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FINANCIAL SECURITY OF FINAL PRODUCTION SOLD IN POLISH AGRICULTURE

In this article the main research tool used is the Cobb-Douglas power model with one independent variable, which supports the investigation on the regressive dependence of final production sold under the EU single area payment scheme and upon the separate payment related to the EU fruit and vegetables as well as sugar (indirect payment) in Polish agriculture in the years 2011, 2012, and 2013, respectively. The models have been used to calculate marginal and average productivity; the categories are referred to in order to evaluate the efficiency of financial security in Polish agriculture. The research has shown that direct payments fall within the "irrational management" zone, while indirect payments are appearing, within the "rational management" zone as far as Polish agriculture is concerned.

Keywords: *direct/indirect payments; final production sold; financial security; Polish agriculture.*
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ФІНАНСОВА БЕЗПЕКА ПРОДАЖІВ ГОТОВОЇ ПРОДУКЦІЇ У СІЛЬСЬКОМУ ГОСПОДАРСТВІ ПОЛЬЩІ

У статті ключовим інструментом дослідження стала модель Кобба-Дугласа з однією незалежною змінною. Модель використано для дослідження регресивної залежності продажів готової продукції згідно зі схемою єдиних оплат (SAPS, прямі платежі) та окремими оплатами для категорій овочі-фрукти та цукор (непрямі платежі) на прикладі сільського господарства Польщі, період дослідження — 2011–2013 роки. Побудованої моделі використано для розрахунку граничної та середньої продуктивності. Саме ці категорії сільгосптоварів було обрано через їх значення для фінансової безпеки сільського господарства Польщі. Результати дослідження доводять, що в сільському господарстві Польщі за досліджені три роки прямі платежі потрапляють переважно в зону «нераціонального менеджменту», а більшість непрямих платежів — до зони «нераціонального менеджменту».

Ключові слова: *прямі (непрямі) платежі; продажі готової продукції; фінансова безпека; сільське господарство Польщі.*
Табл. 9. Літ. 31.

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ФИНАНСОВАЯ БЕЗОПАСНОСТЬ ПРОДАЖ ГОТОВОЙ ПРОДУКЦИИ В СЕЛЬСКОМ ХОЗЯЙСТВЕ ПОЛЬШИ

В статье ключевым инструментом исследования стала модель Кобба-Дугласа с одной независимой переменной. Модель использована для исследования регрессивной зависимости продаж готовой продукции согласно схеме единых оплат (SAPS, прямые платежи) и согласно отдельным оплатам для категорий овощи-фрукты и сахар (непрямые платежи) на примере сельского хозяйства Польши, период исследования — 2011–2013 годы. Построенные модели использованы для расчёта граничной и средней продуктивности. Данные категории сельхозтоваров выбраны по причине их значимости для финансовой безопасности сельского хозяйства Польши. Результаты исследования доказывают, что в сельском хозяйстве Польши за исследуемые три года прямые платежи попадают преимущественно в зону «нерационального менеджмента», а большинство непрямых платежей — в зону «рационального менеджмента».

Ключевые слова: *прямые (непрямые) платежи; продажи готовой продукции; финансовая безопасность; сельское хозяйство Польши.*

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Introduction. Market-oriented agriculture meets and fulfils the main objective of economy, since it contributes to country's economic growth. It is therefore expected to be stable income-wise and in terms of production – increasing economic efficiency and production quality. Thus, it is indispensable that the mechanisms regulating development and conditions in agriculture are put in place. Among these mechanisms, of critical importance are the internal factors of agriculture's financial security. These include security of financial institutions and customer security at the financial market. External factors of financial security cover the country's system of financial security networks as established and run by entities such as government, the central bank, financial regulatory/supervisory institutions, and guarantees on deposits.

Hence, financial security encompasses business entity's ability to gain cash in case financial flows are under threat. Financial security of this sort ensures entity's (business's) endurance and development. Resulting from the globalisation megatrend effect, difficulties in adaptation to market mechanisms tend to appear. Moreover, high employment against low productivity is typical for Polish agriculture as well as low soil fertility (productivity); continually unfavourable structure and low income from farming operations complement the picture. These determinants are indicative of the need to investigate the efficiency and effectiveness of payments based on the EU Common Agricultural Policy (CAP) funding in Polish agriculture.

