

## COMPARATIVE STUDY OF INLAND PRODUCTION AND CONSUMPTION OF POULTRY MEAT IN ROMANIA

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### Abstract

*This paper aimed to analyse the evolution of domestic production and consumption of chicken in Romania during the period 2006-2015. Romania's poultry meat supply was influenced by the value of inputs, reducing trend for the specific feed consumption, increasing the average daily gain, reducing mortality as a result of the implementation of good practices, and capitalization of production. This study covered the 2006-2015 period and was based on statistical data provided online by the Romanian Institute of Statistic and professional magazines. The production of poultry meat in Romania has been developed during the analyzed period and was influenced by the applied technology, as well as by impact of the subsidies which led to improvement of the production's performance. The results indicated by the regression method revealed the relationship between poultry meat production and the sales price of poultry meat in Romania, because the increase of the market price for poultry meat made this product more attractive to producers.*

**Key words:** poultry meat, regressions, Romania

### INTRODUCTION

Aviculture has an important role in livestock production, given that are obtained products with high nutritional value, widely used in the food industry, are suited to industrial, semi-industrial and extensive farming, and can harness a wide range of fodders.

Breeding of broilers provides farmers with welfare by generating profits and products of superior quality to consumers.

World poultry production has seen significant increases due to: progress in poultry farming, but also to increased product requirements caused by demographic increase and urbanization.

Romania's poultry meat supply is influenced by the value of inputs, reducing specific feed consumption, increasing the average daily increase, reducing mortality as a result of the implementation of good practices, and how to capitalize on production.

In our country the demand for poultry meat has increased significantly, taking advantage of the tendency of consumers to replace red meat with white meat, but also because of the lower

price compared to beef or pork, which makes it accessible to all social categories.

Poultry consumption in Romania has experienced explosive growth similar to the upward trend in the world, being influenced by a number of objective and subjective factors, of which the most important are:

- Growth and urbanization of the population
- Absence of cultural or religious obstacles
- Income growth especially in developing countries
- Lower price compared to pork, beef or sheep
- Easier cooking and less pungent flavour
- Consumer tendency to substitute red and white meats for ease of fat removal.

Meat can be regarded as having a double image of the chemical composition, a positive and a negative image. The negative image is given by high fat content, the specialists making a link between meat consumption to heart disease, cancer and obesity. Also, experts believe that high protein and low carbohydrate content causes a low glycemic index that leads to obesity, diabetes and cancer. The positive image is given by the content in micronutrients available in meat such as iron, selenium,

vitamin A, B12 and folic acid because the bioavailability of these micronutrients in plant-derived foods is lower [7].

The controversial association between meat consumption and incidence of certain cancers needs clarification, although recent studies suggest that this is of utmost importance for processed red meat compared to the white meat [10].

The price level has always been one of the reasons that led to the purchase of food and will continue to have greater importance than the origin, brand, quality, or a combination thereof [2].

The most dynamic market in the meat sector will be the poultry because it is considered cheaper and healthier than others [5].

This paper aimed to analyse the evolution of domestic production and consumption of chicken in Romania during the period 2006-2015

## MATERIALS AND METHODS

This study covered the 2006-2015 period and was based on statistical data provided online by the Romanian Institute of Statistics and professional magazines.

The research methods applied for the processing of the data necessary for the realization of this study were: method of index, regression and correlation.

The indicators analyzed in this study were: internal poultry meat production in Romania, consumption of poultry meat in Romania without self-consumption, poultry meat prices and total monthly average incomes.

The indices suggest the evolution of a phenomenon, pointing the annual growth rates. The correlation method highlights the degree of association between the variables.

In a narrow sense, it is a measure of the degree of statistical linkage between quantitative variables, called "coefficient of correlation" [3].

The determinant coefficient ( $r^2$ ) expresses how much of the variance of Y is due to factor X influence [1].

The regression method is a statistical method for the research of the link between the

variables and can be considered as a method of generalization of the dispersal analysis.

The calculation of correlations and regressions was done using the statistical tool in Excel, useful in analyzing, simulating and interpreting the results.

## RESULTS AND DISCUSSIONS

The production of poultry meat in Romania was sustained during the analyzed period was influenced by the applied technology, as well as by the subsidies for the improvement of the production's performance.

Poultry meat production registered an increase of 73.4% in 2015 compared to 2006. But one can see the decrease of production by 1% in 2011 compared to 2010 and in 2012 compared to 2011, in 2010 compared to 2009 there is a decrease of 5% (Fig.1).

