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THE EFFECTS OF THE CURRENT CRISES ON THE DEVELOPMENT OF THE GRANIVORE SECTOR IN ROMANIA

ABSTRACT

At the level of the European Union, in 2022, Romania ranked 9th in pig population, with a number of 3,328 thousand pigs and 13th in pork production, down by 7.8% compared to 2021.

In terms of poultry meat production, Romania ranked 6th in the EU in 2022, up by 5.6% compared to the previous year.

The paper aims to analyse the evolution of the granivore farming sector in Romania in the period 2015–2022, in the context of current crises. The study highlighted the effects produced by the energy crisis, the COVID-19 pandemic and the war in Ukraine on the evolution of the production of granivores and the volatility of their purchase prices.

The results of the study indicate that Romania's pork industry has been severely affected by the African swine fever.

The situation at the level of international markets determined an increase in production costs, which was also reflected in the increase in purchase prices for pork and poultry meat. Thus, an increase of 22.24% was noticed in October 2022 compared to March 2022 in the purchase price for liveweight pig meat and an increase of 29.65% in October 2022 compared to March 2022 in liveweight poultry meat.

Key words: pig population, poultry farming, production, average purchase prices, African swine fever.

JEL Classification: Q10, Q11, Q17.

1. INTRODUCTION

In the context of the current challenges (the COVID-19 pandemic, the war in Ukraine, the energy crisis, the climate change), the European agricultural and food system supported by the Common Agricultural Policy is desired to become a standard for sustainability. It is considered that a shift to a sustainable food system could bring benefits to the environment, health and social life, as well as more equitable economic gains. At the same time, the current crises have determined the increase in the prices of agricultural commodities on the global markets and an increased uncertainty with regard to the food security for the population. The countries dependent on food and input imports are the most vulnerable to such

challenges. The war between the two countries (Russia and Ukraine), as major exporters of agricultural products, with Russia also being the world's largest exporter of fertilisers, has increased the uncertainty in food security.

The current situation has also had a major impact on feed prices globally. The EU has a large deficit in plant protein and relies on imports to meet its protein needs. More than 90% of the soybean production needed for animal feeding in the EU is imported. EU member states aim to reduce their dependence on imported feeds, so several countries have implemented national programmes to support local farmers to grow non-genetically modified soybeans. At the level of the European Union, most of the soybean meal is used in the pork and poultry industry. The pig meat sector is already in a difficult situation in Europe, with an increase in production costs, which has led to production decrease in the EU. After several avian influenza outbreaks identified in the European Union, the poultry sector is recovering in some countries (Poland, the largest producer in the EU, Bulgaria) and is still struggling with new outbreaks in other countries (France, Spain).

2. STATE OF KNOWLEDGE

Concerns related to animal health, feed, energy, fuel prices and labour are the major factors affecting the pig sector in Romania. Considering the current context, the following factors have a particular impact on the pig sector in Romania: African swine fever, fuel prices, animal feed, as well as labour shortage. According to a report of the United States Department of Agriculture (USDA), of December 2022, pig population in Romania registered a decrease by 5.9% in May 2022 compared to the same period of the previous year, while imports increased by 23% in the first eight months of 2022. Although the number of African swine fever outbreaks has decreased significantly compared to previous years, it continues to be a threat to pig farmers in Romania, which inhibits investment in this sector.

A report published by the European Food Safety Authority (EFSA) in May 2023 shows that outbreaks of African swine fever in pigs decreased by 79% in 2022 compared to 2021 in the European Union. Eight countries from the European Union reported outbreaks of swine fever in domestic pigs, Romania being the most affected country in the EU, with a number of 327 outbreaks, which represented 87% of the total outbreaks in the EU. However, in the year 2022, the number of outbreaks significantly decreased in Romania compared to 2021. Since July 2017, when the first outbreak of African swine fever was confirmed in Romania, the African swine fever has been a big problem for the Romanian pork industry.

The European Union is one of the world's largest poultry producers and a net exporter of poultry products, with an annual production of approximately 13.4 million tonnes. The value of imports of poultry meat products is much higher than the value of exports; Brazil, Thailand and Ukraine are the main countries of origin for EU's poultry meat imports.

