THE IMPORTANCE OF SELECTED DETERMINANTS OF ASSETS REPRODUCTION IN AGRICULTURAL HOLDINGS IN POLAND

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Abstract. The main aim of this article is to identify the importance of the determinants that shape processes of reproduction of assets (fixed assets excluding land) in agricultural holdings in Poland conducting agricultural accountancy (FADN). The temporal scope of the analysis covers the period 2004–2012. One has stated that in a situation of economic growth the level of assets reproduction also noticeably improved; whereas the economic downturn was accompanied by impairment of those processes and dominance of narrowed reproduction. The influence of on reproduction processes of assets in agricultural holdings take place mainly on the channel: the conditions of business outlook-reproduction and productive resources – production – income – propensity to invest-reproduction. Among resource factors, one of relatively more importance in shaping of reproduction processes is capital factor. The level of education of farm manager also differentiated the scale of reproduction processes.

Key words: agriculture, reproduction of assets, investments, Poland

INTRODUCTION

One of the conditions of development for agricultural holdings are reproduction processes. They concern agricultural production, as well as resources of production factors. The reproduction refers mainly to fixed assets that are renewal by investment expenditures [Grabowski 1991]. This issue is important from the point of view of the development prospects of agricultural holdings. A condition necessary, but not sufficient for agricultural development, is not only the renewal of production assets, but also developmental investments, responsiveness to environmental and animal welfare standards, as well as

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improvement of work safety[1]. Therefore, reproduction processes allow not only to carry out the production and profit function of agricultural holdings, but also to maintain hygiene (e.g. in case of farms specialising in milk production), environmental and biological standards, which are related to specialised fixed assets [Popławski 2013], and often become a necessary condition (requirement) to achieve the desired economic-production results. Therefore, in the context of reproduction and investment processes great importance is also put on qualitative dimension of these phenomena, e.g. improvement of work ergonomics or access infrastructure. After integration with the EU and taking up agriculture of the CAP instruments, the process has gained in strength. Thus, an evolution in terms of approach to reproduction processes in agriculture can be noticed. While previously they had been treated as a part of development of fixed assets directly related to production functions, since the accession to the EU, their role in the shaping of non-productive functions of agriculture has become considerably more noticeable.

The issues of reproduction of assets in the literature were taken mainly from the perspective of development of farms or their competitiveness [Józwiak 2012]. Meanwhile, the issues referring to the factors influencing the reproduction were taken in a limited extent. The exceptions were studies of Grabowski [1991], which focused on the 1980s. That is why the studies included in the article have the opportunity to fill the existing gap in this area.

The main aim of this article is to identify the importance of the determinants that form processes of reproduction of assets (fixed assets excluding land) in agricultural holdings in Poland conducting agricultural accountancy (FADN). The article focuses mainly on endogenous factors, especially resource ones. Simultaneously, the following research question was formulated: what factors determine reproduction processes the most? The temporal scope of the analysis covers the period 2004–2012 and it is based on a sample of agricultural holdings conducting agricultural accountancy (FADN) in Poland.

RESEARCH METHODS

The paper discusses the results of agricultural holdings keeping their agricultural accounts in accordance with the principles of the FADN system. Despite the fact that the farm accountancy data network results cover only part of agricultural holdings (i.e. those that are economically stronger), they are approximately relevant (although not representative) to commercial agricultural holdings in Poland, especially as regards determining trends prevailing among the analyzed phenomena. Particular attention should be paid to the fact that this data is of microeconomic nature and that it regards arithmetic mean values from an average agricultural holding from a specific group of farms. By referring to an average agricultural holding covered by the FADN system (the situation of which is the result of many agricultural producers' behaviour), the analysed results become more systematic, thus restricting randomness. One should note here that the examined group

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[1] In later analyses, due to aggregation of data, delimitation of investment to replacement, adaption or development investments were not conducted, assuming that all of them decide about the dynamics of assets reproduction processes.

of farms usually achieve better economic and production results as compared to average values for all agricultural holdings in Poland, as well as to average results of holdings monitored by the FADN system[2].

