutton, Wael Zakout for useful comments on earlier drafts of this paper. The authors are solely responsible for the views expressed within the paper and for any remaining errors.

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# Patterns of Land Market Developments in Transition

## Abstract

Transition countries provide a natural experiment to study the development of land markets. This paper provides survey-evidence of the variation in the development of land markets, identifies a series of patterns, and provides a set of hypotheses to explain these variations in land market development.

## 1 Introduction

There is a vast literature on the role of land rights and institutions for land exchange in the process of development (see e.g. Binswanger et al., 1995; Deininger, 2003; Platteau, 2000; Keefer and Knack, 2002 for reviews). Land reform and the creation of optimal land institutions has attracted renewed attention because of its central role in the transition process in former Communist countries in East Asia, the former Soviet Union and Eastern Europe; as well as because of continuing political pressure for land reforms in countries with highly unequal land distributions such as South Africa, Zimbabwe, Brazil, and others. Recommendations for privatization of land and the stimulation of land markets are based on the arguments that (a) land sales transfer full rights to the new user, (b) they 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; Deininger and Jin, 2003). However, it is well understood that the functioning of land markets is strongly affected by uncertainty and imperfections in input, product, credit and insurance markets.<sup>1</sup> With substantial market imperfections, other forms of land

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<sup>1</sup> Especially credit market imperfections and transaction costs play an important role. 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, investments in land ties up much needed capital in land, and prevents farmers from using these savings for investments in technology, equipment, or quality inputs. Further, people hold land for many other reasons than production, such as prestige value, lifestyle value, family traditions, leading wealthy and

exchange, such as rental markets, can play an important role. Hence, the functioning and development of land markets may therefore depend on the state of the surrounding economy and other markets.

Yet, it is remarkable how much variation one observes empirically in institutions for land exchange even within regions where countries are relatively close in income levels and the state of their general market developments. For example, in Western Europe the role of sales and rental markets in land varies tremendously among countries (Swinnen, 2002). The share of agricultural land rented by farmers varies from less than 10% in Ireland to more than 70% in Belgium. Also the historical evolution varies strongly. For example, in Ireland the share of land rented decreased from 95% in 1875 to 5% by the Second World War. In contrast, the importance of land renting has remained almost constant over 150 years in Belgium.

One part of the literature explains differences and changes in land tenure as an endogenous response to changes in the external environment. For example, the emergence of private property rights is seen as an endogenous response to increased scarcity of land and the associated incentives for land-related investments (Boserup, 1965) or to reduced risk to income and consumption (Deininger and Feder, 2002).

However, others question the hypothesis that changes in land institutions are efficiency-driven and argue that there is no assurance that an institution will come into being simply because it is more efficient than existing alternatives (Baland and

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politically connected households to accumulate large tracts of land. Some of these factors also make that the sale price for land will typically be higher than the productive value of land (Binswanger et al., 1995). Finally, transaction costs (including costs of enforcing property rights, of getting access to the necessary documents and approval from local officials) 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 of land, and hence prevent flexible adjustments of land use through land sales (Carter and Zimmerman, 2000; de Janvry et al., 2001). The arguments raised above make it 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 a consequence, rural land sales markets are typically thin in developing countries – and maybe limited to distress sales (Sadoulet et al., 2001).

Platteau, 1998). Changes in land institutions also imply a redistribution of wealth and rents, and often of economic power and political influence. The emphasis on distributional aspects of institutional change underlies studies on the political economy of land reforms (Bardhan, 1989; de Janvry, 1981; Swinnen, 1999, 2002).

The changes that have occurred in transition countries provide a “natural experiment” to study the formation of these institutions, and to analyze how in the historical-evolutionary process the institutional forms adapt and mutate (or not) in response to the changes circumstances. Under the Communist regimes, land was mostly managed by huge collective and state farms, and land transactions were controlled, and often forbidden, by the state. After 1989, more than 20 countries in Europe and Central Asia<sup>2</sup> reformed their land rights and tenure systems and deregulated land exchange (Lerman et al, 2004; Spoor, 2003). Yet, despite the common point of departure and the shared process of privatization of land and move towards deregulation of land exchange, the current situation in terms of land market development is vastly different across the countries. For example, in countries such as the Czech Republic, Slovakia, and Russia the vast majority of agricultural land is rented (see figure 1). In contrast, very little renting is going on in countries such as Albania, Azerbaijan, or Kyrgyzstan. Moreover, the differences cannot be simply related to regional or broad political-institutional differences as there are major differences between countries in the same sub-regions (such as e.g. Slovakia versus Slovenia, or Kazakhstan versus Kyrgyzstan).

The objective of this paper is to document the development of land markets in the transition countries and to explain the differences and changes in land exchange and associated tenure institutions. The empirical evidence we provide draws on a

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<sup>2</sup> The analysis here concentrates on the East European and former Soviet Union countries.

large set of survey-based data collected between 1997 and 2004 across the transition region.

The paper is organized as follows. We start with a description of the data and the analysis of the main differences in land tenure systems in the transition countries. We continue with analysing how land tenure varies with farm organizations. Next, we investigate which factors (both proximal and fundamental causes) determine the differences in the development of the land markets across countries. We then use these insights to identify different patterns of land market development in transition; and we draw a set of implications.

## **2 Data**

The analysis in this paper is based on data from fifteen surveys implemented between 1997 and 2004 in eleven different transition countries by the World Bank and by European research institutions. Surveys implemented by European research institutions<sup>3</sup> include Albania 1999; Albania 2003; Bulgaria 1997; Bulgaria 2003; Czech Republic 1999; Hungary 1997; Romania 1998; Slovakia 1999. The World Bank surveys include Azerbaijan, 2004, Bulgaria 2004; Moldova 2004; Kazakhstan, 2004; Romania 1996; Tajikistan 1999; and Poland 2000. Table 1 provides an overview of the datasets, the time of data collection, the institutions which organized the surveys and the units of information collection.

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<sup>3</sup> The surveys were partly financed by the European Commission and by the Foundation for Scientific Research of Flanders. The Policy Research Group at the Catholic University of Leuven coordinated the surveys. Other institutions involved in the implementation were the University of Athens, Greece; GTZ Tirana, Albania; the University of National and World Economics, Bulgaria; the Research Institute of Agricultural Economics, Czech Republic; the Budapest University of Economic Sciences, Hungary; the Slovak Agricultural University in Nitra; and the Institute of Agrarian Economics, Romania.

Some of the surveys were targeted at rural households and some at farms (both family farms and corporate farms). In the analysis of farm-level data we distinguish between several types of farms.<sup>4</sup> Corporate farms (CF) include cooperatives, limited liability companies, etc. Family farms (FF) include both “unregistered” family farms (UFF) and “registered” family farms (RFF).<sup>5</sup> Unregistered family farms include subsistence farms and household plots. In all countries unregistered farms are small (a few hectares on averages). Registered family farms can be quite large (table 2).<sup>6</sup> For example, in the Czech Republic the unregistered farms use less than 2 ha on average, while the registered farms use on average 55 ha; in Azerbaijan and Kazakhstan, registered family farms are cultivating 140 and 555 hectares on average, respectively. Corporate farms are even much larger. The average size of the agricultural enterprises is between 1,300 and 2,000 ha in Bulgaria, the Czech Republic, Hungary, and Slovakia (table 3). They are even larger in Kazakhstan (more than 5000 hectares), and somewhat smaller in Moldova (around 900 hectares on average). In some countries, such as Albania and Azerbaijan, very few corporate farms are left.

While the country coverage is not complete, the countries covered by the surveys include a wide variety of sub-regions within the transition world. As we will show further, this allows to capture large differences in land market developments. It is important to note that the land data for Central and Eastern Europe are from the end

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<sup>4</sup> For simplicity, unless specified more explicitly, we use “households” in the tables in a generic way, referring to all households (which can include unregistered farms, registered farms, or non-farming households) who were surveyed.

<sup>5</sup> Unregistered family farms: rural households cultivating land, natural persons engaged in agriculture without setting up a legal activity.

Registered family farms (RFF): family farms who formally registered as agricultural producers

<sup>6</sup> There are large differences in the importance in land use by family farms with/without registration across countries. In Czech Republic and Kazakhstan, 90% of the agricultural land used by family farms is cultivated by registered farms. In Moldova, registered family farms use also a larger share of land than the unregistered. However, the differences is not as pronounced as in Kazakhstan and the Czech Republic. In Azerbaijan and Bulgaria, unregistered family farms are much more important in terms of land use: they use more than 90% of the land in individual use.



of the 1990s. In particular, the surveys do not include recent data on land market developments<sup>7</sup> for the Central and East European countries that have since 2004 become members of the European Union (EU) – the so-called New EU Member States (NEMS), such as Hungary, Poland, Slovakia, Czech Republic, etc. The land markets in these NEMS have been heavily affected by accession to the EU. The combination of the inflow of foreign capital (mostly indirectly into the land markets through agri-food industry investments), increased agricultural prices and large subsidies under the EU's Common Agriculture Policy (CAP) have caused a major impact on land prices and land transactions in these countries. Because of these strong effects of EU accession on NEMS land markets, which started already in the years before accession with anticipation, we use data which do not yet incorporate these effects. The impact of the EU accession process on NEMS land markets is analysed elsewhere (e.g. Ciaian and Swinnen, 2006).<sup>8</sup>

### 3 General Observations on Land Markets in Transition

The first main observation is that *land sales markets are thin and almost everywhere less developed than land rental markets*. On the supply side, many more households and farms are renting out land than have sold land. Very little land is sold by rural households or family farms in transition countries. In all surveyed countries,

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<sup>7</sup> Also, the data on Kazakhstan represent the situation in 2003, but since then a new Land Code has changed the land property rights fundamentally, thereby dramatically altering the tenure system and the land market. Effectively, all land which was rented by farms by 2003 was turned into ownership for the users of the land. The data in the paper refer to the pre-2004 situation, but we integrate this recent land policy change in the analysis and conclusions at the end of the paper.

