Conditions of Agriculture Compared to Economic Growth in Selected Countries

Anna Szczepańska-Przekota [1]

Abstract:

Purpose: In the past years, agriculture has been undergoing large transformations. It has become more modern, but its share in the GDP growth has been diminishing. The question of the connection between the condition on the agriculture market and the general economic condition seems fundamental.

Design/Methodology/Approach: Based on the added value of agriculture and the Gross Domestic Product in 1992-2017 in the United States, Great Britain, France, and Poland, the connection was determined between these variables. Correlative and cointegration research was carried out.

Findings: Based on the research results, conclusions may be drawn about a poorer and less stable increase in agriculture in Europe as compared to the United States.

Practical Implications: Grounds for the statement were found that disturbances in agriculture may have a negative impact on the entire economy. This is particularly evident in Europe. Hence, it is recommended to examine the current policy of the EU.

Originality/value: Research shows how important the implications of a single branch of the economy are for the entire economy. Moreover, it provides grounds for remodeling EU policy towards market deregulation following the US pattern.

Keywords: Agriculture, GDP, cointegration, causality.

JEL classification: E32, O11, O57, Q11.

Paper Type: Research study.

[1]*Ph.D., Faculty of Economic Sciences, Koszalin University of Technology, Poland., e-mail:* *anna.szczepanska-przekota@tu.koszalin.pl*

1. Introduction

Systems that provide food are an integral part of the health of the human population and our planet's durability. The development of effective food systems will have to be of fundamental significance for achieving long-term economic growth globally. However, given the variability of weather phenomena, a seasonal cycle of agricultural production, and the resulting variability of food prices, the risk of agricultural production is growing, which has a negative influence on the global economic growth. At the same time, the policy towards agricultural markets is changing due to new international agreements (Swinnen, 2010).

Present-day economies are subject to certain fluctuations, that is, disturbances in long-term growth, which occur in irregular time intervals with an irregular force causing changes in the whole economy's functioning (Romer, 1996). Fluctuations on agricultural markets may proceed similarly to fluctuations in the entire economy. Therefore, the question seems natural concerning the causal relationship between a given state's economic situation and the condition of the agricultural market (Pollack and Shaffer, 2006). The reciprocal direction of dependences may be quite easily justified because, on the one hand, a good condition on agricultural markets means increased profitability of production, and this may be an impulse for a global increase of production; on the other side, a global increase of incomes may contribute to an increased demand for agricultural products and thereby to an improved condition on this market (Marsden, 2017).

As dependencies between the agricultural market and the economic condition appear to be reciprocal, identifying the statistical properties of this process is interesting. Therefore, the study's purpose is to examine the strength and direction of long-term and short-term dependencies between the added value of agriculture in the Unites States, Great Britain, France, and Poland and the Gross Domestic Product in these countries. The data from the years 1992-2017 was analyzed. Based on the results obtained, an assessment was carried out of the functioning of the individual economies; recommendations were given to the policy's effectiveness.

2. Factors that Are Responsible for the Agricultural Markets

In agricultural markets, demand demonstrates greater stability than supply. This is quite natural, and it results from the nature of agricultural production. Prices regulate the market, but this mechanism may be disturbed on the part of institutions. The problem of the demand for agricultural products is connected with the fact that it is dependent on the consumption of processed food. The growing national income results in changes in society's dietary habits and, thus, changes in the structure and size of agricultural products' demand. Only a small portion of production from farms becomes the final product. The vast majority is processed further by the food industry, fuel, textile, paper industries, etc., (Baffes and Haniotis, 2010).