The studied group of farms was reduced due to the presence of outliers and atypical observations[3]. Thus it was possible to obtain fairly normal distributions for the most important examined features, which was confirmed by Jarque-Bera test for normality. In total, the average number of studied farms was 11.6 thousand (from 10.5 thousand in 2004 to 12.5 thousand in 2005). Reproduction processes were analysed by indicator of being the ratio of gross investment (excluding land purchase) to depreciation, as well as gross investment value (excluding land purchase). In the latter case a simplifying assumption was made that investments can be one of the measures of the reproduction scale. It results from the fact that fixed assets are replaced through investments. In addition, the said assumption is possible because of the use a regression analysis which requires positive logarithmic variable values[4]. In order to evaluate the importance of factors determining renewal processes, regression models were used[5].

The analyzed period of 2004–2012 was divided into three sub-periods: 2004–2007 (years of economic growth), 2008–2009 (economic downturn), 2010–2012 (economic recovery in agriculture)[6]. This division creates relatively homogenous economic sub-periods in agriculture and reflects the results of other studies investigating business outlooks in agriculture. At the same time, the division made it possible to more accurately show the connections between the analyzed issues with economic cycles in agriculture. Furthermore, in the assessment of the selected characteristics of reproduction processes of assets, five groups of farms were identified, based on their indicator of reproduction of assets[7].

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[2] For instance, in 2011 the number of Polish farms monitored in the FADN system was 738 thousand, as compared to 10.5 thousand farms in the analyzed sample (holdings conducting agricultural accountancy in the FADN system, excluding outliers and atypical observations). The surface area of arable land in the first group was 55% of the size of farms in the second of the mentioned groups. As regards production values, the corresponding percentage was 48%, and 42% for income. At the same time, the 738 thousand agricultural holdings participating in the Polish FADN monitoring are economically stronger than the population of all agricultural holdings collecting direct payments (approximately 1.4 million).

[3] In the first case the aim was to eliminate objects (farms) outlying in terms of indicator of reproduction process (gross investment to depreciation). Thus, outliers were defined as those farms whose indicator of reproduction exceeded double standard deviation determined for the studied group (both downwards and upwards). In practice this meant exclusion of part of farms whose values were significantly different (which was particularly common in the case of upwards deviations). Very high values deviating from the mean values were observed, which interfered with the results of analyses, most of which relate to the average values. On the other hand, atypical observations included agricultural holdings whose current assets value was 0. The total scope rejected outliers was approx imately 5% of farms conducting accountancy FADN in Poland.

[4] Application of the indicator of reproduction (sometimes taking a negative value) in this case could reduce the number of observations.

[5] The models are based on logarithmed data for individual observations (farms).

[6] Mean values for analyzed years were calculated for the sub-periods corresponding to business cycle phases.

[7] Group 1, below 0.5, includes agricultural holdings with a clear decapitalisation of assets (indicator of reproduction below 0.5). Group 2, consisting of agricultural holdings with narrowed

REPRODUCTION PROCESSES – THEORETICAL PERSPECTIVE

The problem of reproduction of assets has implications in the theory of corporate finance [Tomaszewski 2003]. It is in particular the issue of structure of a capital, its costs, depreciation [Juszczyk 2013]. In the case of agriculture in Poland there is still relatively low commonness of the use of agricultural accounting, as well as no need to create a depreciation fund (except for units with legal personality). Consequently, it can be assumed that activities in farms related to reproduction of assets are often ad hoc and non-complex. In the long term, in the absence of an adequate supply of investment associated with modernisation, purchase of new fixed assets, it would lead to decapitalisation of assets in farm. Therefore, there exists a need to reproduce assets, i.e. to renewal productive resources and thus maintain continuity of the production process.

