

## RESEARCH ON PORK MARKET IN ROMANIA

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### **Abstract**

*The paper presents the evolution of pork market in Romania, starting from the year 2009 till present. The research is based on a set of specific indicators such as: pig stock, obtained pork production, basic price, consumption, import, export, etc. The data used in this research were taken from the National Institute of Statistics, Ministry of Agriculture and Rural Development and FAOSTAT. The analysis of pork market in Romania is a quantitative study and the used indicators varied from a year to another. The evolution pork market in Romania was determined by economic and financial situation in the country, and also by the fluctuations in the international meat market. Pork production is influenced by many factors, among which consumer demand occupies an important place. Consumer demand is influenced by the price of pork and the price of other categories of goods, consumer incomes and preference.*

**Key words:** market, pork, price, production, Romania

### **INTRODUCTION**

Pig farming sector has an important place in the economies of the world, because a significant share of the world population consumes pork and pork preparations. In general, meat consumption is important for the functioning within normal parameters of the human body, because it contains high quality protein and minerals. The nutritional characteristics of meat are closely correlated with several factors, such as: animal species, sex, age, feeding, season and methods of processing and preparation of meat destined to human consumption.[14].

Romania has a long tradition in pig farming at household level, but also in the industrial system. Before 1989, there were grown 18-19 million pigs, most of them destined to export. After 1989, some of the many units profited in raising pigs either were privatized or went out of business. Romania's entry into the European Union generated important effects on the national economy, but an important aspect is the increasing competition among the European pork producers. Currently, the pig stock accounts for 5 million heads, which represents 40-45% of consumer need. The economic and financial crisis led to lower

investments, lower investment growth in swine industry, with a negative impact on the domestic production. Because of this, the domestic production does not meet demand in the domestic market. According to the statistical data, pig farming in the family households is more extended than in the industrial system. [23].

### **MATERIALS AND METHODS**

In order to carry out this research, the empirical data were taken from specialized institutions such as: FAOSTAT, Institute of Statistics and Ministry of Agriculture and Rural Development. For the achievement of a relevant analysis of pork market, there were consulted journals, studies, textbooks etc. Pork market analysis is based on a number of indicators, such as: pig stock, pork production, consumption, foreign trade, etc. This study was based on the use of statistical usual methods.

### **RESULTS AND DISCUSSIONS**

Pig stock is an important indicator for the pork sector because the number of pigs have a close impact on pork production. [4]

The evolution of pig number at national and regional level is shown in Table 1. The analysis referred to the period 2009-2013. In this table, the data are structured as follows: the total, private sector, individual holdings. The pig registered a decreasing trend in the period with some exceptions.[2, 9, 10].

In 2013, at world level, the pig stock declined by 10.6 % compared to 2009. At macroregionla level, the descending trend is also maintained. Pig stock differ from a region to another. The macroregion 4 in onthetop position, in 2013, counting 1,623,848 pigs, representing 31.3% of the national stock. In the oposite side, it is the macroregion 3 with the smallest stock, in 2013, having 985,351 pigs, representing 19 % of the total number of pigs.

According to FAO Data base, in 2010, Romania came on the 10th position regarding pig stock, having 3.1% of the pig number

existing in Europe. Germany is the country with the highest number of pigs, being followed by Spain, Rassion Federation, Poland, France, Denmark, the Netherlands, Italy, Ukraine, Belgium, Romania etc [16].

In 2013, according to the data cited by Agerpres, Romania was placed on the 9th position concerning pig stock. On the first positions in hierarchy there were, in order, the following countries: Germany, Spain, France, Denmark, the Netherlands, Poland, Italy and Belgium [21]. The data published by the National Institute of Statistics at the beginning of the month of May mentioned 4,518 million heads, reflecting a decline by 0.2 % compared to the same period of the year 2013. [12].

The forecast for the year 2025 provides as the pig stock to reach 10,000 thousand heads in Romania [15].