On the side of demand, the most important factors which have an impact on the prices of agricultural products are connected with the increase of the world population, economic growth, and changes in trends in the developing countries towards a high quality of agricultural products (Rezitis and Sassi, 2013). An abrupt increase in people's incomes in emerging economies with accelerated economic growth (Hopewell, 2015), especially in China and Southeast Asia, has caused changes in societies' consumption habits. Increased meat consumption is being observed in these countries. Taking this into consideration, the following deduction may be made: cereals constitute feed for animals, and meat consumption in Asia in the period of 1995-2005 increased by 50%; therefore, this factor may be perceived as the main reason for the increase of food prices and variability, especially when there are no supplies (Prakash, 2011). The Gross Domestic Product is responsible for a significant part of the total fluctuations of agricultural prices in 1971-2008 (Gilbert, 2010). Noticing this phenomenon points to the fact that the demand for agricultural raw materials will continue to grow with the further development of the economy; thereby, a further increase in prices is expected (Hathaway and Hathaway, 1997). Also, the demand for financial instruments related to agricultural products is growing in recent years (Sanders and Irwin, 2012).

On the side of the supply of agricultural products, several main factors are accepted which are responsible for changes in prices: extreme weather phenomena, a slowdown in the increase of the production of cereals, the availability of resources (Keatinge, 2015) but also the growing prices of petroleum and its consequences for the real economy. In recent years, droughts have been a problem, although this problem is ignored in some investigations. It is noted that the cases of droughts distributed in time may be responsible for an abrupt increase of prices on a global scale because each country affected by drought accounts only for a small portion of the world production, and similar disasters practically appear continuously. They are already included in the world price (Lagi, Bar-Yam and Bertrand, 2011). Additionally, even though stocks are related both to demand and supply, they play a key role in the supply of agricultural products because the flexibility of the supply of agricultural products given the seasonal nature of production is low (Emback and Raquet, 2011).

The pace of the increase in agricultural production is an important issue that is also addressed in the investigations contained in this publication. It is estimated that in the years 1970-1990, the world production of cereals rose on average by 2.2% per annum with an increase in the number of people by ca. 1.7% on an annual average. However, in the years 1990-2007, the pace of the increase of the total world production of cereals decreased to the level of 1.3% on an annual average while the pace of the increase of population numbers also decreased but only to the level of 1.4% on an annual average (Trostle, 2008). A slower increase in the production of cereals that have been observed since the year 2000, with decisions being taken on the limitation of reserves in the leading developed countries, has contributed to a reduction in the supplies of cereals (Wiggins, Keats and Compton, 2010). Lower

supplies in themselves cannot cause an increase in prices. For this effect to occur, this decrease must be correlated with an unforeseen reduction of supply and/or an increase of demand, which may not be met through a release of supplies; hence the balance between demand and supply is accomplished with the aid of a higher price (Piesse and Thirtle, 2009).

The growing prices of petroleum are yet another factor on the supply side that influences the prices of agricultural products (Prakash, 2011). Even though the cost of energy constitutes only a small portion of the total production cost in agriculture, this is a positive dependence even though it is a weak one (Baffes and Hanniotis, 2010). Therefore, by the principle of flexibility, changes in petroleum prices should trigger significantly smaller changes in crops and food (Mitchell, 2008).

Agriculture is one of the national economy sectors, which means that it depends on the developmental tendency of the whole economy and, at the same time, influences these tendencies (Bachev, Ivanov, Toteva and Sokolova, 2017). A good economic situation offers development possibilities to all market entities, including those that run agricultural activities. However, on the other hand, good results in agricultural production have a positive impact on the entire economy's results (Dudek, 2014). The agricultural sector is significantly more sensitive to economic situation changes than non-agricultural sectors (Stepień, 2011). A deterioration of the economic condition and a decrease in people's incomes reduces the demand for food. Given the low flexibility of agricultural production, there is an oversupply of goods, leading to a reduction in prices. In turn, in the conditions of an economic upturn, the prices of agricultural products increase with an increased demand for food. Simultaneously, in the agricultural sector, the costs of production accrue because of the growing prices of fodders, fertilizers, pesticides, and services for agriculture, which are relatively stiff in the period of recession. (Bellmann and Hepburn, 2017). An increase in the manufacturing cost levels out the positive effects of the higher prices of agricultural production. Thereby, losses from the phase of recession are not compensated by annuities from the phase of recovery.

