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SUBSISTENCE OR LEISURE?**

Maksim Yemelyanau

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SECOND AGRICULTURE IN BELARUS AND UKRAINE: SUBSISTENCE OR LEISURE?

MAKSIM YEMELYANAU*
BEROC[†] and CERGE-EI[‡]

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Abstract

In many post-Soviet countries, more than half of all households use small land plots to produce significant agricultural output even though their members have paid jobs or collect state pensions. Existing studies suggest that in Russia such “second agriculture” helps smooth consumption. Using household survey data, I study the role of “second agriculture” in Belarus and Ukraine, two countries that differ significantly in the coverage of their social safety nets. I find that while in Belarus small land plots do help smooth consumption of the poorest households (during the 1998 crisis), Ukrainian poor appear to be unable to invest sufficiently in their small land plot production to produce similar benefits. Most urban households use their small land plots for leisure, and over years they tend to move away from this activity.

Keywords: Belarus, Ukraine, transition, social security, second agriculture, small land plots, consumption smoothing

JEL classification: D13, H55, I32, I38, J43, Q12

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[†]Belarusian Economic Research and Outreach Center, 13 Yakira street, Office 317, 04119 Kyiv, Ukraine. Phone: +380 44 492 8012; fax: +380 44 492 8011; web: <http://www.beroc.by/>; e-mail: yemelyanau@beroc.by. BEROC is a joint project of Kyiv School of Economics (Ukraine) and Stockholm Institute of Transition Economics (Sweden).

[‡]CERGE-EI, Politických vězňů 7, 111 21 Prague, Czech Republic. Web: <http://home.cerge-ei.cz/yemelyanau/> CERGE-EI is a joint workplace of the Center for Economic Research and Graduate Education, Charles University in Prague, and the Economics Institute of Academy of Sciences of the Czech Republic.

1. Introduction

The current economic crisis is a serious negative shock for all countries of the world. Many of them did not experience a crisis of such magnitude in 80 years, since the Great Depression. For post-Soviet countries, however, this is the third major shock in the last 20 years, the two previous being the collapse of Soviet Union in 1991 and the Russian financial crisis in 1998. Thus, studying the crisis of 1998 may help us better understand the current one and set up policies needed to mitigate and shorten it.

In times of economic uncertainty, formal social safety nets often fail to provide adequate coverage, so people have to turn to various informal mechanism of insuring their consumption levels. One of these mechanisms is the so called “second agriculture”.¹ In many transition countries over half of all households is involved in the “second agriculture”, an activity that is widely spread not only among rural, but also urban households.² Existing studies, which are chiefly analyzing Russia, suggest that the “second agriculture” serves two main purposes in the transition countries: it is used as a consumption smoothing device during the times of economic crises (to complement or even substitute the formal social security systems) and it is also a cultural and historical phenomenon.

Unfortunately, there is almost no research on the “second agriculture” and its effect on poverty or inequality in other post-Soviet countries, chiefly due to lack of suitable data. This gap in research is important as post-Soviet countries often dramatically differ in their ability to provide income insurance to their citizens. A case in point is the comparison of Belarus and Ukraine, countries that have tight historical and cultural links and are very close economically, yet they have quite different social security systems. A World Bank (2007) country brief characterizes Belarus as having a “...comprehensive

¹As opposed to the “first” (industrial) agriculture – the large-scale agricultural production for market. Also called *independent agriculture*, *individual agriculture*, *subsistence agriculture*, *household agriculture*; *family farming*; *home gardening*, (agricultural) *home production*, and *household food production*. The actual land parcels are called *household plots*, *personal subsidiary plots*, *home gardens*, *garden plots*, *small land plots*, *private plots*, *plots of rural households (LPH)*, and *dachas*, gathered together in *subsidiary farms* (or *horticultural associations*).

²My estimates from Belarusian and Ukrainian Households Budget Surveys show that approximately two thirds of all households use small land plots in those countries, which is consistent with the data provided by the national statistical offices. In Russia, according to the Goskomstat (the State Statistical Committee of Russia), this figure is lower, but still exceeds 50%.

social security and good basic health and education services [that] have been sustained since independence and remain available.” As for Ukraine, the World Bank poverty report (World Bank, 2005) explains: “The set of government transfers still require better coverage of the poor and better targeting of transfers... There are major gaps in terms of coverage and targeting of the poor” (p. 45). Hence, it is possible that the “second agriculture” plays different roles in Belarus and Ukraine, providing more of consumption-smoothing insurance in Ukraine, where social safety net is less comprehensive.

Figures 1 and 2 here.

Surprisingly, descriptive statistics suggest otherwise. Belarus and Ukraine have roughly the same share of households that use³ small land plots (SLPs thereafter) and this share goes down with time similarly as Figure 1 suggests. Moreover, SLPs in Belarus seem to be more productive than in Ukraine (relative to the investments made), which is counterintuitive at the very least because Ukraine has a better climate and more productive soil.⁴ Figure 2 suggests that the productivity gap is particularly large among the poor. For example, in 2001 the ratio of SLP output to investment (productivity) (both in monetary real terms) was 3.5 times higher for the poorest Belarusian households than for the poorest Ukrainian households.

In this paper I use household budget surveys from both countries to explain and quantify the roles of the “second agriculture” in both Belarus and Ukraine and to shed light on the surprising patterns outlined above. The structure of the paper is as follows: Section 2 reviews the literature; Section 3 describes the data used; Section 4 discusses the results and Section 5 concludes.

2. Literature

There is an extensive literature on livelihood sustainability and consumption smoothing under conditions of economic uncertainty. This literature (including Rosenzweig, 1988;

³They can own or rent them, though neither Belarus nor Ukraine has a real market for (agricultural) land. Numerous obstacles, mostly administrative, prevent land plots from being sold and bought freely.

⁴According to the Ministry of Agrarian Policy of Ukraine and the Ministry of Agriculture and Food of Belarus, soil productivity indices for Ukrainian regions are 1.5-2 times higher than for regions of Belarus.

Deaton, 1989 and 1992; Paxson, 1992 and 1993; Townsend, 1995; Udry, 1995; Ersado, 2006; Kazianga and Udry, 2006; and many others) concludes that most households avoid an extended period of dependence on only one source of income. It suggests that income diversification is the key way of *ex ante*⁵ or *ex post*⁶ risk management for households anticipating or facing adverse economic conditions. This literature is especially large for developing countries, mostly focusing on rural areas and estimating the share and the significance of non-farm income.

There are also some articles on consumption smoothing and social safety nets in transition countries (e.g. Buckley et al, 2003, Lokshin and Ravallion, 2000, Lokshin and Yemtsov, 2004, Prokofieva and Terskikh, 1998; and others).