3. MATERIAL AND METHOD

In this paper, the evolution of the granivore farming sector in Romania in the period 2015–2022 was analysed in the context of current crises. The study highlighted the effects produced by the energy crisis, the COVID-19 pandemic and the war in Ukraine on the evolution of granivore production and the volatility of purchase prices in this sector.

For the purpose of this research, various specialised scientific materials were consulted: reports, articles, studies of various specialised institutions. In order to carry out the quantitative analyses, the following databases were used: Tempo online, MADR, FADN, EUROSTAT as well as various studies and publications by authors from Romania and other countries.

4. RESULTS AND DISCUSSIONS

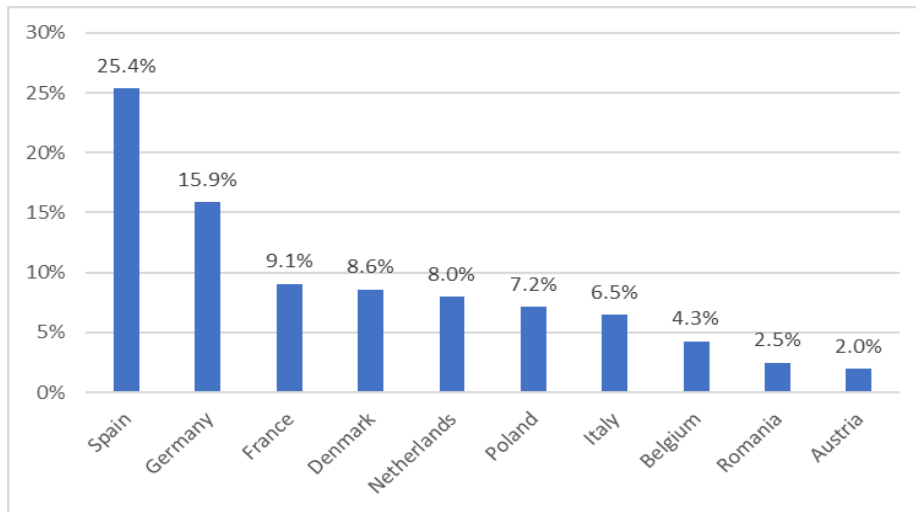
4.1. EVOLUTION OF THE GRANIVORE SECTOR AFTER THE COVID-19 PANDEMIC AT EUROPEAN LEVEL

Although the European Union is the largest exporter of pork worldwide, a decrease of pig herds has been noticed in recent years. While in the year 2021 pig herds decreased by 2.9% compared to 2020, in 2022 pig herds decreased by 5.1% compared to the previous year. With the exception of Italy and Sweden (where pig herds increased by 3.9% and 3.2% respectively), all EU member states recorded decreases in pig population in 2022 compared to 2021. In 2022, Spain had the largest pig population (34,073 thousand heads) followed by Germany (21,366 thousand heads) and France (12,182 thousand heads). Romania ranked 9th in the EU-27 in 2022, with 3,328 thousand pig heads, down by 8% compared to the previous year.

According to several analysts, the decline of the European pork sector may extend over the next 5–10 years. The main causes of this decline could be: the African swine fever epidemic, European animal welfare regulations generating high costs for farmers, rising energy prices, rising animal feed costs, the war in Ukraine that has had a negative impact on global commodity markets.

The following figure shows the top ten countries in terms of pig population in the EU-27 and their share in total pig population of the European Union in the year 2022.

If we refer to the EU's pork production, statistical data highlight that pork production increased by 1.6% in the year 2021 compared to 2020, to decrease by 5.7% in the year 2022 compared to the year 2021. The European Union's largest pork producer, Spain, recorded a 9.5% decrease in 2022 compared to the previous year. Germany ranks 2nd in the European Union, with a 3.6% increase in 2022 compared to 2021; France ranks 3rd, with pork production down by 3.9% compared to 2021.