In most developed countries, the contribution of agriculture to the GDP is diminishing, and the condition in agriculture is increasingly more consistent with those occurring in the economy and the global environment (Grzelak, 2013). The integration of the world food markets and the setting of agricultural policy goals on the international level is gaining on a special significance (Sokolova, Kirovsky, Ivanov, 2015). However, despite the declining contribution of agriculture to the GDP, many publications still point out that investments in this sector may stimulate the economy and, thereby, drive force (Chikwama, 2014; Safdar, Maqsood, and Ullah, 2012).

3. Method of Analysis

The study is based on the logarithmic time series for real GDP values and the added

value of agriculture in 1992-2017 for the United States, Great Britain, France, and Poland. Annual data were analyzed. The original GDP values and the added value of agriculture were presented in national currencies according to prices from the year 2010. The data comes from the United Nations Statistical Commission.

The empirical analysis was divided into two parts: a descriptive part and modeling of dependencies. In the descriptive part, the average annual increase of the GDP value and the added value of agriculture were determined for the levels. The level of correlation coefficient was established between the GDP and the added value of agriculture. The long-term correlation GDP relationships and the relationships of the added value of agriculture between the countries examined were measured. Next, the time series of growths were treated similarly. The scope of changes and their standard deviations were determined. The correlation short-term GDP relationships and the relationships of the added value of agriculture between the countries examined were measured.

In part related to the modeling of the dependences of the GDP and added value of agriculture, the conceptions of stationarity and co-integration were used (Engle, Granger, 1987). The time series examined based on an ADF test proved to be a non-stationary series, while the first differences proved to be stationary. Co-integration was tested based on the following equations:

$$\ln(Agriculture) = a_1 \cdot \ln(PKB) + a_0 \qquad (1)$$

$$\ln(PKB) = b_1 \cdot \ln(Agriculture) + b_0 \qquad (2)$$

The residuals from these equations were subject to the ADF test of stationarity.

The equations above determined the long-term path (equation) of the balance around which the values run of the rating of the economic processes analyzed. The differences between the value of time series and the determined path of long-term balance are short-term deviations. A situation is expected where the residuals (deviations from the long-term balance) will be stationary. Such a result was obtained.

By the Granger theorem, if variables X and Y are co-integrated in the 1.1 degrees; that is, these are non-stationary processes, yet their first differences are stationary, and it is possible to determine a long-term path of balance, whose residuals are stationary, it is possible to present, in one equation, a short-term relationship between these variables and the process of reaching the long term balance. In this study, two models for each country were determined:

$$d(\ln(Agri)) = a_1 \cdot d(\ln(Agri)(-1)) + a_2 \cdot d(\ln(PKB)) + a_3 \cdot d(\ln(PKB)(-1) + a_4 \cdot ecm(-1) + a_0 \qquad (3)$$

$$d(\ln(PKB)) = b_1 \cdot d(\ln(PKB)(-1)) + b_2 \cdot d(\ln(Agri)) + b_3 \cdot d(\ln(Agri)(-1) + b_4 \cdot ecm(-1) + b_0 \qquad (4)$$

where:

ecm(-1) – a series of residuals from the co-integrating equation;

a_4; b_4 – pace of the adaptation of the dependent variable to the level of the long-term balance with an independent variable; for the mechanism of return to the state of balance to function correctly, the value of this parameter should be negative;

a_1; b_1 – the influence of the delayed values of the increment of the dependent variable on the current increment of this variable;

a_2; b_2; a_3; b_3 – the influence of the current and delayed values of the increment of the independent variable on the current increment of the dependent variable.

a_0; b_0 – constant of the model.

4. Data Analysis

In Figure 1, the logarithmic GDP values and the added value of agriculture are presented. The scope of variability in ordinates in each case is the same. This makes it possible to compare a relative increase in the values observed. Here, a fast GDP increase in Poland can be observed compared to the remaining countries, with typically a weaker increase in agriculture's added value. Moreover, the increase of the added value of agriculture here is less stable than the GDP increase.