Notten and de Neubourg (2007) study *ex ante* and *ex post* risk management in Russia. They find that in Russia home production is very popular, even for urban households (about half of them used land to grow their own crops versus 64% for rural households) (p. 37). Gerry and Li (2007, pp.13-14) and Stillman (2001, pp. 5 and 8) construct models of consumption smoothing in Russia that households use to alleviate the impact of idiosyncratic shocks. They find that home production does play an important insurance role for the most vulnerable households. To my knowledge there are no analogous, or even similar, studies for other post-Soviet countries. They exist only for Russia, because of RLMS, which is a very rich data set.

Some other articles consider the “second agriculture” in the former Soviet Union as mainly a cultural phenomenon. This stream of (mostly sociological) articles includes Zavisca (2003), Ioffe and Nefedova (1998), Koenker (2003), Wegren (1994, 1996), White (2000), Buckley and Gurenko (1997), Lovell (2002), White and McAlister (1996). Their main conclusion is that SLPs in former USSR are used mostly for leisure.

3. Data

The data used for this paper are pooled cross-sections (the sample is different each year) from 1995 to 2008 (from 1999 to 2007 for Ukraine) obtained from the National Statistical

⁵E.g. self-insurance against risks in the context of missing insurance and credit markets.

⁶E.g. extra jobs taken on to stem the decline in income.

committees of Belarus and Ukraine. Each cross-section contains approximately 5000 observations for Belarus and 9000 for Ukraine representing the whole population each country. Each observation includes detailed information about the household and its members; breakdown of income by categories; breakdown of expenditures by categories; more detailed data on food consumption; information about their dwellings.

The data on income and expenditure are monthly averages for a given year. They are collected quarterly using a diary completed by household and survey questions asked by interviewers. The sample is different each year, so I cannot follow the same households over time; it is possible however to follow cohorts of population defined by age or another criterion.

Unfortunately, for the purposes of this research the data have several major drawbacks:

(1) There are no panel data, we cannot follow the same households over time (as in RLMS) and observe the changes in use of individual SLPs.

(2) For those people who work for wages, there is no information on whether they are employed by a state or a private enterprises.

(3) There is no information on hours worked, on the SLPs and on the main jobs as well⁷.

(4) There is no data on the size of the SLPs, only the number of them (for the case a household uses several of them).

(5) The survey in Ukraine started only in 1999, there is no pre-crisis data.

4. Descriptive statistics⁸ and some results

4.1. SLPs in Belarus - general evolution

A close look at the Belarusian data related to small land plots reveals some interesting patterns.

⁷Such data exist, but the statistical offices refuse to provide them.

⁸All data relate to urban households only. Rural households were omitted because virtually 100% of them use SLPs. Different mechanisms are in work for for urban and rural households: rural people work in kolhozes, so in fact on their SLPs they perform the same activities as at their usual jobs. All urban workers have jobs other than agriculture.

While the share of households (both rural and urban) using small land plots goes down from 70% to less than 60% from 1995 to 2008, virtually all (97-98%) rural households use small land plots, so I exclude them from my subsequent analysis. Minsk – the capital – has the lowest share of households using small land plots (between 26% and 35%). Big cities have a higher share (from 40% to 46%), while in small towns it is even higher (from 58% to 73%). It may look that contrary to the predictions of consumption smoothing models, this share *decreased* in 1998 – the year of Russian financial crisis that was a major hit to the Belarusian economy, but actually this is not completely true. The crisis burst out in August 1998, when that year’s crop was mostly collected, so the decrease of use of SLPs in 1998 should be attributed to some downward trend from previous years. In 1999 it went up, totally in accordance with the consumption smoothing theories (the lack of pre-1999 data on Ukraine doesn’t let me to check whether this is true for Ukraine as well).

While Minsk has the lowest share of households using small land plots, the inhabitants of Minsk mainly own them, while in other cities and towns the households prefer to rent. Note that in 1998-1999 the share of renters went down in Minsk, which combined with the overall decrease of using of small land plot would mean that during the crisis those who rented their small land plots were more likely to give them up.

Figure 3 here.

As for the share of households using small land plots by income deciles, it actually *increases* with the increase of income (see Figure 3). The poorest households have the lowest share, and it further decreased during the crisis, combined with the largest drop in income and consumption.

Figure 4 here.

The analysis of shares by socio-economic categories of household heads reveals that the retired are the most active users of small land plots, as 55-62% of such households use them (among urban households) (see Figure 4). They are followed by the white-collar workers (with 40-55%) and the blue-collar workers (40-48%). The lowest share is among the unemployed (from 28% to 35%), but it has significant jumps, most probably because

of sample selection, as there are only 60-120 such households in each year's sample.

As the retired have much higher *propensity* to use small land plots than the unemployed, it may seem that it is more of a cultural than of an economic phenomenon. However, the white-collar workers are more likely to have small land plots than the blue-collar workers, even though this difference disappears by the mid-2000s. To investigate this matter further, I run the following regression⁹ for each 13 years of my sample:

$$slp = \alpha + \beta X + \varepsilon, \quad (4.1)$$

where slp is equal to 1 if a household uses a small land plot and 0 otherwise and X include wages, pensions, assistance from relatives, total expenditure¹⁰ and dummy variables for socio-economic status and residence (Minsk - big cities - small towns). I obtain the following results.

The constant term is decreasing over years (cf. Figure 3). The coefficients at wages, pensions, assistance from relatives and total expenditure are small but statistically significant. Total expenditure is positively correlated with slp (except in 1999) meaning that richer households are more likely to use a small land plot (see Figure 3). Wages and pensions are also positively correlated with slp , and their coefficients are the biggest in 1998-1999, the years of crisis. Assistance, on the contrary, is negatively correlated, showing that those vulnerable households who receive significant amounts of financial assistance do not want or cannot use small land plots as a kind of substitute for the lack of social security.

The households from Minsk and other big cities are less likely to use small land plots than those living in small towns.

The unemployment status is negatively correlated with slp , but the coefficients jump up and down unexpectedly. The retirement is positively correlated (except for 1997 and 1998), while the blue-collar status is negatively correlated in the 1990s but becomes positively correlated in the 2000s.

⁹I use the Linear Probability Model; the signs of coefficients are the same when I use Logit or Probit models as well, only their magnitude changes sometimes. All coefficients are available upon request.

¹⁰I use the total expenditure instead of the total income because the latter is highly correlated with the wages.

Then I run the same regression, but this time X include age of the household head, age squared, number of people in the household, wages, pensions, assistance from relatives, living space and number of years people live in the same house or apartment, number of cars (from 0 to 3 and more), dummies for male household head, Minsk or big cities, house or apartment, its ownership or renting, and ownership of a personal computer or VCR/DVD player. I obtain the following results (all coefficients for all years are statistically significant at 99% level).

Age is positively correlated with small land plot use, while the coefficient at age square is negative, meaning that the relationship has an “inverted-U” shape.

The coefficient at the “male household head” dummy switches back and forth from negative to positive, so the true relationship is ambiguous. The coefficients at wages, pensions and assistance from relatives and dummies for Minsk and big cities have the same sign as in the previous regression.

