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Current and Projected Economic Situation of Polish Agricultural Producers

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SUMMARY

The purpose of the study was to assess the economic prospects of Polish agricultural producers under the conditions of an increase in their production costs after 2022. This assessment was made using research methods, such as descriptive analysis, financial analysis, simulations, and inference. The results of the research are presented in tables. The research problem was carried out using data of farms conducting agricultural accounting (FADN) in 2018-2020 and literature information. The research and literature shows that due to the increase in production costs, the economic situation of Polish agricultural producers in 2022 and beyond may deteriorate. Simulations of the future economic situation of farms in Poland were carried out for different agricultural types. Such as[1]:

- field crops,
- dairy cows,
- pigs,
- poultry,
- mixed.

INTRODUCTION

In economic research, we mostly use historical events. The analyses conducted are based on the past. The hypotheses made also refer to the events that have occurred. These, in turn, allow for their verification. In general, in economic work we are not concerned with predicting the future. For the above reason that it would be difficult to verify hypotheses that relate to it. In recent years, we are in special conditions when it comes to the macroeconomic situation in Poland and the world. It is very dynamic and difficult to predict. It seems to be a good time to depart from the tradition of past economic research and attempt to assess the future. Of course, the basis for predicting the future will be the past. The purpose of the study is to present the economic situation of agricultural producers in Poland, in the coming years, agricultural producers as the weakest link of agribusiness in the last three years have found themselves in new economic conditions caused by the COVID-19 pandemic and the war in Ukraine. These new conditions are causing a drastic increase in input prices, an inadequate increase in the price of agricultural products, the breaking of supply chains, making the economic situation of farms deteriorate. Measures to mitigate the effects of adverse changes in the macroeconomic situation on agricultural producers must be noted with appreciation. However, the force of these adverse changes is much stronger than the shielding measures. As a result, it is likely to result in a deterioration of the income situation of farms. Consequently, it will lead to the collapse of some of them, which may undermine food self-sufficiency in Poland.

RESEARCH METHODS

The study will use classical research methods, such as descriptive analysis, financial analysis, simulation and inference. The results of the analysis will be presented in tables.

SOURCE MATERIAL

The basic economic and financial data comes from farms keeping agricultural accounts within the FADN, which is administered by IERiGŻ-PIB. FADN farms are approx. 12,000 and they represent about 700,000 farms in Poland. In addition, data from the CSO mass statistics and information from the literature will be used.

[1] The study omitted, due to the niche nature of farm agricultural types such as horticultural crops, permanent crops and grassland animals.

a) Economic and production results of FADN farms in 2018-2020.

This part of the work will present the results of FADN farms by selected individual agricultural types. Such as:

- field crops,
- dairy cows,
- pigs,
- poultry,
- mixed[2]

Table 1 shows the economic and production results of farms engaged in field crops.

Table 1. Economic and productive results of farms engaged in field crops

Specification	Year			On average in years
	2018	2019	2020	
Number of farms represented	177174	180548	317692	225138
Agricultural area in ha	21,29	20,88	20,57	20,61
Farm income (with subsidies in PLN)	38 475	41343	39346	39651
Surcharges to operating activities (in PLN)	29475	28828	27264	28262
Share of surcharges in the income of the economy (in %)	76,6	69,7	69,3	71,3
Income from homestead (without subsidies in PLN)	8121	10942	10775	10124
Operating payments (in PLN)	125584	125410	118451	122183
Operating withdrawals (in PLN)	68480	67813	61809	65164
Balance on operating activities (in PLN)	57104	57596	56042	57019
Ratio of disbursements to operating contributions (in %)	54,5	54,1	52,2	53,3
Average net salary in the national economy (in PLN)	37156	39877	42062	39820

Source: FADN Data, own study.