Figure 1. *Indexes of economic activity in the years 1992-2017*
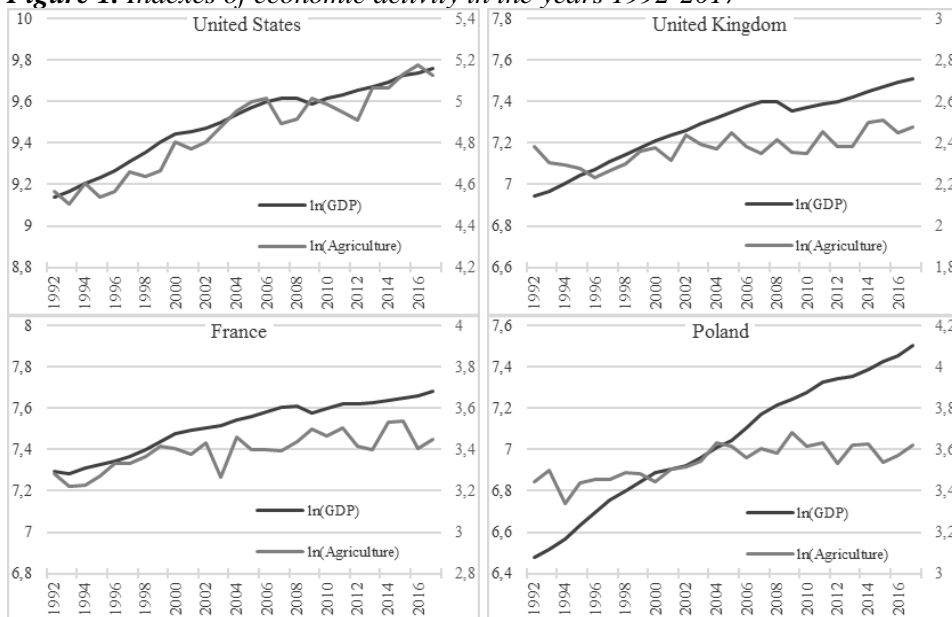
Note: ln(GDP) - left axis, ln(Agriculture) – right axis.
Source: Author's own study based on data from the United Nations Statistical Commission (UNSC).

The properties observed may be confirmed by basic statistics related to the average growth pace (Table 1). It becomes evident that Poland's GDP developed at the

average annual pace of 4.04%, which is the best result among the four countries analyzed. The United States proves to be a country where the increase of the added value of agriculture equals the GDP increase and even slightly exceeds it (2.53% and 2.39%, respectively). Compared to this, the situation of agriculture in Europe is definitely worse as in Great Britain, France, and Poland, the increasing pace of the added value of agriculture does not exceed 1% in any case, and it was clearly lower than the GDP increase. A prolonged increase in the added value of agriculture in Europe is observed during the whole period.

The correlation relationships between the GDP and the added value of agriculture are strong (r≈0.75-0.80) in the European countries, and they are even solid in the United States (r>0.96). Compatible trends cause these results despite the various growth paces.

Table 1. *Average annual real growth pace*

Country	GDP	Agriculture	r(*Pearson*)
United States	2.39%	2.53%	0.9617
United Kingdom	2.14%	0.71%	0.7407
France	1.62%	0.89%	0.8032
Poland	4.04%	0.83%	0.7823

Source: *Author's own calculations based on data from the UNSC.*

The correlation relationships between the GDP and the added value of agriculture (Table 1) are strong (r≈0.75-0.80) in the European countries, and they are even solid in the United States (r>0.96). Compatible trends cause these results despite the varying growth paces.

Table 2. *Long-term correlation relationships*

ln(GDP)	US	UK	France	Poland
United States	1			
United Kingdom	0.9982	1		
France	0.9960	0.9951	1	
Poland	0.9848	0.9767	0.9794	1
ln(Agriculture)	US	UK	France	Poland
United States	1			
United Kingdom	0.7807	1		
France	0.7592	0.6630	1	
Poland	0.7879	0.5647	0.7179	1