As for dwellings, the households living in houses are more likely (positive coefficient) to have small land plot than those living in apartments (negative coefficient). Both the size of living space and the “tenure” have positive coefficients, so households that have bigger houses (or apartments) and live there for longer time are more likely to use small land plots. The number of cars, as well as the ownership of a personal computer or VCR/DVD player, are also positively correlated.

From the results of the above-mentioned regressions I draw several conclusions. The main one is that small land plots in Belarus are more of a hobby than of a survival or consumption-smoothing mechanism. However, as in Minsk and big cities small land plots are used less than in small towns and villages (see Figure 1), there are at least three factors that affect small land plots use, and sometimes they work in the opposite directions. The first one can be called a “Soviet legacy”, it affects mainly older people (and often not very affluent) who still grow food on their small land plots, but mostly because of habit. The second one affects younger and richer people, who use small land plots as pure leisure. Finally, a minority of households (primarily poor) uses small land plots for subsistence, especially during macroeconomic crises. Unfortunately, I cannot

quantify those three factors yet, but the construction of a model should allow me to do it.

Figures 5.A and 5.B here.

Figures 5.A and 5.B show separately the households that do and don't have cattle on their small land plots. For the first group (figure 5.A), it appears to be the "inverted-U shape" relation, as the richest people don't want to have cattle on their small land plots and the poorest cannot afford to. The share of those households goes down with years, meaning that less households use their small land plots for consumption smoothing. The second group (figure 5.B) uses their small land plots mainly for leisure. The share of such households increases with income and stays virtually constant over years. These two graphs suggest that in Belarus the role of small land plots as a consumption smoothing mechanism is the most important for the middle of income distribution, but as the average wages go up, less people need them, so small land plots' leisure role becomes more and more important.

As for small land plots and inequality, they appear to have an equalizing effect (see Figure 6). The inequality of income and expenditure is almost always higher among the households who do not use small land plots than among those who do. The differences are the biggest during the crisis of 1998, when small land plots seem to have equalizing effect. In Ukraine they have much higher contribution to total inequality – 25% versus only 6% in Belarus (in 2002) (Yemelyanau, 2008).

4.2. Income and consumption

The crisis of 1998 was a major hit to the income and consumption of all Belarusians and Ukrainians.

Figure 6 here.

The poor were hit the hardest: in Belarus their income went down three times, from 63 USD per month per household to only 21 USD. While for Ukraine the data exist only from 1999 onwards, the situation there was very similar, except Ukrainians have on average lower income than Belarusians.

Figure 7 here.

The share of income going for food consumption that was already rather high (60-70%) for the bottom deciles skyrocketed, exceeding 120% for the bottom decile in 1998-1999 (fig. 8) - this means that the Belarusian poor didn't have enough income even to cover their food expenditures, so they had to borrow. In Ukraine the situation was even worse - not only the bottom, but even the second decile had to borrow to buy food, and this continued up until 2004, as the effect of the 1998 crisis on the Ukrainian poor was much longer than in Belarus.

Figure 8 here.

Government support (all government transfers except pensions) in Belarus was not adequate during this time, though it was much better targeted on the poor than the pensions – bigger but still far from abundant. In Ukraine it was virtually nonexistent, while pensions were much more generous.

Figures 9.A and 9.B here.

While government support relative to food expenditure was increasing over years, especially for the bottom decile (both in Belarus and in Ukraine), during the crisis of 1998 it didn't play any significant role - the state wasn't helping the poor to cover their food consumption.

Figure 10 here.

Overall, government transfers in Belarus seem to be more or less adequately targeted on the poor, but it didn't help them much during the previous crisis of 1998. In Ukraine they didn't help at all.

The crisis also widened the income gap between the poorest and the richest in Belarus.

Figure 11 here.

In 1998 and 1999 the bottom decile of Belarusians received more than 10 p.p. less income (relative to the top decile) than in 1997. In Ukraine the gap was even higher, almost reaching 85% in 1999.

4.3. Small land plots and consumption smoothing

SLPs provide a unique opportunity to households to grow their food by themselves, thus reducing their vulnerability towards macroeconomic shocks. Their role decreases with

income and with time - in the 1990s in Belarus up to 60% of the food consumption of the households in the bottom quintile (almost 75% for the bottom decile) was covered by the crop from the small land plots (for those households who have SLPs). By the middle of 2000s this share became twice lower. For the richest quintile, it went down from 50% to almost 20%.

In Ukraine this share was already lower in 1999 (for all quintiles), and since then it went down significantly. Note that for the poor the share is actually *lower* than for the rich (in Belarus it is vice versa).

Figure 12 here.

It should be noted that in Belarus for the bottom quintile (deciles d1 and d2) the importance of SLPs for food consumption went down abruptly from year 1998 to 1999. The crisis struck in August 1998, when current year's crops were almost completely harvested. The poor didn't increase their use of SLPs in 1998 - quite the contrary, they reduced it! On the other hand, the use of SLPs went down for all quintiles in 1998 and again up in 1999 (figure 9). It looks like the poor who already had SLPs when the crisis struck used them very heavily or at least as usual, but for the next year the share of households using SLPs increased (this is consistent with consumption smoothing behavior), but the output of the SLPs went down.

The importance of SLPs is higher for richer Ukrainians than for the poor, but only until the mid-2000s; after 2004 this importance is now the same for all quantiles (quintiles or deciles). This means that those urban households that use SLPs get significant output from them, which is consistent with the finding from Yemelyanau (2008): in 2002, income from small land plots contributed 25.2% of total inequality in Ukraine (10.5 Gini points) and only 6.3% in Belarus (1.5 Gini points).

Overall, while the social security system in Belarus is better developed than in Ukraine (see the reports of the World Bank) and the income of Belarusians is higher (see Figure 1), the importance of SLPs in Ukraine is nevertheless *lower* than in Belarus.

This phenomenon may be explained by the "burden" of SLPs, i.e. their costs relative to income minus food expenditures.

Figures 13 and 14 here.

My overall conclusion would be that in Belarus (and even more in Ukraine) SLPs would have worked as consumption smoothing mechanism for the poor during the crisis of 1998, but they simply couldn't afford to use them efficiently. Government could step in by providing some incentives for people to be more self-reliant and grow their own food, but it didn't.

4.4. SLPs and their productivity.

Contrary to what one may believe, given more favorable climate of Ukraine and its more fertile soils, SLPs in Ukraine are *less* productive than in Belarus (see fig. 2), and it is not caused by heavier investment in Belarus - quite the contrary, converted into USD using market exchange rate, the average expenditures in both countries (by income deciles) are very rarely different by more than 1/5, and the investments in Belarus are usually slightly *lower*.

However, if one separates working and retired people, the picture becomes quite different.

Figures 15.A and 15.B here.

Figures 15.A and 15.B show the productivity of SLPs in Belarus relative to Ukraine for pensioners and working people separately, for 4 bottom deciles (or 2 bottom quintiles).

