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THE NET WORKING CAPITAL MANAGEMENT IN THE EUROPEAN AGRICULTURE BASED ON THE FADN DATABASE

ZARZĄDZANIE KAPITAŁEM OBROTOWYM NETTO W EUROPEJSKIM ROLNICTWIE NA PODSTAWIE BAZY FADN

Key words: working capital management, liquidity, assets, liabilities

Słowa kluczowe: zarządzanie kapitałem obrotowym, płynność, aktywa, zobowiązania

Abstract. The article describes the 2008 net working capital management in the European agriculture on basis of the country level data to show differences between the countries in relations between economic indicators. The FADN database was used. A descriptive and comparative analysis were applied, and the basic indicators of the financial analysis were calculated. It has been demonstrated, that the agriculture of the European Union (EU) in 2008 realized an aggressive-conservative strategy of net working capital management. The most important characteristics of this strategy were: moderate profit and risk, high share of current assets in total assets, high cover of assets by its equity, over-liquidity and low importance of short-term liabilities.

Introduction

In the last hundred years in the World, there have been many crises, due to different causes. The more often the trends from the financial market, through transmission mechanism, has an affect to the sphere of the real economy [Nogaj 2009]. The first wave of the current crisis took place already in 2007 in USA, but the forcefully crisis broke out in the second half of the year 2008 and also came to the Europe [Antkiewicz, Pronobis 2009]. It was also an impact on the agriculture.

In such conditions, the economic decisions should be taken with the extreme caution, in particular that farms have the specific characteristics¹ as the economic entities. And it's worth to underline, that the choice of the strategy of the net working capital (NWC)² management is one of the most important financial decisions. This article describes the NWC management in the European agriculture on basis of the country level data to show differences between the countries in relations between economic indicators.

Materials and methods

In this article, as a material of the research, the data from the FADN database were used for the year 2008 [FADN 2012]³. In order to describe the nature of the European agriculture, the weighted averages converted into the farms (named in this research as the average farms) from the EU-27 have been selected. The main methods used in this research were: the descriptive and comparative analysis and the basic methods of the descriptive statistic applied during the construction of the financial indicators. The 9 indicators were calculated⁴:

¹ That means the biological nature of production and it's worth to note, that any lack of production means is reflected in the yields obtained. And the agriculture has a low capacity to create its own equity, also is a one of these sectors, in which the significant restrictions of the use of the external sources of financing are existing [Gołębiewska 2010, Wasilewski 2004].

² In the literature, there are many definitions of working capital. We can notice, that in the broadest terms, working capital is based on the current assets, which are financed by long-term liabilities and by a part of long-term liabilities (or by the part of the equity) – then it is called gross working capital (GWC). However, some part of the assets, which is not financed by short-term liabilities, but by the long-term capitals (permanent capital) is called net working capital (NWC) and in the literature also is called as net current assets or working capital [Compare: Sierpińska, Wędzki [1997] with Brigham and Houston [2005]].

³ In the FADN database, the data are published with the significant delay. When this article was prepared at the beginning of the year 2012, in this database the complete data on agriculture were developed for the year 2008. While the data for the year 2009 were incomplete. But this database represents farms in each country of the UE-27 and is agreeable with reality and is comparable [not. auth.].

⁴ Based on: Kulawik [1995], Sierpińska, Wędzki [1997], Wyniki standardowe... [2005], Tatka [1999]. But some formulas were changed because of the lack of data in the FADN database.

- $X1$ – share of current assets in the total assets (%),
 $X2$ – share of short-term loans in the total liabilities (%),
 $X3$ – level of NWC – current assets decreased by the short-term loans (euro),
 $X4$ – level of NWC/ESU – $X3$ calculated on the economic size of farm (euro/ESU),
 $X5$ – level of NWC/UAA – $X3$ calculated on the total utilized agricultural area of farm (euro/hectare),
 $X6$ – Cash Flow (euro)⁵,
 $X7$ – cover of assets by its equity – ratio of the equity to the total assets (%),
 $X8$ – current ratio – ratio of the current assets to the short-term loans,
 $X9$ – quick ratio – ratio of the current assets without stocks to short-term loans.