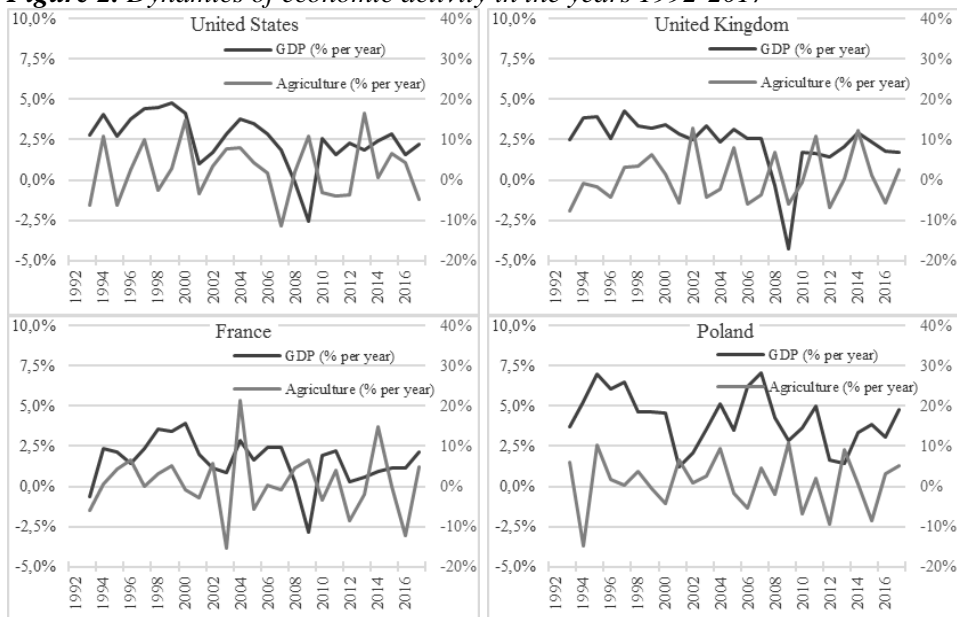**Source:** *Author's own calculations based on data from the UNSC.*

However, the GDP relationships and the added value of agriculture between the countries prove to be quite interesting (Table 2). It becomes evident that the GDP relationships are solid in all of the cases r>0.97. Such results are compatible with the

theory of economics related to economic relationships. The correlation relationships between the added value of agriculture are weaker yet positive. Here, depending on the countries' pair, results were obtained ranging from r=0.5647 for Great Britain and Poland to r= 0.7879 for the United States and Poland.

In practice, the high value of correlation does not need to indicate real relationships and can result from an apparent dependence. In connection with technological progress, long-term GDP growth, and an increase of its particular components is generally observed. Hence, such results are to be recognized as expected. In this situation, what is interesting is the connections of increments, which indicates the strength and direction of a short-term connection.

The GDP value growth and the growths of the added value of agriculture are presented in Figure 2. The scope of the variability of the left axis Y for d(GDP) was determined -5% to 10%, and the scope of the variability of right axis Y for d(Agriculture) from -20% to 40%.

Figure 2. Dynamics of economic activity in the years 1992-2017

Note: ln(GDP) – left axis, ln(Agriculture) – right axis.
Source: Author's own performance based on data from the UNSC.

Quite a significant differentiation of Agriculture's growth dynamics and clearly smaller dynamics of the GDP growth can be seen in Figure 2. The statistics for the GDP growth dynamics and the increase of the added value of agriculture serve to confirm this (Table 3). The standard deviation of the GDP dynamics indexes is from 1.40 percentage points for France to 1.62 percentage points for Great Britain. The standard deviation for the dynamics indexes of the added value of agriculture is on

the level from 6.01 percentage points for Great Britain to 7.56 percentage points for France. Also, the scope of the variability of the dynamics indexes of the added value of agriculture is several times greater than the scope of the variability of GDP dynamics indexes. The correlation relationships between the GDP dynamics and the dynamics of the added value of agriculture in the countries examined are very poor.