Belarusian pensioners, as well as their Ukrainian counterparts, do not have to work, they can devote their time completely to whatever activity they may choose, including growing food on their SLPs. For those who choose this very activity, the productivity of SLPs in Belarus is usually bigger than in Ukraine, but not very much, except for the poorest decile. This can be explained by the very inefficient targeting of the poor in Ukraine where they simply cannot afford investments in SLPs, they have to borrow just to buy food (see figure 8).

As for the workers, the result is remarkably different - Belarusian workers obtain at least 200% (or three times) more output from their SLPs! For the bottom decile the difference is sometimes more than ten-fold, but again, this can be explained by the very

hard poverty of the Ukrainian poor.

A valid explanation of this phenomenon would be that in Belarus more people are underemployed, they have more free time to work on their SLPs (as they don't exert their full efforts on their day jobs). This is consistent with the macro-data - according to the national statistical offices, in Ukraine in 1999 only 30% of workforce was employed at state enterprises (and the share was going down ever since), while in Belarus in the middle of the 1990s this share exceeded 60% and reached 50% (still very high by any standards) only in the middle of the 2000s. Unfortunately, the available data from households budget surveys cannot answer this question (see Section 3).

To my knowledge, there are no articles on hidden unemployment in either Belarus or Ukraine in Western journals, only some local publications. Sosnov (2002) assesses the level of hidden unemployment is high. His rough estimates are that at least one third of all economically active population should be considered as unemployed (open or hidden). This is confirmed by Pavlova and Rogozinsky (2006). They also assert that in spite of all the differences in social policies, the levels of hidden unemployment in Belarus and Ukraine are close to each other. Razorenova (1999) corroborates by saying that many people keep their formal employment (to obtain some privileges like subsidized kindergartens or healthcare) while having some informal activities (to complement their official income).

5. Conclusions

Using data from Ukrainian and Belarusian Household Budget Surveys (UHBS and BHBS), I find that in Ukraine small land plots do not work as consumption smoothing devices for the poorest households because they cannot afford them, and the social security system is not helping. In Belarus, the situation is less dramatic, but many workers who are likely to be a part of excessive workforce spend their time and efforts on their SLPs. As for the rich, many of them use their SLPs for leisure, but they gradually switch away from this activity.

Paying state subsidies to the poor who run their SLPs could be an efficient way

to help them cope with the crisis, as this will provide them with both occupation and insurance of their food consumption.

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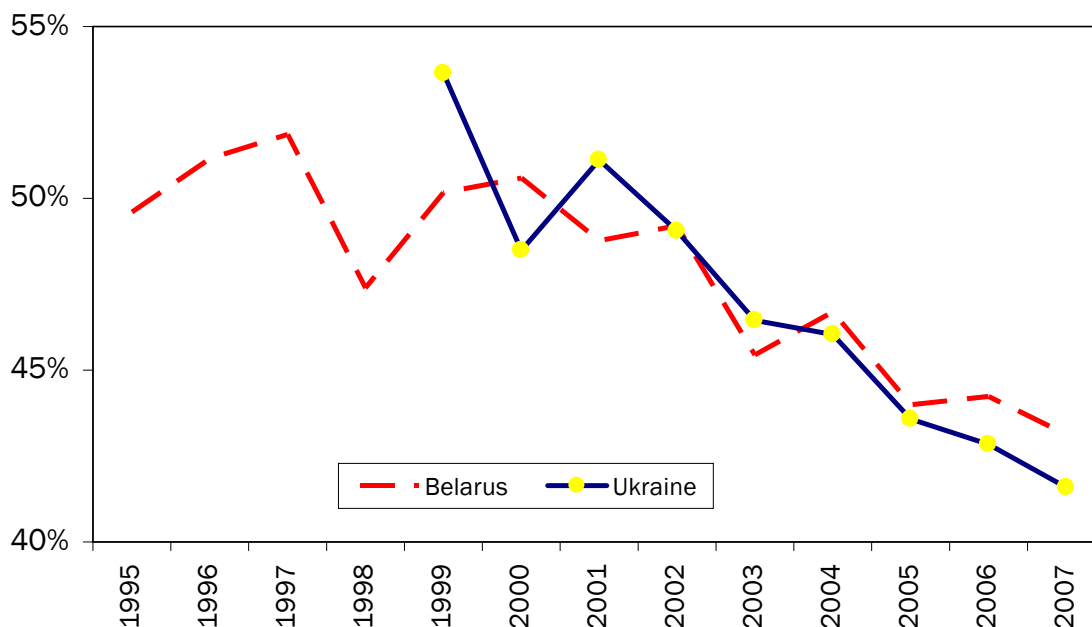
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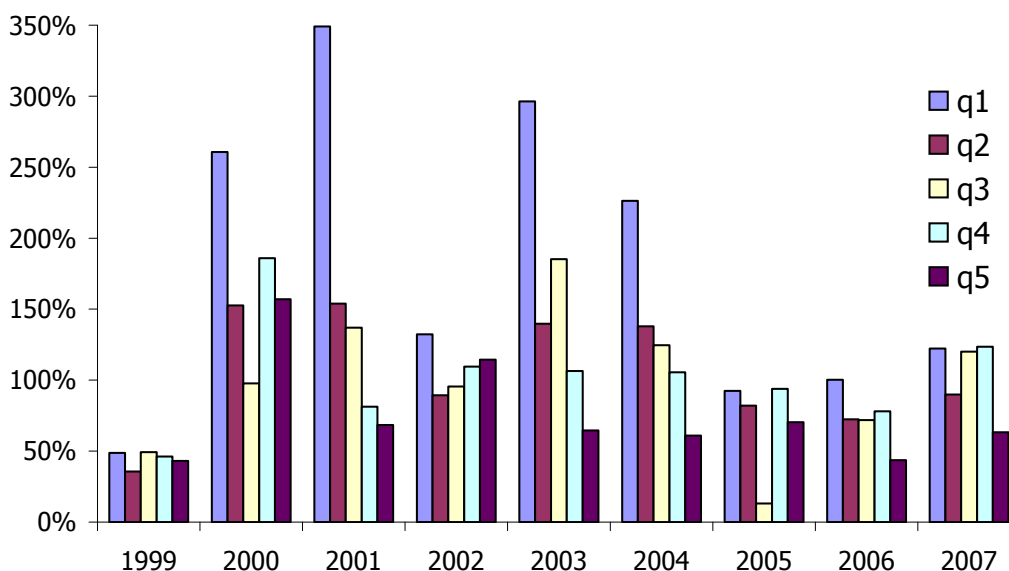
Appendix

Figure 1. The share of urban households that use small land plots.



Source: author's own calculations based on BHBS and UHBS.

