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## On the Political Economy of Land Reforms in the Former Soviet Union

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# LICOS

## Centre for Transition Economics

### LICOS Discussion Paper

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#### On the Political Economy of Land Reforms in the Former Soviet Union

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**ON THE POLITICAL ECONOMY OF LAND REFORMS  
IN THE FORMER SOVIET UNION**

**Johan F.M. SWINNEN and Ayo HEINEGG\***

**ABSTRACT**

This paper provides a set of hypotheses to explain differences in the procedures and progress of land reforms among FSU countries. The first factor is the historical legacy of the countries and their institutions. Demand for land privatization was weak except in countries and regions where collectivization was imposed only after the second World War. Another factor is technology: countries with labor-intensive agricultural systems are characterized by more radical land reforms and decollectivization. The domination of nomadic pastoral grazing systems in Central Asia reinforces the technology factor. The last factor is politics: further political reforms may be needed as a prerequisite for progress in land reforms in the countries lagging far behind in land reforms.

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# ON THE POLITICAL ECONOMY OF LAND REFORMS IN THE FORMER SOVIET UNION

**Johan F.M. Swinnen and Ayo Heinegg**

## **Introduction**

While all transition countries have chosen to reform land property rights as part of their reform strategies, the procedures chosen and the implementation has differed strongly among transition countries. For example, countries such as the Czech Republic, Slovakia, and Slovenia have restituted farmland to former owners who lost their land during the collectivization process. Others have distributed farmland among rural households (Albania), have sold and leased farmland (Poland), used share distribution systems (Russia), or voucher procedures (Hungary) to privatize (part of the) farmland. In several countries more than one procedure was used.

Elsewhere we have forwarded a series of hypotheses on the reasons behind the differences in land reform procedures in Central and Eastern European countries (CEECs), using a political economy framework (Swinnen, 1999). The study did not cover land reform procedures in the countries of the former Soviet Union (FSU), except for the Baltics. In FSU countries, land reform differs significantly in procedure and lags behind in progress compared to the CEECs (see table 1). In many FSU countries, land property rights are distributed to rural households under the form of land shares (see further). This procedure results in incomplete individual property rights and creates important constraints on access to land for potential farmers.

Many studies have noted the lagging reform progress in the former Soviet Union as compared to the CEECs. This is well captured by the following quote from Lerman (2001, p.1-2):

*“[T]here is sometimes a feeling that the cold-War iron curtain has been replaced by another “east/west divide”, which now lies further east, along the borders of what has become known as the Commonwealth of Independent States (CIS), a political entity comprising the 12 successor republics of the former Soviet Union (excluding the Baltic states). ... [T]he countries west of the divide, which include the former Comecon members in CEE and ... the Baltics, are applying for accession to the European Union and are making plans to join ... NATO. ... The CIS countries east of the divide remain introvert and relatively isolated from the rest of Europe, viewing the west with undisguised suspicion.”*

It is often argued that this difference is determined by the historical and institutional legacies of the communist system. In CEECs (and in the Baltics) communism and collective farming was only imposed after the Second World War. In those countries family farms made an important part of the agricultural economy and land ownership by rural households was common. In contrast, in the CIS, communism and collective farming was imposed on a feudal system where land rights for rural households were limited to small garden plots.<sup>1</sup>

This historical legacy has several implications. First, collective farming and communism have permeated much deeper into the lives and skills of CIS rural households than in Central Europe. Second, both family farming and private landownership by rural households are part of the collective memory, and new aspirations, of rural households in Central Europe, while they are foreign to CIS rural households.

However other legacy arguments are less straightforward. For example, in the CIS all farmland was owned by the state. While in many CEE countries, land used by collective farms was never formally nationalized and was legally still owned by individuals. This

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<sup>1</sup> The exception is Moldova and western parts of Ukraine and Belarus, which were integrated in the Communist bloc only after the Second World War.

situation was the main determinant behind the restitution of the property rights on this land to former owners. Yet, as in the CIS, farmland was owned by the state in countries such as Albania and the Baltics, and there state owned land was either restituted or distributed in clearly delineated boundaries to individuals (or households). Similarly, in Slovenia state owned land was restituted (Swinnen, 1999).

