

COMPARATIVE ANALYSIS OF DEBT FINANCING MODELS IN CZECH AND UKRAINIAN AGRICULTURE

Olena Oliynyk-Dunn¹, Viktor Adamenko², Pavel Zufan³

¹Department of Banking, Faculty of Economics, National University of Life and Environmental Sciences of Ukraine, Heroyiv Oborony str., 11, Kyiv, 03041, Ukraine

²Department of Economics and Business Finance, Faculty of Economics, Management and Psychology, Kyiv National University of Trade and Economics, Kyoto str., 19, Kyiv, 02156, Ukraine

³Department of Management, Faculty of Business and Economics, Mendel University in Brno, Zemedelska 1, 613 00 Brno, Czech Republic

Abstract

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The paper defines the essence of financing models (financing patterns) from the viewpoint of different scientific approaches. Using the operational viewpoint it then analyses the use of different financing model by large and medium-sized agricultural enterprises of Ukraine and the Czech Republic. Based on this analysis, there are identified the basic financing models in Czech and Ukrainian agriculture. The changes that occurred in the role of the debt financing model for enterprises in the sector in both countries are determined. The role of debt financing model for agricultural enterprises in Ukraine, in contrast to the Czech Republic, significantly increased in recent years. The causes of this phenomenon are associated with the deterioration of the development of the financial system in the country, which also projects into worsening conditions for self-financing. It is the sign of a systemic crisis in agriculture. But in the Czech Republic the role of equity financing model of agricultural enterprises increased on the background of improving conditions for self-financing and, consequently, increasing their independence from creditors. The volume of liabilities is distributed between the agricultural enterprises very unevenly (especially in Ukraine), and it reflects not only the existing differentiation of size of these enterprises, but different access to external funds in general. The results of the paper deny the findings of some researchers that in countries with a less developed economy and financial system, the role of debt financing model is lower due to a lack access to the loans.

Keywords: Debt financing model; Equity financing model; Operational approach; Financial decision making; Regression model; Lorenz curve.

INTRODUCTION

Agriculture is considered the main driver of the Ukrainian national economy due to natural agricultural factor endowments, it is capable of providing technology, investment and socio-economic recovery in the country. The share of agriculture in gross domestic product (GDP) of Ukraine is about 20%. The sector represents more than 20% of the country's export. However, one of the essential factors, that are constraining the formation of an effective competitive,

environmentally sound and socially aiming sustainable agriculture in Ukraine, is the presence of significant constraints of access to finance for agricultural producers.

The Czech agriculture, though, is in a rather different situation. Its share on Czech GDP is about 3%, and the share on employment is even lower. Share of agriculture on the total export is about 5% (import about 6%). But even though the position differs, agriculture still remains a very important sector of the economy due to the character of

the product. And the important factors enabling competitiveness, social responsibility, and sustainability remain the same, as well-including access to finance.

This problem is also related to the imperfections of the existing financial system and financing models. It might be possible to overcome these imperfections through structural adjustment and innovation-based agricultural financial system supported with an appropriate scientific argumentation. Financing models of agriculture represent an important field of interest of scientific experts. The example of that is the report "Innovative Agricultural SME Finance Models", which tries to answer the question "What innovations can help bankers in developing countries, who wish to finance agricultural small and medium enterprises (SMEs)?" by isolating promising cases of emergent and innovative financing, risk mitigation, and distribution models (IFC, 2012).

Recent scientific literature presents rather diverse approaches to the nature and classification of financing models (financing patterns). Some studies only mention that they consider mostly external financing with a focus on equity and external debt (Beck *et al.*, 2008), others differentiate financial patterns based on the type of financial system of a country (bank-based or market-based) – e.g. Hackethal *et al.* (2004), who show that the differences between the financing patterns used in three selected countries (U.S.A., Germany, and Japan) are largely consistent with the differences between financial sector structures, corporate governance regimes and several other financial system elements of these countries. It means that the type of financial system affects the financing pattern in the country. The firms of a country with bank-based financial system use mostly bank loans as external financing. In turn, the firms of a country with market-based financial system use mostly securities as the main source of external finance.

But there exists a lot of studies which examine how institutional differences (the institutional environment) affect capital structure choices across countries (Booth *et al.*, 2001; Demircuc-Kunt and Maksimovic, 1996, 1999; Giannetti, 2003; De Jong *et al.*, 2008; Fan *et al.*, 2010). Implications of these studies are interesting and diverse.

Demircuc-Kunt and Maksimovic (1999) find systematic differences in the use of long-term debt between developed and developing countries, and small and large firms. In developed countries with good legal systems, and, consequently, good financial systems, firms have more long term debt, which represents a greater proportion of their total debt. Also, they find that large firms have more long-term debt as a proportion of total assets and debt compared to smaller firms.

De Jong *et al.* (2008) state that in countries with a better legal environment, and more stable and healthier economic conditions, firms are not only likely to take more debt, but the effects of firm-level determinants of financial leverage are also reinforced.