With regard to usage of fixed assets in agriculture, attention is brought to the fact that they are generally used seasonally, in difficult conditions (contact with soil, the impact of weather conditions), there exists considerate specialisation of equipment, as well as highly capital-intensive nature of production [Bollman et al. 1995]. It makes difficult reproduction of assets involved due to rising fixed costs and causes pressure on increase the scale of production and its intensity. Furthermore, a significant degree of fixed assets consumption in Polish agriculture[8] indicates that they are often used longer than their total depreciation period and regulations specify, which takes place especially in smaller agricultural holdings and concerns in particular buildings and structures. In consequence, this restricts real reproduction of these assets, while agriculture in Poland requires high capital expenditures [Grzelak 2014].

Maximisation of utility function of agricultural producer increases the pressure to make the reproduction processes more dynamic. Thus, there takes place a process of eliminating less efficient techniques and structures, and replacing them with more efficient or pro-environmental ones which is the basis for the development of agriculture [Zwolak 2007]. However, it should be emphasised here that in the case of smaller agricultural holdings with labour provided by family members, this process is limited due to adaptive servo-mechanism, which comes down to taking actions by farmers to eliminate or to compensate unfavourable changes in external farming conditions [Czyżewski 1986]. The process involves regulation of consumption level by agricultural family due to substitution of natural consumption and income from agricultural production, and most importantly, lowering one's work cost in incomes gained during recession. As consequence, those farms may for years operate in a situation of so-called negative income, narrowed reproduction and decapitalisation of assets [Czyżewski 1995, Makinen et al. 2009]. Moreover it should be noted that in the case of smaller agricultural holdings, the relatively low indicator of reproduction is connected with the fact that renewal of assets is limited by the

asset reproduction that still have a chance of achieving at least a flat indicator of reproduction. The next group includes agricultural holdings with indicator of reproduction oscillating around simple recovery of assets. Group 4 consists of agricultural holdings with extended reproduction. Finally, Group 5 consists of farms with quickly growing indicator of reproduction s and an advanced level of fixed assets modernisation.

[8] The extent of fixed assets consumption in 2012, according to GUS aggregated data, reached approximately 77% (GUS 2013).

difficulties in funding investments with both own incomes, as well as external sources, e.g. loans. At the same time, it is generally only possible for bigger holdings to efficiently use machinery and equipment purchased as part of investment support from the EU CAP instruments [Defrancesco et al. 2008]. On the other hand, when there is expanded reproduction in agriculture, then it is accompanied by land rent, which are discounted in the price of land [Czyżewski and Brelik 2015].

Agricultural capital needs quickly and often abruptly increase when production concentration processes in agriculture become more advanced. However, for a given level of productive resources, propensity to invest and agricultural income level plays the decisive role in the scope of a renewal of assets. At the same time, the use of external sources of financing (debt) supports the reproduction and development processes [Swinnen et al. 1999], which are to some extent determined by the level of interest rates, the level of production profitability, as well as production risk, which in the case of agriculture is high. Bigger holdings, in general, show greater propensity to take risks, and therefore the debt is relatively higher. However, due to average long production cycles, as well as a high share of land value in assets, there exists high demand for long-term sources of asset financing [Moss et al. 1997].

Investment processes and asset reproduction connected with them also result from psychological factors concerning predictions of future business outlook by agriculture producers. Events in 2014 connected to African swine fever, Russian embargo are examples of the impact of external negative signals, which, in turn, restricts further investments and hinders assets reproduction. On the other hand, there are also examples of the positive impact. The abolition of milk quotas stimulated farmers to enlarge of the herd and to invest in the development of milk production.