Moreover, a closer look at table 1 reveals major differences in land reform progress among CIS countries. The land reform progress index (LRPI), calculated by Csaba Csaki and John Nash of the World Bank (2000), varies from 2 to 8, which reflects a huge variation in progress among countries with similar characteristics both with respect to legal ownership of land (all land was state-owned), and to duration of central planning and Communist rule (over seventy years). Second, the indicators suggest that reform progress is as far ahead in some of the CIS countries as they are in the CEECs. For example, Armenia, and Azerbaijan all have LRPIs of 8, which is the average for the CEECs.

Furthermore, the legal conditions and procedures differ as well. For example, while some countries recognize private ownership of farmland, some countries only recognize private ownership of household plots. While most countries allow leasing of farmland, countries as Turkmenistan and Uzbekistan do not allow transfer of user rights (Lerman, 2001).

These observations suggest that the simple historical legacy argument as summarized above may account for some of the differences between CEECs and FSU, but is clearly insufficient to explain all the differences that can be observed. The objective of this paper is to identify a set of factors that may provide a more complete explanation of the variation in government policies regarding land reform and implementation in the FSU countries.

## **A Classification of Countries by Progress**

Looking at table 1 we can distinguish four groups within the FSU in terms of progress and land reform procedure. Ranked in order of progress, the groups are:

*Group 1 (“The Baltics”)*: The countries in this group (Estonia, Latvia, Lithuania) have an average land reform progress index of 8.7. They have restituted farmland to former owners. All agricultural land can be privately owned and both ownership and use rights are transferable.

*Group 2 (“The Caucasus & Moldova”)*: The countries in this group (Armenia, Azerbaijan, Georgia, Moldova) have an average LRPI of 7.2. Some of these countries have followed the most common CIS land reform procedure of share distribution (see next section). However, Armenia and Georgia have distributed actual physical plots of land instead of paper shares (Lerman, 1997). Importantly, what characterizes these countries is that all agricultural land can be privately owned and both use rights and ownership rights of agricultural land are transferable.

*Group 3 (“RUK”)*: The countries in this group (Russia, Ukraine, Kazakhstan) have an average LRPI of 5.3. Land reform in these countries was done in two steps, which in practice often occurred simultaneously. The first step was to transfer land from exclusive state ownership to collective ownership of the peasants living and working in collective farms. State farms were generally transformed into collective farm, which then became part of this general “privatization pattern”. This procedure resulted in large-scale “privatization” of land,

but to collectives and not to individual owners. It therefore had to be followed by a second stage, in which individuals received certificates of entitlement to land in collective ownership. These certificates are usually called “land shares” but they are basically “paper shares”, and not physical plots of land (Lerman, 2001).

Use rights are transferable in all three countries, but the private ownership situation is mixed at best. Only household plots can be privately owned in Kazakhstan. Although all agricultural land can be ‘potentially privately owned’ in Russia and Ukraine,<sup>2</sup> effectively there are important constraints on land for individual households.<sup>3</sup> The land reform process of allocating private ownership in the form of shares in former collective and state farms creates severely restricted and incomplete individual property rights on the land. Further, while Lerman (2001) characterizes the legal status of the transferability of ownership rights as “unclear”, *de facto* land ownership transfers seem mostly impossible.

*Group 4 (“BTU”)*: The countries in this group (Belarus, Turkmenistan, Uzbekistan) have an average LRPI of only 2.3. Private land ownership and transfers are severely restricted. The most striking characteristics of the countries in this group are that even user rights are not transferable.

The remaining countries, Kyrgyzstan and Tajikistan, have hybrid reform characteristics.

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<sup>2</sup> Even this is only partial, since several regions in Russia impose significant restrictions on this, including some regions that do not recognize private land ownership.

<sup>3</sup> In a policy discussion on Russian land reforms published in a special issue of *Economic Systems*, several experts point at the imperfections and the inherent constraints in the Russian land reform system, while others emphasize that the lack of alternatives for access to inputs and output markets outside the former collective farming system is a more important constraint for the development of individual farming than land constraints (O’Brien, 2002; Wegren, 2002).



At first sight, there appear to be some important regional clustering in the ranking of countries by land reform progress and procedures. Group 1 and 2, characterized by their reform progress and procedure, are also regionally close. Furthermore, when looking at the LRPI ranking in table 1, it is striking that the five Central Asian Republics (CARs)<sup>4</sup> are ranked low. Four out of six of the countries with an LRPI of 5 or less are CARs. On average the CARs have an LRPI of 4.4 while the average LRPI of the other NIS (even excluding the Baltics) is 6.0.