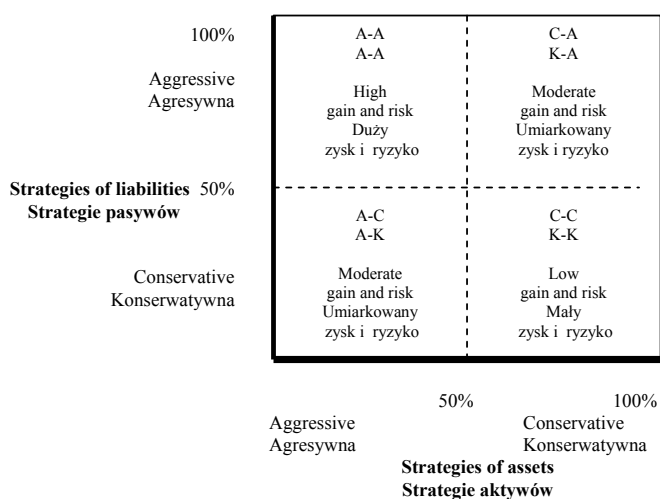


Figure 1. Strategies of the working capital
Rysunek 1. Strategie kapitału obrotowego

Source: own study based on Sierpińska, Wędzki 1997

Źródło: opracowanie własne na podstawie Sierpińska, Wędzki 1997

Also, in this article an attempt was made to show which management strategy of NWC was chosen by the farms from the EU-27 countries. It can be distinguished conservative and aggressive strategy based on the level of the assets and liabilities (Fig. 1) in 4 combinations [Zimon 2008]:

- aggressive-conservative strategy (A-C): $X1 < 50\%$ and $X2 < 50\%$,
- conservative-aggressive strategy (C-A): $X1 > 50\%$ and $X2 > 50\%$,
- aggressive strategy (A-A): $X1 < 50\%$ and $X2 > 50\%$,
- conservative strategy (C-C): $X1 > 50\%$ and $X2 < 50\%$.

The conservative strategy (C-C) is related to low risk and the possibility of achieving a low income, but an aggressive strategy (A-A) increases the chances of high profits with a higher level of the risk. Whereas the combinations of the aggressive and conservative strategies (A-C, C-A) mean the moderate strategy with a moderate gain and risk [Konieczna 2008].

Results of the research

According to the data showed in the tab. 1, we can notice that the sector of agriculture in the EU-27 had an assets-capital specificity, which was characterized by a noticeable share of the current assets in the total assets, with a little level of the share of the short-term loans in the total liabilities. That means that the aggressive-conservative (A-C) strategy was commonly realized and it was characterized by a moderate gain and risk (Fig. 2).

Presented data in the table 1⁶ indicated that in the year 2008 the average share of current assets in total assets ($X1$) for the EU-27 amounted to 19.69% and for Poland was equal to 17.37%. Nevertheless, this data shows the significant differences between countries of the EU-27. For example, the share of current assets in total assets greater than 35.00% had the average farms from Slovakia, Hungary, France, Spain and Bulgaria. While in agriculture of Ireland, Greece, Slovenia and Malta, this share was below 10.00%. In case of the share of the short-term loans in the total liabilities ($X2$), we can notice the smaller differences. This average level for the EU-27 equaled to 3.71% and 3.23% for the Poland (Tab. 1). It's worth to underline that

⁵ In the FADN database, this indicator is called a Cash Flow II (SE530) and informs about the farm's capacity for a self-financing and for a creating of savings [FADN 2012]. It is calculated based on total sales of products increased by the others incomes, sales of livestock, subsidies (also concerning to the operations, investments), VAT balance, net increase in fixed assets, closing valuation of debts and diminished by the paid costs, purchases of livestock, farm taxes (including from the investments) [Wyniki standardowe... 2010].

⁶ It should be underlined that many indicators (such as $X3$, $X4$, $X6$ and possibly others) strongly depends from the average farm size and level of prices in countries. The largest farms occurs in the Netherlands, Slovakia, Denmark, Belgium, Czech Republic, United Kingdom (bigger than 100 ESU). The smallest are farms from Cyprus, Latvia, Portugal, Greece, Lithuania, Poland, Slovenia, Bulgaria and Romania (smaller than 15 ESU).

the financing based on the short-term loans played the biggest role in the Hungarian agriculture (15.64%), in the French agriculture (13.33%) and in the Estonia one (10.98%). But the smallest importance of the X2 indicator was observed in the agriculture of 7 countries, such as: Italy, Cyprus, Slovenia, Belgium, Greece, Ireland and Spain, in which the share of the short-term loans did not exceed 0.5% of total liabilities (Tab. 1).

Also the considerable differences occurred in case of the level of NWC (X3) and Cash Flow (X6) in the EU-27 (Tab. 1). The average level of NWC for a farm from the EU-27 in the year 2008 equaled to 45743 euro, and from Poland to 13 914 euro. The highest resources of NWC were observed in the average farms from the Czech Republic, The Netherlands, Luxembourg, Denmark and Slovakia (higher than 134 000 euro), and the lowest were noticed in the average farms from Greece (3798 euro) and Romania (9852 euro). However, the X6 indicator (Cash Flow), which demonstrates the ability of a farm to self-finance its operations and to create of savings, amounted to about 19 482 euro at the average in the EU-27, while in Poland to 7789 euro. Its highest levels of X6 (over 44 000 euro) occurred in the average farms from the Great Britain, The Netherlands and Denmark, and the lowest (less than 2000 euro) from Slovakia, Slovenia and Bulgaria. It can be underlined, that the average farm from Slovakia lost the capacity to self-finance its operations and to create of savings. The indicators: X4 and X5 shows the calculations of the NWC's level on the 1 unit of the economic size (in ESU) and on the total utilised agricultural area of farm (in hectare). The average level of X4 and X5 for the EU-27 equaled to respectively: 1524.77 euro/ESU