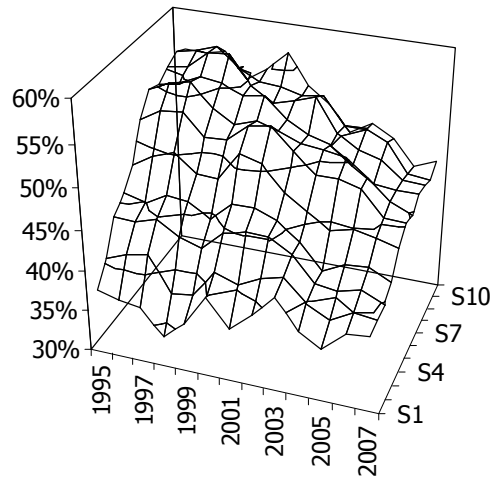
Figure 2. Relative productivity¹¹ of small land plots in Belarus versus Ukraine, by income quintiles.



Source: author's own calculations based on BHBS and UHBS.

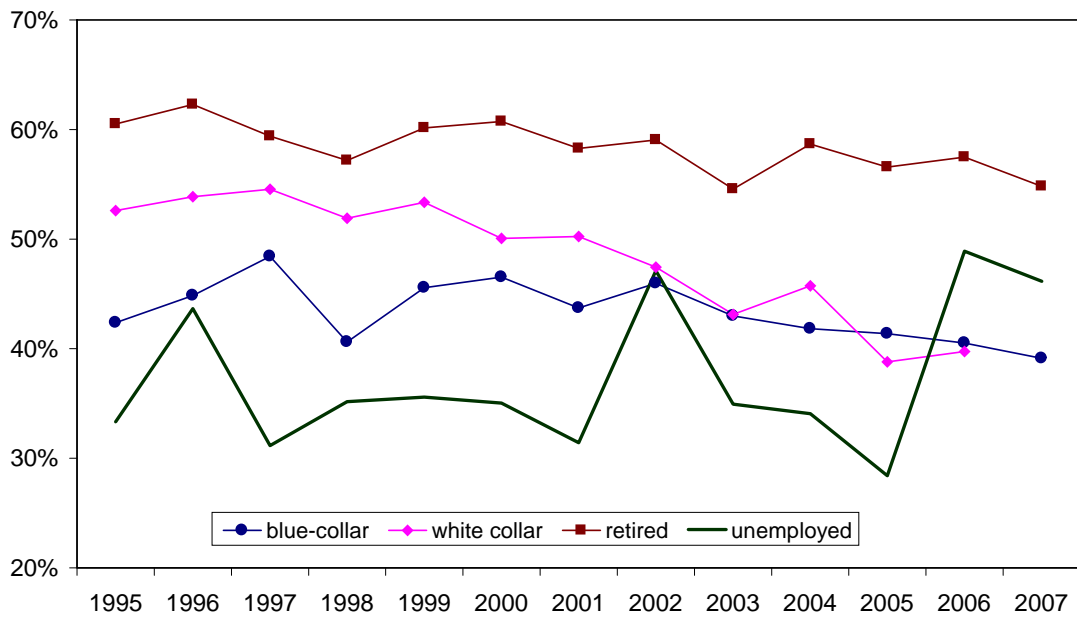
¹¹The productivity is defined as the ratio of output from SLPs (both in-kind and sold) to the expenditures on SLPs. Unfortunately, due to the lack of the data (see section 3) time investment cannot be measured. The size of SLPs is also not in the data.

Figure 3. SLPs of urban households in Belarus by income deciles.



Source: author's own calculations based on BHBS.

Figure 4. SLPs in Belarus by socio-economic categories of household head (urban households).



Source: author's own calculations based on BHBS.

Figure 5.A. SLPs with cattle in Belarus by income deciles (urban households only).

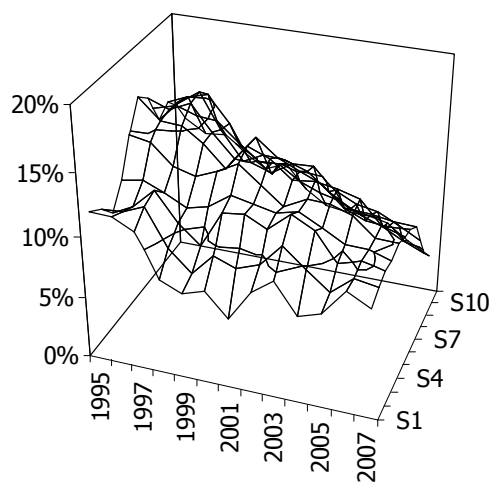
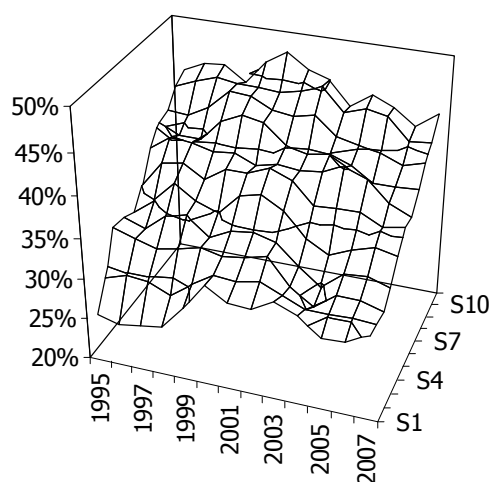
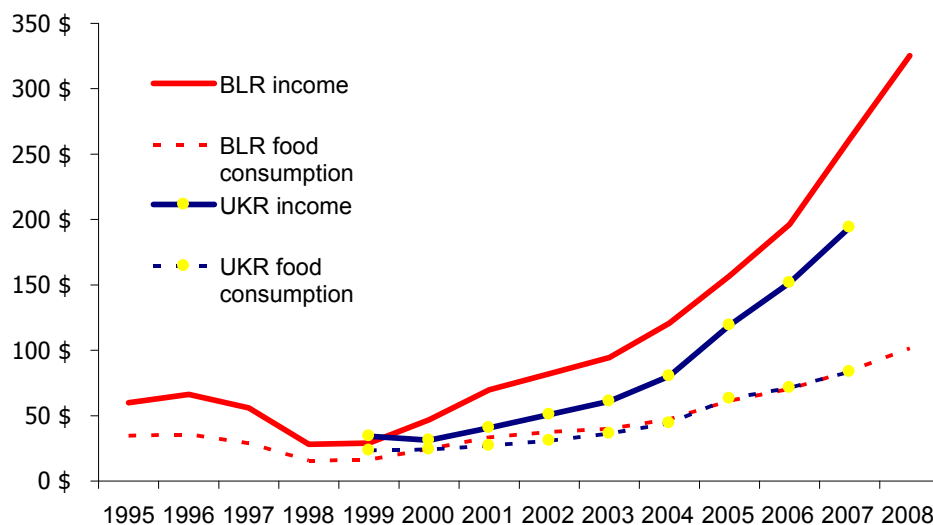


Figure 5.B. SLPs without cattle in Belarus by income deciles (urban households only).