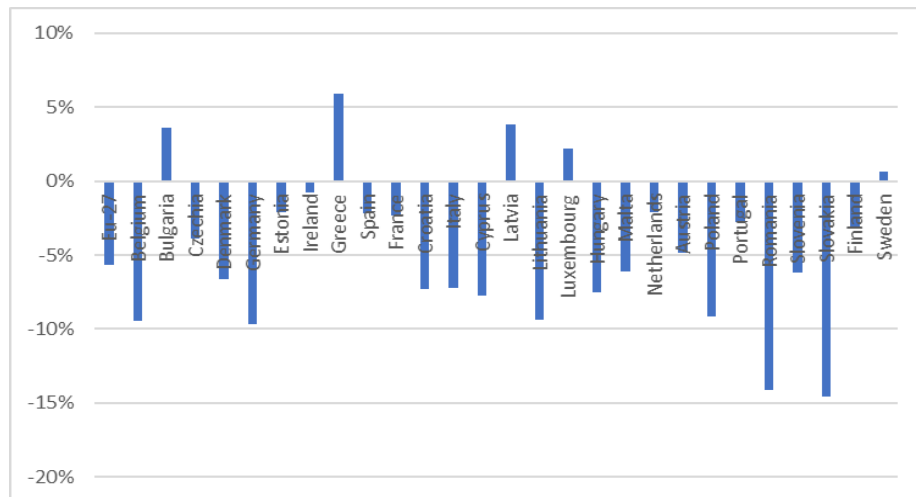


Source: Author's calculations based on Eurostat data, 2023.

Figure 1. European pig population, % of total EU-27 pig population in 2022.

In 2022, Romania ranked 13th in the European Union in terms of pork production, the same as in 2021, down by 7.8% compared to the previous year.

The figure below shows the evolution of pork production in the European Union countries in 2022 compared to 2021. It can be seen that the biggest decreases in pork production were found in Slovakia and Romania, and the biggest increase in pork production was in Greece.



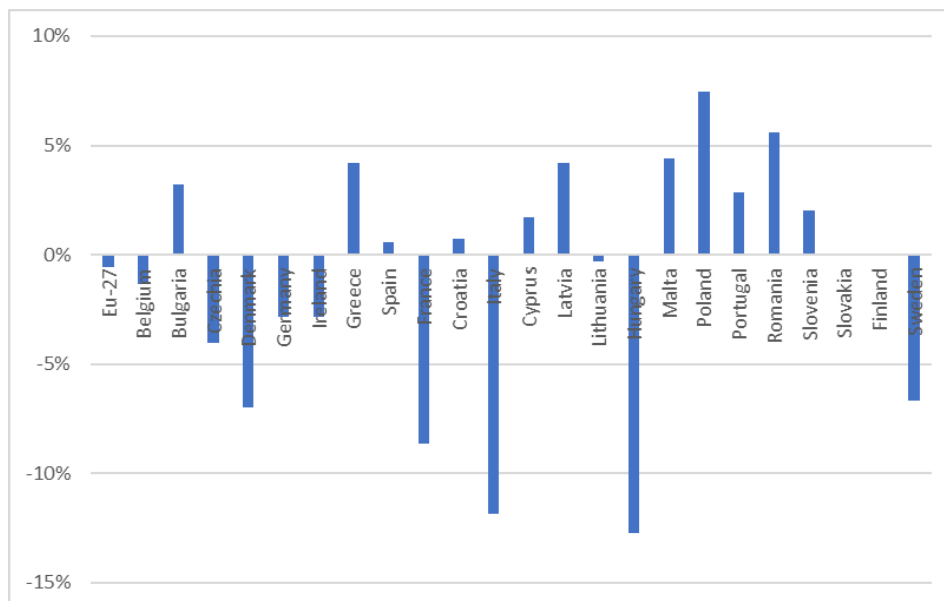
Source: Author's calculations based on Eurostat data, 2023.

Figure 2. Pork production in EU-27, % 2022/2021.

Taking into account some analyses of consumer behaviour, it is noticed that a sharp increase in pork prices determines more and more consumers to switch to chicken meat, which is considered a cheaper option.