A factor favouring the processes of reproduction in agricultural holdings is to support the state budget funds (or within the instruments of the CAP EU), especially booming in the economy, and furthermore in agriculture [Baryshrikov et al. 2011]. This primarily concerns price relations between the products purchased and products sold by farmers, which determines the conditions of profitability in agriculture, as well as in the investment processes. In case of negative relations, the investments are limited [Chand 2000]. Moreover, business outlook in agriculture can not only accelerate modernisation, but also allow the outflow of labour resources to non-agricultural sectors. Assuming that together with economic development of the country integration between changes in the economic situation in agriculture and the whole economy is also enhanced [Von Braun 1991], it can be concluded that the relation between the business outlook in agriculture and general economic situation in Poland will be getting stronger, which, in turn, may increase instability of the reproduction processes. Changes in economic conditions (as a part of the cycle) are to some extent an investment accuracy verifier, and only recognition of reproduction processes throughout the all business cycle presents the full picture of the situation concerning the analysed processes. Seen from this narrowed reproduction during the economic downturn does not have to be evaluated negatively seeing as during economic recovery the investment processes easily compensate the consumption of assets. If the investments are unsuccessful, not even high dynamics of reproduction processes are able to generate a parity income [Woś 2000] or a return on equity capital higher than the current interest rates. Moreover the dynamics of reproduction processes is stimulated indirectly

by vertical and horizontal integration in the food economy. It is conducted by lowering transaction costs, increase of efficiency or propensity to invest of agricultural holdings [Bryła 2012].

An important stimulant for the reproduction processes was the fact that the EU CAP instruments were implemented in Polish agriculture. It can be stated that public aid for investment financing is currently one of the most important elements that allows modernisation of agriculture in Poland, as well as in other countries where the sector needs to be modernised [Karanikolas et al. 2007]. Thanks to the EU funds supporting capital expenditures, expenditures on a fixed assets have increased, which, in turn, contributed to the implementation of innovations [Józwiak et al. 2012]. Implementation of the instruments of the CAP EU in Polish agriculture, especially the introduction of the direct payments, influenced catalysing on income and reproduction processes, limiting their sharp declines. Also the experiences of other countries indicated on this phenomenon [Phimister et al. 2004]. It is also worth add that the scale of the processes of reproduction of assets depends on the development phase of the farm. In the case of acquisition of the farm by young successor and further continuation of agricultural production, as a rule, we can expect higher propensity to invest. A different situation is when the farm manager is close to retirement age and there is no successor.

EMPIRICAL RESEARCH FINDINGS

The processes of reproduction of assets showed variability depending on the terms of business outlook (Table 1). They decide about the profitability of production, and resulted mainly from price relationships – price scissors. The reproduction has improved in terms of the favorable cyclical conditions. One could observe an increase in the case of agricultural output, income, propensity to invest (investment rate), and debt rate[9] as we "move" to groups with higher indicator of reproduction in the studied agricultural holdings (Table 1). One can conclude that the scale of productive resources have a positive impact on the scope of the reproduction process of assets. These processes facilitate an increase in workforce productivity. In particular, the rate of investment showed a high diversity among the examined groups of farms due to the level of reproduction. This points to the important role of the propensity to invest in shaping the studied phenomena. The more active the agricultural farm as far as reproduction processes, the wider the scope of how it uses external financing for its own development, with preferential credit being the most dominant in Poland. Bigger agricultural holdings more closely connected to the market, implement a riskier management strategy, replacing own capital with outside capital. On the other hand, the relatively low level of indicator of reproduction of assets in agricultural holdings with fewer productive resources results from the fact that renewal

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[9] The considerate influence of the indicator of debt on reproduction processes has been proven by logit models. They show that an increase of debt by 1% increases chances for extended reproduction three-fivefold (depending on the year). Despite of the fact that these models proved to be statistically significant (verification with a likelihood coefficient test), and the number of correct predictions stood at 72–79% level, due to the relatively low McFadden's *R*-squared (0.05–0.15), they were not taken into account in further analyses.