<sup>8</sup> The impact of agricultural subsidies on the rental market depends on the implementation and the nature of the subsidies. For example, Deininger et al. (2003) argue that subsidies which disproportionately benefit large farms will induce small to large rental. The removal of such subsidies will have equity benefits. However, this finding appears conditional on the nature of the subsidies and on the land ownership structure. As Ciaian and Swinnen (2006) show, even with important land market imperfections, agricultural subsidies in Eastern Europe benefit small landowners.

less than 5% of the rural households and family farms, both registered and unregistered, had sold land and in many cases the share was even below 2% (table 2). In countries where many households or farms are providing land to others, the vast majority is through renting out. In countries where little land is rented out, even less is sold. Clearly, few rural households have been willing to sell land and if they allocated land to others they did it through rental arrangements.

On the demand side, much more land is transferred through rental than through purchase because the large scale farming organisations are renting in the vast majority of the large amounts of land they use while only small plots are purchased, mainly by some of the registered farms.

The second main observation is that there are *major differences in how much land is being exchanged, and in particular in the importance of land rental markets*. To measure the importance of land renting, we calculated an indicator of the share of rented land over total cultivated agricultural area based on national statistics and survey evidence. Figure 1 presents aggregate indicators of the importance of renting as a share of total land used. The data indicate that there are large country differences between the role of rental markets in land allocation. In, for example, Slovakia and the Czech Republic more than 90% of all cultivated land area is rented in. In Bulgaria, Hungary, Moldova and Kazakhstan, between 50% and 60% of the cultivated area is rented. In Azerbaijan, this number decreases to 35% and even to 10% in Albania.

These enormous differences in the role of land rental markets among transition countries is remarkable. In the next sections we will provide an explanation for these differences.

#### 4 Farm Organizations and Variations in Land Markets

The variation in land markets is strongly affected by the relative importance of different farm organizations in the various countries. In this section we will first show this relationship. In the following section we will then explain which are the fundamental factors behind the variations in land markets, which includes an analysis of what causes the differences in farm organizations.

##### **Farm organization and land access**

An important finding from the data analysis is that there are *major differences among farm types in how they access land*. Corporate farms are very active in the rental markets, and rent a large share of their land. Unregistered family farms are the opposite: few of them rent in land and if they do, it is only small plots. Registered family farms are in between: a significant share of them rent in land, and often relatively large plots, but several have also purchased land.

More specifically, *corporate farms (CFs)* purchased some land but the amount is very small compared to the cultivated land area. In Azerbaijan, 13% purchased on average 3 ha of land. Around a third of the corporate farms in Moldova and Bulgaria purchased (some) land. In Kazakhstan, none of the corporate farms in the survey purchased land. CFs access most of their land through renting. In Hungary, Bulgaria, Moldova, the Czech Republic, Slovakia, and Azerbaijan, 85% or more of the land used by corporate farms is rented. They rent in from three sources: members<sup>9</sup>, non-members and the state. In Azerbaijan, the vast majority of corporate farms are using land that is owned by the municipality or the state. In Czech Republic, Slovakia,

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<sup>9</sup> Expert interviews by the World Bank indicated that regarding rental payment or contract types, members/partners, employees and households that are not related to the CF are generally treated in a similar way (World Bank, 2006).

Hungary, Bulgaria, Moldova and Kazakhstan, corporate farms are using much land which is owned by their members. In Bulgaria, 70% of the land used by corporate farms is owned by their members. This number was more than 96% in Kazakhstan in 2003.

*Unregistered family farms (UFFs)* did not purchase much land either. In fact, by 2004 less than 5% of unregistered farms had purchased land in Azerbaijan, Bulgaria, Moldova and Kazakhstan. However, in contrast to the other farm types, UFFs are not active in renting in land either. Few of them rent in and if they do, they rent in much smaller areas of land. In most cases less than 10% of UFF rent in land, and the area they rent in is only a few hectares on average. The exception is Azerbaijan, where the 5% of UFF that rent in, rent 17 hectares on average. UFFs are more likely to rent out land than to rent in. In almost all countries, more UFF are renting out than renting in land (see table 2). Among the countries for which data is available, a large share of UFF rented out land in Bulgaria (40%), Czech Republic (61%), and Moldova (38%). These households are renting out mostly to corporate farms, and in the second place to family farms (see table 4). In many of the countries, including, Czech Republic, Slovakia, Hungary, Bulgaria, Kazakhstan and Moldova, more than two-thirds of the households that rent out rent a large share of their land to corporate farms.

A significant share of the *registered family farms (RFFs)* purchased land, albeit relatively modest amounts. Land purchases by registered family farms were common, in particular in Bulgaria and Moldova where 30% and 23% of the RFF had purchased land. The average size of the land purchase was 8 hectares in Bulgaria and 3 hectares in Moldova. Since the start of transition until 1997, around 17% of the Hungarian family farms bought land and the average amount of land purchased was

12 ha. At the same time a large share of RFFs are renting in (often large amounts of) land. In all countries where data are available for RFF, they show that many of the RFF are renting in land: Azerbaijan (93%), Bulgaria (39%), Czech Republic (54%), Moldova (23%) and Slovakia (46%). RFF often rent in large areas of land: on average 137 hectares in Azerbaijan, 20 hectares in Bulgaria, 71 hectares in Czech Rep, and 85 hectares in Slovakia. The exception is Kazakhstan where less RFF rent in land (15%), but those who do rent in large areas: more than 250 hectares on average. RFFs rent in almost exclusively from other households, which can be members of their extended family, other farmers, retired people, or households no longer active in agriculture (see table 5).

An important further observation is that for transition countries, just as in the US and Western Europe, larger family farms see renting and buying land as complementary. Family farms that are buying land, rent in at least as much, and often much more land: the amount of land rented in is on average around twice as much as the amount purchased (see table 2). Moreover, the complementarity of renting and buying of land increases by farm size. Larger family farms are more likely to both rent and buy land. Figure 2 illustrates how the amount of land bought and rented increases by size category for Hungary and Moldova.<sup>10</sup>

Finally, in addition to farm differences in the amount of land rented and purchased, there are important differences in the nature of the contract different farms use for renting land. In general, land rental contracts vary from a few months to many years, from verbal and informal to written and formally endorsed, some require cash payments, others are paid in kind. Typically, contracts between households and family farms are shorter and less formal, while contracts with corporate farms

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<sup>10</sup> See Vranken and Swinnen (2006) for a formal and statistical analysis of this relationship in Hungary.

(renting out) or the state (renting in) are longer and more formal. For example, in Bulgaria households mostly used informal verbal agreements for renting out to other households. In contrast, renting land from the state/municipality was in 77% of the cases based on written contracts. Renting out to registered family farms and to corporate farms was in 80% of the case based on registered contracts (Noev and Swinnen, 2004). Similarly, in Moldova and Kazakhstan, rural households are mainly renting out to farm enterprises and these land transfers are in general based on registered contracts. Renting between households is less formalized.

Moreover, the type of payment varies strongly by farm organization. Rural households mostly pay cash for land that they rent in, but are paid in kind for land that they rent out (see figure 3). For example in Kazakhstan, cash payments account for 95% of total payments for land they rent in, while less than 24% of total payments are received in cash for the land they rent out. This is because corporate farms do not pay cash in many of the countries. The share of corporate farms paying (partially) in-kind is 100% in Azerbaijan, 98% in Moldova and 83% in Kazakhstan. This is the main reason why households receive in-kind payments for their land while they have to pay cash themselves.<sup>11</sup>

In kind payments used by corporate farms are less transparent and therefore allow the farms to reduce their effective payments. They often depend on yields, which are difficult to control by the land owners, and may result in lower effective rent payment. In several countries, experts indicate that less productive corporate farms often do not pay rents as contractually agreed upon. This seems to be more problematic in countries where land is under land share ownership, or where some land is owned in physical plots and some in land shares. For example, in Ukraine

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<sup>11</sup> A study by the IME (2000) confirmed this for Bulgaria, where corporate farms generally paid their rents in kind, while family farms were much more likely to pay cash or mixed cash/in-kind.

experts estimate that when corporate farms are using land shares owned by individuals, only in approximately 70% of the cases are rental payments made.