Table 1. Evolution of pig stock by ownership form at national level and by macroregion (heads)

Specification	2009	2010	2011	2012	2013	2013/2009 (%)
ROMANIA	Total					
	5,793,415	5,428,272	5,363,797	5,234,313	5,180,173	89.4
	Private sector					
	5,785,756	5,412,681	5,356,458	5,226,998	5,173,209	89.4
Macroregion 1	of which: Individual agricultural holdings					
	4,265,310	3,680,282	3,763,220	3,587,972	3,497,747	82.0
	Total					
	1,360,965	1,217,943	1,215,516	1,190,729	1,170,981	86.0
Macroregion 2	Private sector					
	1,359,489	1,216,283	1,212,979	1,188,816	1,168,767	85.9
	of which: Individual agricultural holdings					
	1,191,544	1,020,438	1,017,038	963,215	945,818	79.3
Macroregion 3	Total					
	1,560,545	1,478,933	1,449,947	1,384,077	1,399,011	96.5
	Private sector					
	1,557,514	1,475,426	1,446,521	1,382,403	1,397,642	89.7
Macroregion 4	of which: Individual agricultural holdings					
	1,086,666	929,219	962,440	957,998	928,521	85.4
	Total					
	1,160,456	1,112,234	1,075,106	1,033,227	986,333	84.9
Macroregion 3	Private sector					
	1,159,834	1,105,622	1,074,291	1,032,284	985,351	84.9
	of which: Individual agricultural holdings					
	846,668	761,109	827,496	762,197	700,182	82.6
Macroregion 4	Total					
	1,711,449	1,619,162	1,623,228	1,626,280	1,623,848	94.8
	Private sector					
	1,708,919	1,615,350	1,622,667	1,623,495	1,621,449	94.8
Macroregion 4	of which: Individual agricultural holdings					
	1,140,432	969,516	956,246	904,562	923,226	80.9

Source: [18]; own calculations

In Table 2, it is presented the evolution of the number of pigs per 100 ha in the period 2009-2013. At national level, the number of pigs decreased from 65.9 heads in 2009 to 58.9 heads in 2013. The highest density of pigs was recorded in the macro-region 1, 84.13

heads/ha in 2013. The macro-region 2 is at the opposite site, with a density of only 45.6 heads/ha heads in 2013. It should be noted that the density of this macro-region is below the national average.

Table 2. Evolution of pig stock per 100 ha by ownership form at national and macroregional level in the period 2009-2013 (heads)

Specification	2009	2010	2011	2012	2013	2013/2009 (%)
ROMANIA	Total					
	65.9	59.3	59.6	58.2	58.9	89.3
	Private ownership					
	66.7	60	60.3	58.8	59.3	88.9
Macroregion 1	Total					
	84.9	84.10	84.11	84.12	84.13	99.0
	Private ownership					
	85.5	70.2	73.3	71.8	74.1	86.6
Macroregion 2	Total					
	51.3	47.2	47.2	45	45.6	88.8
	Private ownership					
	51.7	47.7	47.6	45.5	45.9	88.7
Macroregion 3	Total					
	56.6	55.3	53.1	51	49.3	87.1
	Private ownership					
	57.6	55.7	53.6	51.5	49.7	86.2
Macroregion 4	Total					
	81.8	71.3	73	73.1	76.1	93.0
	Private ownership					
	83.3	73	74.2	74.3	76.8	92.1

Source: [18]; own calculations

In Table 3 it is presented an overview of the pig stock on March 1st, 2014, both in the private sector, and at national level. According to data published by the Ministry of Agriculture and Rural Development, at national level at the date mentioned above, there were 4,349,356 pigs, of which: 8,306 heads in the state sector and 4,341,050 heads in the private one. In the private sector, pigs can be found in the industrial units, companies and associations, family farms. In table 4 it is presented the evolution of pigs' live weight, destined to be slaughtered for human consumption, at the national and macro-regional level, by ownership, during the period 2009-2013. It was noticed a decrease in live weight at the national level, from 584,868 tons in 2009 to 546,530 tons in

2013. At the level of individual agricultural holdings, there is a higher reduction of pigs' live weight.

This decrease accounted for 21.3% in 2013 compared to 2009. At the macro regional level it can be seen a different situation from a macro-region to another. In Romania for the year 2025 it is expected an increase by 13,000 tons pig live weight.

The Ministry of Agriculture and Rural Development has released an Operative Technical Report on the situation of animal husbandry at 31 March 2014.