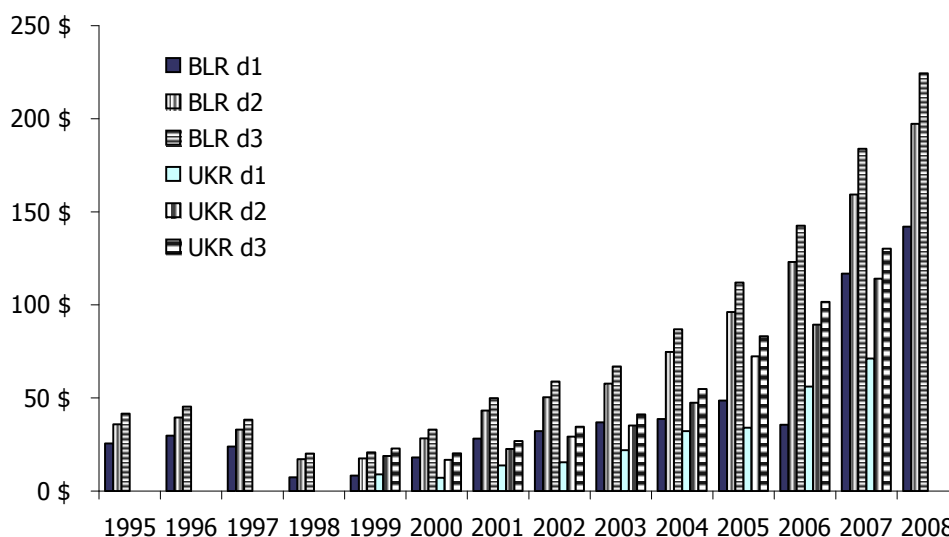
Source: author's own calculations based on BHBS.

Figure 6. Average income and food consumption in Belarus and Ukraine, per household, USD market exchange rate.



Source: author's own calculations based on BHBS and UHBS.

Figure 7. Income in Belarus and Ukraine by deciles¹², per household, USD market exchange rate¹³.

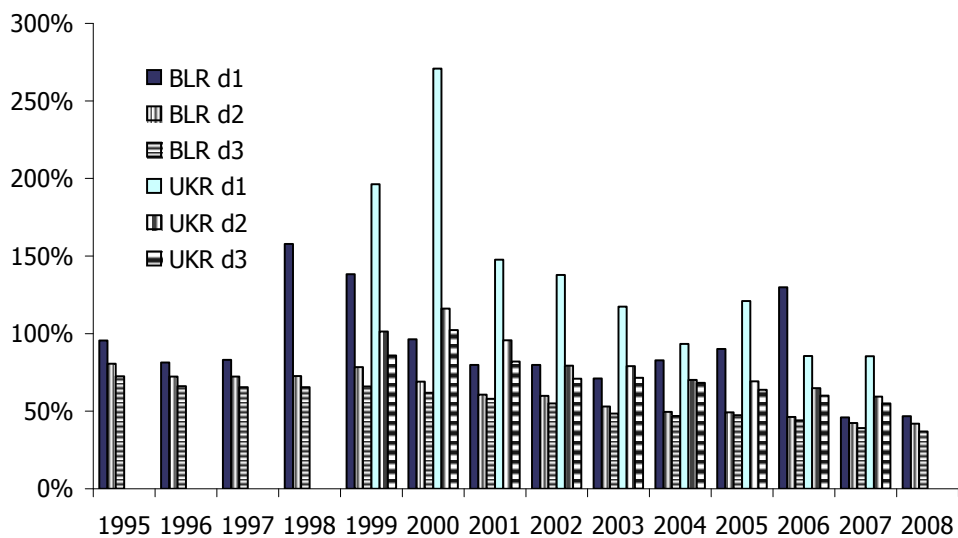


Source: author's own calculations based on BHBS and UHBS.

¹²The deciles are defined by *per capita* net income, while all the figures shown are *per household*, as SLPs are used by the whole household. This might create some distortions (as on average there are more people in the poor households than in the rich ones), but they are minor.

¹³Unusually low income for the bottom decile in 2006 is caused by unusually high number of households that have negative net income, i.e. have to turn to borrowing or selling assets or using some unreported income to cover their expenses. Of course, this has influence on all numbers related to the bottom decile in 2006.

Figure 8. Share of food expenditures in Belarus and Ukraine.



Source: author's own calculations based on BHBS and UHBS.

Figure 9.A. Government support in Belarus and Ukraine by income deciles, per household, USD market exchange rate.

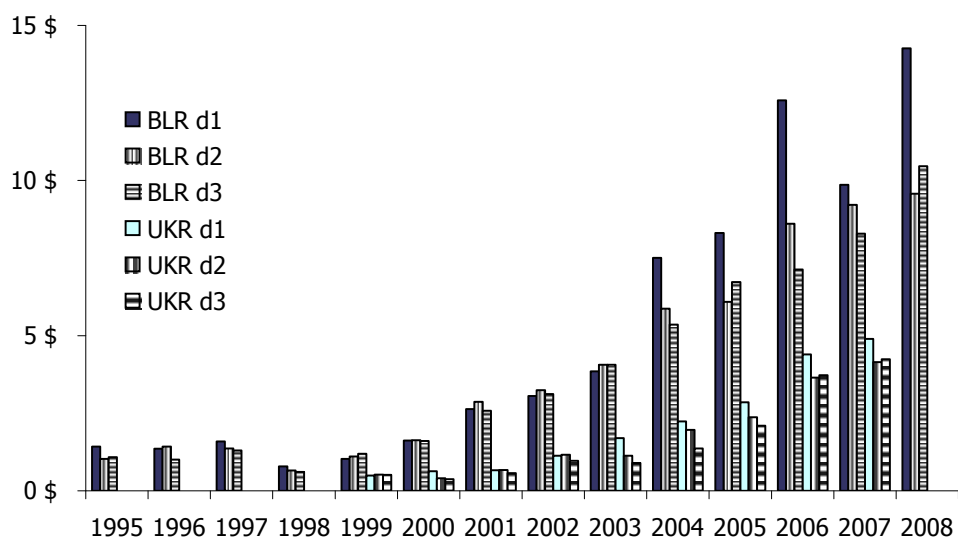
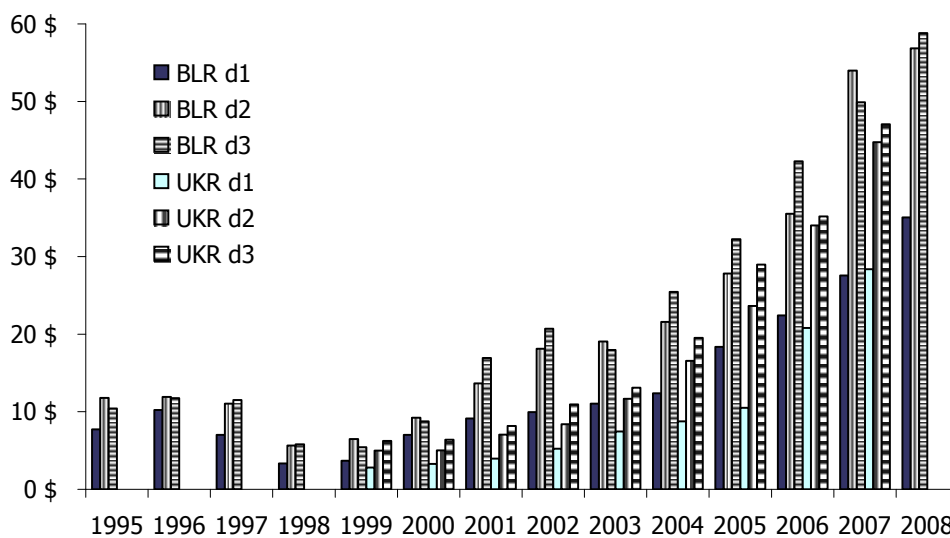
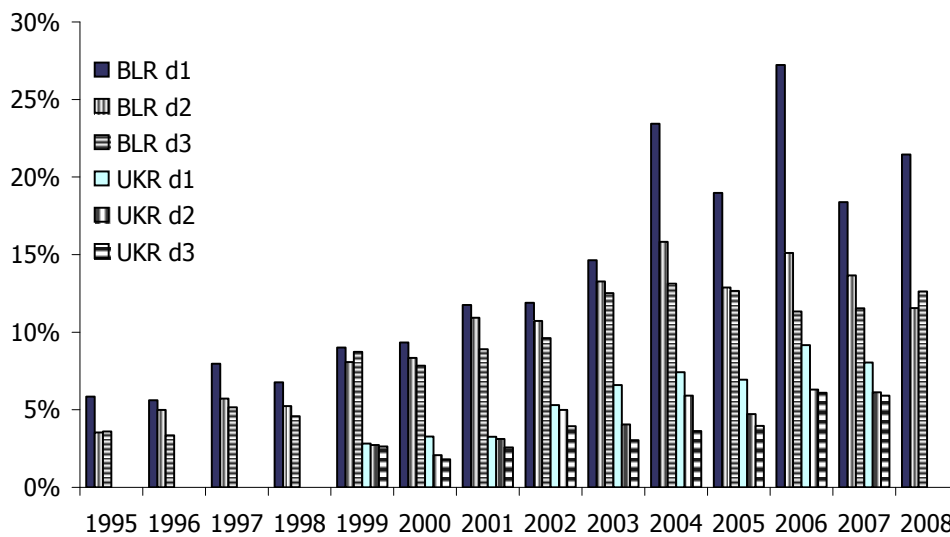