Table 1. The 9 indicators of NWC management in the average farms from the EU-27 according to the level of X1 in the year 2008

Tabela 1. 9 wskaźników opisujących zarządzanie KON w przeciętnych gospodarstwach rolnych z UE-27 według poziomu X1 w 2008 r.

No./ Nr	Country/ Kraj	Indicators of NWC management/ <i>Wskaźniki opisujące zarządzanie KON</i>								
		X1	X2	X3	X4	X5	X6	X7	X8	X9
1	SK	47.03	8.47	308 717	2 374.75	532.87	-18 866	82.86	5.55	4.09
2	H	39.31	15.64	39 719	1 757.48	730.93	14 540	70.20	2.51	1.92
3	F	39.06	13.33	94 731	1 220.76	1 218.09	37 495	63.49	2.93	2.08
4	E	38.53	0.24	127 290	3 678.90	3 633.74	25 592	97.79	159.91	157.46
5	BG	35.46	6.88	13 321	1 604.94	504.39	1 658	80.06	5.16	4.28
6	LV	34.55	9.80	26 160	1 981.82	419.90	7 679	66.19	3.53	2.90
7	LT	34.07	7.70	28 927	2 835.98	572.93	11 069	82.21	4.42	3.44
8	CZ	26.74	9.60	134 094	1 312.07	588.44	22 979	76.89	2.79	2.33
9	S	23.42	5.55	121 255	2 296.50	1 238.94	12 928	71.99	4.22	3.61
10	RO	22.60	2.03	9 852	2 096.17	786.90	9 561	96.48	11.15	9.78
11	A	22.13	2.52	85 252	2 552.46	2 491.29	30 904	89.88	8.80	7.97
12	EW	19.68	10.98	19 286	884.68	147.04	8 622	69.33	1.79	1.17
13	L	17.54	2.42	147 470	2 143.46	1 918.68	26 974	82.68	7.25	6.66
14	FIN	17.39	1.63	59 498	1 465.47	1 130.93	25 035	72.21	10.66	8.73
15	PL	17.37	3.23	13 914	1 364.12	760.74	7 789	89.50	5.38	3.27
16	D	14.88	7.02	61 270	654.59	722.44	25 323	81.44	2.12	2.00
17	NL	13.56	5.36	147 075	932.63	4 519.82	48 064	61.04	2.53	2.08
18	P	13.39	1.44	10 638	851.04	402.65	11 636	96.46	9.30	7.30
19	CY	13.19	0.11	23 468	1 700.58	2 944.54	10 084	98.97	120.73	120.64
20	B	13.02	0.14	75 866	221.16	1 666.65	34 928	74.70	92.63	82.42
21	I	12.45	0.03	40 750	1 223.72	2 477.20	30 994	98.65	378.31	325.41
22	GB	12.16	5.24	87 850	873.26	548.41	44 999	89.44	2.32	1.98
23	DK	12.14	3.03	216 157	1 896.11	2 617.86	49 226	50.66	4.00	3.41
24	M	8.56	1.00	22 096	883.84	6 103.87	16 012	95.79	8.59	8.59
25	SLO	5.62	0.11	11 187	1 316.12	1 013.32	1 077	98.47	53.28	19.21
26	GR	5.03	0.17	3 798	351.67	535.68	13 661	99.38	29.99	24.60
27	IRL	4.66	0.40	40 053	1 804.19	876.43	17 377	97.26	11.77	10.74
EU-27		19.69	3.71	45 743	1 524.77	1 432.60	19 482	84.88	5.31	4.54

A – Austria/*Austria*, B – Belgium/*Belgia*, BG – Bulgaria/*Bulgaria*, CY – Cyprus/*Cypr*, CZ – Czech Republic/*Czechy*, D – Germany/*Niemcy*, DK – Denmark/*Dania*, E – Spain/*Hiszpania*, EW – Estonia/*Estonia*, F – France/*Francja*, FIN – Finland/*Finlandia*, GB – Great Britain/*Wielka Brytania*, GR – Greece/*Grecja*, H – Hungary/*Węgry*, I – Italy/*Włochy*, IRL – Ireland/*Irlandia*, L – Luxembourg/*Luksemburg*, LT – Lithuania/*Litwa*, LV – Latvia/*Łotwa*, M – Malta/*Malta*, NL – The Netherlands/*Holandia*, P – Portugal/*Portugalia*, PL – Poland/*Polska*, RO – Romania/*Rumunia*, S – Sweden/*Szwecja*, SK – Slovakia/*Słowacja*, SLO – Slovenia/*Słowenia*