Yet, one should be careful with these simple correlations. The average LRPI in the three “European CIS”, i.e. Russia, Ukraine, and Belarus, (4.3) is actually lower than that in CARs (4.4). Looking at the specific countries also presents a more nuanced picture. For example, Belarus, which is regionally and institutionally much closer to Russia and Ukraine is lagging behind most of the CARs, while Kyrgyzstan is further advanced than Russia or Ukraine.

### **The History of Private Property and Traditional Agricultural Systems**

The transformation to a system of private property may consist of a return to pre-colonial traditions for some countries, but for others it implies a change to new practices. The importance of a tradition of private farming—or its absence—cannot be understated. For one, regional culture may be permeated with a deep-seated sense of communal ownership of land and a popular belief that land cannot be privately owned or legally legislated (EBRD, 2000). Traditional cultural and social relationships and structures may be organized around pre-Soviet communal institutions. For example, in Russia the communal farming villages consisted of the extended family and community. And in the CARs, communal land

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<sup>4</sup> Kyrgyzstan, Kazakhstan, Tajikistan, Turkmenistan and Uzbekistan.

management structures consisted of the clans. Thus the return to traditional social and cultural structures and institutions (after independence from imposed Soviet social organization) may imply a return to communal organization for some. Hence, a transition to individual farm organization in the FSU would require a modification of cultural and social practices and organization, in addition to the usual modification of economic practices and organization.

Another way that the (lack of a) history of private farming can affect land reform progress is through the (lack of a) tradition of the skills and farming practices necessary for individual farm management. Although ex-collective workers may have experience with household plots connected to collective farms, they do not have experience with independent, larger sized farms. Their perception of the risk involved in individual farming will be greater than for those with historical traditions of individual farming. Thus the demand for individual farming, and hence for individual land rights, by these inexperienced workers may be lower than by workers in other countries.

The importance of the history of private farming on land reform is consistent with our four-group classification. Compared to the other FSU countries, the Baltic countries (Group 1) had the strongest, and most recent, established tradition of private property farming. This system was forcibly dismantled by Soviet colonial rule after the Second World War. The choice in these countries to restitute farmland to former owners was partly driven by demands from former peasants and farmers or their children, where the memory of their former land ownership was still relatively recent. But the restitution process was also, and importantly, part of a general political strategy to disassociate themselves—and their agrarian structure—from the Communist system and Russian colonial domination.

For example, in both Latvia and Lithuania the first privatization effort was still under FSU and the Communist Party (CP) regime, which gave land on a usufruct basis to rural workers. After anti-Communist coalitions overwhelmingly defeated the CP in the 1990 elections, the new governments restituted land to former owners (all native Latvians and Lithuanians) as a strategy for securing their independence (putting landownership in the hands of native citizens). Interestingly, Latvia's emphasis on a radical and rapid agrarian reform was in stark contrast to its government's reluctance to privatize industry, where restitution to Latvians was impossible. Because most industry was built after 1945, any other privatization policy was likely to give an important share of the capital stock to the management and employees of the industrial enterprises, many of who were Russians. Thus, while ethnic motivations induced a fast privatization in agriculture, they had the opposite effect in industry (Rabinowicz, 1997).

The countries in Group 2, Caucasus and Moldova (as well as western Ukraine and western Belarus), have also had a history of private land ownership, albeit that the Communist regime was imposed for a much longer time period in the Caucasus. In contrast, in most of the area covered by group 3, i.e. eastern Slavic regions—eastern Ukraine, eastern Belarus and most of Russia—the traditional agrarian system was largely feudal. Although serfs had individual use-rights on their family plots, all land belonged to the feudal landlords. In addition, at the turn of the century much of this region was characterized by communal village farming. Thus in most of this region there is no history or tradition of individual private farming.

For some of the Central Asian countries, (principally Group 4), there was even less of a tradition of individual farming. Much of this region was dominated by migratory or semi-

migratory pastoralism in the pre-Russian era, and much of the land was used and managed communally. Most of the laborers on the Soviet collective farms consisted of the former nomads that the Russians forcibly settled. These former nomads and their children have little history or experience with agricultural farming, and thus few of the skills required by it.

### **Technology**

A second factor that seems to have played a role is the technology or input structure of the respective agrarian systems. Looking at table 3, it is striking how the CIS countries with the most labor-intensive production systems have progressed considerably further than the other countries. All the countries with a labor/land ratio of more than 0.2 agriculturally employed persons per hectare are in Group 2.