This may also reflect the perception of corporate farms in several FSU countries, such as Russia, Ukraine and Moldova, that the land they rent as shares is de facto their own land, even though rent is paid (from time to time) to the owners.<sup>12</sup> However, in the CEECs, where the ownership situation of households is more secure and corporate farms certainly do not consider the land that they rent as their own, also try to use their bargaining power to affect contract terms in their own favor. Rental price evidence shows that rental prices paid by corporate farms are often much lower than the rent paid by individual farms. For example, in the late 1990s, in the Czech Republic and Slovakia land rents paid by corporate farms are generally much lower (table 6): most vary between 50% and 20% of the rents paid by family farms (Ciaian and Swinnen, 2006). In Hungary land rental prices were significantly lower in regions where corporate farms dominate (Vranken and Swinnen, 2006).

### **Implication for country differences**

An important implication of these findings is that *the main cause of the large country differences in the share of rented land is the importance of corporate farms*. While corporate farms own little land, they use a lot of agricultural land in some of the transition countries. For example, in the Czech and Slovak Republic 75% of the total agricultural land area or more is used by corporate farms (see figure 4).<sup>13</sup> Also

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<sup>12</sup> Notice that in Kazakhstan this perception became reality in 2003, as the farmers pressured the government into new legislation which effectively made them owners of the land which they used (and de facto transferred rights from households to the farms).

<sup>13</sup> Since the start of transition the importance of family farms in land use increased in all countries. However, both the magnitude and the speed of the change differed strongly. By 2004, in Albania and Azerbaijan, the vast majority of the land is used by family farms. In Albania, this was already the case 5 years after the start of the reforms. At the other end of the spectrum we find Slovakia where after more than ten years of reforms still only 11% is used by family farms. In Bulgaria, Kazakhstan and Moldova, around half of the land is used by family farms. This change in land use occurred faster in Bulgaria compared to Moldova or

in Hungary, Bulgaria, Kazakhstan or Moldova, corporate farms still use around half of all land. In contrast, corporate farms have virtually disappeared in countries such as Albania and Azerbaijan, where more than 95% of the land is used by family farms. Since these farms rent most of the land they operate on, this has important implications for the development of land rental markets.

The strong correlation between the share of corporate farms in land use and the importance of land renting is demonstrated in figure 5. There is almost a perfect linear relation, as illustrated by the fitted trend line and the high  $R^2$  of more than 90 percent. Hence, the main explanatory factor in the relative importance of land renting between countries is (a) the importance of land use by large scale corporate farms, and (b) the ownership structure of the land – determining who is renting out the land.

Therefore, to identify the fundamental causes of these differences in the development of land markets, we need to determine why the share of corporate farms differs so strongly between countries, and possible differences in post-reform land ownership.

## **5 Fundamental Causes of Differences in Land Markets**

The issue of why the share of corporate farms differs so strongly among countries has already been the topic of several studies (e.g. Lerman et al., 2004; Mathijs and Swinnen, 1998; Rozelle and Swinnen, 2004). Key factors are relative factor endowments, commodity characteristics, market imperfections, and the nature of the land reform. All these factors have, often indirectly, had a major impact on the development of land markets. Here we will review some of the key arguments to the

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Kazakhstan, reflecting differences in land reform. Also the share of family farms in output increased. (Their share in livestock herd increased even more due to the labour intensity of animal breeding).



extent that they are relevant to explain country variations in farm structures and land markets.

### **5.1 The Nature of the Land Reform Process**

The most important land reform choices were restitution to former owners, distribution in kind (in actual plots), distribution of land shares, and a combination (sequence), e.g. first distribution in shares, then in kind (table 7). The reform choice had important implications for the development of farm structures and the role of rental markets.

With restitution of land to former owners, 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 and are less likely to use land than rural households who are active in agriculture. First, because of limited information about the sales price and the expected increase in land prices upon accession to the European Union, most of these new land owners were unwilling to sell their newly acquired assets and preferred to rent it out instead. Second, since identifying potential tenants involves search and negotiation costs, the easiest way for the new land owners was to rent out their land to the corporate farms, which were the historical user of the land (Mathijs and Swinnen, 1998). Third, the corporate management was closely involved in the land reform process and their search and negotiate costs to identify and contract with those new owners were significantly lower than the costs faced by newly emerging structures (particularly family farms and *de novo* companies). In combination, these factors resulted in a higher demand for rented land by corporate farms than by family farms and an increased supply of

rented land to corporate farms than to family farms. As a result, restitution is more likely than other land reform procedures to have contributed to a consolidation of the large scale farming structures (collective and state farms in the past, now corporate farms) through the land rental market.

Distribution of land has been done by allocating physical plots (such as in Albania) or in shares (such as in Russia and Kazakhstan) or first in shares and later in physical plots (such as in Azerbaijan). There are important implications for the development of the land markets and the farm structures.

First, the distribution of land in specific plots (boundaries) has created stronger property rights for the new owners, while the distribution of land shares has often implied uncertain property rights and high transaction costs.<sup>14</sup> The stronger rights with distribution in plots have caused a stronger growth of family farms as it was easier for these new owners to access their land. For example, the distribution of land in kind leads to the rapid growth of family farming in Albania in the early 1990s and in Azerbaijan in the second half of the 1990s. In both countries, within a few years after the start of the land reform, around 90% of all agricultural land shifted to family farms who are now relying on owned land for cultivation, leading to a low share of rented land in total cultivated area.

In contrast, where land shares were distributed (e.g. Russia, Kazakhstan and pre-2000 Ukraine) this resulted in much weaker property rights. As Uzun (2000, p.8) observes: “land share owners do not know where their land shares are located; managers of agricultural enterprises have an opportunity to use the land owned by citizens freely and without controls; and workers, still, after nine years of reforms, do

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<sup>14</sup> Individuals usually had to declare their intention to start up their own farm in order to take physical possession of their land. However, the barriers to exit were severe as leaving the farm was often discouraged by farm managers and local officials. In addition, in several countries, the share distribution system was accompanied by continued soft budget constraints for the large farms (eg in Ukraine, Russia and Kazakhstan), further reducing incentives for restructuring of the farms.

not clearly understand their choices.” These weak property rights constrained the shift of land use to family farms and contributed to consolidation of the large scale farming organizations. The concentration of land use among the large corporate farms occurred not only through rental, but also through sales. Corporate farms were in a favoured position to rent in the land shares because imperfect property rights made it very costly for the owners to withdraw their land from the corporate farm.

Furthermore, share distribution has also allowed a concentration of land ownership, much more so than the other types of land reform. Shares were exchanged without being linked to specific plots. In several cases, workers transferred their land shares to the corporate farm, for example in exchange for employment. When farms were sold, often after bankruptcy, the land shares were now part of the farm assets, and investors who took over the farm became land owners. This process led to strong concentration of land ownership, e.g. in parts of Kazakhstan, with vertically integrated companies owning now hundreds of thousands of hectares of land. In contrast, land distribution in plots and restitution<sup>15</sup> has led to relatively egalitarian land ownership distributions.

## **5.2 Factor Intensity and Economies of Scale**

The initial resource endowment plays an important role in explaining the development of land rental markets and farm structures because they affect the costs and benefits of shifting to family farms (from corporate farms). Differences in resource endowment (or technology) reveal themselves in differences in relative

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<sup>15</sup> The ownership distribution following the restitution process depends on the pre-collectivization ownership distribution. This distribution was relatively egalitarian as it was typically preceded by a Communist-imposed land reform which distributed land from large landowners and institutions (such as the Church) to landless peasants and small farmers. The main exception is Albania where the pre-collectivization was very inegalitarian (feudal). This was one of the reasons why restitution was heavily opposed in Albania and the government distributed the land equally to rural households (Swinnen, 1997, 1999).

factor ratios. The pre-reform land/labor ratio in, for example, Russia and Kazakhstan is many times higher than in, for example, Albania, Azerbaijan, Moldova or Romania (Macours and Swinnen, 2002). If land/labour ratios are low, i.e. if agricultural production processes are relatively labour intensive, the benefits of shifting to family farms (from corporate farms) are larger, while the costs of shifting are lower and this for several reasons.

First, the returns to incentives that boost effort are larger in labour intensive agricultural systems. Because of the sequential and biological nature and spatial dimensions, effort in agricultural production is difficult to measure and particularly corporate farms are coping with labour supervision problems. Since farm individualization boosts labour effort, the benefits of breaking up the large-scale agricultural production units into individual farms are larger when pre-reform land/labour ratios are lower.

Second, scale economies vary by commodity and diseconomies of scale in production are typically characterized by high labour intensity (Mathijs and Swinnen, 1998). For example, grain production (less labour-intensive sector) tends to have more economies of scale because it is more suitable for mechanization than, e.g. dairy or vegetable production (more labour-intensive sector). Therefore, the losses in scale economies and disruption costs are lower in labour-intensive systems. On the other hand, in land- and capital intensive systems, households were often lacking the financial means and inputs to farm more efficiently so that households were less inclined to start farming on their own. Therefore, breaking up the large scale agricultural production units is less costly and farm individualization will increase in labour intensive systems, while the opposite holds for land- and capital intensive systems where the share of corporate farms will be higher. Since corporate farms are

mainly relying on rented land, the share of rented land in total cultivated area will also be higher in these land- and capital- intensive systems

In summary, resource endowment (technology) and scale economies explain why we observe a strong correlation between factor intensities and the growth of family farming (figure 6) and why corporate farms remain much more important in land- and capital- intensive farming.