The data of Tab.1 report that the economic situation of farms engaged in field crops is determined by operating subsidies. They represent in the years under study, on average, 71.3% in relation to the income realized by these farms. If they were not there, then the income from the surveyed farms would account for about 25% (10124 PLN; 39820 PLN) of the average wage in the national economy. Of interest is the ratio of disbursements to operating payments. It informs about the cost intensity of production in farms engaged in field crops. On average, in the years under study, it was 53.3%. In view of this, the profit on operating activities is lower than its costs. On average, the operating balance in 2018-2020 was PLN 57018 and costs were PLN 65164. If one were to assume that in the next few years the operating profit would be at the current level, then with the calculated cost structure at IERiGŻ-PIB[3] and the projected 60%[4] increase in the cost of this production , operating income should increase by 32%. This follows from the following simulation:

100 PLN operating income (OI) – 53 PLN operating expenses (OE) = 47 PLN operating profit (OP)

132 PLN operating income (OI) – 85 PLN operating expenses (OE) = 47 PLN operating profit (OP)

A smaller increase in operating income will result in a deterioration of the existing operating profit. An increase in operating income above 32% will result in an increase in the existing operating profit. The information in Table 1 makes it possible to note that the income with subsidies from a farm engaged in field crops is much higher than the balance of operating activities. On average in the years studied, these values are respectively: PLN 39651 PLN 57019. This means that these farms incur, in addition to operating expenses, other costs of their operation. These will be taxes, fees, insurance premiums, interest, etc.

Table 2 shows the economic and production results of FADN dairy farms.

[2] Among FADN farms, types such as horticultural crops, grass crops and grassland animals are still distinguished.

[3] M. Podstawka, Opracowanie pt. „Wzrost cen środków produkcji a przewidywana sytuacja ekonomiczna polskich produktów rolnych 2022 r." Przedstawione 22 marca 2022 r. na Posiedzeniu Rady przy Prezydencie RP ds. Rolnictwa i Obszarów Wiejskich.

[4] A. Skarżyńska, Koszty jednostkowe i dochody wybranych produktów w 2017 r. Wyniki badań w systemie AGROKOSZTY. Zagadnienia Ekonomiki Rolnej 2(359), 2019 r., s.114-119

Table 2. Economic and production performance of dairy farms.

Specification	Year	Year	Year	On average in years
	2018	2019	2020	
Number of farms represented	82839	81624	94513	86325
Agricultural area (in ha)	22,40	22,93	21,32	22,17
Income from farms with subsidies (in PLN)	83143	86982	91389	87363
Surcharges to operating activities (in PLN)	38516	38808	38229	38503
Income from farms without subsidies (in PLN)	43257	46667	51588	47372
Share of subsidies in farm income (in %)	46,3	44,6	41,8	44,1
Operating payments (in PLN)	205656	218837	229296	218438
Operational withdrawals (in PLN)	100282	112331	114951	109433
Balance on operating activities (in PLN)	105374	106505	114346	109005
Ratio of disbursements to operating contributions (in %)	48,8	51,3	50,1	50,1
Przeciętne wynagrodzenie netto w gospodarce narodowej (w zł)	37156	39877	42062	39820

Source: FADN Data, own study.

In the case of dairy farms, the share of operating subsidies in income is much lower than in farms engaged in field crops. On average, in the years studied, this share is 44.1%. This means that dairy farms are more economically efficient than crop farms. This is evidenced by the values of income per farm, both with and without subsidies. In the years under study, the average income of these farms with subsidies was PLN 87363. Farms engaged in crop production realized this income in the amount of PLN 39851. At the same time, the areas of agricultural land of one farm and the other were similar to each other. The average area of farms engaged in field crops was 20.61 hectares of farmland. Dairy farms, on the other hand, had an average of 22.17 hectares of farmland. It is worth noting that dairy farms obtained in the years under study, income values without subsidies, higher than the net wage in the national economy. In the case of dairy farms, as before, we observe that income with subsidies is lower than the balance on operating activities. This implies a similar situation to that of crop farms, that among dairy farms there are also costs other than just on operating activities. From the point of view of the future economic situation of these farms, the ratio of disbursements to operating payments and the expected increase in production costs is important. In the case of dairy farms, disbursements to operating contributions, on average, amounted to 50.1% in the surveyed years 2018-2020. In this situation, operating profit, equals its costs. If it is assumed that operating profit will be among these farms, at the current level, then with the increase in production costs of 23%[5] in 2022, operating income should increase by 11.5%.

100 PLN operating income (OI) – 50 PLN operating expenses (OE) = 50 PLN operating profit (OP)

111,5 PLN operating income (OI) – 61,5 PLN operating expenses (OE) = 50 PLN operating profit (OP)

The following Tab 3 shows the economic and production situation of FADN pig farms.

Table 3. Economic and production results of swine farms.