The purpose of the present study is to identify the regressive dependency of the final production sold under the single area payment scheme (SAPS) and under the separate payment related to the EU fruit and vegetables as well as sugar per province (region) and their respective business entities in agriculture in the years 2011, 2012, and 2013. Moreover, we seek to determine marginal and average productivity of the aforesaid EU payments. Payments constitute financial security of the final production sold.

The underlying hypothesis claims that flexibility of the final production sold proves to be the highest when relative to SAPS in agriculture as for the years under research. The effect stabilising the final production sold in agriculture proves to be undisputedly beneficial.

Section 2 offers literature review on the financial situation of economic entities. Section 3 describes the research methodology. Econometric analysis and its discussion forms section 4. Lastly, section 5 offers the conclusion.

Literature review. Financial threat is a dynamic and somewhat vague category, not easily quantifiable (Platt and Platt, 2006). S. Dahiya et al. (2003) pointed out that satisfactory cash flows enabling timely covering of debt payoff determine business entity's financial security. Business operations can be continued and developed also based on provisions for plausible losses and expenditures. Moreover, such security help secure business operations against the bankruptcy risk (Pringle and Harris, 1987).

The European Commission has forecasted that the number of profit-generating business entities will fall by 2020, with a possibility that their financial standing will deteriorate (European Commission: CAP Towards Impact Assessment, 2011). The impact of agricultural policy instruments is of importance with respect to the shaping of financial security of farming businesses (Kropp and Katchova, 2011); B.K. Goodwin and A.K. Mishra's studies (2006) confirm this trend. Production must

be adapted not only in calculation terms but also in reality; similarly, major types of material outlays ought to be adapted as appropriate (Vanecek and Kalab, 2005). Hence, enhancing quality and decrease in prices for agricultural products encourage market allocation of processed foods and shifts the limits of the trends in question (Morrison and MacDonald, 2003). Product marking creates the so-called "justice brands" that cause customers to pay more as compared to the observable mean cost of production in time (DiPietre, 2000). Finally, the influence of politics on efficiency and on resources mobilisation in fixed assets investment has been confirmed (Bassanini and Scarpetta, 2001).

Fast and low-cost analysis of soil fertility enables identification of variability and efficient allocation of other production factors or drivers: particularly, where managerial ability proves positively to be correlated with highly productive contracts, the output does increase (cf. Key and McBride, 2003). Based on the research conducted by (Cameron and Chamala, 2004), it follows that many business entity managers are ready to extend schemes to build a change, and those focused on goal fulfilment tend to highly correlate, which points to the identification of change in business purposes/objectives. This mechanism has a special role as far as the functioning of CAP is concerned, since entities may obtain/receive support at a fairly weak output generated (Hill, 2012). J.D. Kropp and A.L. Katachova (2011) proved that direct payment forms considerable and reliable flows of cash actually received, thus improving liquidity and solvency of farming business entities and, to an extent, quality of loan collaterals. N. Mirza et al. (2013) found, in turn, that high financial leverage does not always lead to more risk, especially when business entities have adequate coverage of business productivity and cash flow. S. Dercon and P. Krishnan (2003) indicated that an attempt to prove the constrained-efficient (partial) risk that divides the model and the imposed constraints is the evidence that intrinsic shocks may not be as well secured in the era of public networks of financial security. In the endogenous growth context, surpluses required to keep up production tend to emerge in a natural manner, as awards for successful innovative activity (Francois and Roberts, 2003). Industrialisation enables higher differentiation between foodstuffs, and leads to more clearly coordinated production and marketing channels such as contracts, to a broader use by farmers, and to more voluminous business entities in agriculture (MacDonald et al., 2004).

The influence of politics on fixed income market proves to be not particularly significant for most investors. This results in higher productivity, with an observably increased quantity of resources being the object of investment in the private sector (Bomfim, 2003). Productivity may only be altered resulting from a change, or several changes (Juszczyk and Balina, 2014). Resulting from irreversibility, uncertainty tends to decrease investment, but when an option proves real the investment is carried out. A negative junction between uncertainty and investment is formed by the irreversibility (Khuong Ninh et al., 2004). Investment demand ought to be favourable to at least small-scale as well as large-scale producers, whereas credit supply at the rural market tends towards large-scale producers if there is internal concentration of capital (Carter and Olinto, 2003). In the long term, development coexists with short-term financial security and investments. Coordination of these elements causes fundamental changes in making the systems more efficient and integrating them with the

local landscape (Frost, 2004). Liberalisation in commerce causes a possibly more sustainable development and increasing productivity. This indicates that other factors, such as a different policy, investment and institutions, prove to be of importance for development (Winters, 2004). Adequacy of rural development projects is positively correlated with the existence of informal systems (Volk and Bojnec, 2014).