This observation is consistent with conclusions based on a wider cross-comparison of countries. The countries where land reform has been implemented most radically, typically coinciding with a radical decollectivization of the farming system, i.e. a dramatic shift to individual farming, are those countries with the most labor intensive production systems (Macours and Swinnen, 2002). For example, agrarian reforms in China and Vietnam, but also in Albania—three transition countries with a labor intensity of greater than 0.6—have been characterized by a dramatic and rapid shift from collectives to individual farms and a radical shift of property rights from collective farms (and/or the state) to rural households.

The reason behind this correlation is primarily demand driven. With labor-intensive production systems, the costs and benefits of decollectivization reinforce one another. The gains from improved labor governance in individual farms compared to collective farming,

and even private large-scale farming corporations, are higher in labor-intensive production systems. At the same time, the disruption costs in terms of temporary distortions in factor combinations, and in losses of scale economies, are lower in labor-intensive systems (Swinnen, 2000).

Finally, labor-intensive production systems typically coincide with low-income (rural) economies, where household farming plays an important role in terms of ensuring food security. This further reinforces household demand for access to land. In combination these factors cause a stronger demand for direct access to land, and hence for private and individualized land property rights, than in more capital-intensive agricultural systems.

### **The Case of Central Asia**

The CARs have several characteristics that contribute to their low ranking as measured by the LRPI indicators. Part of the reasons reflects actual lagging in reforms, but part of the low ranking may also be due to the fact that the LRPI measures may not be appropriate indicators for measuring improvements in property rights for the CAR agricultural systems.

CAR agricultural land is dominated by pasture. The lowest share of pastures in agricultural land among the CARs is a staggering 78%. In Turkmenistan no less than 97% of agricultural land is under pasture. The unique characteristics of pasture and rangeland may make the privatization of this type of land particularly problematic<sup>5</sup>. This land tends to be less agriculturally productive than arable land, and is often located at a greater distance from settled communities. Using the land for grazing may also be problematic, as livestock appears to be particularly unprofitable in the post-transition period, and inputs are often unavailable or too expensive. The pasture parcels granted may be too small for permanent grazing, while the

privatization of land blocks access to traditional pastoral migratory routes. Under these conditions, individual livestock herding may not be as efficient as collective or communal herding. This may lead to less demand for land from potential farmers. In addition, the inefficient use of rangelands has led to overstocking and land degradation in Kazakhstan and Kyrgyzstan (Suleimenov, 2000).

The more general question is whether privatized individual rights are suitable for large-scale common property resources such as Central Asia's rangelands. In fact, in many market economies grazing land is often operated through different property rights regimes other than individualized private properties. An example is the grazing lands in the western regions of the USA where state and national governments own the lands and allocate certain use-rights to ranchers. Research suggests that common property regimes may be more efficient for the management of rangelands (see for example, Ostrom, 1990)<sup>6</sup>. Common property rights would allow herders access to greater areas of more ecologically heterogeneous land and migratory paths, and thus to a more environmentally sound use of water and land. Granting communal ownership to clan (kinship) based groups with mutual trust and self-enforcing mechanisms helps preclude overgrazing and other free ridership problems.

Another factor that distinguishes CAR from the rest of the FSU is the extent to which its society is dominated by ethnic, religious and clan networks. These informal institutions parallel and sometimes even overshadow their formal counterparts such as the kolkhoz system (Collins, 2001). In practice, the actual implementation of land reform often targets the

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<sup>6</sup> A "common property" regime is one where a defined group has exclusive legal property rights to land, and is not the same as an "open access" regime, where no one has legal rights. The confusion of the latter for the

unstated goals of these informal institutions as much as they do the official goals of the formal institutions. When these two sets of goals collide, a political or ethno-religious crisis may ensue. The allocation of land to the “wrong” ethnic groups has resulted in at least two major incidents of violent ethnic conflict<sup>7</sup> in the region. Land disputes also contributed greatly to the religious revolutions in Tajikistan and neighboring Iran. State officials often use the threat of this kind of ethnic, religious, and clan conflicts—however justifiably—as reason for their slow progress on land reform.

Even when it does not lead to violent clashes, the existence of parallel clan or religious goals can corrupt or even undermine land reform progress. For example, many Central Asians resist privatization in their communities because they fear that the land will fall in the hands of Russians and other ethnic minorities. And due to the pervasiveness and extensiveness of CAR clan networks, clientelism is more extensive here than in the rest of the FSU (Schatz, 2002).