In 2022, poultry meat production in the European Union slightly decreased, by 0.5%, compared to the previous year. The largest decreases in poultry meat production were found in Italy and Hungary, by 11.8% and 12.7% respectively; the largest increase in poultry meat production was in Poland (+7.5%) and Romania (+5.6%). The largest poultry meat producers in the European Union were Poland, Spain and Germany, together holding 48.8% of total poultry meat production in the European Union.

According to a Scientific Report of the European Food Safety Authority, 6614 outbreaks of avian influenza were identified in 37 countries of the European Union and the European Economic Area between October 2021 and September 2022, in both domestic and wild and pet birds in cages. The Board of Directors of the Romanian Poultry Breeders Union announced that in Romania only three outbreaks of avian influenza were identified in domestic birds during the mentioned period, assuring consumers that the poultry meat and egg market will not have to suffer from this virus.

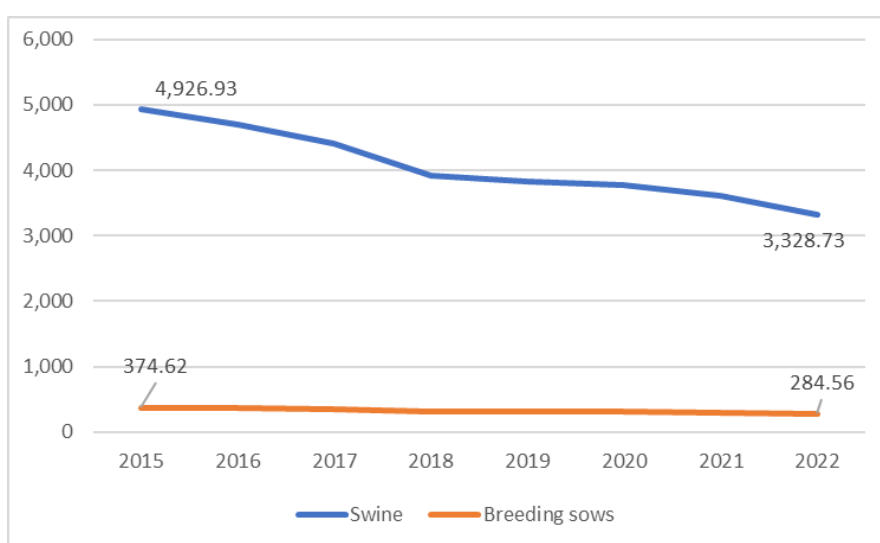


Source: Eurostat, 2023.

Figure 3. Poultry production in EU-27, % 2022/2021.

4.2. PIG POPULATION AND POULTRY NUMBER IN ROMANIA

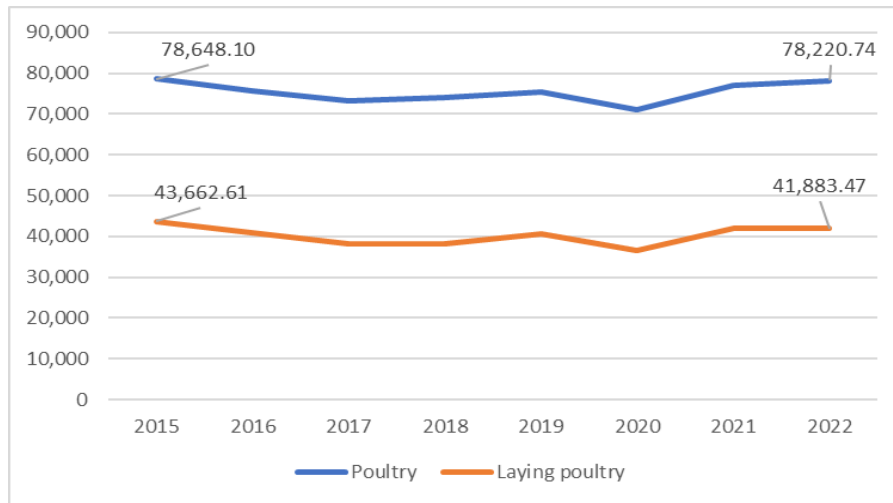
Over the entire analysed period, 2015–2022, both the pig population and the breeding sows in Romania had a downward trend. In 2022, pig population decreased by 32.4% compared to 2015, the main cause being the African swine fever outbreaks. In 2022, Romania ranked 9th in the European Union in pig population, accounting for only 2.5% of the total pig population of the EU-27.



