

## AGRICULTURAL FINANCIAL SYSTEMS IN SLOVENIA AND UKRAINE

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### Abstract

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The paper analyses financial systems for agriculture, their similarities and differences, and comparative advantages with related challenges for future development. The focus is on the comparison between farm structures, financial systems in agriculture and government supports in Slovenia and Ukraine. The farm nature, farm structure and evolution are different between Slovenia and Ukraine. In Slovenia, family farms are the most important in farm structures, while in Ukraine large agricultural enterprises. Different farm organizational structures and farm sizes affect also different financial systems in agriculture. Multifunctional roles of agriculture and for rural development are supported with different agricultural policies and government supports, which is one of the important lessons learned from the comparative analysis.

*Key words:* Farm structure, finance, government support, Slovenia, Ukraine

*JEL Classifications:* Q14, Q18, G21, G28, H25, P52

### Introduction

The paper aims to present and analyse financial systems for agriculture in different countries and their comparative advantages and related challenges for future development. The previous studies have shown that different determinants can shape different agricultural and rural capital and financial markets among the countries (e.g. Miteva, 2005; Bojnec, 2012). The focus of the analysis is on the comparison between farm structures and financial systems in agriculture in Slovenia and Ukraine. Slovenia is a small country and Ukraine is a bigger country. The farm nature, farm structure and evolution are also different between Slovenia and Ukraine. In Slovenia, family farms are the most important in farm structures, while in Ukraine large agricultural enterprises. Different farm organizational structures and farm sizes might affect also different financial systems, which are applied in agriculture. On the contrary to Slovenia, Ukraine is considered as one of the countries with the richest natural agricultural factor endowments with long-term investment opportunities (Global Ag Investments, LLC, 2013). Therefore, we analyze features of

agriculture in Slovenia and Ukraine in terms of their farm organizational structures, their farm size structures and evolution in association with development of an efficient financial system for multifunctional roles of agriculture and for rural development.

### Method

The previous studies of investment behaviour for a sample of Ukrainian large farms 2001–2005 provided empirical evidence for the coexistence of financial constraints and soft budget constraints (Zynych and Odening, 2009). Credit constraints are more important than soft budget constraints. Large farms' investments significantly depend on financial variables in an imperfect capital market in Ukrainian agriculture. The presence of soft budget constraints was identified also for investment behaviour of a sub-sample of large non-private Ukrainian firms (Mykhayliv and Zauner, 2013a, 2013b). Distortions to incentives in Ukrainian agriculture, including for capital market, have been widely analysed in the literature (von Cramon-Taubadel et al., 2001, 2007).

Family farms with off-farm employment and off-farm income are dominant in the Slovenian farming structures (Bojnec and Latruffe, 2013; Bojnec and Fertö, 2013). Slovenian farms' investment decisions were based on market opportunities, ruling out the presence of soft budget constraints, but that these decisions were constrained by the availability of finance (Bojnec and Latruffe, 2011). Slovenian farms have been small and highly subsidized. Investment subsidies received by farms are not found significant for farms' investment behaviours, while operational subsidies for small farms help on the alleviation of financial constraints. The persistence of small farms in Slovenia may be associated with the provision of generous subsidies (Bojnec and Latruffe, 2013).

The financial system is often defined in the literature in a narrow sense, i.e., as a set of financial institutions – markets and intermediaries – through which households, corporations and government obtain funding for their activities and invest their savings (Bodie and Merton, 2000; Allen and Gale, 2001; Hartmann et al., 2003). Some other (e.g., Schmidt and Hackethal, 2006; Hryckiewicz, Schmidt and Tyrell, 2001, 2003) argue that the conceptual starting points are financial decisions and activities of no financial firms and households. From their point of view the concept of the financial system is a broader than previous definition. Within the financial system, they are considering financial relationships of households and firms that occur through the financial sector and outside the financial sector. Examples are real savings, self-financing and self-insurance, and informal and direct lending and borrowing relationships. Financial relations of the state with other economic agents concerning to the flow of financial instruments on non-repayable and non-equivalent fiscal relations have not been considered in the concept of the financial system of a given country or region.

The analysis of literature shows that the concept of the financial system is complex and multifaceted. Definition of the term “financial system” is often missing in fundamental works devoted to the study of the theory and practice of financial systems (Bain, 1996; Buckle and Thompson, 1998).

Based on the definition of “system” as a set of any items, pieces, parts, joined by a common feature, the purpose, we can determine that a common feature of the elements of the financial system is that they provide flow of financial instruments. Under the elements of the financial system should be understood entities of the financial system that have been identified according to harmonization institutional sectors: government, non-financial corporations, financial corporations, households, and non-profit organizations. If we would like to consider the concept of the financial system comprehensively, we should include to the financial system the financial relations of the state with other economic agents con-

cerning to flow of financial instruments on a non-repayable and non-equivalent basis. Therefore, the financial system is the sum of economic entities, which comes together in financial relations according to the flow of financial instruments on the equivalent and non-equivalent basis.

Our aim is to analyze the financial system in agriculture in Slovenia and Ukraine. We aim to analyze the ways in which financial relationships of farms with other economic agents through the financial sector as well as without financial sector on the equivalent and non-equivalent basis are designed and implemented. Therefore, the focus of the analysis is on the comparative analysis of the financial system for agriculture in two countries of different geographical and economic sizes with different agricultural histories and different farm structures during the previous socialist system in the former Yugoslavia (Slovenia) and the former Soviet Union (Ukraine) and after the independence during transition to a market economy and the Slovenian membership in the European Union on 1<sup>st</sup> May 2004. The paper contributes to the analyses on the ways in which farms meet their financial needs through the financial sector, directly with other economic agents and through the budgetary system.

Using the secondary evidence of available data, we compare financial systems for agriculture in Slovenia and Ukraine. Evaluation of the budgetary system is assessed based on the OECD indicators which are available for Slovenia as a member of OECD as well as for Ukraine. One of the most known is the producer subsidy equivalent (PSE).