Figure 9.B. Pensions in Belarus and Ukraine by income deciles, per household, USD market exchange rate.



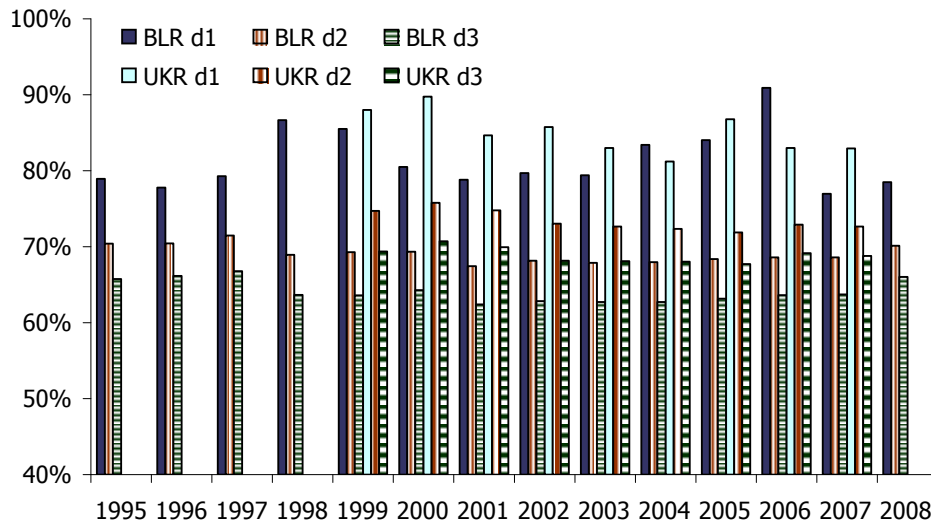
Source: author's own calculations based on BHBS and UHBS.

Figure 10. Government support versus food expenditure in Belarus and Ukraine, by income deciles.



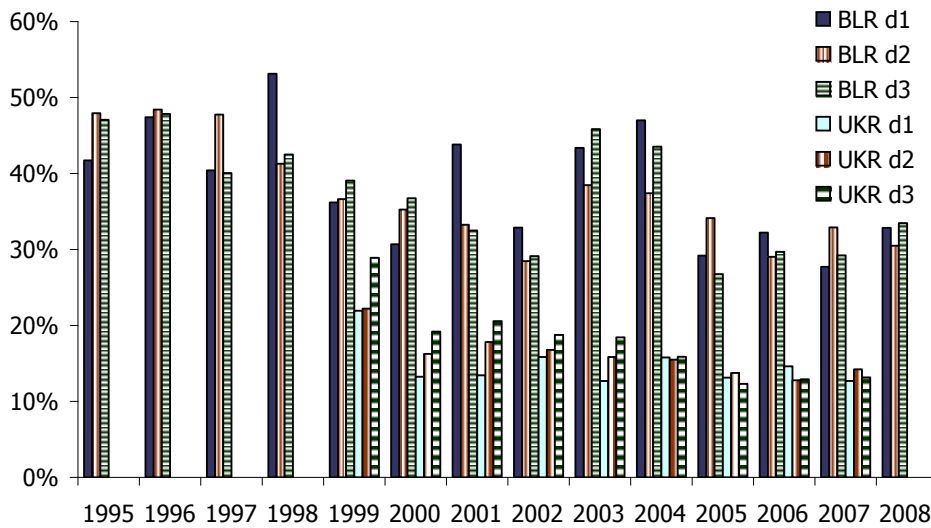
Source: author's own calculations based on BHBS and UHBS.

Figure 11. Income gap relative to the top decile in Belarus and Ukraine.



Source: author's own calculations based on BHBS and UHBS.