### **5.3 Market imperfections and existing institutions**

Imperfections in output and input markets and existing institutions are an important factor affecting the development of land rental markets in transition countries, where there are substantial market imperfections and where traditional institutions, for e.g. product marketing and input supplies, have been designed to serve large scale farms. In the absence of such institutions for small scale farms, it is not surprisingly that large scale farms have remained more prominent in transition countries than would have been predicted based on models from other countries where institutions were much more targeted to smaller farms. Gorton and Davidova (2004) review the empirical evidence and conclude that, on average, corporate farms are not less efficient than family farms in the transition environment. Furthermore, non-traditional farm structures have turned out to be well fitted for this non-traditional farm environment. For example, in Romania the most efficient farm organization for resource-constrained small farmers are “family societies” in which farmers collectively share in the provision of mechanized services (Sabates-Wheeler, 2002). In East Germany, “partnerships” (small groups of farmers in that pooled their effort in certain production and marketing tasks) outperformed all other forms of farm organization between 1992 and 1997 (Mathijs and Swinnen, 2001). In Russia the

most successful household farms refrain from registering as “private farms,” instead choosing to remain connected in some fashion to large farm enterprises. Such producers use their connections to gain access to inputs, marketing channels and other services in an environment where traditional markets, if any, function poorly (O’Brien and Wegren, 2002). Even in Turkmenistan, producers have begun to shift to family-based leasing within the nation’s highly regulated environment in order to be able to access basic inputs, services and output channels through the state marketing order system (Lerman and Brooks, 2001).

In summary, corporate farms and “non-traditional” large farming organizations are more likely to be (relatively) efficient in the specific institutional environment and structural conditions of transition countries and will therefore survive longer. This holds particularly for transition countries with little history of pre-Socialism private household farming and with a long history under Socialism.

#### **5.4 Transaction costs**

Several studies document that land markets in the transition countries, even the most advanced such as in Central Europe, are still characterized by the existence of significant transaction costs in the rural land markets. Transaction costs affect the development of land markets as they constrain access to land for rural households willing to start up or enlarge their farm and reinforce the persistence and dominance of large scale corporate farms (Ciaian and Swinnen, 2006).

First, transaction costs rise when the new owners of the land want to withdraw and reallocate their land from the corporate farms who are the historical users of the land and make impede emergence of individual farms. These transaction costs include: bargaining costs, costs of enforcement of withdrawal rights, costs

related to asymmetric information, to co-ownership and unknown owners, unclear boundary definitions, etc. The difficulty to withdraw land, and hence the magnitude of the transaction costs, is highly dependant 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. Furthermore, corporate farm managers typically have more information than landowners about the economic situation of the farm and about regulations governing local land transactions, putting these new land owners even more at a disadvantage.<sup>16</sup> This is especially the case for landowners who have not been involved in agriculture, or who are living outside the village where their land is located, or for pensioners.<sup>17</sup>

Second, other transaction costs follow from co-ownership of land, unclear boundary definition, and the problem of unknown owners. In many transition countries, land ownership registrations were 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 and Baldwin, 2000). Unsettled land inheritance within families during the socialist regime caused a strong land ownership fragmentation and a large number of co-owners per a plot of land. For example, according to OECD (1997), in 1993 approximately 9.6 million plots were registered in Slovakia, which is 0.45 hectares per plot, and each plot was owned by on average 12 to 15 people. As Dale and Baldwin (2000) put it, “a single field of twenty hectares may have hundreds of co-owners”. In the Czech Republic, there were 4 million

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<sup>16</sup> For example, Swain (1999) describes how pensioner-members of co-operatives in Slovakia were “forced” to rent the land to the co-operative by being threatened of losing their pension.

<sup>17</sup> In Hungary “passive owners” (this include village-based pensioners, landowners that are not active in the co-operatives and those living outside of the village where their land is located) received around 71% of agricultural land (Swain, 1999).

ownership papers registered in 1998 for 13 million parcels, with an average parcel size of 0.4 hectares. In Bulgaria, a recent study found that 50% of the plots were co-owned, often by several people (Vranken et al., 2004). Some co-owners may be unknown, or may not be in the country, or may be scattered all over the country. This raises the costs of land withdrawal as land withdrawal from the CF normally requires agreement from co-owners. The study indeed finds that co-owned plots of land in Bulgaria are more likely to be used by corporate farms (Figure 7). This raises the costs of land withdrawal as land withdrawal from the corporate farms normally requires agreement from co-owners.

Finally, 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 between 10% and 30% of the value of the land transaction (OECD, 2000; Prosterman and Rolfes, 2000; World Bank, 2001).

## 6 A Tale of Two Land Markets

The previous section explains how land reform procedures (who themselves are the result of political economy equilibria), factor endowments, market imperfections, existing institutions, and transaction costs all have affected the development of land markets. To illustrate how the combination of these factors have caused the divergent developments of land markets in transition countries, let us consider the cases of Albania and the Czech Republic (see table 8).

The rental market is very active in **the Czech Republic** and all types of farms participate actively. Large corporate farms, who use more than 60% of the land in the country, rent in 99% of their land, a significant part from households who are no longer active in agriculture and received land ownership through the restitution



process. More than half the registered family farms rent in land, and more than 60% of unregistered farms rent out land. Not only are most farms and households involved in renting in the Czech Republic, they also rent large plots of land: the average size of land rented in by registered family farms is 71 ha, and the average area of land rented out by (registered and unregistered) farming households is more than 9 ha. The latter is very large, given the fact that the average area owned by all unregistered farming households is only 6.5 ha. In addition, most rental contracts are formal and long term, with the average length between 5 and 10 years.

The contrast with **Albania** is huge. In Albania virtually all the land is farmed and owned by small family farms, who received land under the land distribution scheme in the early 1990s. The 1999 survey data indicate that only 2% of farming households were renting land, either in or out, and the area is very small, on average 1 ha or less. A more recent (and targeted) survey of the land rental market indicates that these numbers are likely underestimating the rental activities, because there is considerable informal renting going on within extended families, which is not generally recognized as “renting.” However, even accounting for this, only 10% of the rural households, almost all of whom are farming in Albania, are renting land in and another 10% are renting out. A large share of the rented plots belong to people living abroad<sup>18</sup>, but often the rental contracts are within extended families. Much of the rental is short term (one season) and virtually all is informal.

These enormous differences in land market developments reflect a combination of factors: differences in farm structure, patterns of land reform, and

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<sup>18</sup> In fact, about a third of the male rural population of Albania has migrated abroad, and most rural households have one or more members that have migrated (Germenji and Swinnen, 2004). 55% of the plots of land rented in is from people living abroad.

differences in the role of agriculture in employment and in the economy.<sup>19</sup> In the Czech Republic land was restituted to former owners, most of whom were no longer active in agriculture, with the share of agriculture in employment as low as 5 % by the 1990s. Farming was capital and land intensive in the Czech Republic with a labor/land ratio of around 0.12 workers per hectare (compared to 0.63 in Albania). In combination the technology and land reform factors contributed (as explained above) to a consolidation of the large-scale farming structures, who use almost two-thirds (62%) of all land in the Czech Republic. These farms continued to use the land on which they had been operating, but now had to pay rents to the new owners. As farming companies, with formal administrations and official book-keeping, the farms use written rental contracts. The companies prefer longer term contracts as it provides them stability in their operations – and possibly locks the owners into lower payment contracts, as payments were generally low at the start of transition. Hence, with land mostly used by large farms and mostly owned by non-farming households, who received the land through restitution, formal renting is very widespread in the Czech Republic.

In contrast, land was distributed in plots to rural households in Albania, almost all of whom were active in agriculture, with more than 50% of total employment still in agriculture. Farming was very labor intensive, with the labor/land ratio about five times as high as in the Czech Republic, causing a complete disruption of the large farming system into small household farms who use all the land. As a consequence, rural households themselves generally use most of the land they own, and exchange of land, if any, is done mostly among by informal renting within extended families,

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<sup>19</sup> In this paper we take the choice of the land reform process as given. However this choice itself was partly endogenous and the result of a combination of initial conditions and political economy factors. An explanation of these choices is in Cungu and Swinnen (1998) for Albania and in Swinnen (1999) for other East European countries, including the Czech Republic.

generally limited to one season. Renting within extended families is also related to migration, which is very extensive in Albania, and informal renting allows use of the land while some of the members of the households are abroad, often temporary.

## **7 Patterns of Land Market Development**

Extending this interpretation beyond the Albania versus Czech Republic case to all countries, we can identify several “patterns” of land rental development across transition countries (table 9). We should note up front that these “patterns” are extreme versions of land rental market development. Several countries may not fit a single pattern but have hybrid characteristics.