Research methodology. There is no financial security unambiguously quantifiable for agricultural business entities. The most frequently used measure of agriculture's economic development is the category of final production sold. An identical level of output is achievable at various levels or relations between the factor and resources involved and at diverse volumes of business operations. The "final production sold" category is dependent upon the sales conditions and costs, in terms of their level and variability as compared to actual sales.

Some problems have appeared in using the agricultural income category as a dependent variable, since the subsidies received based on CAP directly increase agricultural income. The share of EU subsidies (funding) in Poland's agricultural income reaches at times 70%, and hence, this particular category cannot be used as a dependent variable in assessing the profitability of individual EU funds. Owing to this methodological default, the category of final production sold has been used as a dependent variable in this research.

It can be presumed that the set of agricultural (farming) business entities in the provinces may be identifiable in terms of proportionality of developmental opportunities (Brant, 1990). However, proportional financial supply does not ensure prospects for continued and developing business activity in agriculture. Econometric verification will cover the level and the rate of change in final production sold as influenced by SAPS and the separate fruit/vegetable and sugar-based payment, plus special support addressing market conditions in farming operations in each under − 2011, 2012 and 2013.

The variables of final production sold, SAPS, separate fruit/vegetable and sugar-based payment, and special support are all discrete random variables. Moreover, they form a finite collectivity (ranging across the whole of Poland) and express regression curves that reflect the dependencies between the features − the way in which the values of the features of the two sets tend to associate. This is indicative of the need to use the curvilinear power regression of the Cobb-Douglas type in identifying the regressive dependence of final production sold upon SAPS, the separate payment based on fruit/vegetables and sugar, and special support in agriculture, for the years 2011, 2012 and 2013.

Empirical variables for the Cobb-Douglas model have been selected using a matrix of logarithmic correlation coefficients. The principle of strong correlation between the independent variable and the dependent variable, against a weak correlation between independent variables, has been used. The numerical calculations have been carried out in SPSS program.

Results and discussion. Research has been performed into sets of empirical data related to agricultural business entities within the provinces (regions), such as final production sold, SAPS, separate payment related to fruits/vegetables and sugar, and special support in Poland for 2011, 2012 and 2013: N = 16. Direct as well as indirect financial security forms a complex system referred to as the financial security network

in Polish agriculture. Direct financial security is connected with production-related decisions based on market demand. Direct area payments ought to ensure stable farming-based income in the event of a sudden change in market situation, or in the case of disaster. Indirect financial security is based on separate payments related to vegetables and fruit as well as sugar, plus special support. Importantly, the aforesaid payments are separated and constitute funds satisfying financial security and operating internally or externally with regard to agricultural activities.

The linear (Pearson's) correlation between the final production sold variable (Y2) and the SAPS variable (x1) is 0.925; for the separate fruit/vegetable and sugar-related payment (x2) it amounts to 0.554, and for special support (x3) it is 0.074, the bilateral significance being 0.01. The aggregated value of the separate fruit/vegetable and sugar-related payment, with special support, and final production sold is bilaterally correlated at 0.427, with the significance of 0.01. Based on the above-specified Pearson correlation coefficients (r), it follows that the final production sold is not correlated with special support, while the total of features of the variables (x2 and x3) does not increase the correlation (0.427).This is indicative of no effective use of special support even in the model with one independent variable. Given such a substantive status as far as bilateral correlation is concerned, it is necessary to apply a regression with one independent variable but without special support (x3), as the parameter with respect to x3 proves to be statistically insignificant (> 0.05). Determinations of the related linear correlation of features authorise the specification of the parameters for the variables' features (Table 1).

Table 1. **Parameters of the features of the relevant variables
in Polish agricultural sector, as of 2011, 2012 and 2013,**
based on the author's calculations (GUS, 2012–2014)

Specification	Year	in	Symbol	Arithmetic average	Range, min to max	Variability coefficient, %
Final production sold	2011	mln	Y2	4869.2	1898.3–12813.7	67.7
	2012	PLN		5104.5	1960.1–13230.8	66.9
	2013			5431.2	2085.6–14685.9	71.9
Single Area Payment Scheme (direct payments)	2011	mln	x1	488.2	185.8–1039.4	51.8
	2012	PLN		617.1	235–1312.5	51.8
	2013			638.1	245.4–1361.8	51.8
Separate payment based on fruit/vegetables and sugar (indirect payments)	2011	mln	x2	40.8	4.5–129.6	98.5
	2012	PLN		37.1	5.0–126.3	98.1
	2013			45.3	4.6–134.7	89.4
Special support (indirect payments)	2011	mln	x3	10.0	1.0–44.6	129.0
	2012	PLN		9.6	1.0–34.41	116.7
	2013			26.8	2.6–135.9	126.5