Specification	Year			On average in years
	2018	2019	2020	
Number of farms represented	22445	24238	11607	20096
Agricultural area (in ha)	20,9	18,6	22,5	20,4
Income from farms with subsidies (in PLN)	50833	90910	102789	78671
Surcharges to operating activities (in PLN)	29055	24650	32339	28025
Income from farms without subsidies (in PLN)	19760	63292	66187	47739
Share of subsidies in farm income (in %)	57,2	27,1	31,5	35,6

[5] M. Podstawka, Opracowanie pt. „Wzrost cen środków produkcji a przewidywana sytuacja ekonomiczna polskich produktów rolnych 2022 r." Przedstawione 22 marca 2022 r. na Posiedzeniu Rady przy Prezydencie RP ds. Rolnictwa i Obszarów Wiejskich.

Operating payments (in PLN)	300439	328346	499768	356646
Operating withdrawals (in PLN)	214401	223606	349800	248660
Balance on operating activities (in PLN)	86038	104740	149969	107986
Ratio of disbursements to operating contributions (in %)	71,4	68,1	70,0	69,7
Average net salary in the national economy (in PLN)	37156	39877	42062	39820

Source: FADN Data, own study.

Among farms engaged in pork livestock production, we observe (Table 3) a smaller share of subsidies in their income than before. This is due to the fact that these farms are more intensive and realize higher operating income than farms engaged in crops and pork livestock production. They achieve relatively higher incomes than the average wage in the national economy. On average, in the years under review, the income of these farms without subsidies, except for 2018, amounted to PLN 47739 and was higher than the average wage in the national economy, which was PLN 39820. It is worth noting that among pig farms, the share of subsidies, in income with subsidies was relatively the lowest. On average, in the years under review, it was 35.6%. As before, we observe among these farms that income with subsidies is lower than the balance on operating activities. On average in 2018-2020, income with subsidies amounted to: PLN 78671 per farm, and the balance on operations was PLN 107986. This means that pig farms, like the previous ones, incur costs of running their business in addition to operating expenses. These include taxes, fees, insurance premiums, interest, etc.

From the data in Table 3, it can be seen that among swine farms there is a relatively high ratio of operating disbursements to such payments. On average in 2018-2020, the proportion was 69.7%. In this situation, operating profit is less than operating expenses. On average, in the years under review, operating profit was PLN 107986 and operating expenses were PLN 248660. If we assume that the operating profit in 2022 and subsequent years will be at the same level, then forecasting an increase in production costs for this agricultural activity by 37%, operating income should increase by about 26%.

100 PLN operating income (OI) - 69.7 PLN operating expenses (OE) = 30.3 PLN operating profit (OP)

125.8 PLN operating income (OI) - 95.5 PLN operating expenses (OE) = 30.3 PLN operating profit (OP)

Table 4 provides economic and production information of poultry farms.

Table 4. Economic and production performance of poultry farms.

Specification	**Year**	**Year**	**Year**	**On average**
	2018	**2019**	**2020**	**in years**
Number of farms represented	4396	4801	5162	4786
Agricultural area (in ha)	20,3	25,9	28,1	25,0
Income from farms with subsidies (in PLN)	330532	280044	297633	301182
Surcharges to operating activities (in PLN)	27611	29875	35285	31127
Income from farms without subsidies (in PLN)	301436	248300	259781	268694
Share of subsidies in farm income (in %)	8,4	10,7	11,9	10,3
Operating payments (in PLN)	1525270	1316944	1548406	1463933
Operating withdrawals (in PLN)	1142429	970656	1132839	1081535
Balance on operating activities (in PLN)	382841	346327	415566	382398
Ratio of disbursements to operating contributions (in %)	74,9	73,7	73,2	73,9
Average net salary in the national economy (in PLN)	37156	39877	42062	39820

Source: FADN Data, own study.

Poultry farms (Table 4) have the relatively lowest share of subsidies in their income. In the surveyed years 2018-2022, it averaged 10.3%. Despite this, these farms have relatively high incomes, which without subsidies are several times higher than the average net salary in the national economy. In the surveyed years 2018-2022, these incomes averaged PLN 268694 and were almost 7 times higher than the average salary in the national economy. For these farms, we observe, as before, that the balance on operating activities is higher than the income from the farm with subsidies. This indicates,

as, in the case of the previously assessed farms, that poultry farmers are also burdened with social accumulation costs, interest, etc. Poultry farms have, like swine farms, a high ratio of disbursements to operating contributions. On average, in the years studied, it was almost 74%. This shows that poultry production on Polish farms is highly cost-intensive. Similarly, as in the case of previously assessed farms, a simulation will be presented on the development of the economic situation of poultry farms in 2022 and subsequent years. In this case, we will assume that operating profit will remain unchanged, which, with a 50% increase in production costs in 2022, should be offset by an increase in revenue of almost 37%.