Giannetti (2003) analyses a large sample of unlisted firms from eight European countries and finds a significant positive influence of a few institutional variables such as creditor protection, stock market development and legal enforcement on the financial leverage of individual firms.

Fan *et al.* (2010) find contrary result compared with the studies mentioned above. They contend that "firms in countries that are viewed as more corrupt tend to use less equity and more debt, especially short-term debt, while firms operating within legal systems that provide better protection for financial claimants tend to have capital structures with more equity, and relatively more long-term debt".

In this paper, we investigate whether the financing patterns of agricultural enterprises depend on the level of financial and economic system development of the country, similarly to the focus of the prior literature. A direct implication of previous studies is that in countries with weak financial systems, firms obtain less external financing and that this results in lower growth. We focus on a comparative analysis of financing models (patterns) in Czech and Ukrainian agricultural enterprises. These former socialist countries have different development of the economic and financial system¹, but close geographic location. Our aim is also to identify the basic tendencies concerning the volume and composition of external financial sources of agricultural enterprises in the two countries.

MATERIALS AND METHODS

We suggest three main methodological approaches, which scientists use when they consider financing models: an approach from the perspective of the economic modelling theory, institutional and operational approaches. Consideration of financing models as a variety of economic models implies that they are an abstraction of reality, and reflect the idea of researchers (authors of these models) about the causal relationships regarding the movement of money and other financial instruments. Financing models as a form of economic models, obviously, can be of two types: symbolic or analog. The symbolic models are usually characterized with describing all concepts using quantified variables and representation of all relations in mathematical form. Therefore, such models are called mathematical (Moor and Weatherford, 2001). Analog models reflect connections, replacing real elements by other – those that are suitable for abstraction, and

1 See the paper Oliynyk *et al.* (2015)

thus, despite the different nature and shape, they have similar properties and patterns. Charts, graphs and diagrams are typical examples of analog models. Third type of models – physical models – are characterized with tangibility, and it is problematic to build them for financing.

According to the institutional approach, financing model is a sustainable system of channels and institutions, providing movement of financial instruments within the financial system of a country. This approach envisages the possibility identification of a single type of institutional financing model for individual country as one of the existing basic types or their combinations. The basic types of financing models are determined by different researchers in different ways, such as: bank-based and market-based models (Schmidt and Hryckiewicz, 2006), or models that are allocated depending on the role of the state – “the state regulator” and “the state investor” (Kirdina, 2013).

From the position of the operational approach, financing model is a certain set of actions based on the external attraction or internal mobilization of funds to implement financial decisions by certain persons. The financing decision represent the decision on which sources and ways of raising funds should be used to meet the needs in the formation of assets. This type of decision is traditionally considered by the followers of the neoclassical school as one of the main types of financial decisions for an enterprise (Brigham and Gapenski, 1993; Van Horne and Wachowicz, 2007; Brealey and Myers, 2003). Operational approach, as opposed to the institutional approach, has a weighty practical value, so it is often used in practically-oriented research, for example “Innovative Agricultural SME Finance Models” (IFC, 2012). In this case, it is possible to talk about a variety of financing models that can be used even by an individual enterprise in its activities, and that can be illustrated by constructing an analog economic model in the form of a respective scheme.

In this study, financing models of agricultural enterprises are considered from the position of the operational approach – depending on the type of financial instruments used in mobilizing funds authors differentiate the equity financing model and the debt financing model. The first model assumes that an enterprise uses the equity instruments and free cash flow, which remain in the enterprise after the fulfilment of obligations to creditors. The second model foresees the use of liabilities.

Free cash flow of an enterprise, which is considered within the equity financing model, is the sum of net income, depreciation of fixed assets and amortization of intangible assets. This amount is called “sources of funds from operations” (Holt, 1993)². This definition represents a basis of

this paper. This paper compares the equity and debt financing models applied on the agricultural enterprises in Ukraine and the Czech Republic using the coefficient of financial leverage. The coefficient of financial leverage is calculated as the ratio of total liabilities to equity, and it indicates the dependence of a normal operation of a business on its debts. There are used the Lorenz curves, which were constructed according to traditional methods based on an appropriate ranking of enterprises to study the similarity of distribution of own financial resources and obligations among agricultural enterprises in Ukraine and as well as the Gini coefficients calculated using this formula:

$$G = \frac{2 \cdot \sum_{i=1}^n i \cdot y_i}{n \cdot \sum_{i=1}^n y_i} - \frac{n+1}{n} \\ = \sum_{i=1}^n X_i \cdot Q_{i+1} - \sum_{i=1}^n X_{i+1} \cdot Q_i, \quad (1)$$

where:

G.....the Gini coefficient, $0 \leq G \leq 1$ (the closer the value to zero, the more uniform the distribution of the investigated indicator);

y_ian indicator whose uniformity is studied, $y_i \leq y_{i+1}$ (indicators of individual enterprises are rank ordered in ascending order);

nthe number of enterprises in the sample to be tested;

Xcumulative share (integrated percent) of the total number of enterprises in the sample under investigation, and $X_i = i/n$, and $X_n = 1$ (or 100%);

Q ... cumulative share (integral percentage) of the total amount of the indicator, the uniformity of which is investigated, and $Q_n = 1$ (or 100%).