Concerning the consumption of poultry meat without taking into account the self-consumption, it is noted the increase by 17.4% in 2017 compared to 2006. However, it can be seen a decrease of 19.9% in 2010 compared to 2009, in 2011 compared to 2010 the consumption of poultry meat drops by 6.4% and in 2013 compared to the year 2012 the decrease was 4.3%.

During the analyzed period, the sector faced a number of problems due to the economic crisis. This situation has affected the incomes of the population, which was reflected in the decrease in consumption.

The main advantages of poultry meat production compared to other types of meat are the relatively low cost and the obtaining of a high amount of meat in a low time.

It can be noticed that during the analyzed period, the average monthly total income had an upward trend during 2006-2009. In 2010 they decreased by 0.5% compared to 2009, this decrease was due to the economic crisis, which led to the decrease of salaries in the budgetary system. An upward trend followed until 2013, followed by a fall in 2014 (Fig.2).

Concerning the average price of poultry meat, an oscillating trend can be observed, the largest decrease being recorded in 2010 compared to 2009 by 11%.

Romanian poultry farming faced the economic crisis, with bankruptcies and insolvencies, but it also experienced a slight increase. It faced lower sales prices in the European Union, and implicitly with serious financial problems, but

resisted, due to technical performance, improved year after year [5]. Next, the relationship between poultry meat production and the sales price of poultry meat in Romania will be pursued.

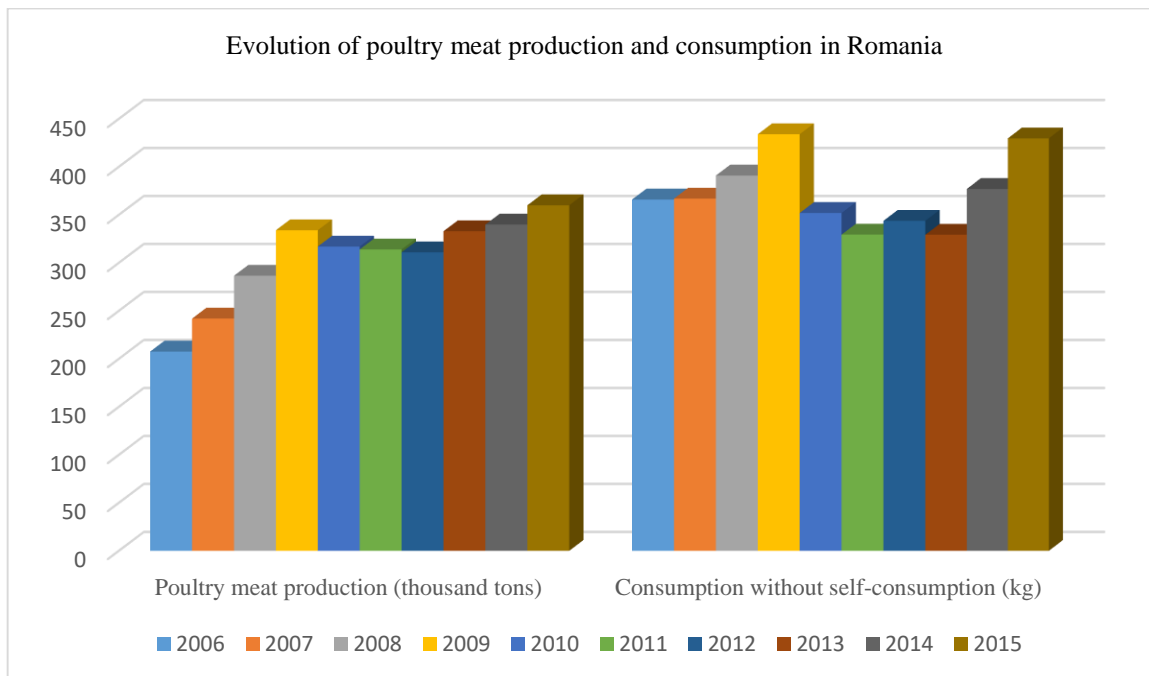


Fig.1 Evolution of production and consumption of poultry meat in Romania  
 Source: Avicultorul magazine [6][9], consumption without self-consumption during 2012-2015, are own estimates based on NIS Tempo on line data base