## Results

### *Farm structures and the role of agriculture in the economy*

Farms structures between Slovenia and Ukraine are substantially different. In Slovenia as well as in the rest of former Yugoslavia and Poland, the communist collectivization process failed and the most agricultural land has always been family farm owned and operated (Bojnec and Swinnen, 1997a; Lerman, 1999; Bojnec, 2013). In Ukraine, similar as in the rest of the Soviet Union and most other Eastern Europe, agricultural land has been collectivized and nationalized into state ownership and operation (e.g. von Cramon-Taubadel et al., 2001). As can be seen from comparative analysis of farm structures between Ukraine and Slovenia in Tables 1 and 2 and Figure 1, Slovenian farms are much smaller than agricultural enterprises in Ukraine. However, according to the agricultural land farm size, rural households' farms in Ukraine are more comparable to the Slovenian farms, which are mostly family owned and operated farms. In Ukraine, this type of small farms play important social buffer role in self-food consumption in rural households and in mitigating of rural poverty. Subsistence farming

is known also in some other countries in the Eastern European region such as in Bulgaria (Mishev and Kostov, 2000).

In the agricultural land use structures, there are mostly legal entities in Ukraine (Table 1). Their share in total agricultural land use was more 60%. However, rural households (family farms) have important role in agriculture in Ukraine. Their percentage indicates substantial importance in Ukrai-

nian agricultural land use structures and increased from 37.4% in 2006 to 38.5% in 2011. They can be also important for cash-flows into rural households' farms by sell of surpluses of agricultural products such as potatoes, fruit, vegetables and milk at local free-markets.

As can be seen from Figure 1, the average size of agricultural enterprises has increased between 2006 and 2011. The

**Table 1**  
**Agricultural land use by categories of farms in Ukraine**

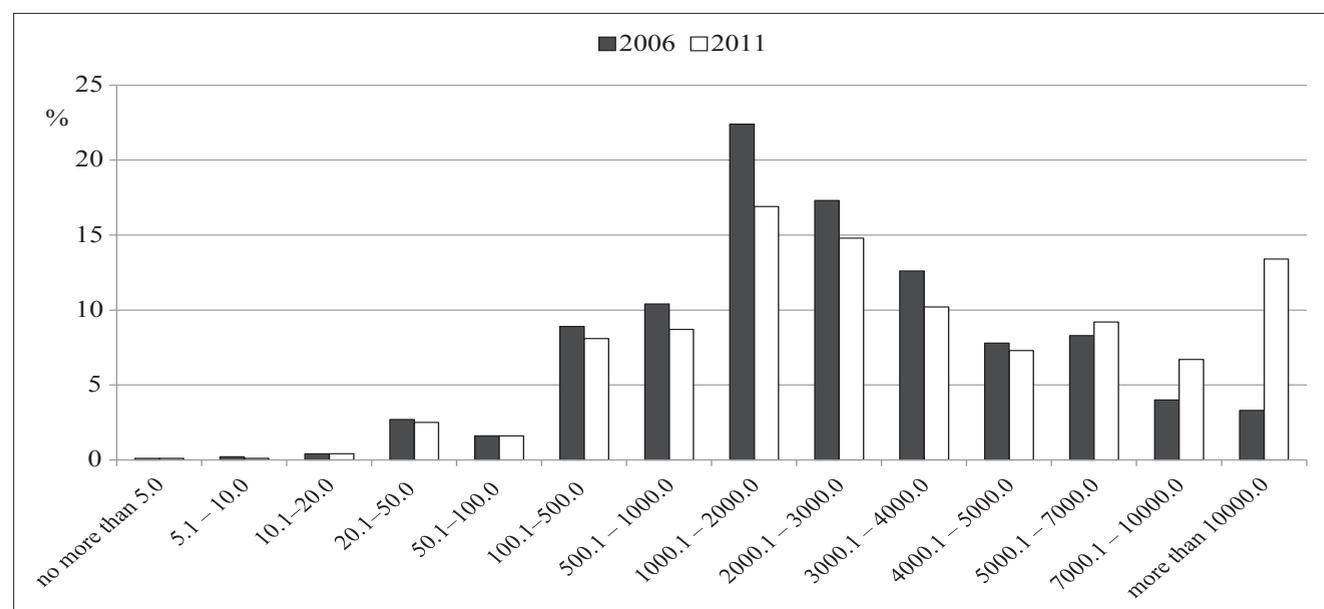
The legal type of farms	2006				2011			
	Number of units	'000 ha	%	Average size, ha	Number of units	'000 ha	%	Average size, ha
Rural households*	15.1**	15602	37.4	1.0	14.4**	15984	38.5	1.1
Private farms***	42932	3972	9.5	93	41488	4346	10.5	105
Private agricultural entities	13030	16051	38.5	1232	12802	15143	36.4	1105
State agricultural enterprises	371	1177	2.8	3173	311	1010	2.4	2691
Enterprises of other types of business	1525	4874	11.7	3196	1532	5074	12.2	991
Total	57858	41676	100	—	56133	41558	100	—

\* Rural households, which own or use the land and their residence is registered in rural settlements.

\*\* The number of rural population (in million).

\*\*\* Private farm is a form of private business of citizens with legal person's right, who has expressed the wish to produce commodity production, to process and sell it with purpose to gain a profit. Citizens carry out their activity on land plots, which were placed at their disposal for farming.

Source: SSSU (2010, 2012a, 2012b)



**Fig. 1. Distribution of agricultural enterprises in operation by the size of agricultural land use in Ukraine**  
Source: SSSU (2012b)

percentage of agricultural enterprises greater than 10000 ha of agricultural land use has also increased from 3.3% in 2006 to 13.4% in 2011. There are the four main factors, which influence on rapid increase of big agricultural enterprises. Firstly, the private enterprises in the agricultural sector were formed, which allowed to merge these forms in the holdings. Secondly, at that time influential and in lobbying powerful capital owners emerged in Ukraine, who aimed to multiply their capital in the long-term perspective. A certain number of large capital owners were from the food industry. They were interested in the vertical integration of agricultural producers to minimize costs. Thirdly, the lack of appropriate institutional and legal conditions for the fully-fledged agricultural land market leads to the opportunity to develop lease market and to lease land for low costs and, consequently, making the agricultural land of unlimited production resources (Oliynyk, 2011). In addition, among the reasons for their rapid increase are migration of labour from rural areas and greater availability of land with opportunities for further large agricultural enterprise concentration. Finally, in privatisation of some agricultural enterprises has been engaged also foreign capital through stock exchange markets (Balmann et al., 2013). Stock exchange markets are one of opportunities for access of capital, which is needed for investments and technological advancements of large commercial agricultural enterprises.