But while these are powerful arguments for explaining lower LRPIs in CARs, the evidence in support of this hypothesis is mixed. Although most CARs have a low LRPI, Kyrgyzstan is the exception. Not only doing better than the other CARs, it is ranked higher than both Russia and Ukraine. Similarly, Tajikistan and Kazakhstan have the same LRPI as Russia and Ukraine. In fact, if one compares the average LRPI of the three large western NIS (Belarus, Ukraine, Russia) with the average of the CARs, there is no difference: 4.3 for the former and 4.4 for the latter (see table 2). The latter suggests that these factors are not sufficient to explain the divergence in CARs’ performance.

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former resulted in the classic “Tragedy of the Commons” article’s misleading conclusion that common property regimes lead to the overgrazing of meadows (Ostrom, 1990).

<sup>7</sup> Between local Tajikis and Kyrgyz in 1989 and between local Kyrgyz and Uzbeks in 1990.

## **Political Institutions**

Another factor affecting the divergence between the four groups is how preferences of individuals and rural households translate into government decisions. This process is obviously affected by the decision-making system, i.e. by political reforms. Several empirical studies have correlated economic reform and political freedom (de Melo, Denizer and Gelb, 1996; de Melo, Denizer, Gelb and Tenev, 1997; EBRD, 1999; Barro, 1997; and Dether, Ghanem, and Zoli, 1999.) Democracy may influence economic reform in three ways: it limits the efforts of rent seeking government officials to stall economic reforms, it permits the implementation of policies with high short-term costs, and it builds legal institutions that facilitate economic reform (Dether, Ghanem and Zoli, 1999).

However, one should be careful in drawing conclusions because of endogeneity and bi-causality in this relationship. Political and economic reform are to some extent complementary (although this is not always the case—see the Chinese case) and self-reinforcing. Yet economic reform may also hinder democracy by providing incentives and opportunities for rent-seeking behavior and corruption. An entrenched elite will block economic reforms to protect their “fiefdoms”, and arrest economic reform in the initial stages to protect the economic windfalls incurred in this stage. (Hellman, 1998; Dether, Ghanem, Zoli, 1999; Robinson, 1997).

More specific on the issue of this paper, we find a very strong positive relationship between land reform progress and political liberalization. Figure 1 illustrates the correlation between the LRPI and an indicator of political freedom from Freedom House. A score of 1 indicates the highest level of political freedom and a score of 7 indicates the lowest freedom. Group 1 (the Baltics) has a very high political freedom score (1.5), Group 2 has a 4.1 on



average, Group 3 rates a 4.8, and Group 4 rates a very autocratic score (6.5 out of 7). This suggests that the low progress in land reform in the countries of group 4 is importantly due to non-agricultural factors, i.e. to the lack of political reforms. Comparing the individual countries in group 3 and 4 shows indeed that this variable is the most distinguishing variable between the countries: all countries in group 4 have a political freedom indicator higher than 6, and all countries in group 3 have an indicator of lower than 5.5.

In general CARs score poor on this point: the lowest score of any CAR is 5.13 for Kyrgyzstan. The development of democratic institutions is constrained by the traditional political structures in Central Asia. Central Asian cultural traditions of patriarchy, popular submissiveness, and deference to authority and to elders are somewhat to blame (Gleason, 1997). The threat of ethnic or religious violence has also been used to justify a more authoritarian state. This lack of political freedom discourages economic reform.

In conclusion, it seems that—although one should be careful about interpreting this relationship—an important implication of these observations is that significant progress in land reforms in the countries of group 4 may not occur before important political liberalization has taken place in these countries.

## **Conclusions**

There are large differences among transition countries in the procedures and progress of land reforms. The gap between FSU and CEECs has often been pointed at in this framework. Yet in this paper we emphasize that even among the FSU countries there are major differences. We identified four groups in terms of land reform progress. The first group, consisting of three Baltic countries, has made major progress and has chosen to

restitute land to former owners. Several countries of the second group, mostly Caucasian countries, have distributed land in physical boundaries to rural households, and allow owners to transfer of ownership and use rights. The third group—Ukraine, Russia, and Kazakhstan—have privatized land through a share distribution system, which creates important imperfections in land property rights. These countries allow the transfer of use rights, but not of ownership rights. The last group—Belarus, Turkmenistan, and Uzbekistan—does not even allow the transfer of use rights.