Table 3. *Elementary statistics related to the growth dynamics of GDP and Agriculture*

d(PKB)	min	max	range	st.dev.
United States	-2,54%	4,75%	7,29	1,56
United Kingdom	-4,25%	4,29%	8,54	1,64
France	-2,87%	3,92%	6,80	1,40
Poland	1,25%	7,03%	5,79	1,62
d(Agriculture)	min	max	range	st.dev.
United States	-11,39%	16,59%	27,98	6,93
United Kingdom	-7,61%	12,85%	20,46	6,01
France	-15,25%	21,31%	36,55	7,56
Poland	-14,92%	10,74%	25,66	6,39

Source: *Author's own calculations based on data from the UNSC.*

The correlation relationships of the GDP dynamics and the dynamics of the added value of agriculture in the countries under examination are inferior. The short-term relationships between the countries are noteworthy (Table 4). In the GDP short-term relationship, the United States, Great Britain, and France constitute a relatively homogenous group with averagely strong relationships (r≈0.74-0.86). Poland falls behind this group; its GDP dynamics are connected evidently to a smaller extent with the remaining countries.

Table 4. *Short-term correlation relationships*

d(PKB)	US	UK	France	Poland
United States	1			
United Kingdom	0,8631	1		
France	0,7607	0,7422	1	
Poland	0,4100	0,3200	0,4702	1
d(Agriculture)	US	UK	France	Poland
United States	1			
United Kingdom	0,0760	1		
France	0,0250	0,4120	1	
Poland	-0,1381	-0,0970	0,2324	1

Source: *Author's own calculations based on data from the UNSC.*

In the case of the relationship of the added value of agriculture, short-term relationships between the countries are inferior; however, the relationship between Great Britain and France: r=0.41 is considered one that points to a relationship of

average strength.

5. Modelling of Dependencies

The dependencies were examined in compliance with the Engle-Granger convention. In the first stage, the stationarity was determined by the time series under investigation. A classical situation was obtained here if the series of variables are non-stationary series, and their first differences are stationary. By the data presented in Fig. 1, the trend is responsible for the non-stationarity of the levels.

Table 5. *Models that co-integrate the added value of agriculture with the GDP*

x	y = ln(Agriculture)			
	US	UK	France	Poland
ln(PKB)	1.0480	0.3170	0.5483	0.2083
	0.0000	0.0000	0.0000	0.0000
c	-5.1004	0.0691	-0.7250	2.0755
	0.0000	0.8728	0.2565	0.0000
R-squared	0.9250	0.5487	0.6451	0.6120
ADF(ecm)	0.0001	0.0046	0.0000	0.0003
x	y = ln(PKB)			
	US	UK	France	Poland
ln(Agriculture)	0.8826	1.7307	1.1766	2.9380
	0.0000	0.0000	0.0000	0.0000
c	5.2145	3.1638	3.5195	-3.3697
	0.0000	0.0004	0.0000	0.0578
R-squared	0.9250	0.5487	0.6451	0.6120
ADF(ecm)	0.0001	0.0063	0.0009	0.0045

Note: The first number in the cell: a structural parameter, the second number in the cell: the significance level of the parameter, ADF(ecm): the significance level of the cointegration test.
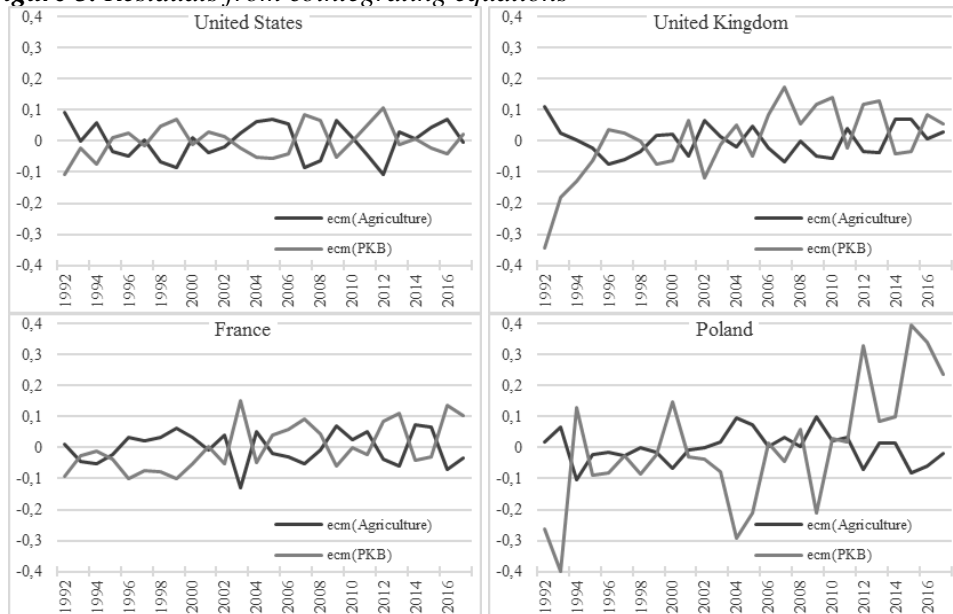*Source: Author's own calculations based on data from the UNSC.*