In comparison with Ukraine, Slovenia is a relatively small country and farms are much smaller (Bojnec et al., 2013). Unlike in Ukraine, in Slovenia are prevailing family farms. The average farm size in Slovenia is around 6.4 ha of utilized agricultural area (UAA) and there are only around 100 farms, which are bigger than 100 ha of UAA. This evidence clearly

confirmed substantial structural differences between farms in Slovenia and Ukraine: first, Slovenian farms are family owned and operated farms, and second, they are much smaller by land size than in Ukraine.

Such differences in the agricultural land farm structures affect the financing of farms of the analysed two countries. Bank loans are the major source of finance for agricultural enterprises in Ukraine (EFSE, 2012), while own financial sources from sale of products, subsidies and off-farm incomes for farm investments by family farms in Slovenia (Bojnec and Latruffe, 2011, 2013; Bojnec and Fertő, 2013) (Table 2).

Ukraine is rare countries in Europe with agricultural productivity higher in agriculture than in the rest of the economy. As can be seen from Table 3, the share of employment in agriculture in the economy in Slovenia is higher than in Ukraine by about 2 percentage points. In addition, the percentage of employment in agriculture in the Ukrainian economy decreased from 8.8% in 2006 to 5.9% in 2011. This declined has been caused by the increasing role of the large agricultural enterprises (agroholdings of the average size more than 50000 ha), which have implemented new advanced technologies on a large-scale farms. Consequently, these large-scale agricultural enterprises in Ukraine have shed the labour, which has also migrated out of the rural areas and to abroad. On the other hand, the share of value added of agriculture, forestry and hunting in the gross domestic product of the Slovenian economy is much lower than in Ukraine by 5-7 percentage points. This comparison clearly indicates that labour productivity in agriculture in Slovenia is much lower than in the rest of the Slovenian economy, and vice versa in Ukraine, where agricultural productivity is higher than in the rest of the economy.

**Table 2**  
**Agricultural holdings by size classes of utilized agricultural area (UAA) in Slovenia**

Size classes of UAA (ha)	2000		2005		2010	
	area	agricultural holdings (in 000)	area	agricultural holdings (in 000)	area	agricultural holdings (in 000)
	000 ha		000 ha		000 ha	
Total	485.9	86.5	485.4	77.2	474.4	74.6
<1	4.5	8.0	3.0	5.8	4.1	8.2
1 to < 5	123.0	45.4	110.8	40.1	101.1	37.5
5 to < 10	155.3	22.1	139.3	19.8	122.8	17.5
10 to < 15	82.9	6.9	76.6	6.4	69.7	5.8
15 to < 20	38.2	2.2	41.5	2.4	39.8	2.3
20 to < 30	29.9	1.3	40.5	1.7	45.9	1.9
30 to < 50	13.8	0.4	26.3	0.7	34.3	0.9
50 to < 100	6.4	0.1	13.8	0.2	24.0	0.4
>= 100	31.9	0.07	33.6	0.1	32.8	0.09

Source: SORS (2012)

### Financial system in agriculture in Ukraine

The financial system is understood how farms meet their financial needs through the financial sector, directly with other economic agents and through the budgetary system. Thus, we analyse the main suppliers of agricultural finance.

Figure 2 indicates the share of liabilities in the structure of the balance sheet of agricultural enterprises. They increased from 27% in 2000 to 45% in 2011. This means that the external sources have become very important source of finance for agricultural enterprises. Therefore, Ukraine can be included among the countries with the bank-based financial system for agricultural enterprises, where the banks are the most important source of finance for the corporate farm financing in Ukraine. The increasing share of agricultural farms' liabilities was caused by the introduction of interest rate subsidy programme on one hand, and the emergence and development of large agricultural enterprises on the other. On average, they have relatively high profitability due to a vertically

integrated structure and implementation of new technologies. Relatively high profitability provides incentives for banks to allocate their credit portfolio to such large more profitable agricultural enterprises.

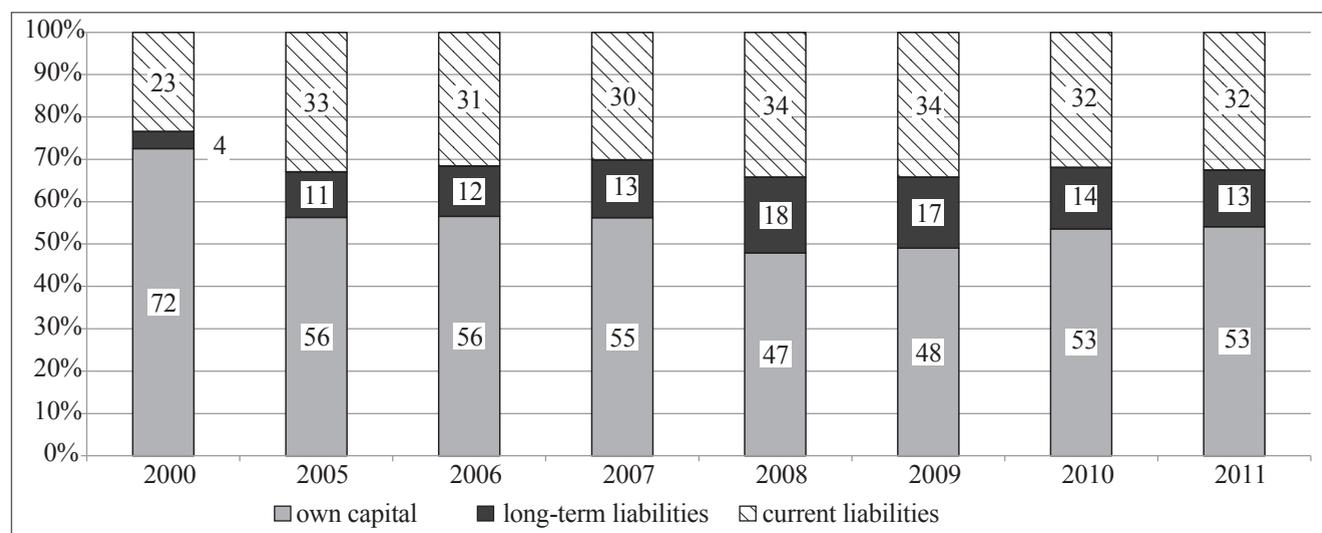
Except for rural households, Ukrainian farms satisfy their need for finance mainly through commercial banks. Other financial institutions such as credit unions, leasing companies, insurance companies and other financial markets play marginal role in funding of farms in Ukraine (Oliynyk and Oliynyk, 2013).