Regarding the obtaining and marketing of swine production, the situation is the following one: [19]

Table 3. Pig stock at the date March 1st, 2014 at national level, in the state and private sector ( heads)

Crt.No	County	Total Sectors	State Sector		Sector privat			
			Total	Of which:	Total	Of which:		
				Industrial units		Industrial units	Societies and private associations	Family farms
1.	TOTAL	4,349,356	8,306	0	4,341,050	1,178,608	678,265	2,484,177
2.	ALBA	81,698	178		81,520		1,838	79,682
3.	ARAD	226,053			226,053		119,831	106,222
4.	ARGES	180,308			180,308	49,249		131,059
5.	BACAU	54,222			54,222	16,579		37,643
6.	BIHOR	196,886			196,886	40,347	18,606	137,933
7.	BISTRITA N.	41,120			41,120			41,120
8.	BOTOSANI	40,251			40,251			40,251
9.	BRASOV	100,082			100,082	43,644	2,760	53,678
10.	BRAILA	204,073			204,073	165,694		38,379
11.	BUZAU	84,164			84,164		18,933	65,231
12.	CARAS S.	49,540			49,540		7,175	42,365
13.	CALARASI	127,163			127,163	79,025		48,138
14.	CLUJ	81,304	1,431		79,873		4,164	75,709
15.	CONSTANTA	146,168	518		145,650	81,423	582	63,645
16.	COVASNA	31,123			31,123			31,123
17.	DAMBOVITA	60,820	79		60,741		7,238	53,503
18.	DOLJ	114,339	2,742		111,597		25,760	85,837
19.	GALATI	71,872			71,872		26,183	45,689
20.	GIURGIU	35,041			35,041		12,426	22,615
21.	GORJ	69,690	54		69,636			69,636
22.	HARGHITA	28,300			28,300		580	27,720
23.	HUNEDOARA	38,851	50		38,801		13,324	25,477
24.	IALOMITA	125,647			125,647		81,632	44,015
25.	IASI	88,772			88,772		20,462	68,310

26.	ILFOV	49,523	1,731		47,792	18,770	4,628	24,394
27.	MARAMURES	76,400			76,400		19,700	56,700
28.	MEHEDINTI	66,694			66,694		11,997	54,697
29.	MURES	78,211	45		78,166	21,082	33,437	23,647
30.	NEAMT	121,845			121,845	58,087	7,350	56,408
31.	OLT	149,100			149,100		44,264	104,836
32.	PRAHOVA	65,504			65,504	13,851		51,653
33.	SATU MARE	126,407	155		126,252		44,212	82,040
34.	SALAJ	63,641	79		63,562		14,630	48,932
35.	SIBIU	58,066			58,066	26,078	659	31,329
36.	SUCEAVA	59,204			59,204		4,960	54,244
37.	TELEORMAN	133,827			133,827	13,905		119,922
38.	TIMIS	657,521			657,521	493,555	16,773	147,193
39.	TULCEA	87,626	1,244		86,382	57,319	255	28,808
40.	VASLUI	56,400			56,400		7,000	49,400
41.	VALCEA	96,054			96,054		24,595	71,459
42.	VRANCEA	125,412			125,412		82,311	43,101
43.	M.BUCURESTI	434			434			434

Source: [20]; own calculations

-at national level, the total production obtained from the state and private was 115,948 tons;

-the production obtained in the state sector was 99 tons, and was entirely sold in the market. Of this production, 46 tons were directly marketed, and 53 tons went to public or private industrial units;

-the production obtained in the private sector was 115,948 tons;

-the family consumption was 18,752 tons, of production achieved in the private sector;

-of the 97,097 tons carried out in the private sector, 14,921 tons were sold on the open market and 82,176 tons were directed marketed to the state or private industrial units.

At present, besides production, a special

attention is paid to price, because it determines the profitability of an economic unit.

In the modern economy, the price represents an important indicator both for producers and consumer. Price is the amount of money that is required and/or offered to purchase a unit of satisfaction or production factors [1]. In other words, the price is the amount of money that the buyer owns and is willing to give to producer at the time when the exchange takes place in the market [5]. The price is part of the marketing mix, with a significant influence on the activity of economic agents, in general, to the marketing especially because it has a large influence on: sales, market share, position on the national market and not least on profit. In the marketing mix, although the price is an

abstract variable, this is the most valuable tool because it is the only element that generates profit compared with other ingredients that cause only expenses.