Table 1 shows that a relatively strong positive dependency occurs between the GDP and the added value of agriculture. Here, based on the cointegration test found in Table 5, it can also be inferred that cointegration also occurs between these variables. The residuals from the cointegrating equations prove to be stationary (in each case, with $p<0.1$). Cointegration is related to the dependency between the added value of agriculture and the GDP and the reverse dependency between the GDP and the added value of agriculture. In all of the cointegrating equations, the regression coefficient proves to be of a high statistical significance ($p<0.0001$).

Figure 3 presents the values of the residuals from the cointegrating equations found in Table 5. The long-term relationship between the GDP and the added value of agriculture is most stable in the United States, where deviations from the long-term balance between the variables under examination are the smallest. This is similar to

Great Britain and France. The situation in Poland is different. Here, the added value of agriculture remains clearly under the influence of the GDP, i.e., its values are not strongly deviated from the level of balance determined by the cointegrating equation, and this is similar as in the other countries. In the other direction, however, despite the test result showing the GDP cointegration from the added value of agriculture, it becomes evident that the GDP may deviate significantly from the level of a long-term balance with the added value of agriculture by the cointegrating equation.

Figure 3. *Residuals from cointegrating equations*

Note: GDP growth – left axis; Agriculture growth – right axis.
Source: Author's own study based on data from the UNSC.

The error correction model (Table 6) is the last stage of modeling, capturing simultaneously short-term and long-term changes. Here, models were built with the d(ln(Agriculture)) dependent variable and the d(ln(PKB)) dependent variable.

Table 6. *Error correction model*

x	y = d(ln(Agriculture))			
	US	UK	France	Poland
d(ln(Agriculture)(-1))	0.1710	0.0982	0.2141	-0.1116
	0.4481	0.6406	0.3964	0.6330
d(ln(PKB))	0.9275	0.6249	0.8876	0.1094
	0.3066	0.3669	0.3670	0.8958
d(ln(PKB)(-1))	-0.4717	0.2040	-0.0359	-0.1537
	0.6006	0.7666	0.9681	0.8521
ecm(Agriculture)(-1)	-0.9175	-0.9512	-1.2553	-0.7238

	0.0041	0.0028	0.0018	0.0211
c	0.0249	-0.0172	-0.0045	0.0074
	0.7807	0.3649	0.8322	0.8404
R-squared	0.4110	0.4634	0.5378	0.4321
x	y = d(ln(PKB))			
	US	UK	France	Poland
d(ln(PKB)(-1))	0.4668	0.1877	0.2070	0.3595
	0.0186	0.3578	0.2417	0.0810
d(ln(Agriculture))	0.0736	0.1314	0.0416	0.0280
	0.1740	0.0504	0.2857	0.6266
d(ln(Agriculture)(-1))	-0.0341	-0.0753	-0.1098	-0.0709
	0.5209	0.1514	0.0190	0.2331
ecm(PKB)(-1)	-0.1710	-0.1240	-0.1475	-0.0418
	0.0667	0.0109	0.0061	0.0794
c	0.0127	0.0190	0.0135	0.0268
	0.0325	0.0024	0.0012	0.0053
R-squared	0.3846	0.4807	0.4184	0.3493

Note: The first number in the cell: a structural parameter, the second number in the cell: the significance level of the parameter.
Source: Author's own calculations based on data from the UNSC.