According to the data presented in Figure 2, during the years 2000 - 2011 there was a positive tendency in the value of loans in constant prices for lending to agriculture by commercial banks. The value of loans at constant prices increased by 36 times and it was 25.2 billion UAH in 2011. The main reasons for the increase in the value of loans have been the introduction of the interest rate subsidy programme since 2000, the emergence and development of large enterprises, which have experienced relatively high profitability.

**Table 3**  
The role of agriculture, forestry and fishing in the economy of Ukraine and Slovenia

	2006	2007	2008	2009	2010	2011
Ukraine						
Value added of agriculture in gross domestic product (%)	8.6	7.5	7.9	8.3	8.7	9.6
Employment in agriculture in the economy (%)	8.8	7.6	6.9	6.6	6.2	5.9
Slovenia						
Value added of agriculture in gross domestic product (%)	2.0	2.2	2.0	2.1	2.1	2.3
Employment in agriculture in the economy (%)	9.3	8.8	8.4	8.4	8.4	8.3

Source: SSSU (2012b) and SORS (2012)



**Fig. 2. Structure of agricultural, hunting and forestry enterprise balance sheets in Ukraine**  
Source: SSSU (2012c)

On the other hand, the share of agriculture, hunting and forestry in total loan portfolio of banks has fluctuated during the years 2000-2011 between 3.7% in 2000 and 7.8% in 2003. The highest share of agriculture, hunting and forestry in the structure of the bank loans in 2003 can be explained by significant increase in the government support to agriculture through the interest rate subsidy programme from 120 million UAH in 2002 to 326 million UAH in 2003. Since 2003, this share has tended to decline, particularly by the most recent economic and financial crisis, which has affected the agricultural sector more than some other sectors in the economy. Therefore, in a spite of the increase in the value of loans to agriculture, hunting and forestry in constant prices, their share in total bank loans has declined or stagnating (Figure 3).

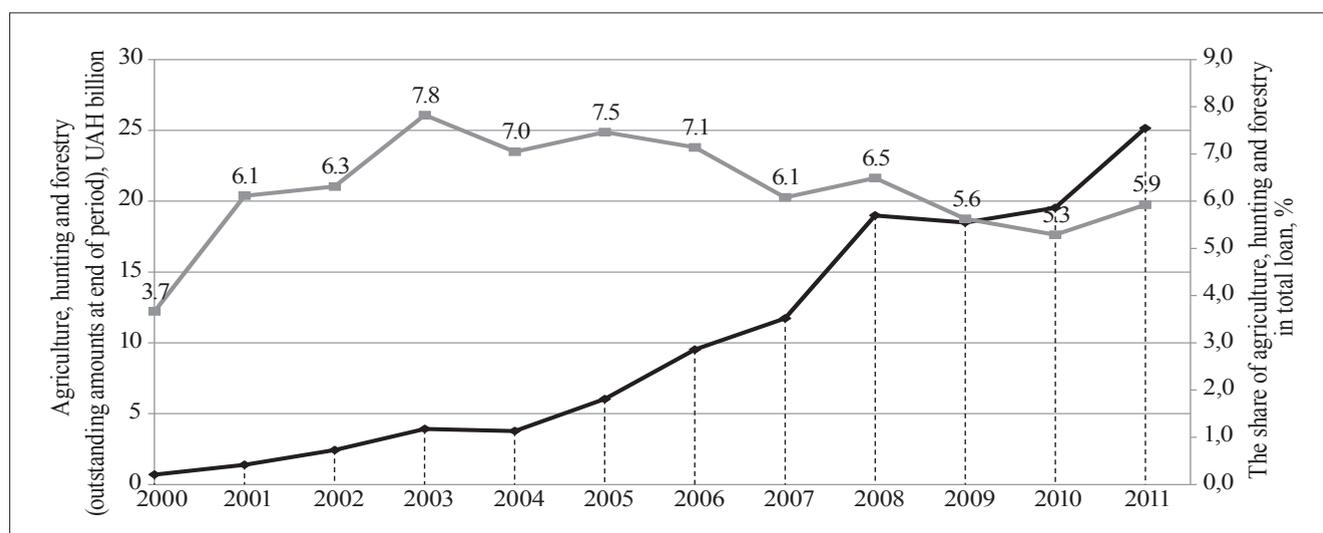
In a spite of the increasing value of loans to agriculture in both current and constant prices, the agro-finance supply of about UAH 34 billion failed to meet short-term demands by agricultural farms, which is estimated at UAH 96 billion (EFSE, 2012). The main obstacles of agricultural lending development in Ukraine are on the supply-side, on the commercial banks, which are facing the lack of specialized risk assessment tools to be used in evaluating business strategies and loan applications of farms. Most of commercial banks due to the lack of understanding of the specificities of agricultural production and the inability to adequately assess the risks associated with farming activities and farmers, they resort to higher interest rates, which in turn lead to a reduction in the demand-side for loans by farms. On the demand-side,

about 35% of all Ukrainian farms are trapped in a vicious circle of low solvency, low yields, low margins, poor management and bad economic performance with low creditworthiness (EFSE, 2012).

Despite the huge natural agricultural factor endowments potentials of Ukrainian agriculture, commercial banks are currently with their loans supply focusing only on the largest agribusiness players. According to the assessments by the Organisation for Economic Cooperation and Development (OECD, 2012a), the European Bank for Reconstruction and Development and the World Bank (EBRD-World Bank, 2009), access to finance is a major obstacle and constraint of agricultural productivity and growth of agribusiness players in Ukraine. This is particularly relevant obstacle for small and medium enterprises (Bojnec et al., 2013).

#### *Financial system in agriculture in Slovenia*

The prevailing family farms in Slovenia largely relies on own capital. Table 4 clearly indicates that total farm liabilities for most of the farms included in the Slovenian Farm Accountancy Data Network (FADN) are much lower than is the annual total farm output. Total farm liabilities are defined as value at closing valuation of total of long-, medium- or short-term loans still to be repaid. Total farm output is defined as total farm output of crops and crop products, livestock and livestock products and of other output. The ratio of total farm liabilities to total farm output for the Slovenian FADN sample of farms decreased rapidly from 75.6% in 2004 to 29.7%



**Fig. 3. The loan portfolio of commercial banks to agriculture, hunting and forestry in Ukraine, in constant prices of the year 2000\***

\*Loans deflated using price indices for industrial production (2000 = base period).