*Pattern A* is that of labor intensive agricultural economies where land was distributed in kind to rural households and where small scale family farms dominate. Examples of this pattern are Albania, (post 1996) Azerbaijan, Kyrgyz Republic and large parts of Romania and southern Kazakhstan. In these countries and regions, there is *relatively little land renting, all of it household to household and mostly informal*. Key constraints in the rental market are due to constraints in other markets such as the credit and input markets, product market (output marketing), and labor market constraints – which is partly resolved through migration.

*Pattern B* is that of capital intensive agricultural economies where land was restituted to former owners and where large scale corporate farms dominate. Examples of this pattern are Slovakia, the Czech Republic, and large parts of Hungary. In these systems, there is *very extensive renting of land going on, mostly from households to large scale corporate farms, often based on formal contracts*. Land rental markets are well developed and prices increasing, especially in those

countries which have acceded to the EU. Constraints in these markets are transaction costs in the rental market due to fragmented, unidentified, or joint land ownership.

*Pattern C* is that of land intensive agricultural economies where land was distributed as shares and where large scale corporate farms dominate. Examples of this pattern are North Kazakhstan, large parts of Russia, and pre-2000 Ukraine. *Corporate farms either rent large amounts of land from households, often under the form of shares, or rent very little as they have been able to acquire ownership of vast areas of land.* Where corporate farm renting is dominant, constraints are poor identification and weak enforcement of ownership rights and major problems in accessing output and input markets for smaller farms. In several regions, corporate farms, or large agro-holdings, acquired vast amounts of land either through bankruptcy proceedings (e.g. vertically integrated grain companies in Northern Kazakhstan and agro-holdings in Russia), or through government policy which transferred property rights from households to farms using the land (in current Kazakhstan). In these systems a large share of the land is owned by large corporate farms, and very little renting is taking place.

*Hybrid countries.* Several countries do not fit into a single pattern, either because they have hybrid characteristics resulting in strong differences between regions (or over time in some cases), or because they have changed patterns in the course of the past decade. For example, some countries changed land policies in the late 1990s (such as Azerbaijan, Moldova, Ukraine, and more recently Kazakhstan) which had major implications for the land rental market. Examples of “hybrid patterns” are Moldova and Bulgaria which have characteristics of pattern A and B and Ukraine which has characteristics of pattern A and C.

## **8 Conclusion and Implications**

Considerable differences in the development of land markets can be observed among the transition countries of Central and Eastern Europe and the Former Soviet Union. This paper presents some stylized facts about structure of rural land ownership and use of land by farms and the development of land markets in transition countries, and identifies several factors that affect the development of land markets and the therewith associated development of farm structures. This information was then used to identify several patterns of land rental market development across transition countries. One pattern is that of labour intensive agricultural economies where there is relatively little land renting, all of it household to household and mostly informal (such as in Albania, Azerbaijan and Kyrgyz Republic). Another pattern is that of capital intensive agricultural economies where there is very extensive renting of land going on, mostly from households to large scale corporate farms, often based on formal contracts (such as in Slovakia, the Czech Republic, and Hungary). A third pattern is that of land intensive agricultural economies where corporate farms either rent large amounts of land from households, often under the form of shares, or rent very little as they have been able to acquire ownership of vast areas of land (such as Kazakhstan and Russia).

These different developments of land markets are caused by a combination of differences in land reform and initial conditions. Land restitution typically led to the consolidation of large scale farming structures who rely almost entirely on rented land for cultivation. Distribution of land in specific plots resulted in a large shift of land use to family farms who largely rely on owned land for cultivation. Distribution of land shares created much weaker property rights and resulted in a much stronger concentration of land ownership, constraining the shift of land use to family farms.

The initial resource endowment (agricultural technology) importantly affected the farm restructuring process – and thereby the development of land markets. Where agricultural production processes were relatively labour intensive, the benefits of shifting to family farms (from corporate farms) were larger, while the costs were lower. If combined with land distribution to rural households, this led to a situation with many households using their owned land in farming. Land exchange was often constrained to informal household-to-household renting of some additional land. In contrast, rental of land grew rapidly in land and capital intensive production systems where large corporate farms used most of the land, renting it from mostly small owners, often with formal contracts.

Imperfections in output and input markets and institutional constraints also affected the development of land rental markets in transition countries in a variety of ways. Corporate farms and “non-traditional” large farming organizations are more likely to be (relatively) efficient in the specific institutional environment and structural conditions of transition countries. This holds particularly for transition countries with little history of pre-Socialism private household farming and with a long history under Socialism. Transaction costs affect the development of land markets as they constrain access to land for rural households willing to start up or enlarge their farm (Dale and Baldwin, 2000; Lerman et al., 2004) and reinforce the persistence and dominance of large scale corporate farms. In addition, transition risks, the general weakness of the rural financial system, and low profitability during the first decade of agricultural transition all constrained land markets and especially land sales.

These findings have important implications. Transition evidence supports evidence from other regions that land rental markets, exchanging land between

households, can have a positive effect on equity and efficiency<sup>20</sup>. However, these effects are not generally true, but rather seem to depend on the agents involved in the rental market, and the structure of the market. Where corporate farms dominate the land rental market the equity and efficiency effects can be very different. While corporate farms may be efficient farming organizations in some regions and for some farming activities, transaction costs and regional monopoly power of corporate farms negatively affect the land market. The evidence presented in this paper implies that in several countries, corporate farms are using more land (than efficient), pay lower rental prices than family farms, are more likely to pay rents in kind than family farms (who pay cash), have rental contracts of longer duration (locking in land), and often use their political powers/relationships to influence policies that shift effective land property rights in their favor. The problems appear more serious (a) where land is owned as shares than where households have physical plots; (b) where land is initially allocated in the middle of large consolidated plots, (c) where the costs of withdrawal is expensive, either because there is considerably uncertainty on the (co-) owners of the land or because ownership is highly fragmented through the combination of restitution and an egalitarian historical rural land ownership structure (eg Bulgaria and Slovakia) or because the registration costs are high and/or corporate farms consider the land as quasi-property of the farm (e.g. Kazakhstan, Ukraine and Russia).

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<sup>20</sup> Evidence in Swinnen and Vranken (2006) indicates that households with more human capital access land through a combination of buying and renting land, and rental markets contribute to increased returns to labor on family farms. Next, older and less educated households rent out land to get additional incomes, and those who can rent out their land if they wish, have higher welfare. Further, rental markets reduce inequality of access to land by transferring land from households with high land endowments to those with low land endowments. In contrast, sales markets seem to contribute to inequality of land ownership.

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*Table 1: Survey Overview*

| Country    | Year | No observations | Type of survey*                 | Source** |
|------------|------|-----------------|---------------------------------|----------|
| Azerbaijan | 2004 | 703             | Unregistered Family farms (UFF) | WB       |
|            |      | 65              | Registered Family farms (RFF)   |          |
|            |      | 15              | Corporate Farms (CF)            |          |
| Albania    | 1999 | 1232            | Family farms (FF)               | ACE/PRG  |
| Albania    | 2003 | 517             | Rural Households (RH)           | PRG      |
| Bulgaria   | 1997 | 1411            | Family farms (FF)               | ACE/PRG  |
| Bulgaria   | 2003 | 642             | Rural Households (RH)           | PRG      |
| Bulgaria   | 2004 | 598             | Rural households (RH)           | WB       |
|            |      | 23              | Registered Family farms (RFF)   |          |
|            |      | 25              | Corporate Farms (CF)            |          |
| Czech      | 1999 | 400             | Registered Family farms (RFF)   | ACE/PRG  |
|            |      | 198             | Unregistered Family farms (UFF) |          |
|            |      | 102             | Corporate Farms (CF)            |          |
| Hungary    | 1997 | 1618            | Family farms (FF)               | ACE/PRG  |
|            |      | 404             | Corporate Farms (CF)            |          |
| Kazakhstan | 2004 | 600             | Unregistered Family farms (UFF) | WB       |
|            |      | 178             | Registered Family farms (RFF)   |          |
|            |      | 22              | Corporate Farms (CF)            |          |
| Moldova    | 2004 | 500             | Unregistered Family farms (UFF) | WB       |
|            |      | 176             | Registered Family farms (RFF)   |          |
|            |      | 24              | Corporate Farms (CF)            |          |
| Poland     | 2000 | 2835            | Rural households (RH)           | WB       |
| Romania    | 1996 | 1650            | Land owning rural households    | WB       |
| Romania    | 1998 | 1676            | Land owning rural households    | ACE/PRG  |
| Slovakia   | 1999 | 412             | Registered Family farms (RFF)   | ACE/PRG  |
|            |      | 150             | Corporate Farms (CF)            |          |
| Tajikistan | 1999 | 1456            | Rural households (RH)           | WB       |

\* The surveys are based on different samples. \*\* WB=World Bank; ACE = EU Phare Ace Program; PRG = Policy Research Group Leuven (Catholic University of Leuven)