Source: Tempo online, 2023.

Figure 4. Evolution of pig population and breeding sows in the period 2015–2022 in Romania (thousand heads).

Regarding the number of poultry and the number of laying poultry, significant variations were noticed in Romania in the analysed period. While from 2015 to 2017 the poultry number followed a downward trend, in 2018 and 2019 the poultry number increased, to decrease afterwards by 5.6% in 2020 as compared to 2019. In the years 2021 and 2022 poultry number increased, to reach 78,220 thousand heads in 2022. In 2022, the total number of laying poultry was down by 0.4% compared to 2021 and by 4% compared to 2015.

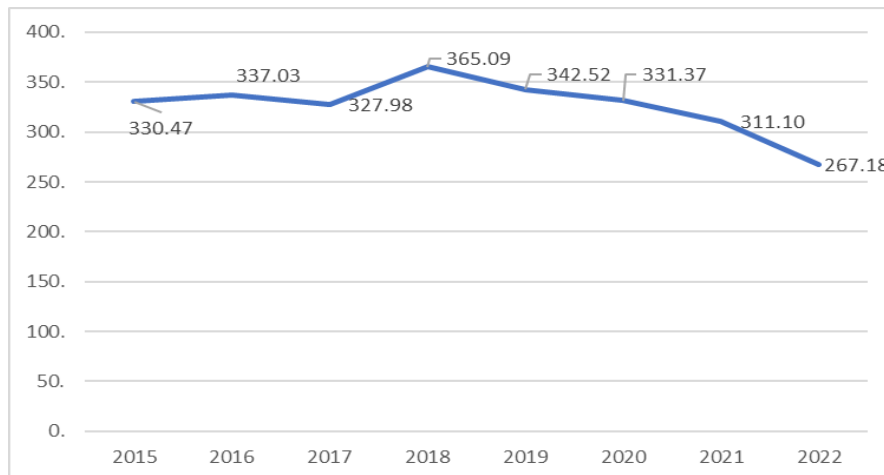


Source: Tempo online, 2023.

Figure 5. Evolution of poultry and laying poultry in the period 2015–2022 in Romania (thousand heads).

4.3. ROMANIA’S PORK AND POULTRY PRODUCTION

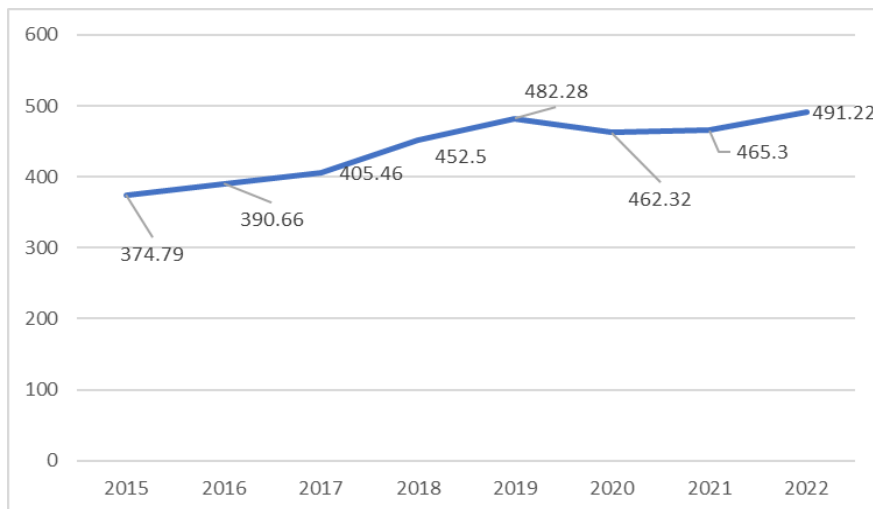
Romania’s pork production decreased by 14.1% in 2022 compared to 2021 and by 19.2% compared to 2015, Romania ranking 13th in the European Union in pork production.