Source: National Bank of Ukraine (2012)

in 2005, and later stabilized at 16.8% in 2010. In addition to the changes in the FADN sample size and its farm structures, this reduction can be explained on the farm demand side by the entry of Slovenia into the Common Agricultural Policy (CAP) of the EU with a greater shift of policy support from market price support to direct payments on one hand, and by possible supply-side effects by banks, which less their credit potential allocated to agriculture. Particularly during the most recent years, the Slovenian banks, particularly state-owned banks, in general have faced difficulties to serve the economy, including agriculture, with loans.

The Slovenian FADN farms are also relatively less indebted. Total farm liabilities to total farms assets were around 2.5% for the sample of the Slovenian FADN farms during the years 2004-2010 (Table 5). As total farm assets are taken into account only fixed assets and current assets in farm ownership.

#### **Government support to agriculture**

Different indicators can be used to evaluate and compare the developments in government transfers and the distributional effects from agricultural policies. The Organisation for

Economic Co-operation and Development (OECD) uses indicators of agricultural support, which are comparable over time and between countries. Among the most popular is Producer Support Estimate (PSE), which measures the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm-gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income. PSE values are calculated by adding to the market price support the value of transfers to producers from other policies (OECD, 2011).

The publication of internationally comparable PSE figures has increased transparency on the nature and incidence of agricultural policies in OECD countries. In addition to the OECD countries, the PSEs have been also calculated for some emerging economies such as Brazil, China, Russia, Ukraine and South Africa.

The PSE concept has also contributed to establishing a base for internationally binding commitments on domestic support measures through the Aggregate Measure of Support (AMS) in the Uruguay Round of trade negotiations of the

**Table 4**  
**Total farm liabilities to total farm output for the Slovenian FADN sample of farms**

	Number of observations	Mean	Standard Deviation	Minimum	Maximum
2004	494	0.7562	72 958	0.0000	1 555 711
2005	658	0.2966	0.8967	0.0000	160 000
2006	723	0.2712	0.8616	0.0000	113 979
2007	747	0.1683	0.6491	-0.0344	125 561
2008	821	0.1359	0.3885	0.0000	57 676
2009	856	0.1527	0.4958	-20 234	71 449
2010	956	0.1683	0.6168	-0.7832	94 524
2004-2010	5255	0.2462	23 280	-20 234	1 555 711

Source: Slovenian FADN data sample

**Table 5**  
**Total farm liabilities to total farms assets for the Slovenian FADN sample of farms**

	Number of observations	Mean	Standard Deviation	Minimum	Maximum
2004	494	0.0359	0.0670	0.0000	0.4965
2005	658	0.0319	0.0706	0.0000	0.8109
2006	723	0.0267	0.0662	0.0000	0.7862
2007	747	0.0228	0.0597	0.0000	0.8648
2008	821	0.0208	0.0519	0.0000	0.5752
2009	856	0.0215	0.0545	0.0000	0.4428
2010	956	0.0228	0.0667	0.0000	0.8081
2004-2010	5255	0.0252	0.0624	0.0000	0.8648

Source: Slovenian FADN data sample

World Trade Organization (WTO). The summary measure, the relative PSE or %PSE (expressed as a percentage of the gross support transfers to farmers in the value of the farmers' gross receipts), is frequently cited in the international debate on agricultural policies, and used as a yardstick of policy "misconduct", i.e., unfair competition with farmers in unsubsidizing countries (Blandford et al., 2008).

The percentage PSE (%PSE) is often used for international comparisons. A %PSE of 20% means that 20% of gross farm receipts come from transfers due to policy measures supporting producers. A % PSE of 0% indicates that the estimated aggregate value of transfers to producers from consumers and taxpayers is zero. A %PSE cannot be higher than 100%, at which level all farm receipts come from policy measures, with no returns from the market (OECD, 2011).

Figure 4 compares the %PSE between the EU and Ukraine over time. Three main features are evident. First, the government transfers to farms in Ukraine average have been relatively lower than the government transfers from consumers and taxpayers than for the EU's farms. Second, there has been convergence in the %PSE as the government support to agriculture in the EU has declined, particularly since the EU enlargement from 33% in 2004 to 20% in 2010. While the %PSE for Ukraine oscillates by individual years, since 2004 it tends to increase slightly closer to the EU levels. Finally, the higher volatility in the % PSE in Ukraine over time implies unsystematic government supports to agriculture with a lack of stability of agricultural policy in Ukraine. A substantial volatility in government support to agriculture in Ukraine in comparison with the EU in the case of Ukraine confirmed that the exist-

tence of budgetary spending and its growth could not guarantee stability in government assistance to agriculture, if there are some other ad hoc policy measures (Figure 4).

Figure 5 presents the composition of the PSE in Ukraine during the years 2000-2010. According to this data payments based on output (mainly for livestock products) and input subsidies were Ukraine's principal instruments of government support to agriculture, especially during the years 2007-2010, where they accounted for a slightly more than 70% of the Ukrainian PSE. The bulk of this support is based on budgetary revenue foregone as opposed to actual budgetary spending. This is implemented through specific procedures to use the Value Added Tax (VAT) due from agricultural producers and processors (Kvasha and Oliynyk, 2011; Oliynyk, 2012).

Market price support has significantly affected the total amount of the Ukrainian PSE as only this component of the PSE has been subjected to negative values as the impact on PSE due to lower domestic than world prices for some agricultural products. For comparison, in OECD countries market price support has been recorded as a positive value, which has amounted between 44 and 60% of total PSE. In Ukraine only in 2001, 2005-2006 and 2009-2010 domestic prices exceed world prices of agricultural products, which are considered for the PSE calculations. The market price support in Ukraine was close to zero in 2000, and 2002-2003. The main strategic objective of Ukraine should be development and implementation of long-term strategy of agricultural and rural development that would allow carrying out a transparent agricultural policy focusing on a greater stability and sustainability in competitive agricultural and rural development.