*Table 2 : Agricultural Land Ownership and Exchange*

|                       | <i>Owning land</i>              |                       | <i>Cultivating</i>              |                       | <i>Renting in</i>               |                       | <i>Renting out</i>              |                       | <i>Selling*</i>                 |                       | <i>Purchasing*</i>              |                       |
|-----------------------|---------------------------------|-----------------------|---------------------------------|-----------------------|---------------------------------|-----------------------|---------------------------------|-----------------------|---------------------------------|-----------------------|---------------------------------|-----------------------|
|                       | <i>% of surveyed households</i> | <i>Area, hectares</i> | <i>% of surveyed households</i> | <i>Area, hectares</i> | <i>% of surveyed households</i> | <i>Area, hectares</i> | <i>% of surveyed households</i> | <i>Area, hectares</i> | <i>% of surveyed households</i> | <i>Area, hectares</i> | <i>% of surveyed households</i> | <i>Area, hectares</i> |
| Albania (1999)        | 94.32                           | 0.97                  | 89.12                           | 1.72                  | 2.11                            | 0.65                  | 1.95                            | 1.00                  | 1.70                            | 0.43                  | n.a.                            | n.a.                  |
| Azerbaijan (2004) RFF | 84.62                           | 14.13                 | 100.00                          | 139.53                | 93.85                           | 136.86                | 0.00                            | 0.00                  | 0.00                            | 0.00                  | 7.69                            | 2.44                  |
| Azerbaijan (2004) UFF | 100.00                          | 2.21                  | 98.15                           | 2.64                  | 4.27                            | 17.37                 | 9.53                            | 1.94                  | 0.28                            | 4.63                  | 0.28                            | 5.5                   |
| Bulgaria (1997)       | 84.98                           | 2.27                  | 93.77                           | 2.77                  | 8.25                            | 6.16                  | 27.10                           | 3.06                  | 0.92                            | 3.33                  | n.a.                            | n.a.                  |
| Bulgaria (2004) RFF   | 100.00                          | 7.00                  | 100.00                          | 14.93                 | 39.13                           | 20.61                 | 13.04                           | 1.67                  | 0.00                            | 0.00                  | 30.43                           | 8.04                  |
| Bulgaria (2004) RH    | 79.43                           | 2.06                  | 64.72                           | 0.9                   | 3.51                            | 3.70                  | 40.47                           | 2.64                  | 3.51                            | 1.33                  | 1.00                            | 3.33                  |
| Czech Rep (1999) RFF  | 96.00                           | 17.02                 | 97.00                           | 54.96                 | 54.00                           | 71.47                 | 13.50                           | 9.74                  | 2.75                            | 1.53                  | n.a.                            | n.a.                  |
| Czech Rep (1999) UFF  | 98.48                           | 6.54                  | 96.97                           | 1.57                  | 7.07                            | 1.60                  | 61.11                           | 9.18                  | 5.05                            | 3.52                  | n.a.                            | n.a.                  |
| Hungary (1997)        | 93.24                           | 4.50                  | 89.96                           | 4.84                  | 7.58                            | 17.68                 | 16.07                           | 4.59                  | n.a.                            | n.a.                  | 16.88                           | 11.75                 |
| Kazakhstan (2004) RFF | 96.63                           | 555.21                | 100                             | 558.36                | 14.61                           | 257.87                | 1.12                            | 160.00                | 0.00                            | 0.00                  | 0.00                            | 0.00                  |
| Kazakhstan (2004) UFF | 100                             | 22.54                 | 100                             | 1.72                  | 10.50                           | 2.29                  | 6.00                            | 19.96                 | 1.00                            | 4.58                  | 0.67                            | 6.52                  |
| Moldova (2004) RFF    | 100                             | 3.81                  | 99.43                           | 5.52                  | 23.26                           | 7.74                  | 4.02                            | 1.56                  | 1.72                            | 1.09                  | 22.73                           | 3.25                  |
| Moldova (2004) UFF    | 94.72                           | 2.49                  | 99.80                           | 1.51                  | 4.20                            | 1.36                  | 38.00                           | 2.77                  | 1.81                            | 0.89                  | 5.01                            | 1.04                  |
| Poland (1999)         | 60.28                           | 8.50                  | 53.44                           | 10.40                 | 17.00                           | 12.00                 | 8.00                            | 3.40                  | 4.80                            | 2.60                  | n.a.                            | n.a.                  |
| Romania (1996)        | 100.00                          | 3.18                  | 91.88                           | 2.28                  | 1.58                            | 0.99                  | 13.76                           | 2.52                  | 0.18                            | 0.77                  | n.a.                            | n.a.                  |
| Romania (1998)        | 98.15                           | 3.00                  | 96.78                           | 2.73                  | 7.88                            | 2.43                  | 20.05                           | 2.58                  | 0.66                            | 0.97                  | n.a.                            | n.a.                  |
| Slovakia (1999) RFF   | 84.95                           | 16.50                 | 92.72                           | 46.45                 | 42.72                           | 84.93                 | 23.54                           | 10.90                 | 0.73                            | 0.52                  | n.a.                            | n.a.                  |
| Tajikistan (1999)     | 96.02                           | 0.59                  | 93.82                           | 0.84                  | 17.38                           | 1.00                  | 0.41                            | 0.38                  | n.a.                            | n.a.                  | n.a.                            | n.a.                  |

Sales and Purchases are reported for the period: in Albania 1991-99; in Azerbaijan (2004 RFF), Bulgaria (2004 RFF), Kazakhstan (2004 RFF), Moldova (2004 RFF): since the registered farm was created in its present form until 2004; in Azerbaijan (2004 UFF), Bulgaria (2004 RH), Kazakhstan (2004 UFF), Moldova (2004 UFF) since the dismantling of the sovkhos/kolkhoz/TKZS until 2004; in Bulgaria (1997 - FF) 1991-97; in Czech Republic 1989-99; in Poland 1995-99; in Romania only for 1996 and 1998, respectively; in Slovakia 1989-99. n.a. not available

*Table 3: Corporate farms renting and use of land*

|   | Czech<br>Republic<br>(1999) | Slovakia<br>(1999)   | Hungary<br>(1997)    | Azerbaijan<br>(2004)   | Bulgaria<br>(2004) | Moldova<br>(2004) | Kazakhstan<br>(2004) |
|---|-----------------------------|----------------------|----------------------|------------------------|--------------------|-------------------|----------------------|
| <i>Area, ha</i>                           |                             |                      |                      |                        |                    |                   |                      |
| Cultivated                                | 1354                        | 1989                 | 1837                 | 200                    | 1434               | 883               | 5413                 |
| Owned                                     | 22                          | 16                   | 85                   | 0.4                    | 53                 | 15                | 50                   |
| Rented                                    | 1341                        | 1965                 | 1811                 | 200                    | 1381               | 868               | 5363                 |
| <i>Share of land cultivated land area</i> |                             |                      |                      |                        |                    |                   |                      |
| Owned                                     | 0.48                        | 1.42                 | 1.42                 | 0.20                   | 3.71               | 15.08             | 0.93                 |
| Rented                                    | 99.52                       | 98.58                | 98.58                | 99.80                  | 96.29              | 84.91             | 99.07                |
| Main<br>lessor                            | Members/<br>partners        | Members/<br>partners | Members/<br>partners | Municipalit<br>y/state | Members            | Members           | Members              |

*Table 4: Agricultural Land Renting by Source in Azerbaijan, Bulgaria, Kazakhstan and Moldova – unregistered family farms*

|   | <i>Azerbaijan UFF</i> |           | <i>Bulgaria RH</i> |           | <i>Kazakhstan UFF</i> |           | <i>Moldova UFF</i> |           |
|---|-----------------------|-----------|--------------------|-----------|-----------------------|-----------|--------------------|-----------|
|   | <i>%</i>              | <i>ha</i> | <i>%</i>           | <i>ha</i> | <i>%</i>              | <i>ha</i> | <i>%</i>           | <i>ha</i> |
| Rent in from:                           | 4.27                  | 17.37     | 3.51               | 3.71      | 10.50                 | 2.29      | 4.20               | 1.36      |
| member of extended family               | 1.42                  | 5.40      | 0.17               | 0.20      | 0.17                  | 0.20      | 0.40               | 4.03      |
| Private household based farm            | 0.43                  | 61.67     | 0.50               | 0.60      | 1.00                  | 1.54      | 0.20               | 3.00      |
| old or disabled person not able farm    | 0.57                  | 1.50      | 1.17               | 0.79      | 0.67                  | 31.50     | 1.20               | 1.36      |
| individual not engaged in farming       | 0.43                  | 31.07     | 0.33               | 31.95     | 5.67                  | 0.20      | 0.40               | 0.78      |
| farm enterprise                         | 0.00                  |           | 0.67               | 0.68      | 3.00                  | 0.11      | 0.00               | -         |
| municipality/state                      | 1.14                  | 28.73     | 0.67               | 0.50      | 0.00                  | 0.00      | 2.00               | 0.67      |
| Other                                   | 0.28                  | 3.50      | 0.00               | 0.00      | 0.00                  | 0.00      | 0.20               | 1.08      |
| Rent out to:                            | 9.53                  | 1.94      | 40.47              | 2.64      | 6.00                  | 19.96     | 38.00              | 2.78      |
| member extended family                  | 5.12                  | 1.62      | 1.00               | 0.55      | 0.70                  | 23.08     | 0.00               | 0.00      |
| private household based farm            | 1.28                  | 1.71      | 13.88              | 2.60      | 1.00                  | 6.77      | 0.00               | 0.00      |
| other individual not engaged in farming | 0.57                  | 2.51      | -                  | -         | 0.20                  | 74.00     | 0.60               | 3.67      |
| farm enterprise                         | 0.43                  | 2.32      | 25.42              | 2.03      | 4.00                  | 18.20     | 36.60              | 2.74      |
| municipality/state                      | 0.00                  | 0.00      | 0.00               | 0.00      | 0.00                  | 0.00      | 0.20               | 1.44      |
| Other                                   | 2.13                  | 2.64      | 1.00               | 0.55      | 0.20                  | 75.00     | 1.00               | 3.06      |