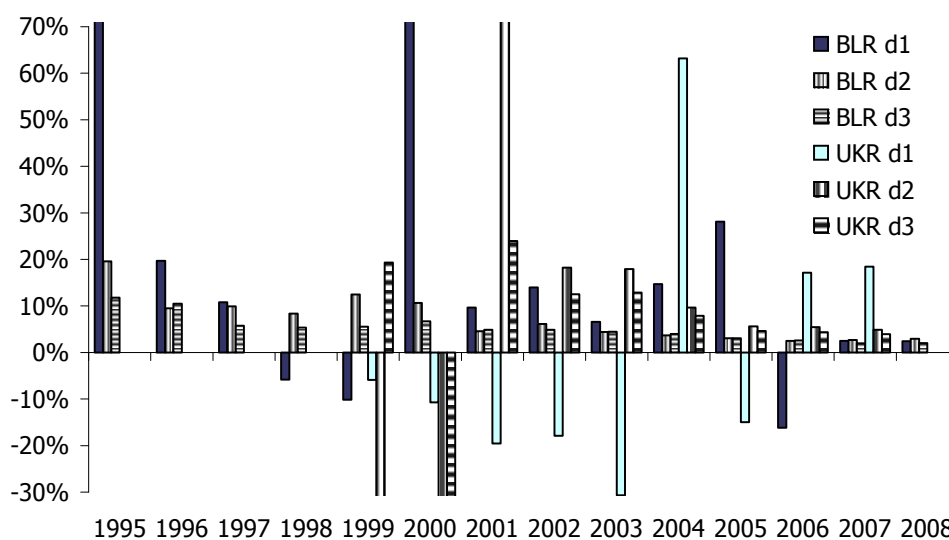
Figure 12. Importance of small land plots for food consumption in Belarus and Ukraine, by income deciles, for those households who have them.



Source: author's own calculations based on BHBS and UHBS.

Note: the importance is defined as the income from SLPs (both in-kind and monetary) divided by the expenditure on food.

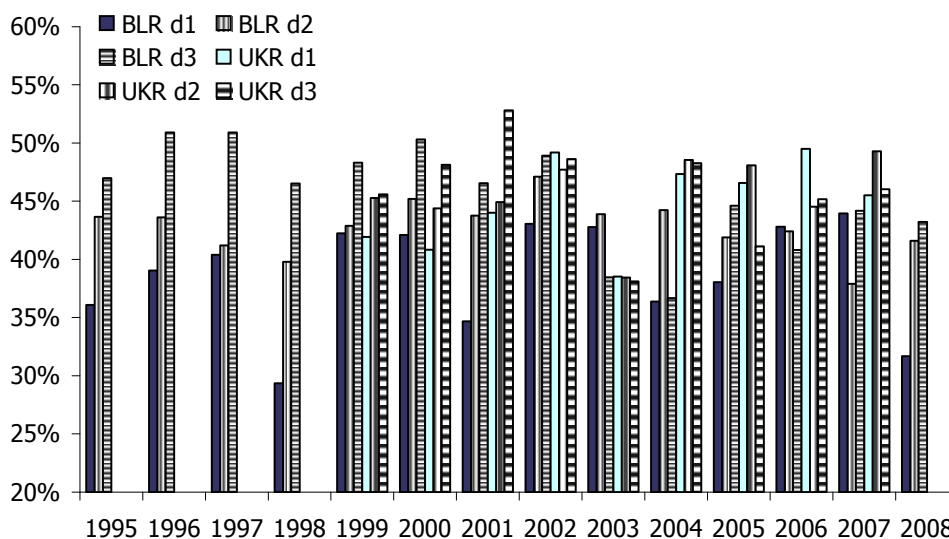
Figure 13. Burden of small land plots in Belarus and Ukraine, by income deciles.



Source: author's own calculations based on BHBS and UHBS.

Note: Negative values mean that food expenditure exceeded income, so the households had to borrow even more to cover the costs of running their small land plots. Only in 2004 in Ukraine the poor could finally afford to have SLPs without borrowing.

Figure 14. SLPs by income deciles.



Source: author's own calculations based on BHBS and UHBS.

Figure 15.A. Relative productivity of small land plots belonging to retired people in Belarus versus Ukraine, by income deciles.

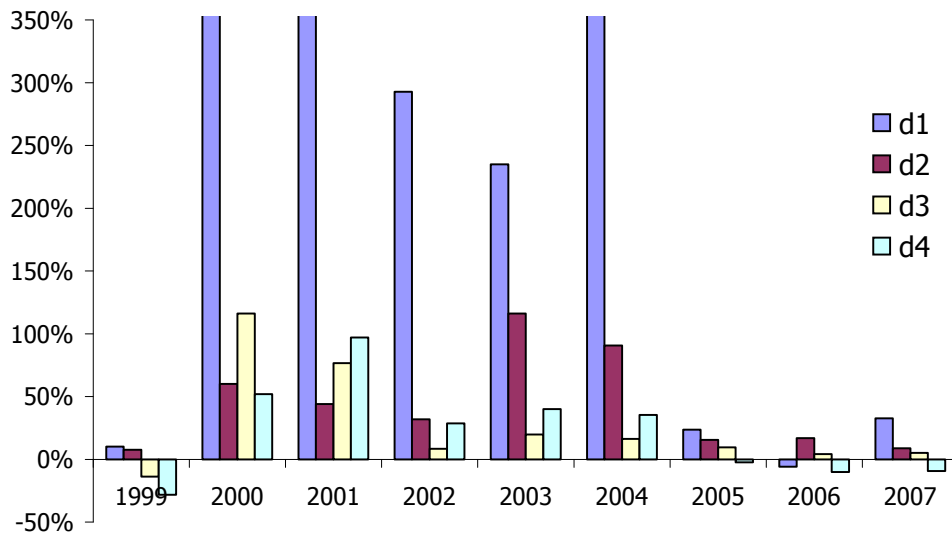
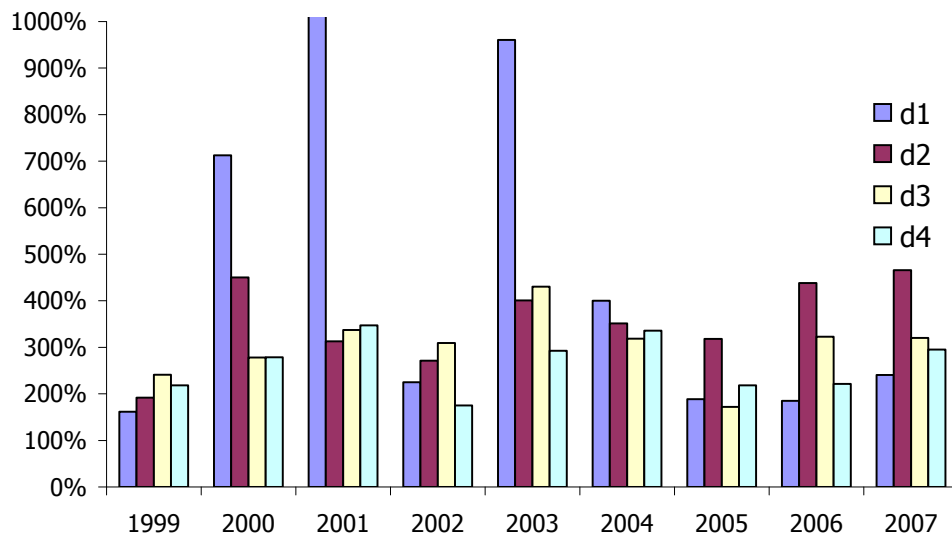


Figure 15.B. Relative productivity of small land plots belonging to working people in Belarus versus Ukraine, by income deciles.



Source: author's own calculations based on BHBS and UHBS.