We use the regression analysis to study the forms of correlation between sample data characterizing the financing model of agricultural enterprises. In particular, we use pair and multiple linear regression by ordinary least squares method (OLS) for estimating unknown parameters of regression models. The choice of the OLS method is due to its prevalence, relative ease of use and sufficient accuracy, which is not significantly inferior to more complex alternative methods and is sufficient for economic studies of this level.

Data is taken from the Amadeus database (Bureau van Dijk, 2016). The research is selective in terms of statistical theory, since only large and medium-sized agricultural enterprises were considered, for which the main indicators of financial statements were available. The current sample of enterprises can be

2 Although, it can also be called “funds provided by operations” (Van Horne and Wachowicz, 2007).

considered nonprobability and judgment samples in accordance with the traditional commonly used classification (Levine *et al.*, 2005). In the view of the above, it should be acknowledged that there is a certain tendency to select enterprises for the sample, and as a consequence, the expediency of refining the results in the process of further in-depth research with the creation of a random sample of enterprises. It should also be noted that the study does not claim to be fully representative of the agricultural sector in general as it does not cover the group of the smallest agricultural producers – rural households that do not have proper financial statements and are not represented in the Amadeus database. However, given the large number of companies that have been included in the sample, the results allow us to adequately characterize the existing trends in financing models for the bulk of the enterprises of the two countries' industries, therefore, they have a scientific and practical value.

RESULTS AND DISCUSSION

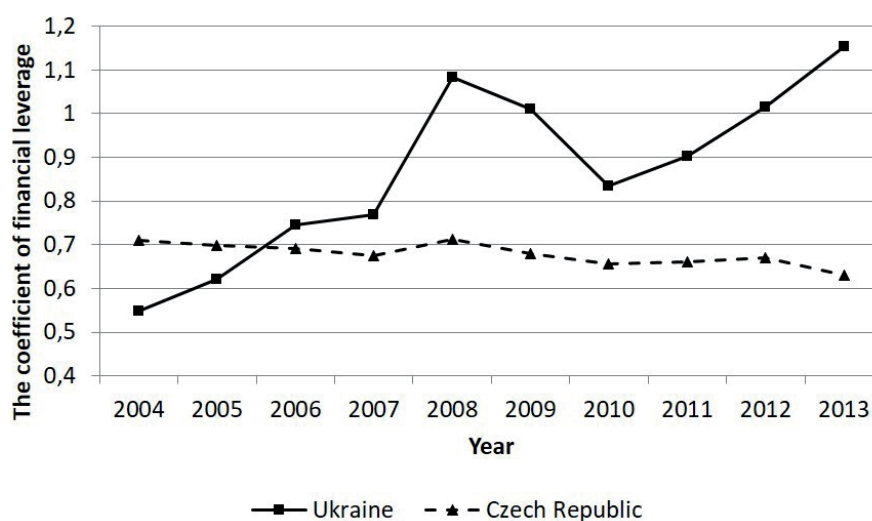
In order to clarify the role of equity and debt financing models for agricultural enterprises in European post-socialist countries, authors conducted a comparative analysis of large and medium enterprises of the two countries – the Czech Republic and Ukraine. The choice of these two countries for comparative analysis has been caused by the fact that they have close geographical location, but different scale and conditions for doing agribusiness. In addition, a comparative analysis is actual in the context of European integration processes that have unfolded in Ukraine.

Dynamics of the coefficient of financial leverage for a sample of large and medium-sized Czech and Ukrainian agricultural enterprises illustrates significant differences (Fig. 1). Particularly in

the Czech Republic the ratio of debt and equity financing models for the sector has not been significantly changing during 2004–2013. However, in Ukraine, as shown in Fig. 1, this coefficient has increased and exceeded the unit in recent years, as well, which was observed at the beginning of the period.

An abnormal growth of the coefficient of financial leverage in Ukraine, which is observed in Fig. 1 in 2008 and 2009, can be explained with the influence of financial crisis. Despite the restoration of pre-crisis trends in 2010, the coefficient for the 10-year period increased more than twice. This fact can be generally interpreted as negative and such that illustrates a significant decline of the role of equity financing model for agricultural enterprises of the country, as well as relevant loss of their financial sustainability and independence from creditors. There is an inverse situation in the Czech agricultural enterprises – the financial leverage coefficient slightly changed and its value has decreased slightly, indicating the dominance of equity financing model. Nevertheless, the overall value of the coefficient of financial leverage does not fully reflect the ratio between equity and debt financing models in all examined enterprises. The values of the debt and equity ratios vary a lot-even negative values of the financial leverage coefficient were found in some cases. The distribution of values for individual enterprises at the beginning (2004) and at the end of the period (2013) is illustrated in Tab. I.