In the second part of the paper, we have forwarded a set of hypotheses to explain these variations. The first, and most straightforward, factor is the historical legacy of the countries and its institutions. The Baltic countries, Moldova, and in a further distance, the Caucasian republics had a history of private land ownership and family farming. These factors have contributed to a stronger demand for private and individualized land property rights. Furthermore, in the Baltics the choice for land restitution was partly inspired by the countries' strategy to throw off the imposed collective farming system and with it Russian colonization.

Another factor is technology. As observed outside the FSU, countries with labor-intensive agricultural systems are characterized by more radical land reforms and decollectivization. The reasons are that the gains in labor governance are larger and costs of disruptions lower with shifting to individualized property rights and farming operations. This factor plays an important role in the Caucasian countries and Moldova, which are characterized by labor-intensive farming.

The opposite holds for the Central Asian Republics (CARs). These countries are characterized by very extensive production systems. Moreover, the domination of nomadic pastoral grazing systems reinforces the technology factor. These characteristics not only

reduce the incentives and demand for privatization and individualization of land rights. Moreover, one could argue that in these systems individualized land rights are not necessarily the most efficient institutions.

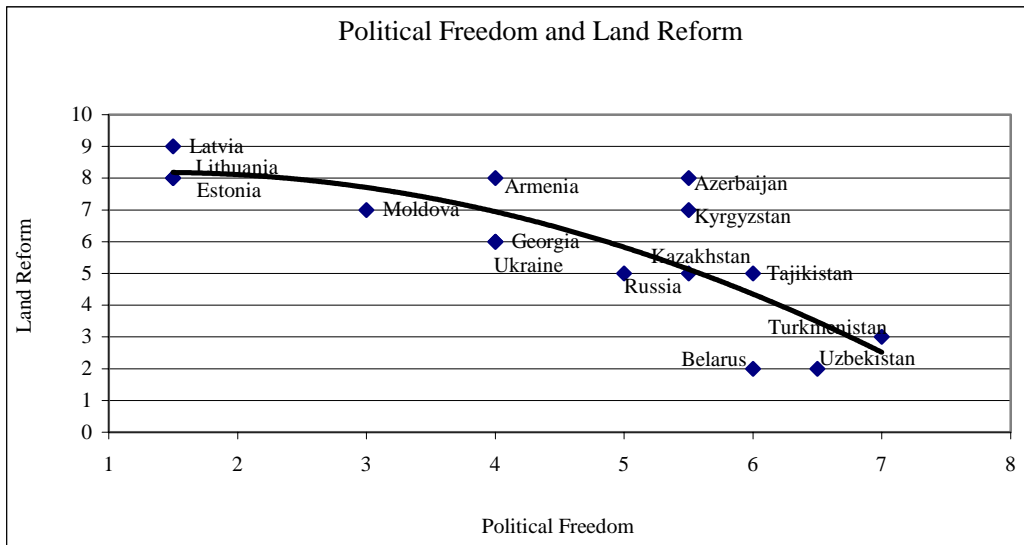
The last factor is politics. We find a very strong correlation between indicators of land reform progress and of political freedoms. While one could argue that there is some endogeneity and bi-causality in this relationship, the significance of the association suggests that further political reforms may be needed as a prerequisite for further progress in land reforms in the countries lagging far behind in land reform progress.

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**Figure 1: Political reforms and land reforms**



Source: World Bank for land reform; Freedom House for political freedom.

**Table 1: Reform Status in the FSU**

	<i>Land Reform Progress</i> 1999 °	<i>Potential Private Ownership</i> <sup>#</sup>	<i>Farm Restructuring Land in Indiv. Farms</i> Pre-reform After 5 yrs		<i>Average Size of Private Farm</i> 1999 %	<i>Ownership Rights</i> Transferable <sup>#</sup>	<i>Use Rights</i> Transferable <sup>#</sup>	<i>Freedom House Political Freedom Index</i>
Latvia	9	All land	4	81 b		Yes	Yes	1.5
Lithuania	8	All land	9	64 b		Yes	Yes	1.5
Estonia	8	All land	4	41 b		Yes	Yes	1.5
Armenia	8	All land	7	95	1	Yes *	Yes	4
Azerbaijan	8	All land	2	5	3	Yes	Yes	5.5
Moldova	7	All land	7	12	2	Yes	Yes	3
Kyrgyzstan	7	All land	4	34	17	5-y moratorium	Yes	5.5
Georgia	6	All land	12	50		Yes *	Yes	4
Ukraine	6	All land	6	10	32	Unclear	Yes	4
Russia	5	All land	2	8	55	Unclear	Yes	5
Kazakhstan	5	Household plots only	0	5	398	Unclear	Yes	5.5
Tajikistan	5	None	4	5 b	92	No	Yes	6
Turkmenistan	3	All land	2	3	9	No	No	7
Uzbekistan	2	None	5	13	21	No	No	6.5
Belarus	2	Household plots only	7	16	29	Unclear	No	6