100 PLN operating income (OI) - 73.9 PLN operating expenses (OE) = 26.1 PLN operating profit (OP)

136.9 PLN operating income (OI) - 110 PLN operating expenses (OE) = 26.1 PLN operating profit (OP)

If the same level of cost growth is maintained in 2022 and subsequent years, to ensure the current economic conditions of poultry farms, their revenues should be higher by almost 37% compared to 2018-2022. Making some simplification, poultry selling prices should increase by 37%. Table 5 presents the economic and production situation of mixed farms keeping accounts for FADN.

Table 5. economic and production results of mixed farms.

Specification	**Year**	**Year**	**Year**	**On average**
	2018	**2019**	**2020**	**in years**
Number of farms represented	326238	323735	204721	284898
Agricultural area (in ha)	15,2	15,2	15,7	15,3
Income from farms with subsidies (in PLN)	22449	30020	30488	27242
Surcharges to operating activities (in PLN)	22799	23648	24981	23643
Income from farms without subsidies (in PLN)	-908	4990	4006	2500
Share of subsidies in farm income (in %)	101,6	78,8	81,9	86,8
Operating payments (in PLN)	90013	95823	105182	95847
Operating withdrawals (in PLN)	52599	55937	58796	55347
Balance on operating activities (in PLN)	37415	39886	46386	40500
Ratio of disbursements to operating contributions (in %)	58,4	58,4	55,9	57,7
Average net salary in the national economy (in PLN)	37156	39877	42062	39820

Source: FADN Data, own study.

Mixed farms are characterized by a relatively large share of subsidies in the structure of their activities. In 2018-200, this share averaged 86.8%. Mixed farms earn less income with subsidies relative to the average wage in the national economy. The income of these farms without subsidies is 16 times lower than the average wage in the state economy. It should be emphasized that in 2018 these farms had negative income without subsidies. In the case of mixed farms, we observe an analogous situation, as before, that the operating balance is higher than income with subsidies. This indicates, as before, that these farms are burdened with other costs resulting from their operation. Such as taxes, fees, insurance premiums, interest, etc. In all the years studied, among mixed farms, we observe the shares of costs in operating income exceed 50%. Specifically, on average, the share in 2018-2020 was 57.7%. This shows that if it were not for subsidies similarly to the previously described farms, these farms also make losses on operating activities. Taking into account the increase in production costs in 2022 of 85% in the case of mixed farms, we will simulate the value of income, which allowed to maintain the current values of operating profit.

100 PLN operating income (OI) - 57.7 PLN operating expenses (OE) = 42.3 PLN operating profit (OP)

149 PLN operating income (OI) - 106.7 PLN operating expenses (OE) = 42.3 PLN operating profit (OP)

In the case of mixed farms, in order to achieve the current level of operating profits, with an 85% increase in costs, operating income should increase by almost 50%. If price increases for the products of these farms are lower, this will contribute to lower operating profits and incomes on these farms.

All surveyed farm agricultural types recorded losses on operations in 2018-2020. If it were not for subsidies, implemented within the framework of the Common Agricultural Policy, the surveyed FADN farms, grouped by

agricultural type, would be in deficit. This is due to the fact that operating expenses accounted for, among them, more than 50%. The worst situation in this regard was achieved by poultry and swine farms. Among these farms, the ratio of disbursements to operating payments was more than 70%. Among field crop farms, on average in the years studied, production costs amounted to 53.3% in relation to their operating income. On mixed farms, this ratio remained at 57.7% and on dairy farms it was 50.1%. This means that in dairy farms, in 2018-2020, the economic situation was the best because revenues were almost equivalent to costs. As for the prospects for the development of the economic situation of the surveyed farms in 2022 and beyond, it will be most difficult to maintain the current level of operating profit among mixed farms. In this case, operating income should increase by about 50%. It will be slightly better, in this respect, among poultry farms. Here, maintaining, the current level of operating profit, revenues should increase by almost 37%. On a similar scale (32%) should be higher revenues for farms engaged in field crops. Revenues should increase by about 26% in swine farms and by 11.5% in dairy farms to maintain their current level of operating profits.

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