Table 4. Evolution of live weight of the pigs destined to be slaughter for consumption, at the national and macroregional level, by ownership in the period 2009-2013 (tons live weight)

Specification	Ownership forms	2009	2010	2011	2012	2013	2013/2009 (%)
ROMANIA	Total	584,868	552,734	556,694	554,978	546,530	93.4
	Private Sector	583,847	552,105	556,159	554,523	546,139	93.5
	Of which: Individual agricultural holdings	355,996	310,974	271,156	288,477	280,523	78.7
Macroregion 1	Total	146,146	118,998	123,709	122,658	118,479	81.0
	Private Sector	145,936	118,887	123,576	122,485	118,302	81.0
	Of which: Individual agricultural holdings	117,926	94,941	81,002	85,495	85,650	72.6
Macroregion 2	Total	147,165	145,671	155,464	149,691	145,455	98.8
	Private Sector	146,872	145,382	155,212	149,607	145,375	98.9
	Of which: Individual agricultural holdings	83,919	81,457	70,183	93,076	83,984	100.0
Macroregion 3	Total	118,101	110,742	92,245	90,427	86,020	72.8
	Private Sector	118,007	110,641	92,152	90,359	85,978	72.8
	Of which: Individual agricultural holdings	71,230	64,603	51,924	46,997	43,913	61.6
Macroregion 4	Total	173,456	177,323	185,276	192,202	196,576	113.3
	Private Sector	173,032	177,195	185,219	192,072	196,484	113.5
	Of which: Individual agricultural holdings	82,921	69,973	68,047	62,909	66,976	80.7

Source: [18]; own calculations

In table 5 it is presented the evolution of several categories of prices for pork in Romania in the period 2009-2013. There are

presented the following price categories: basic price and annual average acquisition price.

Table 5. Evolution of the basic price and annual average acquisition price for pork in Romania in the period 2009-2013

Specification	2009	2010	2011	2012	2013	2013/2009 (%)
Pork	Basic price (Lei/ton)					
	7,374	7,076	6,860	7,640	8,350	113.2
	Annual average acquisition price (Lei/kg live weight)					
	5.1	4.93	5.21	6.7	6.16	120.7

Source: [18]; own calculations

The base price has increased from 7,374 Euro /ton in 2009 to 8,350 Euro/ton in 2013. It is

imposed to remind that, the basic price includes producer price plus subsidies by

product, tax by product being excluded [18]. The average purchase price for pork has increased by 20.7% in 2013 compared to 2009.

The Economic Accounts for Agriculture related to swine species are shown in table 6. The accounts are expressed in terms of the prices of the previous year and current prices. These accounts represent a system of interconnected accounts which provide a more systematic, comparable and complete image in agriculture, in order to make the analysis of the production process and primary income in the agricultural branch [22].

The Economic Accounts for Agriculture is the basis for analyzes, forecasts and political decisions.

For swine species, the producer's price value increased from Lei million 3,954.18 current prices in 2009 to Lei million 4,265.71 current prices in 2013.

The subsidies were found only in 2009 (Lei million 7.43 current prices) and in 2010 (Lei million 52 prices).

For the pork market, meat consumption is an indicator which reflects, on the one hand, consumer preferences, and on the other hand it reflects the living standard of the population [3, 6, 7].

In Table 7 it is shown the evolution of the average monthly consumption per person at the national level and by urban and rural area.

Table 6. Economic Accounts for Agriculture in Romania, in the period 2009-2013 (swine)

Specification	2009	2010	2011	2012	2013
Economic Accounts for Agriculture ( current prices, Lei million)					
Value at the producer's price	3,954.18	3,762.81	3,531.58	3,859.55	4,265.71
Subsidies by product	7.43	52	-	-	-
Value at the basic price	3,961.61	3,814.81	3,531.58	3,859.55	4,265.71
Economic Accounts for Agriculture ( prices of the previous year, Lei million)					
Value at the producer's price	3,352.46	3,967.67	3,593.36	3,465.51	3,902.99
Subsidies by product	208.1	7.45	49.65	-	-
Value at the basic price	3,560.56	3,975.12	3,643.01	3,465.51	3,902.99

Source: [18]; own calculation

The average monthly consumption of pork per person determine average monthly expenses related to buying this type of meat.

In Table 8, it is shown the evolution of average monthly expenditure for buying pork at national level and at macro-region level.

From the data, it can be seen an increase of the average monthly consumption in 2013 compared to 2009, both nationally and in the urban and rural areas.