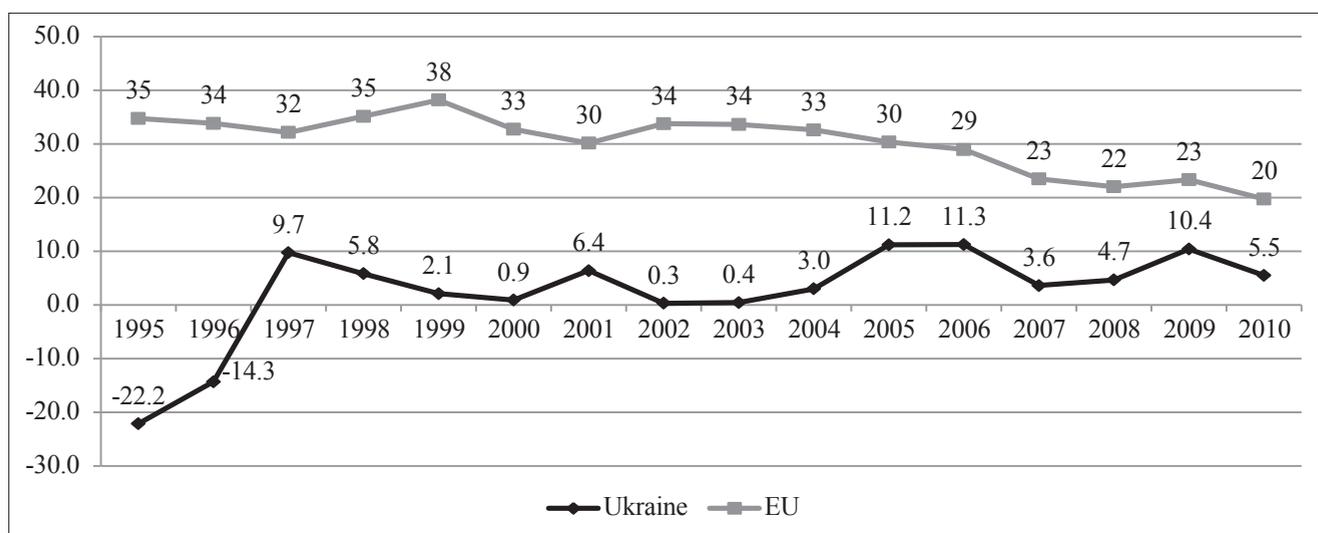


Fig. 4. Percentage PSE in Ukraine and EU countries (%PSE)

Source: OECD, [http://stats.oecd.org/Index.aspx?DataSetCode=MON20113\\_1](http://stats.oecd.org/Index.aspx?DataSetCode=MON20113_1)

Support to Slovenian agriculture has always been relatively high (Bojnec and Swinnen, 1997b; OECD, 2001; MAT and AIS, 2012), while the international competitiveness of Slovenian farms relatively low (Bojnec, 2001; 2002) with implications for Slovenian agricultural accession to the EU (Erjavec et al., 1999; Bojnec and Münch, 2001; Regorsek et al., 2011).

During the pre-accession period to the EU membership in 2004, the percentage PSE for Slovenian agriculture was close to the EU levels (Figure 4 and Table 6). During that period

most of support to agriculture was through market price support or higher domestic than world market prices.

With the entry of Slovenia in the EU in 2004, Slovenia has adopted the CAP of the EU and adjusted its policy implementation to the CAP. The market price support has declined, while the budgetary support for agriculture through financing and co-financing with EU funds has increased up to the economic recession in 2009 and since then has declined (Table 7). The relative importance of budgetary support for market

**Table 6**  
**Aggregate Producer Support (PSE) Estimate for Slovenian agriculture during the pre-accession period**

	1992	1993	1994	1995	1996	1997	1998	1999
Percentage PSE	35	28	32	37	29	37	46	52
% of market price support	78.2	79.8	84.1	85.8	81.3	82.6	84.9	85.2
% of budgetary support	21.8	20.2	15.9	14.2	18.7	17.4	15.1	14.8

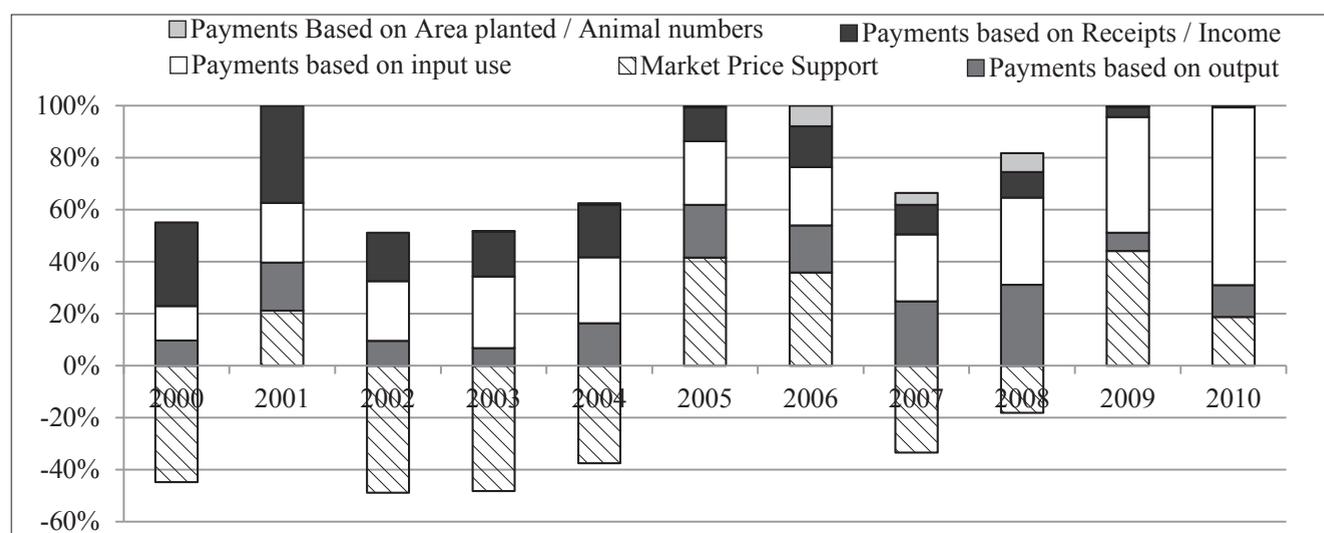
Source: OECD (2001, p. 120 and p. 122)

**Table 7**  
**Budgetary payments for support to agriculture in Slovenia (million euro), 2007-2011**

	2007	2008	2009	2010	2011
Budgetary support to agriculture (million euro at current prices)	313.9	397.6	404.3	355.7	348.6
Budgetary support to agriculture (million euro at 2011 constant prices)*	348.4	418.1	421.6	363.3	348.6
% for market measures and direct payments to producers	31.0	46.0	44.3	45.8	46.2
% for rural development and agricultural structural policy	55.9	43.0	44.9	42.1	41.1
% for general services in support to agriculture	13.1	11.0	10.8	12.1	12.7
Total (%)	100.0	100.0	100.0	100.0	100.0

\* Deflated by the harmonized consumer price index (2011=100).