The data in Tab. I shows that in 2013 in Ukraine there was a significant growth of not only the total value of the financial leverage coefficient, but also of the share of enterprises with negative value of the coefficient and with a value that exceeds the average. This allows us to conclude that the role of equity financing model for an increasing number of agricultural enterprises in Ukraine has reduced.

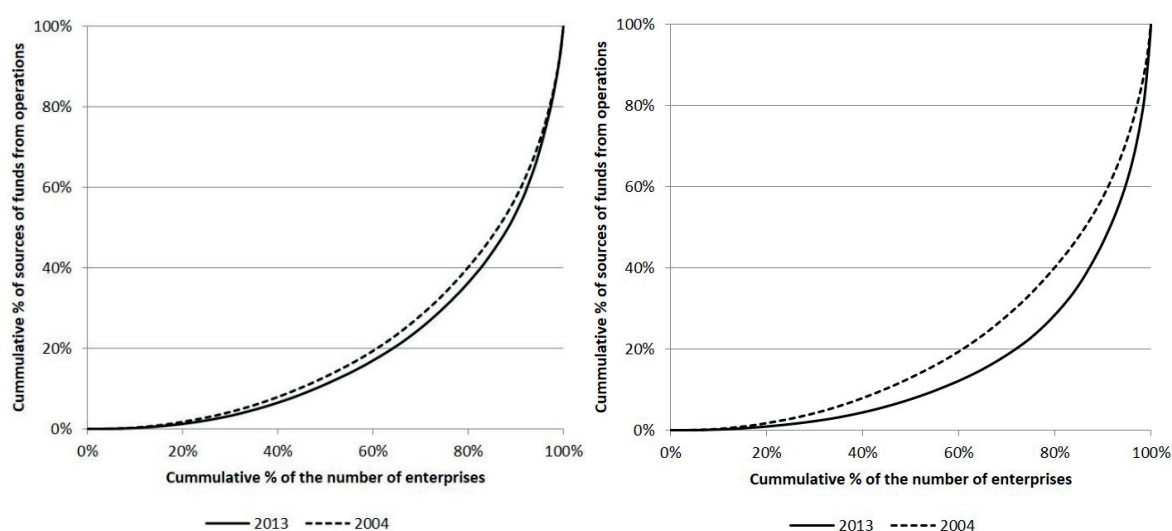


1: Financial leverage development for a sample of large and medium Czech and Ukrainian agricultural enterprises (own calculations based on Amadeus data).

I: Characteristics of distribution of values of the financial leverage coefficients within the sample in 2004 and 2013

Indicator	2004		2013		The growth rate	
	Czech Republic	Ukraine	Czech Republic	Ukraine	Czech Republic	Ukraine
1. Average value of the coefficient of financial leverage	0.711	0.549	0.629	1.154	0.886	2.102
2. Share of enterprises with negative value of the financial leverage coefficient [%]	3.500	2.700	1.800	10.200	0.504	3.796
3. Share of enterprises with value of the financial leverage coefficient above average or less than 0, [%]	52.000	38.800	48.900	68.500	0.941	1.765

Source: authors' calculations based on data (Amadeus).



a) Czech Republic

b) Ukraine

2: The Lorenz curves for volume of sources of funds from operations for a sample of large and medium agricultural enterprises (enterprises with negative values deleted)

Source: Authors' calculations based on Amadeus data.

II: The Gini coefficient for the amount of own funds for a sample of large and medium Czech and Ukrainian agricultural enterprises (enterprises with negative values deleted)

Countries	2004	2013
Czech Republic	0.430	0.508
Ukraine	0.570	0.680

Source: authors' calculations based on data (Amadeus).

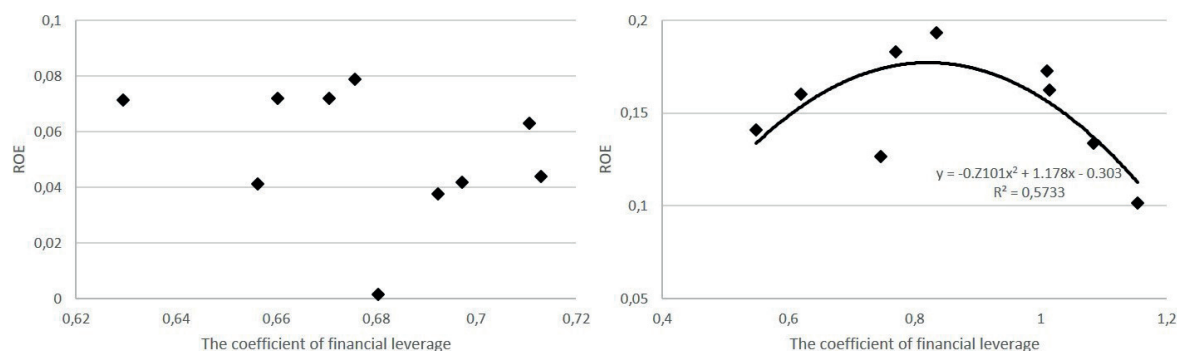
In contrast to Ukraine the situation is inverse in the Czech Republic.