Source: Eurostat, 2023.

Figure 6. Romania’s pork production in the period 2015–2022 (thousand tonnes).

In terms of poultry meat production, Romania ranked 6th in the EU in 2022, accounting for only 4.05% of total poultry meat production of the EU-27. In the period 2015–2022, Romania’s poultry meat production followed an upward trend, up by 5.6% in 2022 compared to the previous year and by 31.1% compared to 2015.



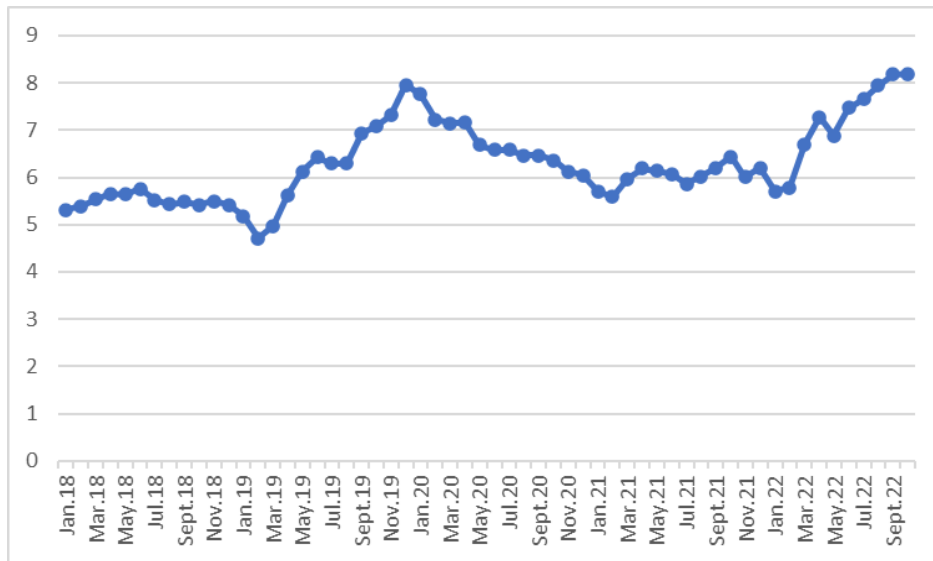
Source: Eurostat, 2023.

Figure 7. Romania’s poultry meat production in the period 2015–2022 (thousand tonnes).

4.4. AVERAGE PURCHASE PRICE DEVELOPMENTS

The war in Ukraine has caused significant price increases in various raw materials in international markets. These increases were also reflected in the price of pork as a result of the increase in feed prices, Ukraine and Russia being among the main exporters of grains and oilseeds. Thus, an increase by 12.23% was noticed in the purchase price of liveweight pig meat in March 2022 compared to March 2021 and by 22.24% in October 2022 compared to March 2022.

From the price volatility analysis, a high purchase price volatility value for liveweight pig meat can be noticed in 2019 and 2022; the main reason for this variation is the large number of African swine fever outbreaks identified in Romania, as well as the increase in production costs. An increased value of the coefficient of variation of the purchase price for liveweight pig meat, although much lower compared to 2019, was also noticed in 2020, the year that marked the beginning of the COVID-19 pandemic.



Source: Tempo online, 2023.

Figure 8. Evolution of the average purchase price of liveweight pig meat in Romania in the period January 2018 – October 2022 (RON/kg of liveweight).