Notes: ° 1-2 indicates a system dominated by large-scale farms, 3-4 indicates that a legal framework is in place and implementation has recently started, 5-6 indicates an advanced stage of privatization, 7-8 indicates that most land is privatized but titling is incomplete and land market is not fully functioning, 9-10 indicates private ownership and active land markets. \* Mountain pastures not privatized. b. Value for 1994.

Source: °Csaki and Nash (2000); <sup>#</sup> Lerman (2001); <sup>%</sup>Interstate Statistical Committee CIS database 2001.

**Table 2: Land Reform in the FSU: Grouping by Progress and Region**

	1 "BALTICS"	2 "CAUCASUS"	3 "RUK"	4 "BTU"	EUROPEAN NIS	CENTRAL ASIA
<b>LAND REFORM</b>						
Land reform index	8.33	7.25	5.33	2.33	4.3	4.4
Procedure	Restitution	Different	Distrib. in shares	Distrib. in shares	Distrib. in shares	Distrib. in shares
Ownership transferable	Yes	Yes	Unclear	No	Unclear	No
User rights transferable	Yes	Yes	Yes	No	Yes	No
<b>INITIAL CONDITIONS</b>						
Yrs under communist rule	51	65	73	71	73	71
History of indiv. farming	yes	yes	feudal serfdom (Kazakh.: communal)	communal	Feudal serfdom	Communal
<b>TECHNOLOGY</b>						
Agricultural labor intensity	.085	.227	.057	.076	.089	.074
<b>POL. INSTITUTIONS</b>						
Political Freedom, 2000-01	1.5	4.1	4.8	6.5	5.0	6.1
<b>COUNTRIES</b>	Estonia, Latvia, Lithuania	Armenia, Azerbaijan, Georgia, Moldova	Russia, Ukraine, Kazakhstan	Uzbekistan, Turkmenistan, Belarus	Russia, Ukraine, Belarus	Uzbekistan, Turkmenistan, Kazakhstan, Kyrgyzstan, Tajikistan

Source: Land reform indicators from Csaki and Nash (2000) and Lerman (2001), except for average size of private farm, which is from Interstate Statistical Committee of the CISs. Agricultural labor intensity from Macours and Swinnen (2002). Political freedom is from Freedom House.



**Table 3: Pre-reform Economic Indicators in the FSU (1990)**

	<i>% Arable Land</i>	<i>% Pastures</i>	<i>Labor/ Agric. Land</i>	<i>GNP/capita PPP \$ 1989</i>	<i>Years Central Planning</i>	<i>Natural Resource Endowment</i>	<i>Share of Agric in Employ. %</i>
Latvia	66	33	.085	8590	51	Poor	15.5
Lithuania	65	13	.098	6430	51	Poor	18.6
Estonia	74	25	.072	8900	51	Poor	12.0
Armenia	38	54	.218	5530	71	Poor	17.4
Azerbaijan	36	52	.203	4620	70	Rich	30.7
Moldova	68	12	.269	4670	51	Poor	32.5
Kyrgyzstan	13	86	.054	3180	71	Poor	32.6
Georgia	25	63	.217	5590	70	Moderate	25.2
Ukraine	80	18	.118	5680	74	Moderate	19.5
Russia	60	40*	.044	7720	74	Rich	12.9
Kazakhstan	16	84	.008	5130	71	Rich	22.6
Tajikistan	20	78	.185	3010	71	Poor	43.0
Turkmenistan	3	97	.015	4230	71	Rich	41.8
Uzbekistan	16	82	.109	2740	71	Moderate	39.2
Belarus	65	34	.105	7010	72	Poor	19.1

Source: Macours and Swinnen (2002). \*Source; FAO, 1992.