The reasons for this phenomenon in Ukraine, can be related to the slowdown in growth of free cash flow of Ukrainian agricultural enterprises during the study period, and as a result, the deterioration of conditions for self-financing. The analysis also identified other problems of equity financing model at the level of individual companies. First, it is the problem of uneven distribution of volumes of sources of funds from operations between the companies. This unevenness illustrates the significant bulge down of the Lorenz curve, constructed according to data of enterprises that have positive volume of sources of funds from operations (see Fig. 2). This unevenness was

observed in both countries, but in Ukraine it was considerably higher.

In particular, as shown in Fig. 2 (b), in Ukraine in 2013 half (50%) of the enterprises with a positive volume of funds from operation amounted only for 7.6% of the total of these resources (in the Czech Republic it was about 17%). Also Lorenz curve's convexity in 2013 compared to 2004 increased, which is clearly presented in Fig. 2 using Gini coefficient. This allows us to conclude that the uneven distribution of the volumes of sources of funds from operations between agricultural enterprises has increased, which is particularly substantial in Ukraine.

Secondly, it is the problem of worsening of Ukrainian agricultural enterprises asset capacity



a) Czech Republic

b) Ukraine

3: Interdependence between the coefficient of financial leverage and return on equity (ROE) for a sample of large and medium agricultural enterprises, 2004–2013

Source: authors' calculations based on Amadeus data.

to generate their sources of funds from operations. The worsening is confirmed by negative changes in the distribution of values of ratio the volume of sources of funds from operations to total assets³. Namely, we can observe that the average value of sources of funds from operations has diminished, and the standard deviation of sources of funds from operations has increased. As well, the asymmetry of distribution transformed from positive to negative. In addition, we can indicate that the share of agricultural enterprises with negative value of sources of funds from operations in 2013 increased to 20.3 % from 7.3 % in 2004. In the Czech agricultural enterprises, we can observe some improvement in the ability of assets to generate their sources of funds from operations – an indicator of the sources of funds from operations increased from 9.96 % to 10.83 % during 2004–2013.

Thus, potential assets concerning the generation of sources of funds from operations by agricultural enterprises has decreased in Ukraine, which was caused by the growth of debt financing model priority. In the Czech Republic we observe the opposite tendency. The debt financing model, although associated with additional financial risk, is considered quite attractive for owners (shareholders) because it allows an additional growth of return on equity (ROE) due to the effect of financial leverage. However, it should be noted that the empirical data do not always confirm the expediency for owners of increasing financial leverage effects. The last statement is true for both (Czech and Ukrainian) agricultural enterprises (see Fig. 3). In particular, in the Czech Republic we could not detect the pattern

between the level of financial leverage and ROE. In Ukraine, although constructed regression model is not sufficiently strong⁴, it shows that the maximum ROE is achieved for value of coefficient of financial leverage, which is 0.829. This value corresponds with 40 % share of liabilities in total assets, which is consistent with the classical scientific views due to the optimal capital structure for agricultural enterprises (Barry *et al.*, 2000).

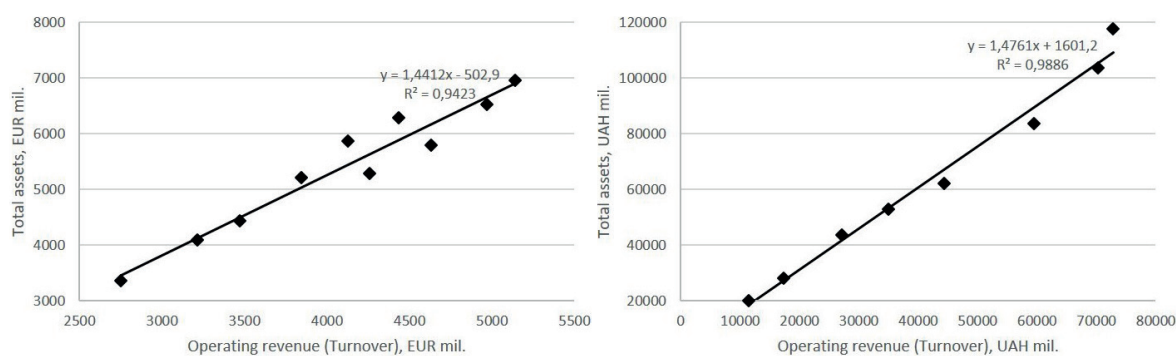
Thus, concerning the model, which is illustrated in Fig. 3 (b), the total value of coefficient of financial leverage (1.154) achieved in 2013 is not optimal for the agricultural enterprises in Ukraine. Nevertheless, under present conditions, the artificial limitation of further growth of the financial leverage coefficient and braking of debt financing models should be recognized impossible, because it could adversely affect the results of basic operating activities of these enterprises. This conclusion is based on identified dependencies between the general volume of the main results of operational activity and total assets, which cannot be fully available, when there is a limitation of debt financing. In particular, almost functional dependence is observed between operating revenue (turnover) and total assets of agricultural enterprises (see Fig. 4)⁵.