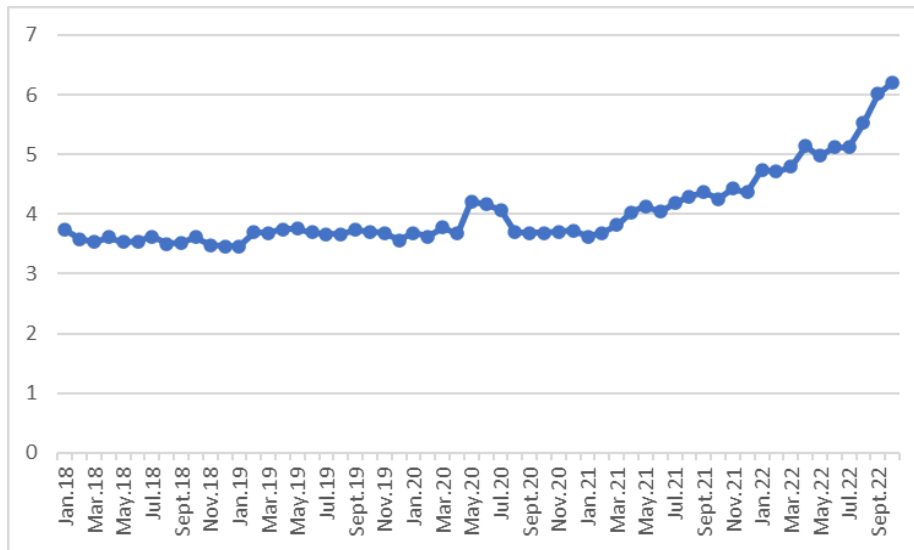
Table 1

Purchase price volatility for liveweight pig meat

	Average	Standard deviation	CV
2018	5.51	0.13	2.30%
2019	6.24	0.99	15.90%
2020	6.72	0.51	7.56%
2021	6.03	0.23	3.87%
2022	7.18	0.90	12.58%

Source: Author's calculations.

In poultry meat, there were significant variations in the purchase price. Thus, in March 2022, the average purchase price of liveweight poultry meat increased by 25.39% compared to March 2021 and by 29.65% in October 2022 compared to March 2022.



Source: Tempo online, 2023.

Figure 9. Evolution of the purchase price of liveweight poultry meat in Romania in the period January 2018 – October 2022 (RON/kg of liveweight).

If we refer to the analysis of the volatility of purchase prices for liveweight poultry meat in the period January 2018 – December 2022, a high value of the coefficient of variation was noticed in the year 2022.

Table 2

Purchase price volatility for liveweight poultry

	Average	Standard deviation	CV %
2018	3.56	0.08	2.16%
2019	3.67	0.08	2.30%
2020	3.81	0.21	5.53%
2021	4.10	0.21	5.13%
2022	5.24	0.52	10.01%

Source: Author's calculations.

5. CONCLUSIONS

The pig meat sector is already in a difficult situation at European level, with production costs increasing, which has led to a decrease in production in the EU. The main causes of this decline could be: the African swine fever epidemic,

European animal welfare regulations that generate high costs for farmers, rising energy prices, rising animal feed costs, the war in Ukraine that has had a negative impact on global commodity markets. After several avian influenza outbreaks, the poultry sector is recovering in some countries (Poland, the largest producer in the EU, Bulgaria) and still struggling with new outbreaks in others (France, Spain).

The war in Ukraine, the COVID-19 pandemic, as well as the energy crisis caused an increase in the prices of agricultural commodities in the global markets and an increased uncertainty regarding the food security of the population.

In 2022, Romania ranked 9th in the European Union in pig population, accounting for only 2.5% of the total pig population of the EU-27 and 13th in pork production, with a 14.1% decrease in production compared to the previous year.

From the analysis, it resulted that in the period 2015–2022, Romania's poultry meat production followed an increasing trend, with a 5.6% increase in 2022 compared to the previous year and 31.1% compared to 2015.

The war in Ukraine has caused significant price increases in various raw materials in international markets. These increases were also reflected in the price of pork as a result of the increase in feed prices. Thus, an increase by 12.23% was found in the purchase price for liveweight pig meat in March 2022 compared to March 2021 and by 22.24% in October 2022 compared to March 2022.

From the price volatility analysis, a high purchase price volatility value for liveweight pig meat was noticed in 2019; the main reason for this variation was the large number of African swine fever outbreaks identified in Romania.

As regards poultry meat, there were also significant variations in the purchase price. Thus, in March 2022, the average purchase price for liveweight poultry meat increased by 25.39% compared to March 2021 and by 29.65% in October 2022 compared to March 2022.

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