Source: MAT-AIS (2012)



**Fig. 5. The structure of the PSE in Ukraine during the years 2000-2010**  
Source: OECD, [http://stats.oecd.org/Index.aspx?DataSetCode=MON20113\\_1](http://stats.oecd.org/Index.aspx?DataSetCode=MON20113_1)

measures and direct payments to producers has increased, but with considerable changes in the structures. The market support measures have almost disappeared since 2007. At the same time, there has been a substantial switch from farm payments coupled to production to direct payments decoupled from production.

The budgetary support for rural development and agricultural structural policy increased up to the years 2007-2009, when there has been both absolute and relative decline in the measures for restructuring and for payments to areas with limited natural factor endowments for agricultural production. Payments for ecological measures and measures for support of rural development have remained at similar levels or a slightly increased.

A slight increase in budgetary support for general services in support to agriculture has been due to an increase of support for control over food safety and food control. On the other hand, the largest percentage for research, development, advices and similar services has remained rather stable as it holds for a relatively smaller share of budgetary support for other general services.

## Conclusion

Historical experience and practice of agricultural enterprises in Ukraine and family farms in Slovenia confirm that their operation and survival have largely been determined by the existence of state support. Each year the countries spend a significant part of government budget for different supports in agriculture. Many small and medium-sized (SME) farms in Ukraine need input and output market outlets and financial infrastructure to support their development.

The Ukrainian farms' investments rely largely on access to loans and borrowed capital and thus capital market imperfections are one of the major constraints that are faced by farms. In Slovenia, large parts of farm incomes are from government subsidies and off-farm incomes, which can mitigate capital market imperfections for farms.

Slovenia is a member of the EU. Ukraine can learn from Slovenia to adopt the EU experience concerning to the issues that need to be improved in Ukraine, particularly regarding agricultural and rural development policies and budgetary support to agriculture.

Slovenia is of interest for Ukraine as a country with developed small-scale agriculture, which in Ukraine is represented by a large number of rural households as small family farms. Consequently, sustainable approach to finance family farms in Slovenia can be useful for adaptation in Ukraine.

Development and implementation of an effective financial system for agriculture in Slovenia and Ukraine can optimize

financial resources for agriculture and rural development, and bring them to a qualitatively new stage of development. Creation of an effective financial system for agriculture and rural development requires a set of measures of legal, organizational, institutional, financial and economic issues, which differ between the countries. The implications are for their consideration for creating an effective financial system for agriculture and rural economy in its sustainable development.

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## References

- Allen, F. and D. Gale**, 2001. Comparing financial systems: a survey. Philadelphia: University of Pennsylvania Wharton School.
- Bain, A.**, 1996. The Economics of the Financial System. Cambridge MA: Blackwell, 2<sup>nd</sup> ed.
- Balmann, A., K. Kataria, F. Schaft and I. Kulyk**, 2013. Efficiency and productivity of Ukrainian Agrohholdings, Paper presented at the 2013 IATRC Symposium, Productivity and Its Impacts on Global Trade, Factor Markets session, June 2-4, 2013, Seville, Spain.
- Blandford, D., R. Brunstad, I. Gaassland and E. Vardal**, 2008. Optimal agricultural policy and PSE measurement: an assessment and application to Norway. The 82nd Annual Conference of the Agricultural Economics Society Royal Agricultural College 31st March to 2nd April 2008.
- Bodie, Z. and R. Merton**, 2000. Finance. Upper Saddle River, New Jersey: Prentice Hall.
- Bojnec, Š.**, 2001. Agro-food competitiveness in Slovenia: The policy analysis matrix approach. *Bulgarian Journal of Agricultural Science*, 7 (4-5): 351-364.
- Bojnec, Š.**, 2002. Agricultural and food competitiveness in transition Central and Eastern European countries: social profit rate and domestic resource cost approaches. *Agricultural Economics Review*, 3 (2): 5-22.
- Bojnec, Š.**, 2012. Agricultural and rural capital markets in Turkey, Croatia and the FYR of Macedonia. *Agricultural Economics - Czech*, 58 (11): 533-541.
- Bojnec, Š.**, 2013. Land endowments and land market policies in Croatia, FYR of Macedonia and Turkey. *Bulgarian Journal of Agricultural Science*, 19 (3): 387-397.
- Bojnec, Š. and I. Fertő**, 2013. Farm income sources, farm size and farm technical efficiency in Slovenia. *Post-Communist Economies*, 25 (3): 343-356.
- Bojnec, Š. and L. Latruffe**, 2011. Financing availability and investment decisions of Slovenian farms during the transition to a market economy. *Journal of Applied Economics*, 14 (2): 297-317.
- Bojnec, Š. and L. Latruffe**, 2013. Farm size, agricultural subsidies and farm performance in Slovenia. *Land Use Policy*, 32:

- 207–217.
- Bojnec, Š. and W. Münch**, 2001. Some implications of Slovenian agricultural accession to the European Union. *Eastern European Economics*, **39** (1): 19–38.
- Bojnec, Š. and J.F.M. Swinnen**, 1997a. Agricultural privatisation and farm restructuring in Slovenia. In: Swinnen, J.F.M., Buckwell, A. and Mathijs, E. (Eds.), *Land Reform, Agricultural Privatisation and Farm Restructuring in Central and Eastern Europe*. Aldershot: Avebury.
- Bojnec, S. and J.F.M. Swinnen**, 1997b. Patterns of agricultural price distortions in Central Europe. *Food Policy*, **22** (4): 289–306.
- Bojnec, Š., S. Kvasha and O. Oliynyk**, 2013. Comparative evaluation of financing small and medium farms in Ukraine and Slovenia. *EARTH Bioresources and Life Quality*, **2** (1), 3: 1–13.
- Buckle, M. and J. Thompson**, 1998. The UK financial system. Theory and practice. Manchester University Press, 3<sup>rd</sup> ed.
- EBRD-World Bank**, 2009. BEEPS 2009. Internet website: <http://beeps.prognoz.com/beeps/Home.ashx>.
- EFSE**, 2012. Potential for agricultural finance in Ukraine: Study paper. EFSE. Internet website: [http://www.efse.lu/media/pdfs/studies/other\\_sector\\_studies/potential-of-agricultural-finance-in-ukraine\\_efse-df\\_2012\\_eng.pdf](http://www.efse.lu/media/pdfs/studies/other_sector_studies/potential-of-agricultural-finance-in-ukraine_efse-df_2012_eng.pdf).
- Erjavec, E., M. Rednak, J. Turk and T. Volk**, 1999. Examining feasible income effects of Slovenian agriculture in the light of future accession to EU. *Bulgarian Journal of Agricultural Science*, **5** (2): 278–290.
- Global Ag Investments, LLC**, 2013. Ukraine Agriculture and Investment Opportunities: Why Ukraine? Available at the website: <http://www.globalaginvestments.com/Ukraine%20Agriculture%20and%20Investment%20Opportunities.htm>.
- Hartmann, P., A. Maddaloni and S. Manganeli**, 2003. The Euro Area Financial System: Structure, Integration and Policy Initiatives. Working paper No. 230. Frankfurt: European Central Bank.
- Kvasha, S. and O. Oliynyk**, 2011. The analysis of budget support efficiency of agriculture in Ukraine. Conference proceeding: Economics of agriculture and environmental sciences in the context of globalization and regional challenges – Kyiv, Ukraine.
- Lerman, Z.**, 1999. New farm structures in the FSU: has efficiency begun to change? *Bulgarian Journal of Agricultural Science*, **5** (2): 236–246.
- MAT-AIS**, 2012. Poročilo o stanju kmetijstva, živilstva, gozdarstva in ribištva v letu 2011 (Report of situation in agriculture, food, forestry and fishery in 2011). Ljubljana: Ministry of Agriculture and the Environment – Agricultural Institute of Slovenia.
- Mishev, P. and Ph. Kostov**, 2000. Subsistence farming in Bulgaria – trends and prospects. *Bulgarian Journal of Agricultural Science*, **6** (1): 65–74.
- Miteva, A.**, 2005. Status and problems of development of agricultural financing in Bulgaria. *Bulgarian Journal of Agricultural Science*, **11** (1): 79–86.
- Mykhayliv, D. and K.G. Zauner**, 2013a. Investment behaviour, corporate control, and private benefits of control: evidence from a survey of Ukrainian firms. *Bulletin of Economic Research*. DOI: 10.1111/boer.12001.
- Mykhayliv, D. and K.G. Zauner**, 2013b. Investment behavior and ownership structures in Ukraine: Soft budget constraints, government ownership and private benefits of control. *Journal of Comparative Economics*, **41** (1): 265–278.
- National Bank of Ukraine**, 2012. Bulletin of the National Bank of Ukraine. Kyiv.
- OECD**, 2001. Review of Agricultural Policies: Slovenia. Paris: OECD.
- OECD**, 2011. OECD's producer support estimate and related indicators of agricultural support. Concepts, Calculations, Interpretation and Use (The PSE Manual). Paris: OECD.
- OECD**, 2012a. Competitiveness and Private Sector Development: Ukraine 2011 Sector Competitiveness Strategy. Paris: OECD.
- OECD**, 2012b. Implementing Credit Guarantee Schemes in Ukraine: The Case of Agribusiness, Private Sector Development, Policy Handbook. Paris: OECD.
- Oliynyk, O.**, 2011. The impact of agroholding activity on rural areas development in Ukraine. Conference proceeding: Development prospects of rural areas lagging behind in the CEE region – Gödöllő, Hungary.
- Oliynyk, O.**, 2012. The estimate of support to agriculture in Ukraine using OECD indicators. *Folia Pomeranae Universitatis Technologiae. Oeconomica*. **69**: 59–69.
- Oliynyk, O. and L. Oliynyk**, 2013. Evaluating financial intermediation for agriculture in Ukraine. - Conference proceeding: Business Management- Practice and Theory in the 21st Century – Nitra, Slovak Republic.
- Regorsek, D., E. Erjavec, M. Kožar and S. Kavcic**, 2011. Economic effects of integration and reform processes – partial equilibrium approach. *Bulgarian Journal of Agricultural Science*, **17** (6): 721–729.
- Schmidt, R. and A. Hryckiewicz**, 2006. Financial Systems – Importance, Differences and Convergence. Institute for Monetary and Financial Stability. Working Paper Series No. 4.
- Schmidt, R. and M. Tyrell**, 2003. What constitutes a financial system in general and the German financial system in particular? Working Paper Series No.111. Finance & Accounting.
- Schmidt, R., A. Hackethal and M. Tyrell**, 2001. The Convergence of Financial Systems in Europe. Working Paper Series No. 75. Finance & Accounting.
- SSSU**, 2010. Statistical Yearbook of 2009 “Agriculture of Ukraine”. Kyiv: State Statistics Service of Ukraine.
- SSSU**, 2012a. Main Agricultural Characteristics of Households in Rural Areas in 2011. Kyiv: State Statistics Service of Ukraine.
- SSSU**, 2012b. Statistical Yearbook of 2011 “Agriculture of Ukraine”. Kyiv: State Statistics Service of Ukraine.
- SSSU**, 2012c. The Statistical Yearbook of Ukraine for 2011. Kyiv: State Statistics Service of Ukraine.
- von Cramon-Taubadel, S., O. Niviyevskiy, E. Elsner von der Malsburg and V. Movchan**, 2007. Distortions to Agricultural Incentives in Ukraine, Agricultural Distortions Working Paper 06. Washington, DC: The World Bank. Available at the website: [http://siteresources.worldbank.org/INTRADERESEARCH/Resources/544824-1146153362267/Ukraine\\_0807.pdf](http://siteresources.worldbank.org/INTRADERESEARCH/Resources/544824-1146153362267/Ukraine_0807.pdf).
- von Cramon-Taubadel, S., S. Zorya and L. Striewe**, (eds.) 2001. Policies and Agricultural Development in Ukraine. Göttingen and Kyiv. Available at: [http://www.policy.hu/kobzev/Agrarbook\\_2001.pdf](http://www.policy.hu/kobzev/Agrarbook_2001.pdf).
- Zinych, N. and M. Odening**, 2009. Capital market imperfections in economic transition: empirical evidence from Ukrainian agriculture. *Agricultural Economics*, **40** (6): 677–689.