As follows from Table 1, the range of final production sold (Y2) points to its not-quite-significant diversity per region and in each of the years concerned. Based on a comparison between internal variability between the variables, the final production sold discloses a diversity in the distributed feature that is halfway through the variables. The least and identical internal diversity in the feature distributed is the case with SAPS. Special support implies the most significant diversity of the distributed feature. In particular, special support, although mostly dispersed around the average,

cannot be used as an independent variable owing to what has been marked. The separate payment based on fruits and vegetables as well as sugar discloses a similar internal variability for the regions and years concerned.

The curvilinear regressive dependence for individual variables expressing financial security in the agricultural sector has been broken down in Table 2.

Table 2. **Power regression of final production sold (Y2) for SAPS (x1) and separate payment based on vegetables and fruit, and on sugar in Polish agricultural sector, as of 2011, 2012 and 2013,** *author's calculations*

a*	Regression coefficient		Standard error			t-test			Corrected R²
	x1	x2	a	x1	x2	a	x1	x2	
2011									
7.128	1.047		0.65	0.11		3.0	9.8		0.86
1387.134		0.339	0.36		0.11	20.0		3.2	0.64
2012									
5.387	1.060		0.67	0.11		2.5	10.1		0.87
2036.514		0.237	0.46		0.11	16.5		1.7	0.41
2013									
3.490	1.130		0.60	0.10		1.9	11.0		0.89
1362.389		0.352	0.45		0.13	16.0		2.8	0.59

a* – absolute term, delogarithmised.
The significance of the regression coefficients is within the range 0.00–0.05.

Table 2 shows the regressive dependence of final production sold, separately, upon SAPS (x1) and upon the separate payment related to vegetables/fruits and sugar (x2) in Polish agriculture as of 2011, 2012 and 2013. Variables x1 and x2 explain the variability of the final sold production within the range 41−89%. Final production sold, explainable in terms of determination coefficient R2 of above 0.9, points to a fairly satisfactory explanation of financial security in agriculture (Neumark et al., 1991). Strength of the association, expressed in terms of partial correlation coefficient between final production sold and SAPS and, separately, the vegetable/fruit and sugar-based payment as a positive square root of R2, is within the range of 64−94%. Standard errors for the regression coefficients are below 50% of their absolute values. The absolute values of the t-test prove to be, in turn, few-fold higher than the regression coefficient values, whereas the significance of the regression coefficients stays within the range of 0.00−0.05. The above statistical evaluations of the regression coefficients (parameters) indicate the option that they may be used in econometric analysis of variability of the final production sold as related to SAPS and separate fruit/ vegetable and sugar-based payment in Polish agriculture in the years 2011, 2012 and 2013.

The regression coefficients, the function parameters at x1 and x2 define the flexibility (flexibility coefficients) for the final sold production relative to SAPS (x1) and the separate fruit/vegetable and sugar-based payment (x2) (financial security of the sector in question). As R. Solow (1956) explained, these coefficients determine the flexibility (Y2) with respect to x1 and x2; according to J.B. Clark's marginal distribution theory, they are the shares of SAPS (x1) and of the separate fruit/vegetable and sugar-based payment (x2) relative to the final production sold in the agriculture sector in each year. Moreover, the flexibility coefficient expresses the relations between

the relative change in the final production sold and the relative alteration in the fund (payment) that has triggered this change.