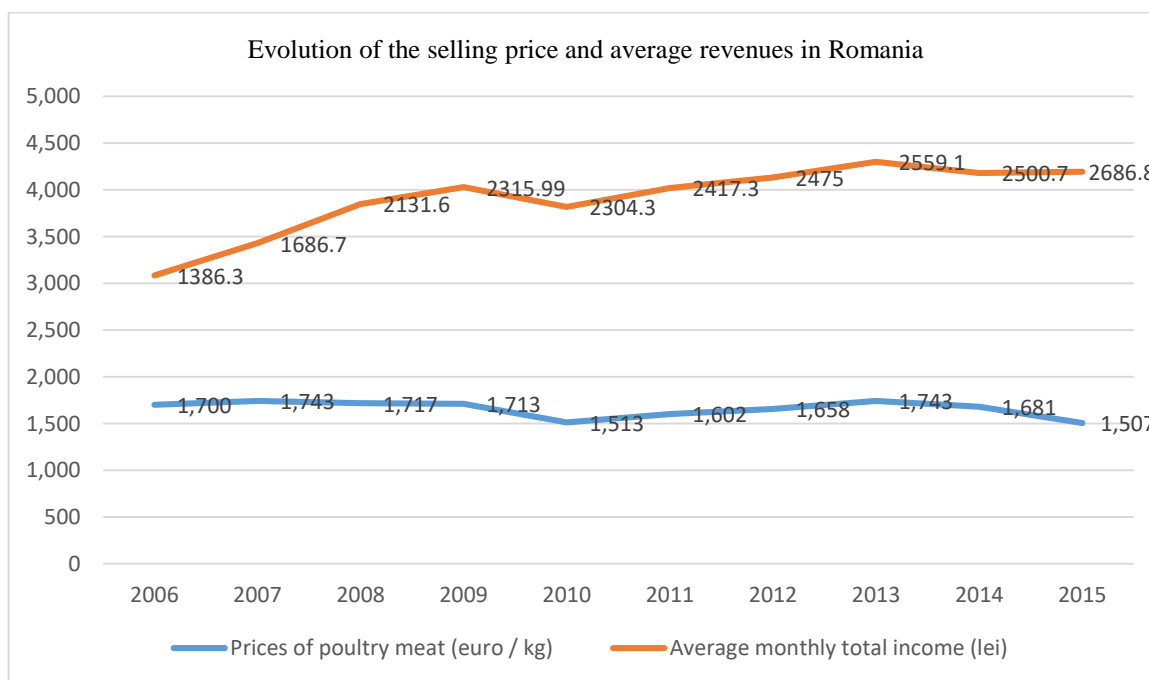


Fig.2 Evolution of the selling price and average revenues in Romania  
 Source: Avicultorul magazine [9], www.temponline.ro [4], the price of poultry meat in 2006 is estimated

Table 1. Results of the regression function between poultry meat production and the sales price of poultry meat

<i>Regression Statistics</i>	
Multiple R	0.661455
R Square	0.437522
Adjusted R Square	0.367213
Standard Error	421.123
Observations	10

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	1103578	1103578	6.223	0.0373
Residual	8	1418757	177344.6		
Total	9	2522335			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	217.043	37.011	5.864	0.000	131.694	302.391	131.694	302.391
X Variable 1	0.059	0.024	2.495	0.037	0.004	0.113	0.004	0.113

Source: Own calculations

On the basis of the data from the table it is found that the link between poultry meat consumption and the selling price of poultry meat is of medium intensity, the correlation coefficient having a value of 0.661.

The value of the coefficient of determination,  $R^2 = 0.437$ , shows that 43.7% of the variation in poultry meat production is influenced by the variation in the selling price of poultry meat.

This link can be described by the linear regression model:

$$Y = 217.043 + 0.059 \times \text{price}$$

This model is valid because the Snedecor-Fisher test value is 6.223 and the probability (F-statistic) is 0.0373, less than 0.05, the calculated value of the F test being higher than the theoretical.

The value of the parameter attached to the factorial variable is greater than zero, which means that there is a direct link between poultry meat production and the sales price of poultry meat.

So we can say that raising the price of poultry meat by 1 euro / kilogram leads to an increase in poultry meat production by 58 tons.

**CONCLUSIONS**

Improving the technologies used in poultry farming has led to an increase in domestic poultry meat production.

The increase in poultry meat consumption was influenced by objective and subjective factors, of which we can remember that the price of poultry meat is lower compared to beef or pig meat, which makes it accessible to all social categories.

The results indicated by the regression method revealed the relationship between poultry meat production and the sales price of poultry meat in Romania, because the increase of the market price for poultry meat made this product more attractive to producers.

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