Table 7. Evolution of average monthly consumption of pork per person in Romania in the period 2009-2013 (Kilograms)

Specification	2009	2010	2011	2012	2013	2013/2009 (%)
Pork	TOTAL					
	0.891	0.904	0.939	0.986	0.989	110.9
	URBAN					
	1.013	1.019	1.027	1.087	1.113	109.8
	RURAL					
	0.743	0.765	0.831	0.865	0.837	112.6

Source: [18]; own calculations

Table 8. Evolution of average monthly expenses per person for purchasing pork, at the national and macro-regional level in the period 2009-2013 (Lei)

Specification	2009	2010	2011	2012	2013	2013/2009 (%)
Average monthly expenses per person	TOTAL					
	9.55	9.49	9.41	10.61	11.74	112.9
	Macro-region 1					
	10.13	10.06	9.77	11.29	12.48	123.1
	Macro-region 2					
	7.43	7.16	7.53	8.91	10.08	135.6
	Macro-region 3					
	11.49	11.41	10.8	11.88	12.81	111.4
Macro-region 4						
9.56	9.9	10.07	10.76	12.01	125.6	

Source:[18]; own calculations

After analyzing of the data presented in the above table, it can be seen an increase of the average monthly expenditure for pork both nationally and at macro-region level. This growth was due, on one hand, to the increase of the acquisition prices for pork, and, on the other hand, to the increased consumption.

In Romania, the annual consumption is around 11 million pigs, of which 40% is assured by the domestic production and 60 % from import [8].

In 2010, according to data from the Ministry of Agriculture and Rural Development, the imports of fresh or chilled pork came on the first position in the hierarchy of agro-food. the imports came from the intra and extra community markets, being around 198,914 tons, with a value of Euro million 304.7.

In 2011, the expenditures related to imports of live pigs and pork exceeded Euro million 350.

From a quantitative point of view, in 2011 there were imported 230,000 tons (33 thousand tons of live pigs and about 200 thousand tons of fresh frozen or chilled meat) [11].

In the first ten months of 2014, pork was on the first position in the hierarchy of imports. The quantity imported was 129,000 tons, representing an increase by 7 % compared to the same period of 2013. For the first ten months of 2014 , the value of imported pork was over Euro million 231.4. It should be mentioned that the Romanian pork was strongly affected by the negative developments on the international market. Due to the export restrictions in certain

regions of the world, some of pork produced in the European Union was imported from Romania at prices very low prices compared to the prices of the domestic producers. In this situation, the Romanian producers were forced to sell their production below the production cost [17]. It is necessary to highlight the following aspects: imported pork is purchased at low prices, but this does not cause a decrease in consumer prices [13].

Romania's exports were negatively influenced both by external and internal factors. Among the internal factors we mention the pig vaccination for the eradication of classical swine fever. Because of this, since 2003 the pork deliveries to the EU market were prohibited. In 2007, the European Commission decided to extend the pork export restrains until 31 December 2009 [11]. An important external factor which hindered the export of pork, but also has negatively influenced the pig farming in Romania, it was the embargo established in some regions where pork is highly consumed.

In order to support the pig sector, at the national level it is running a program whose purposes are the following ones:

- stimulating the organization of competitive and profitable pig farms in rural areas;
- improving the quality of pork carcasse;
- increasing the income of pig breeders;-
- shifting from the production for own consumption to the production destined for the market.

Another important aspect at the national level is represented by the alignment to the EU standards, in terms of how to award subsidies



in order to balance the producer's selling price with the expenditure related to the product achievement[19].

## CONCLUSIONS

The analysis of the pork market in Romania allowed to draw the following conclusions:

-pig stock registered a downtrend in period 2009-2013. For 2025, it is forecasted as the pig number to reach 10,000 thousand heads pigs;

- at the national level, the number of pigs per 100 ha declined from 65.9 heads in 2009 to 58.9 heads 2013;

-at the national, a decrease of pig live weight was registered from 584,868 tons in 2009 to 546,530 tons live weight in 2013. For 2025, the production is projected to increase to 13,000 live weight tons;

-the average purchase price for pork increased by 20.7% in 2013 compared to 2009;

-the average monthly consumption per person increased in 2013 compared to 2009, both at the national level and in the urban and rural areas;

-the average monthly expenses for pork increased both nationally and at the macro-region level;

-about 60% of consumption is covered by imported pork.

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