Constructed regression models showed that growth of total volumes of operational activity of agricultural enterprises was accompanied with a significant growth of the total volume of assets. Moreover, in both countries, it was almost the same. Thus, the 1 EUR growth of operating revenue (turnover) in the Czech Republic was

3 This indicator was calculated as a share of sources of funds from operations on total assets.

4 Although the coefficient of determination is only 0.5733, all regression coefficients in the model are statistically significant (p-value does not exceed 0.05); adequacy models confirms the absence of heteroscedasticity and autocorrelation residues

5 All regression coefficients in both models are statistically significant, there is no auto-correlation of residues, the condition of homozydesis is not violated.



a) Czech Republic

b) Ukraine

4: Total assets and operating revenue (turnover) – regression model for a sample of large and medium agricultural enterprises, 2004–2013

Source: authors' calculations based on Amadeus data.

accompanied with the growth of assets by 1.44 EUR, and in Ukraine the 1 UAH growth of turnover was accompanied with the growth of assets by almost 1.48 UAH (see Fig. 4 – value of the slope coefficient of the regression line). The latter pattern reflects an important economic aspect because it shows the stability of asset productivity of agricultural enterprises in Ukraine and Czech Republic. In turn, the growth of assets, which accompanies the growth of operating income (turnover), naturally causes an increase in the amount of equity and liabilities in the ratio, which illustrates the coefficient of financial leverage.

In contrast to the indicators, which characterize total volume of operating results, assets and liabilities of all enterprises in the aggregate, indicators of individual enterprises do not show these explicit patterns and indicate the presence of some problems concerning the use of debt financing models by agricultural enterprises in both countries.

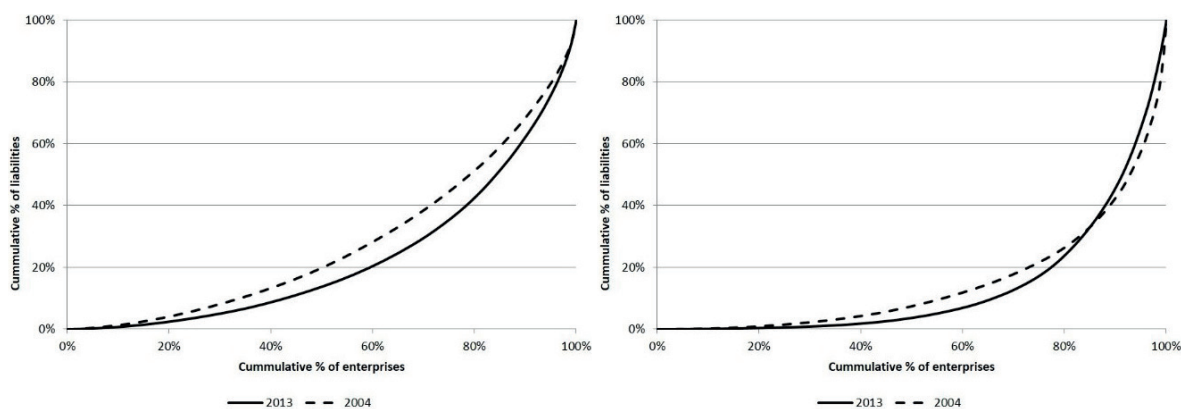
Just as in the case with sources of funds from operations, even in even greater extent, the volume of liabilities is distributed between the agricultural enterprises very unevenly (Fig. 5) and it reflects not only the existing differentiation of these enterprises,

but also different access to funds. Especially this problem is acute in Ukraine. In particular, in 2013 the share of half (50%) of companies with the lowest volume of liabilities in the total amount of liabilities was only 3.6% and 15% of the largest enterprises-borrowers accounted for over 70% of total amount of liabilities. In contrast to sources of funds from operations, the difference in the distribution of liabilities in 2004 and 2013 is not significant.

The uneven distribution of obligations characterizes the value of the Gini coefficient: as in the Czech Republic it increased from 0.445 in 2004 to 0.542 in 2013, and in Ukraine from 0.698 to 0.724.

Besides a considerable differentiation in the volume of liabilities, there was observed such a pattern: enterprises with small volumes of liabilities have obtained significantly higher volumes of operating revenue (turnover) per liabilities than enterprises with large volumes of liabilities (see Fig. 6).