‘-‘ not among possible answers

*Table 5: Agricultural Land Renting by Source in Azerbaijan, Bulgaria, Kazakhstan and Moldova – registered family farms*

|   | <i>Azerbaijan</i> |           | <i>Bulgaria</i> |           | <i>Kazakhstan</i> |           | <i>Moldova</i> |           |
|---|-------------------|-----------|-----------------|-----------|-------------------|-----------|----------------|-----------|
|   | <i>RFF</i>        |           | <i>RFF</i>      |           | <i>RFF</i>        |           | <i>RFF</i>     |           |
|   | <i>%</i>          | <i>ha</i> | <i>%</i>        | <i>ha</i> | <i>%</i>          | <i>Ha</i> | <i>%</i>       | <i>ha</i> |
| Rent in from:                           | 93.85             | 136.85    | 39.13           | 20.61     | 14.61             | 257.87    | 23.26          | 7.74      |
| Private farmers                         | 9.84              | 15.45     | 8.70            | 16.50     | 1.69              | 98.00     | 1.14           | 23.28     |
| Old or disabled person not able to farm | 1.64              | 10.00     | 13.04           | 2.25      | -                 | -         | 12.00          | 5.49      |
| Individuals not engaged in farming      | 4.92              | 48.33     | 17.39           | 13.17     | 4.49              | 151.00    | 1.14           | 3.35      |
| Agricultural enterprise                 | 0.00              | 0.00      | 4.35            | 62.00     | 1.69              | 110.52    | 1.71           | 36.17     |
| Municipality/State                      | 90.16             | 130.66    | 0.00            | 0.00      | 5.62              | 484.30    | 4.57           | 0.62      |
| Other                                   | 0.00              | 0.00      | 0.00            | 0.00      | 1.12              | 14.00     | 2.86           | 5.51      |
| Rent out to:                            | 0.00              | 0.00      | 13.04           | 1.67      | 1.12              | 16.00     | 4.02           | 1.56      |
| Private farmers                         | 0.00              | 0.00      | 13.04           | 1.67      | 0.56              | 30.00     | 0.00           | 0.00      |
| Individuals not engaged in farming      | 0.00              | 0.00      | -               | -         | 0.56              | 2.00      | 0.00           | 0.00      |
| Agricultural enterprise                 | 0.00              | 0.00      | 0.00            | 0.00      | 0.00              | 0.00      | 3.43           | 1.76      |
| Municipality/State                      | 0.00              | 0.00      | 0.00            | 0.00      | 0.00              | 0.00      | 0.00           | 0.00      |
| Other                                   | 0.00              | 0.00      | 0.00            | 0.00      | 0.00              | 0.00      | 0.57           | 0.40      |

‘-‘ not among the possible answers

Table 6.: Land rents in the Czech Republic and Slovakia by farm type (in local currencies)

|                       | Individual farms<br>A | Corporate farms<br>B | Ratio<br>(A/B) |
|-----------------------|-----------------------|----------------------|----------------|
| <b>Czech Republic</b> |                       |                      |                |
| 1999                  | 718                   | 346                  | 2.1            |
| <b>Slovakia</b>       |                       |                      |                |
| 2001                  | 795                   | 242                  | 3.3            |
| 2002                  | 816                   | 333                  | 2.4            |

Source: Czech Ministry of Agriculture; Research Institute of Agricultural Economics. Farm Accountancy Data Network. Bratislava, Various years.

Table 7: Key characteristics of transition countries

|                           | Land reform |                       |                         |                                      | CEE | CIS | EU |
|---------------------------|-------------|-----------------------|-------------------------|--------------------------------------|-----|-----|----|
|                           | Restitution | Distribution, in kind | Distribution, in shares | Distribution in shares, then in kind |     |     |    |
| <i>Data Countries</i>     |             |                       |                         |                                      |     |     |    |
| Azerbaijan                |             |                       |                         | X                                    |     | X   |    |
| Albania                   |             | X                     |                         |                                      | X   |     |    |
| Bulgaria                  | X           |                       |                         |                                      | X   |     |    |
| Czech Republic            | X           |                       |                         |                                      | X   |     | X  |
| Hungary                   | X           | X                     |                         |                                      | X   |     | X  |
| Kazakhstan                |             |                       | X                       |                                      |     | X   |    |
| Moldova                   |             |                       |                         | X                                    |     | X   |    |
| Romania                   | X           | X                     |                         |                                      | X   |     |    |
| Slovakia                  | X           |                       |                         |                                      | X   |     | X  |
| Tajikistan                |             |                       | X                       |                                      |     | X   |    |
| <i>Non-data countries</i> |             |                       |                         |                                      |     |     |    |
| Armenia                   |             | X                     |                         |                                      |     | X   |    |
| Estonia                   | X           |                       |                         |                                      | X   |     | X  |
| Georgia                   |             | X                     |                         |                                      |     | X   |    |
| Kyrgyzstan                |             |                       |                         |                                      |     | X   |    |
| Latvia                    | X           |                       |                         |                                      | X   |     | X  |
| Lithuania                 | X           |                       |                         |                                      | X   |     | X  |
| Poland <sup>b</sup>       | -           | -                     | -                       | -                                    | X   |     | X  |
| Russia                    |             |                       | X                       |                                      |     | X   |    |
| Slovenia <sup>b</sup>     | -           | -                     | -                       | -                                    | X   |     | X  |
| Ukraine                   |             |                       |                         | X                                    |     | X   |    |

<sup>a</sup> The land policy was changed in Kazakhstan in 2003, turning land shares into ownership titles. However survey data used here capture the situation before the change in policy.

<sup>b</sup> Mainly individual land holdings during the pre-transition era.



*Table 8: A comparison of Albania and the Czech Republic*

|   | <i>Albania</i>        | <i>Czech Republic</i> |
|---|-----------------------|-----------------------|
| Share of land rented (%)                  | 10                    | 90                    |
| Rental contract form                      | Informal              | Formal                |
| Rental contract length                    | 1 season              | 5-15 years            |
| Share of land used by corporate farms (%) | 0                     | 62                    |
| Share of agriculture in employment (%)    | 52                    | 5                     |
| Land reform                               | Distribution in plots | Restitution           |
| Factor Intensity (land/labor ratio)       | 1.6                   | 8.2                   |

*Table 9: A comparison of three patterns of land rental development*

|   | <i>Pattern A</i>                     | <i>Pattern B</i>                  | <i>Pattern C</i>       |
|---|--------------------------------------|-----------------------------------|------------------------|
| Share of land rented (%)                  | Low                                  | High                              | Mix*                   |
| Rental contract form                      | Informal                             | Formal                            | Formal                 |
| Rental contract length                    | Short                                | Long                              | Long                   |
| Share of land used by corporate farms (%) | Low                                  | Medium                            | High                   |
| Share of agriculture in employment (%)    | High                                 | Low                               | High                   |
| Land reform                               | Distribution in plots                | Restitution                       | Distribution in shares |
| Agricultural factor intensity             | Labor                                | Capital                           | Land                   |
| Property rights                           | Strong                               | Strong                            | Weak                   |
| Examples                                  | Albania, Azerbaijan, Kyrgyz Republic | Slovakia, Czech Republic, Hungary | Kazakhstan, Russia     |

\* Either very high or very low. Corporate farms either rent large amounts from households or rent very little as they have been able to acquire ownership of vast areas of land through bankruptcy proceedings or through government policies.