Flexibility of the final sold production (Table 2) proves to be the highest with respect to the sector's SAPS, equalling to 1.047 (as of 2011), 1.060 (2012), and 1.130 (2013). The said flexibility related to SAPS tends to grow steadily. The above regressive dependency is more than proportional, and is thus curvilinear. A 10% increment in SAPS, against the other funds remaining unaltered, results in increased final production sold by 10.7% (2011), 10.60% (2012), and 11,30% (2013), respectively. Flexibility of final sold production relative to the separate payment related to fruit/vegetables and sugar in agriculture is more than threefold lower, that is, in respective figures: 0.339 (2011), 0.237 (2012), and 0.352 (2013). This particular dependency is less than proportional, and curvilinear. The increase of 10% in the separate payment based on fruit/vegetables, with the other funds remaining unchanged, causes an increment in the final production sold by, respectively, 3.39% (2011), 2.37% (2012), and 3.52% (2013). The decisions with respect to the separate payment related to fruit-and-vegetables and sugar tend to be shaped by environment conditions (Rostasova and Chrenkova, 2010). Single area payments and those based on vegetables/fruit and sugar may mobilise considerable amounts of money (in Polish zloty) from the sector's business entities' own funds. These would be the multiplier effects of the EU funding as financial security. The most considerable multiplier effects can be expected from the outlays that help reduce costs/expenses of final production sold, and from those mobilising the use of the agriculture's productive capacity.

Based upon J.B. Clark's marginal distribution theory, the structure of financial security can be determined in terms of the proportion of SAPS and the separate payment related to fruit/vegetables and sugar. The relative final production sold relative to SAPS has been influenced at the level of 75.54% (2011), 81.70% (2012), and 76.25% (2013), respectively. These relative determinants of financial security indicate that some 75% of the impact on the relative final production is the case with SAPS, while a quarter is related to separate fruit/vegetables and sugar-based payments in agriculture.

The finance theory implies an attempt to grasp and describe financial phenomena and processes in cause-and-effect terms so that ties and dependencies might be sought. What is therefore needed is to determine, within the reach of variability, the SAPS and the separate fruit/vegetables and sugar-based payment in agriculture in 2011, 2012, and 2013. These have been used to determine marginal and average productivity of the aforesaid independent variables in Polish agriculture. Marginal and average productivity of the SAPS for the sector concerned are specified in Tables 3, 5 and 7.

From Tables 3, 5 and 7, it follows that with SAPS increasing, marginal productivity is growing above the mean productivity, the latter increasing at slower rates; the global productivity demonstrates increasingly faster growth at the same time. These dependencies appear in the input zone of irrational management in the agricultural sector, when viewed as of 2011, 2012 and 2013. However, increasing the single area payment is legitimate since $E_y > 1$, thus, increase of this particular payment causes its higher marginal increments. Thus, it would be unjustifiable to have the single area payment in the aforesaid zone kept non-increased.

Table 3. **Marginal and average productivity of SAPS in Polish agriculture, 2011,**
author's calculations on the data from Tables 1–2

Final production (Y2)	SAPS (x1)	Productivity:	
		average	marginal
mln PLN		mln PLN/mln PLN	
2607.15	280.64	9.29	9.73
3536.28	375.48	9.28	9.72
4476.61	470.32	9.52	9.97
5425.97	565.16	9.60	10.05
6382.87	660.00	9.67	10.13
7346.29	754.84	9.73	10.19
8315.42	849.68	9.79	10.25
9289.66	944.52	9.84	10.30

Table 4. **Marginal and average productivity of separate payments based
on fruit and vegetables and on sugar in Polish agriculture sector, 2011,**
author's calculations on the data from Tables 1–2

Final production (Y2)	Separate fruit/vegetable and sugar payment (x2)	Productivity:	
		average	marginal
mln PLN		mln PLN/mln PLN	
3722.99	18.40	202.34	68.59
4505.45	32.30	139.49	47.29
5086.65	46.20	110.10	37.32
5561.05	60.10	92.53	31.37
5967.44	74.00	80.64	27.34
6326.02	87.90	71.97	24.40
6648.83	101.80	65.31	22.14
6943.66	115.70	60.01	20.34

Table 5. **Marginal and average productivity of SAPS in Polish agriculture, 2012,**
author's calculations on the data from Tables 1–2

Final production (Y2)	SAPS (x1)	Productivity:	
		average	marginal
mln PLN		mln PLN/mln PLN	
2717.69	354.70	7.66	8.12
3698.80	474.40	7.80	8.26
4695.03	594.10	7.90	8.38
5703.46	713.80	7.99	8.47
6722.13	833.50	8.06	8.55
7749.65	953.20	8.13	8.62
8784.96	1072.90	8.19	8.68
9827.24	1192.60	8.24	8.73

The cause-and-effect dependencies related to separate payments for fruit/vegetables and sugar are presented in detail in Tables 4, 6 and 8.