Source: own study based on FADN 2012

Źródło: opracowanie własne na podstawie FADN 2012

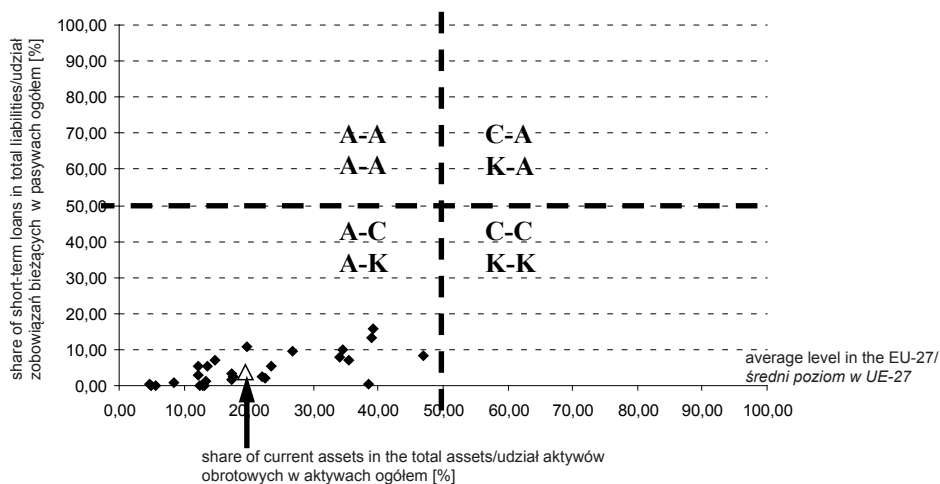


Figure 2. The strategies of NWC realized in the European agriculture in the year 2008

Rysunek 2. Strategie KON realizowane w europejskim rolnictwie w 2008 roku

Source: own study based on FADN 2012.

Źródło: opracowanie własne na podstawie FADN 2012

and 1432.60 euro/hectare, and for Poland respectively: 1364.12 euro/ESU and 760.74 euro/hectare. And the best result of this both indicators occurred in Spain (Tab. 1).

It should be underlined, that the average level of a cover of assets by its equity (X7) in the EU-27 agriculture's sector was high and exceeded 84% in the year 2008. In the Polish average farm was even higher (89.50%), but it didn't reach even 70% in the average farms from Denmark, The Netherlands, France, Latvia and Estonia (Tab. 1).

In case of the liquidity indicators (X8 – the current ratio and X9 – the quick ratio), both have reached high values. At the average for the agriculture of the EU-27 in the year 2008, the cover of short-term loans by current assets amounted to more than 5-times, the cover of short-term loans by current assets without the stocks increased to more than 4.5-times⁷. It is worth to underline, that there occurred a large variation of liquidity between countries (Tab. 1). The highest values of these indicators were reached by the average farms from Cyprus, Spain and Italy. Et for example, the average Polish farm achieved an over-liquidity respectively: 5.38 and 3.27. At the average in the year 2008, the lowest liquidity was observed in Estonia. Such results of the liquidity ratios confirmed the specificity of the agricultural sector, in which the using of the equity and long-term liabilities are the most frequented.

Summary

The agriculture of the EU-27 in the year 2008 realized an aggressive-conservative strategy of net working capital management. It generated the moderate profit and risk. This seems to be a reasonable strategy in times of economic crisis. The farms had also its specificity of the assets and capital structures. Its important characteristics are: a high share of current assets in total assets, the over-liquidity and low importance of short-term loans. Furthermore, these characteristics were very different depending on the country of the EU.

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⁷ Detailed studies of the farms' liquidity were carried out by Bieniasz and Golaś [2008].

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Streszczenie

Scharakteryzowano zarządzanie kapitałem obrotowym netto w rolnictwie Unii Europejskiej w 2008 roku. Wykorzystano średnie dane dla gospodarstw rolnych z bazy FADN. Zastosowano analizę opisową i porównawczą, a także obliczono podstawowe wskaźniki z zakresu analizy finansowej. Wykazano, że rolnictwo UE w 2008 r. realizowało strategię agresywno-konserwatywną zarządzania kapitałem obrotowym netto. Do najważniejszych cech tej strategii należy: umiarkowany zysk i ryzyko, wysoki udział aktywów obrotowych w aktywach ogółem, wysokie pokrycie aktywów kapitałem własnym, nadpłynność i małe znaczenie zobowiązań krótkoterminowych.

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