Table 1. The selected resource characteristics of farms due to the level of indicator of repro-
duction of assets in agricultural holdings (for selected periods 2004–2012) conducting
accountancy FADN in Poland (means from the selected sub-periods 2004–2012, for the
average household)

Specification	a	b	c	d	e
	2004–2007				
The indicator of reproduction[a]	−0.03	0.73	0.99	1.33	3.87
SE131	148.2	185.9	193.2	220.7	236.7
SE420	53.5	71.9	74.7	82.7	94.4
The indicator of debt	0.07	0.09	0.10	0.11	0.13
The rate of investments[c]	−0.05	0.13	0.28	0.46	0.94
	2008–2009				
The indicator of reproduction[a]	−0.05	0.70	0.96	1.30	3.55
SE131	165.1	203.2	145.7	239.5	268.4
SE420	51.7	66.9	74.9	83.7	95.3
The indicator of debt[b]	0.11	0.12	0.12	0.13	0.14
The rate of investments[c]	−0.08	0.29	0.39	0.57	1.07
	2010–2012				
The indicator of reproduction[a]	−0.04	0.71	0.99	1.31	3.59
SE131	193.1	232.3	291.2	294.7	344.6
SE420	79.6	103.9	122.5	124.9	153.6
The indicator of debt[b]	0.06	0.07	0.08	0.09	0.11
The rate of investments[c]	−0.18	0.20	0.37	0.56	1.05

a, *b*, *c*, *d*, *e* – represent the categories of the ratio of reproduction: 0.5 and below – *a*; (0.5–0.9> – *b*;
(0.9–1.1> – *c*; (1.1–1.5> – *d*; (1.5> –*e*.
[a]the indicator of reproduction = investments (excluding purchase of land) / depreciation.
[b]the indicator of debt = total debt / value of the assets.
[c]the rate of investments = investments (excluding purchase of land) / agriculture income.
SE131 total output (in thousand PLN); SE420 – farm net income (in thousand PLN).
There are mean values (within the groups due to level of indicator of reproduction of assets) for
examined sub-periods in the table.
Source: Own calculation based on the database of the FADN system in Poland for the years 2004–2012.

of assets is limited by the difficulties in funding investments with both own income, as
well as external sources, e.g. credits [Kata 2011]. Still, the debt level of agriculture com-
pared to other sectors is low due, among other things the relatively low potential creation
of equity capital [Kulawik 1997]. Moreover, the data (Table 1) shows, that in the condi-
tions of economic downturn, the relative liabilities of the surveyed agricultural house-
holds has increase, while reduced in the case of economic recovery. It is connected with
the higher possibilities of financing its activities on the basis of income, in the period of
favorable business outlook.

At a subsequent stage of the study there was conducted a quantification of the significance of resource factors (e.g. land, labour, capital) for the development of processes reproduction of assets (Table 2). For this purpose, exponential regression models were used, which made it possible to estimate elasticity coefficients of changes in productive resources in relation to investments which reproduce fixed assets. The constructed regression models are characterized by a rather low coefficient of convergence to empirical data, and therefore any conclusions that result from them are not strongly grounded for the entire group of agricultural holdings. On the other hand, the model's parameters,

Table 2. The results of regression analysis for relations between gross investment excluding purchase of land (lnSE516 – dependent variable) and production resources (independent variables) for agricultural holdings conducting accountancy (FADN) in Poland (means from the selected sub-periods 2014–2012, for the average household)

Specification	β	e	p	R^2 cor. (for model)	p (for model)
2004–2007					
lnSE10	0.08 (0.07–0.08)	0.22 (0.21–0.24)	0.000		
lnSE25	0.09 (0.08–0.10)	0.26 (0.25–0.27)	0.000	0.29 (0.28–0.30)	0.000
ln(SE441-SE446)	0.43 (0.43–0.44)	1.21 (1.20–1.22)	0.000		
2008–2009					
lnSE10	0.03 (0.03–0.03)	0.18 (0.18–0.18)	0.000		
lnSE25	0.09 (0.08–0.10)	0.25 (0.24–0.26)	0.000	0.31 (0.30–0.32)	0.000
lnSE(SE441-SE446)	0.45 (0.45–0.45)	1.15 (1.15–1.15)	0.000		
2010–2012					
lnSE10	0.04 (0.03–0.05)	0.19 (0.17–0.20)	0.009		
lnSE25	0.13 (0.11–0.14)	0.30 (0.28–0.31)	0.000	0.34 (0.33–0.36)	0.000
lnSE(SE441-SE446)	0.47 (0.46–0.48)	1.13 (1.12–1.14)	0.000		