According to Fig. 6, differentiation of liability returns in both countries significantly increased in 2013 compared to 2004. For example, in Ukraine in 2004 a quarter (first quartile) of companies with the lowest volume of liabilities accounted for 47% of

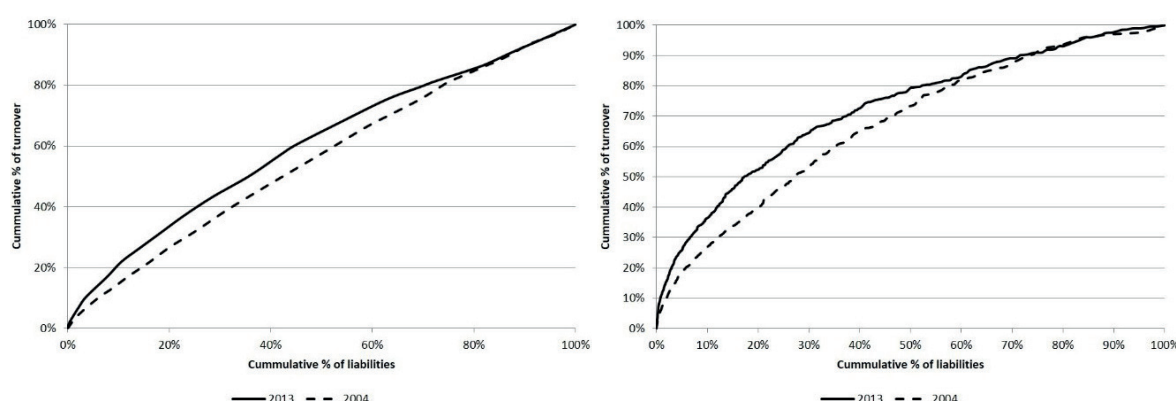


a) Czech Republic

b) Ukraine

5: The Lorenz curves for volume of liabilities for a sample of large and medium agricultural enterprises in 2004 and 2013

Source: authors' calculations based on Amadeus data.



a) Czech Republic

b) Ukraine

6: Relationship between cumulative % of liabilities and operating revenue (turnover) for a sample of large and medium agricultural enterprises in 2004 and 2013

Source: authors' calculations based on Amadeus data.

III: Sensitivity of total assets of agricultural enterprise to changes in operating revenue (turnover) in the Czech Republic and Ukraine during 2004–2013

Volume of operating revenue (turnover), EUR or UAH	Average growth of total assets of agricultural enterprises in case of growth of operating revenue (turnover) by 1	
	Czech Republic, EUR	Ukraine, UAH
10,000	1.90	5.84
100,000	1.53	3.68
1,000,000	1.23	2.32
10,000,000	0.98	1.47

Source: authors' calculations based on Amadeus data.

total operating revenue (turnover) of all agricultural enterprises, and in 2013 already 59%. In addition to this, it should be noted that a similar situation is observed regarding the return on assets.

Authors could not build a strong regression models similar to those that were built for common values (Fig. 4), based on all data of agricultural enterprises due to the uneven distribution of the liabilities and different returns on operating revenue (turnover) per liabilities and per assets. Instead, authors found the strongest regression model, which is illustrated in Fig. 7⁶.

The choice of the kind of regression function is due to the nature of the response of the dependent variable y (total assets) to the change of the independent variable x (operating revenue). Power function showed that sensitivity of total assets to changes in operating revenue (turnover) has been decreasing in the case of growth of the company, and it adequately describes reality (see Fig. 7). According to these models, growth of operating revenue (turnover) by 1 will be accompanied with growth of total assets in different sizes, depending on

the initial volume of operating revenue (turnover) (see Tab. III).

Data in Tab. III illustrate the positive effect of scale for agricultural enterprises financing and in Ukraine it is much more significant than in the Czech Republic. The larger the company, the relatively lower the necessity to ensure growth in assets.

Authors found that for both countries the most adequate model for the volume of liabilities of agricultural enterprises is the multiple linear regression model⁷ with independent variables that characterize the volumes of certain types of assets – fixed and current:

$$Y_{CZ} = 0.36991 X_1 + 0.37643 X_2 + 121520 \quad (2)$$

$$Y_{UA} = 0.33227 X_1 + 0.68425 X_2 - 3769097 \quad (3)$$

where:

Ythe amount of liabilities (CZ–Czech Republic; UA–Ukraine);

X_1 .. the amount of fixed assets;

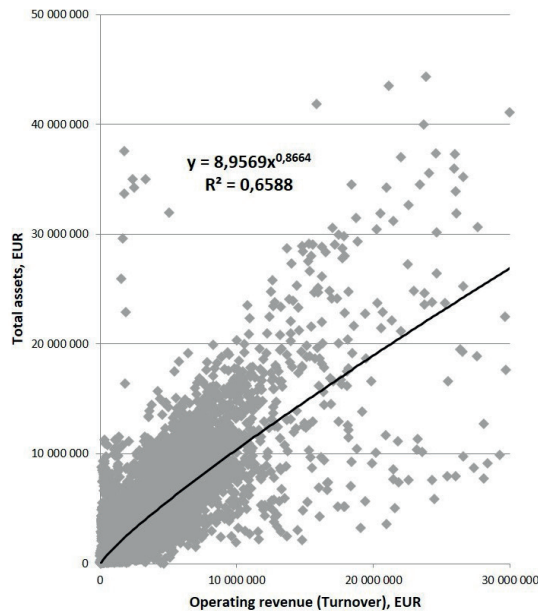
X_2 .. the amount of current assets.

6 For both models, the regression coefficients are statistically significant (p-values do not exceed the limit), no autocorrelation of residues, signs of violation of the condition of homogeneity are revealed.