Figure 1: Share of rented land in total land used (%)

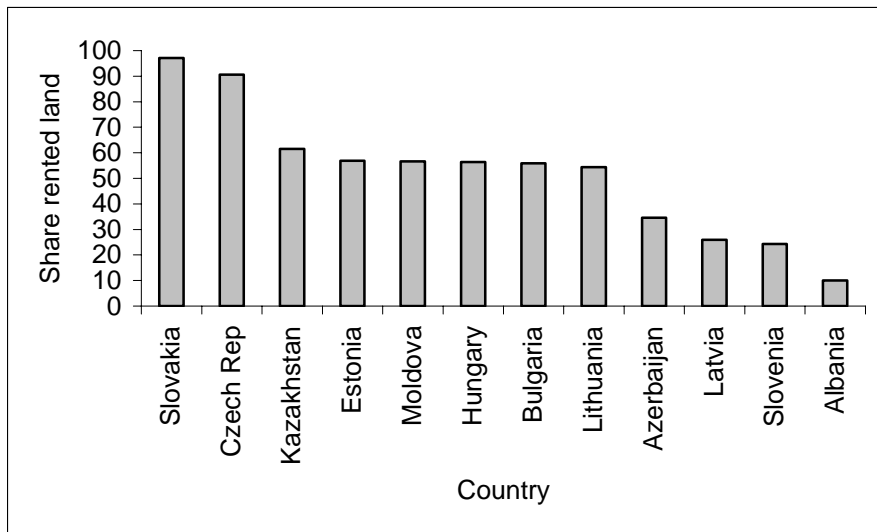
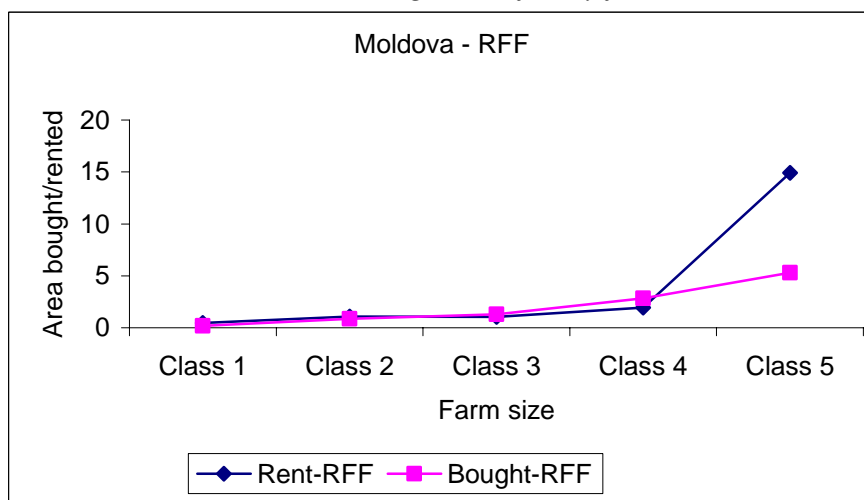


Figure 2: Land renting and purchasing by farm size  
A. Hungarian family farms



Class 1: 0-0.1ha; Class 2: 0.1-0.3; Class 3: 0.3-1; Class 4: 1-3; Class 5: 3<

B. Moldovan registered family farms



Class 1: 0-1.8; Class 2: 1.8-2.9; Class 3: 2.9-3.7; Class 4: 3.7-6.6; Class 5: 6.6<

Figure 3: Cash payment in total rental payments/incomes (%)  
Unregistered family farms in Azerbaijan, Bulgaria, Kazakhstan, Moldova

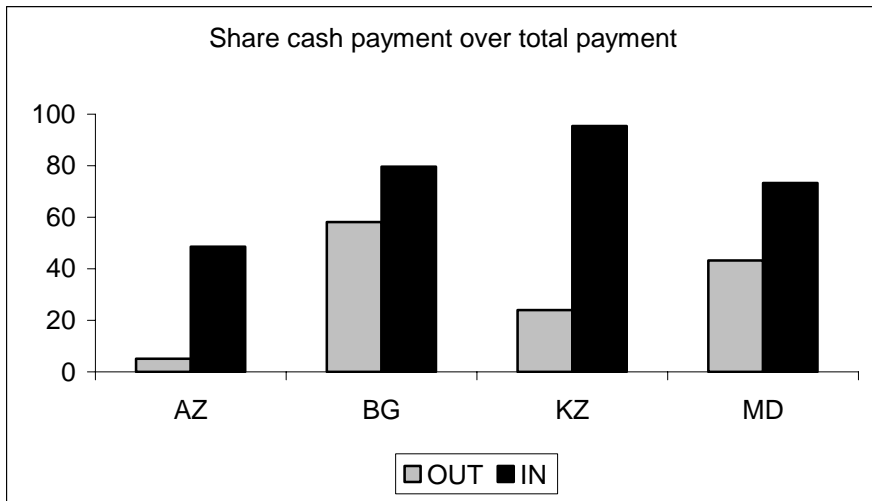


Figure 4: Share of corporate farms in land use (%)

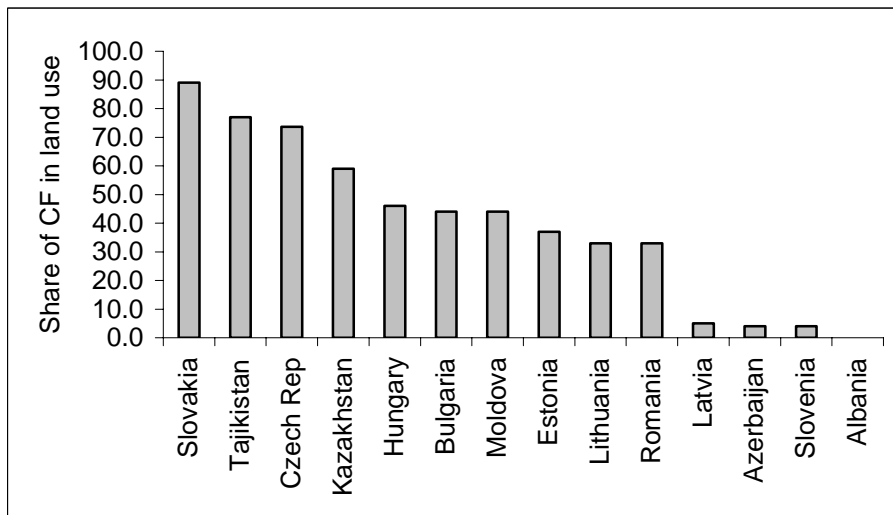


Figure 5: Correlation between land renting and the importance of corporate farms

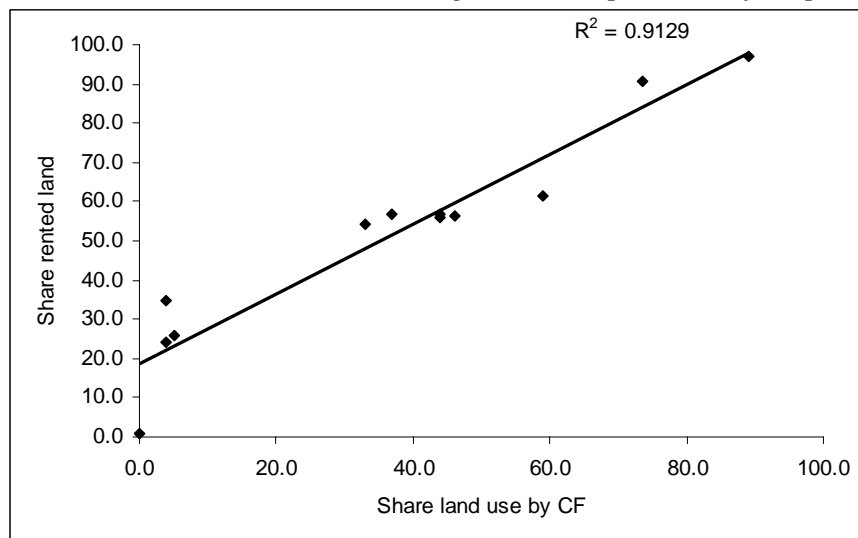
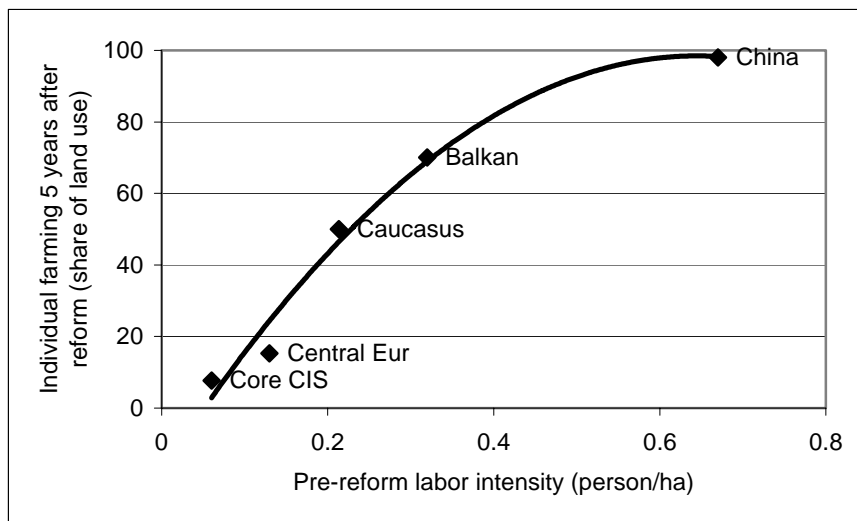


Figure 6: Pre-Reform Technology and the Growth of Individual Farming



Source: Swinnen and Rozelle (2005)  
 Core CIS = Russia, Ukraine, Kazak

Figure 7: Effect of co-ownership on allocation of land in Bulgaria