As it stems from Tables 4, 6 and 8, as the separate payment related to fruit/vegetables and sugar were growing in each year, marginal productivity tends to decrease down to zero, also causing a drop in average productivity. This, however, taking place at a slower rate — while the global productivity shows growth. Yet, the rate at which

the latter increases heads towards zero. The above dependencies take place within the rational management zone in the sector. Therein, flexibility of global productivity relative to the separate payments on fruit/vegetable and sugar is above 0 but less than 1, that is: $0 < E_y < 1.0$ for the sector as of 2011, 2012 and 2013. The growth rate within the reach of the extremes of the individual variables is specified in Table 9.

Table 6. **Marginal and average productivity of the separate payment based on fruit and vegetables and on sugar in Polish agriculture, 2012,**
author's calculations on the data from Tables 1–2

Final production (Y2)	Separate fruit/vegetable and sugar payment (x2)	Productivity:	
		average	marginal
mln PLN		mln PLN/mln PLN	
4064.30	18.48	219.93	52.12
4627.75	31.96	144.80	34.32
5030.26	45.44	110.70	26.24
5349.71	58.92	90.80	21.52
5617.41	72.40	77.59	18.39
5849.38	85.88	68.11	16.14
6055.04	99.36	60.94	14.44
6240.39	112.84	55.30	13.11

Table 7. **Marginal and average productivity of SAPS in Polish agriculture, 2013,**
author's calculations on the data from Tables 1–2

Final production (Y2)	SAPS (x1)	Productivity:	
		average	marginal
mln PLN		mln PLN/mln PLN	
2780.67	369.44	7.53	8.51
3856.38	493.44	7.82	8.83
4968.18	617.44	8.05	9.09
6109.58	741.44	8.24	9.31
7276.18	865.44	8.41	9.50
8464.78	989.44	8.56	9.67
9672.95	1113.44	8.69	9.82
10898.78	1237.44	8.81	9.95

Table 8. **Marginal and average productivity of separate payment based on fruit and vegetables and on sugar in Polish agriculture, 2013,**
author's calculations on the data from Tables 1–2

Final production (Y2)	Separate fruit/vegetable and sugar payment (x2)	Productivity:	
		average	marginal
mln PLN		mln PLN/mln PLN	
3843.65	19.04	201.87	71.06
4688.41	33.48	140.04	49.29
5319.16	47.92	111.00	39.07
5835.90	62.36	93.58	32.94
6279.84	76.80	81.77	28.78
6672.47	91.24	73.13	25.74
7026.62	105.68	66.49	23.40
7350.65	120.12	61.19	21.54

Table 9. **Average rate of growth within the range of variability of:
final production (Y2); SAPS (x1), separate payment (x2) and
marginal and average payments in the agricultural sector,** *%,
author's calculations, using the geometric average*

Specification	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8
Final production sold (Y2)	19.9	9.3	20.2	6.3	21.5	9.7
SAPS (x1)	18.9		18,9		18.8	
Separate fruit/vegetable and sugar-based payment (x2)		30.0		29.5		30.1
Productivity: - marginal - average	0.81 0.81	−15.94 −15.95	1.04 1.04	−17.89 −17.89	2.27 2.27	−15.68 −15.68

Table 9 demonstrates that the average rate of increase in the final production sold (30%) will be ensured against the average rate of increase in the single area payment (19%) and separate fruit/vegetable-based and sugar-based payment (30%), with the growth rate for marginal and mean single area payment within the range of 0.81−2.27% and with a negative rate of increase in marginal and average separate payment based on fruit/vegetables and sugar in the agricultural sector for the average year under investigation. Based upon the relation of the mean growth rates, it follows that the average growth rate of the final production sold (30%) will be ensured by direct and indirect payments (50%). This means that the EU payments within a given year surveyed have satisfactorily met the objective of financial security in the agricultural sector for the average year investigated.

Conclusion. Our research has confirmed the hypothesis whereby the flexibility of the final production sold proves the highest relative to SAPS in agriculture. An unambiguously favourable effect has emerged in terms of stabilised final production sold in Poland's agriculture. The use of direct payments has fallen within the initial (input) zone of irrational management; indirect payments have been consumed within the rational management zone. This proves that the increase of the EU payments, direct as well as indirect, is reasonably justifiable and legitimate, which tells us that there exists efficient financial security in Polish agriculture. Since the EU payments fulfil different functions (internal, external), financial security stabilises various levels of agriculture. Special payments are in a negative relation with the final production sold. This implies the impossibility to achieve a statistically significant parameter, also causing problems in determining the real role of these EU payments for Polish agriculture.

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