Conclusions that follow from all the models are similar. It becomes evident that there is a long-term relationship between the added value of agriculture and the GDP, yet there is no short-term relationship. The results of GDP modeling, depending on the added value of agriculture, look more interesting, which is true of France's result in particular. In this case, a statistically significant impact was obtained of the increment of the added value of agriculture delayed by one year on the current GDP growth (p=0.0190). Apart from it, this impact proves to be negative. It can be noted that in the models for the remaining countries, it is also structural parameters with the d(ln(Agriculture)(-1)) variable that is negative, yet they are statistically insignificant.

6. Conclusions

Agriculture plays a vital role in the economy. It provides the human being with the essentials required to live. The development of this sector is crucial for developing the entire economy and human health; furthermore, it shapes humanity's future. How land is managed these days, how much food and how is produced, how much of it is consumed, and how much is wasted: this is reflected in the current consumption and production, and it also has an impact on consumption and production in the future.

In the present-day economy, much attention is paid to the economic growth measured in terms of the GDP and the per capita GDP. It is frequently demonstrated that trade and services and modern technologies and communication impact the quality of one's life. Agriculture is perceived as a part of the economy whose

contribution to the GDP decreases and where human resources demand is declining. This is confirmed in statistics as at the end of the period examined, the ratio of the added value of agriculture to the GDP dropped in the countries covered by the research from ca. 1% to 0.65% in Great Britain; from 1.8% to 1.45% in France and from 4.8% to ca. 2% in Poland. It is only in the United States that it maintains the level of ca. 1%. Nevertheless, it is to be noted that the processing industry, industry, construction, trade, and services use agricultural production. For this reason, an analysis and an assessment of the condition of agriculture are of vital importance, and agriculture itself should become a priority to decision-makers.

Based on the research conducted, it may be concluded that over the whole period, a very slow increment of the added value of agriculture in Europe is observed (here, Great Britain, France, and Poland) compared to the GDP growth. In the United States, agriculture is developing at a pace that is close to GDP growth. This might mean a lot, like marginalization of agriculture and attempts of deagrarianization of the economy, which, however, considering the structure of the EU budget, where the most important item includes expenses related to agriculture, is difficult to confirm. Despite huge EU expenses on agriculture, the situation obtained may mean that any attempts to reform the agriculture situation are not effective. Mistakes may be related to the structure and methods of production promoted, the sector's organization, or the result of incorrect technologies. If it is to be acknowledged that a smooth development of agriculture and the GDP is an expected situation, the United States' economy may be treated as a model to follow.

Economic relationships (both long-term and short-term ones) between the United States of America, Great Britain, and France prove strong. The relationship of the Polish economy with the remaining economies is poorer, yet it is developing faster. Even though it still lags behind more developed economies, this distance is decreasing. The situation in agriculture is different. Here, relationships between economies generally prove to be clearly weaker, and in the case of short-term relationships for Great Britain and France only, a relationship of an average force was obtained. These results may prove the use of similar relationships in these states and evidence of similar problems.

Interesting results were obtained by modeling the relationships between the GDP and the added value of agriculture. Above all, what was established here was the occurrence of significant long-term cointegration. Furthermore, there is no significant short-term impact of the GDP's current changes on changes in agriculture. What is important, there are certain reasons (that are of statistical importance to France) to consider that agriculture's situation may in advance form the general economic situation. This result is surprising; as noted previously, the participation of the added value of agriculture is not significant. When looking closer at this situation, it can be clearly seen that the impact in question is negative, i.e., the greater the increment of the added value in agriculture is, the small future GDP growth is. Prices may cause this result. An increase in agriculture prices means a

higher added value on the one hand, and it may have a negative impact on the future GDP value growth on the other hand. In this area, what may be recommended is taking care of systematic growth of efficiency, modernization of agriculture, and stabilization of prices. The European Union policy and a certain "over-regulation" of the agricultural market, a departure from a free-market economy, seems to be inappropriate. The United States of America serves as a good example here, where a smaller force characterizes the phenomenon in question. The stabilization of agricultural prices and the stabilization of agricultural producers' incomes will improve the overall economic situation.

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