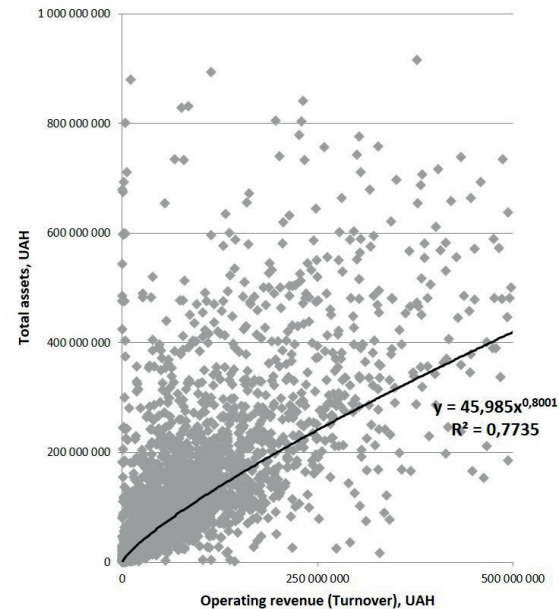
7 The coefficient of determination (R-squared) for these models are 0.650 and 0.640 respectively; All regression coefficients are statistically significant; no residual autocorrelation; no heteroscedasticity.

According to formulas (2) and (3), the amount of liabilities of agricultural enterprises of Ukraine is twice more sensitive to individual changes in the volumes of current assets than fixed assets (see the values of the regression coefficients of

the independent variables). In the Czech Republic the amount of liabilities of agricultural enterprises is almost equally sensitive to individual changes in the volumes of current and fixed assets.



a) Czech Republic



b) Ukraine

7: Operating revenue (turnover) and total assets – regression model for a sample of large and medium agricultural enterprises, 2004–2013

Source: authors' calculations based on Amadeus data.

CONCLUSION

Results of the comparative analysis illustrate the fundamentally different role of the equity and debt financing models for agricultural enterprises of different countries – the Czech Republic and Ukraine – in spite of their similarities in terms of their belonging to the former “Eastern block”. These results deny the findings of some researchers that in countries with a lower level of financial system and economy development, the role of debt financing model is lower due to the lack of access to the loans. Instead, they confirm the conclusion of Fan *et al.* (2010) that in countries such as Ukraine, more debt financing patterns are used by firms.

The role of debt financing model for agricultural enterprises in Ukraine, in contrast to the Czech Republic, significantly increased in recent years. The causes of this phenomenon are associated with the deterioration of the development of the financial system in the country as well as with worsening conditions for self-financing, which appeared in slowing down the growth of free cash flow of agricultural enterprises and reduction of asset ability to generate the sources of funds from operations. It is the sign of a systemic crisis in agriculture. But in the Czech Republic the role of equity financing model of agricultural enterprises increased on the background of improving conditions for self-financing and, consequently, increasing their independence from creditors.

It is obvious that growing role of debt financing model for agricultural enterprises in Ukraine will continue in the future in general while maintaining the overall dynamics of financial leverage factor. Similarly, the growing role of equity financing model for the Czech agricultural enterprises will continue in the future if the absolute growth of total assets of these enterprises in average will be funded mainly through its own financial resources.

In 2013 the average value of the coefficient of financial leverage of the largest Ukrainian agricultural enterprises exceeds the optimum. However, the artificial limitation of further growth of debt financing models should be recognized impossible. It is caused by presence of functional dependence between total assets of agricultural enterprises and the results of operating activities of these enterprises. Insufficient funding of farm assets in connection with debt financing constraints could lead to significant loss of operating revenue (turnover).

The problem is compounded by the fact that a further increase of the volume of operating revenue (turnover) of Ukrainian agricultural enterprises, which is a guarantee of financial safety and economic

independence of the country as a whole, envisages a much more significant increase of the assets of these enterprises (especially enterprises with small volumes of operational activity). Instead, this problem is absolutely irrelevant for the Czech Republic. Czech agricultural enterprises have sufficient potential to expand volumes of debt, against the backdrop of a sufficient accumulation of their own financial resources.

The role of debt financing model is not so obvious for certain agricultural enterprises in both countries. In particular, the volume of liabilities is distributed between the agricultural enterprises (especially in Ukraine) very unevenly, and it reflects not only the existing differentiation of size of these enterprises, but different access to external funds. There was also observed significant differentiation of return in the form of operating revenue (turnover) per liabilities for certain enterprises – both, in the Czech Republic and in Ukraine. Moreover, enterprises with small volumes of liabilities have obtained significantly higher volumes of operating revenue (turnover) per liabilities than enterprises with large volumes of liabilities. The reasons of such situation and the reasons why the volumes of liabilities of agricultural enterprises in Ukraine is more sensitive to individual changes in the volumes of current assets requires further research.

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Contact information

Olena Oliynyk-Dunn: olenaooliynyk@gmail.com
Viktor Adamenko: v_adamenko@ukr.net
Pavel Zufan: pavel.zufan@gmail.com