SE010 total labour input (AWU); SE025 – total utilised agricultural area (ha), SE441 – total fixed assets, SE446 –value of land and permanent crops, β – the standardized coefficient of the independent variable of the parameter of the regression model, e – the coefficient of flexibility of productive resources in realtion to invest.
The mean values, in the examined sub-periods, for coefficients of determination, standardized coefficients of regression, flexibility, significance estimated from the regression models estimated for each year are contained in the cells. But provide only information about mean could cause methodical doubt due to the lack of information about the distribution of these values. Therefore one given (in brackets) the max. and min. value of estimated parameters of regression models for the examined sub-periods. It results that the dispersion were small and generally symmetrical in relation to the mean values.

Source: Own calculation based on the database of the FADN system in Poland for the years 2004–2012.

as well as the model itself, are statistically significant. It has been observed that the relatively strongest influence on the investment processes was exerted by the capital factor, whereas the weakest was exerted by the labour factor (both from the perspective of the *β* coefficient – standardised regression coefficient, as well as elasticity coefficient – e, cf. Table 2). Especially interesting is the capital factor's high elasticity coefficient in relation to investment. This may result from the fact that the relations between capital and investments are direct. Capital increase is a result of investment funding and leads to an increased demand for further investments, due to e.g. the need for depreciation of assets. On the other hand, the relations between investments and the labour factor are significantly more complex and result from efficiency of this factor, terms of profitability, as well as capital – labour ratio. The models (Table 2) also show that the greater resources of production factors were conducive the higher investment activity, what should not be a surprise.

There have not been observed any clear tendencies in the model's parameters influenced by the phase of business outlook. This may indicate that the influence of resource factors on investment activity in regards to assets is independent from conjunctural factors, what is connected mainly with existing system of investment support, periods of his startup. These relations are also confirmed by research carried out by [Sadowski and Giżycka 2012]. They suggest that the factors that had the most influence on the choice of investment among agricultural holdings that receive financial support as part of second pillar of the CAP were, e.g.: production potential, or relations between production factors.

The level of education is the main element of human capital [Wilkin 1998], therefore it determines the dynamics of development process of agricultural holdings, and hence assets reproduction. Some argue that in Poland the low education level of rural population is one of the barriers to rural development [Kłodziński 2005], that would allow existing resources to be used more efficiently. In the examined group of agricultural holdings diversification due to the level of indicator of reproduction and education was observed (Table 3). Its level was moderate. Higher level of reproduction of fixed assets were accompanied by an increase in education of farm manager, and greater focus was put on agricultural education profile. This should not be surprising, given the fact that higher

Table 3. The level of indicator of reproduction due to the level of education of farm manager in examined agricultural holding conducting accountancy (FADN) in Poland (means from the selected sub-periods 2014–2012)

Education[a]						
1	2	3	4	5	6	7
2004–2007						
0.76	0.80	0.93	0.83	0.99	0.95	1.06
2008–2009						
0.61	0.63	0.67	0.65	0.73	0.64	0.84
2010–2012						
0.64	0.59	0.73	0.71	0.83	0.69	0.89

[a]1 – basic education, 2 – vocational non-agricultural, 3 – vocational agricultural, 4 – average non-agricultural, 5 – average agricultural, 6 – higher non-agricultural, 7 – higher agricultural.
There are mean values (within the different types of education) for examined sub-periods in the table.
Source: Own calculation based on the database of the FADN system in Poland for the years 2004–2012.

qualifications make management of agricultural holdings and their development easier. Similar results were obtained in studies of agriculture holding in Estonia [Virra et al. 2013]. They showed that the higher level of education of farm manager increased the probability of the development.

CONCLUSIONS

The considerations conducted in the examined group of agricultural holdings lead to the following conclusions.
1. Business outlook factors determine the scale of reproduction processes. In a situation of economic recovery the dynamic of assets reproduction also noticeably improved; whereas the economic downturn was accompanied by impairment of those processes and dominance of narrowed reproduction. However, no clear tendencies in the scope of influence of business outlook factors on the change of the impact of endogenous factors on reproduction process were observed, which may be due to the complexity of this influence and its intermediate character.
2. It is initially stated that influence on reproduction processes of assets takes place as depicted in Figure 1. However, the most important channel impact is: the conditions of business outlook-reproduction and productive resources – production – income – propensity to invest – reproduction. Among resource factors, one of relatively more importance in shaping of reproduction processes is capital factor, which resulted from direct dependences between capital-investment. It can be assumed that as the economic development increases, the channel connected with debt will also increase.
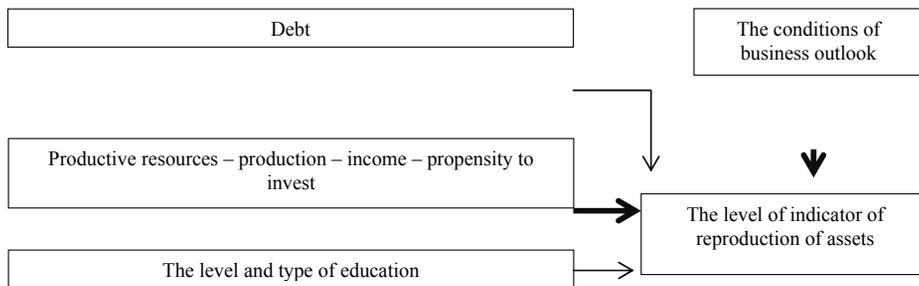

Fig. 1.   Reproduction processes of assets interdependence.
Source: Own elaboration.

3. Another differentiating factor affecting reproduction processes was education of farm managers. The indicator of reproduction of assets were positively correlated with the level of education and its agricultural profile.
4. Taking into consideration the fact that the study includes a group of agricultural holdings that are relatively above average in Poland, it can be concluded that the scope of reproduction processes is still insufficient for effective use of at least one existing land and capital factor in agriculture, as well as its modernisation. As for labour resources engaged in agriculture, there arises a social problem connected with

such usage of these resources so that, on the one hand, there would be an increase in workforce productivity through the outflow of labour resources to non-agricultural sectors, and, on the other, this would not cause their marginalisation. At the same time, further support for farmers in the framework of the EU CAP, in the case of investment support, should be selectively targeted to agricultural holdings that have great chances for achieving simple reproduction, but, on the other hand, it should be limited to individuals constantly achieve extended reproduction.

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ZNACZENIE WYBRANYCH DETERMINANT PROCESÓW REPRODUKCJI MAJĄTKU GOSPODARSTW ROLNYCH W POLSCE

Streszczenie. Głównym celem artykułu jest rozpoznanie znaczenia determinant kształtujących procesy reprodukcji w gospodarstwach rolnych w Polsce prowadzących rachunkowość rolną FADN. Zakres czasowy analiz odnosi się do okresu 2004–2012. W sytuacji poprawy koniunktury miała miejsce wyraźna poprawa jeśli chodzi o dynamikę reprodukcji majątku, natomiast jej pogorszeniu towarzyszyło osłabienie tych procesów i dominacja reprodukcji zawężonej. Oddziaływanie na procesy reprodukcji majątku w gospodarstwach rolnych zachodzi głównie poprzez kanały: warunki koniunktury – reprodukcja oraz zasoby produkcyjne – produkcja – dochody – skłonność do inwestycji – reprodukcja. Spośród czynników zasobowych relatywnie wyraźne zależności oddziaływania zaobserwowano

w przypadku czynnika kapitału (wartość środków trwałych z wyłączeniem ziemi). Czynnikami sprzyjającymi procesom reprodukcji był także wyższy stopień wykształcenia zarządzającego gospodarstwem rolnym oraz skala dywersyfikacji profilu działalności w gospodarstwie.

Słowa kluczowe: rolnictwo, reprodukcja majątku, inwestycje, Polska