# STUDY CONCERNING THE TRENDS IN PORK MARKET IN ROMANIA

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**Abstract**

*The paper aimed to identify the trends in the Romanian pork market based on the statistical data concerning pig stock, number of farms, meat production, consumption and consumer price, pork foreign trade during the period 2003-2008. The number of pigs increased by 19.78 % from 5,145 thousand heads in 2003 to 6,163 thousand heads in the year 2008. The number of pig farms decreased by 36 % in the year 2007 existing 1,697,975 pig holdings. The pig average live-weight at slaughter diminished from 111 kg to 108 kg in the analyzed interval. Total pork production increased from 516 thousand tons in 2003 to 605 thousand tons in 2008. In 2008, pork consumption was 34 kg/capita, representing about 50 % of total meat consumption, 68 kg/year. Pork exports in carcass equivalent have stagnated at 0.4 thousand tons, while imports increased from 98.2 thousand tons in 2003 to 187.3 thousand tons in 2008, characterizing Romania as a net importer. The increased pork consumption by 10 % in average per year should determine producers to extend production and correlate demand and supply in the domestic market.*

**Key words**: market, meat, pork, production, trade

## INTRODUCTION

Pork comes on the first position in meat consumption due to the tradition and importance in the Romania's economy [1, 2]. Despite that before 1990, Romania was a pork producer and net exporter, during the last 20 years, it became a net importer [4, 5]. Romania is still facing many problems regarding pig fattening, processing and pork distribution. The small farm size, in average 3.6 pigs for 84% of the number of agricultural holdings cannot assure enough pigs and pork production in order to cover consumer's needs [6, 7].

The unbalanced offer/demand ratio could be an incentive to intensify pig fattening and increase pig live weight at slaughter and carcass quality [5, 8, 9].

In this context, the paper aimed to identify the main trends in pork market in the period 2003-2008 based on the empirical data provided the National Institute of Statistics and FAO Stat [11, 12].

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## MATERIAL AND METHODS

In order to set up this paper, the empirical data were collected from the National Institute of Statistics and FAO Stat for the period 2003-2008.

To identify the trends in Romania's pork market, the dynamics of the following indicators was analyzed and interpreted: pig stock, number of pig farms, number of slaughtered pigs, average live-weight at slaughter, meat production in terms of live weight, sale price/kg live weight fatty pig, pork consumption/capita, pork balance, pork market price, pork export, import and trade balance. The data were processed using modern statistical methods, especially index method.

## RESULTS AND DISCUSSIONS

***Pig stock*** registered an increasing trend in the analyzed period, growing up by 20% from 5,145 thousand heads in the year 2003 to 6,174 thousand heads in 2008. The highest gains were registered in 2004 (by 26.23% more than in 2003) and in 2006 (by 2.91% more than in 2005, while in 2007 and 2008 pig stock was lower than the maximum level 6,815 thousand heads registered in 2006 (Table 1).

This recover of pig stock started in the year 2002 after a significant reduction compared to 12,006 thousand pigs existing in the year 1990. The main factor with a positive influence on pig stock was the intensification of cereal production, the increased pork demand in the domestic market and attractive subsidies offered by Government.

Table 1 Evolution of Pig Stock in Romania, 2003-2008 (thousand heads)

| Specification | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|
| Pig stock | 5,145 | 6,495 | 6,622 | 6,815 | 6,565 | 6,174 |
| Fixed basis indices(%) | 100.00 | 126.23 | 128.70 | 132.45 | 127.59 | 120.00 |
| Variable basis indices (%) | 100.00 | 126.23 | 101.95 | 102.91 | 96.33 | 94.04 |

***Agricultural holdings growing pigs*** are very numerous in Romania compared to other EU countries but their size is very small. In the year 2002, there were about 2,649,234 pig farms, of which 92.53% were owning less than 5 ha arable land and were raising in average 1.9 pigs. In the following years, important changes took place concerning farm structure, characterized by two trends: a reduction of the number of pig farms and an increasing average farm size. In 2007, in the country, there were 1,697,575 pig farms, by 36% less than in 2002. The share of holdings owning less than 5 ha represented 86% of the total number of pig farms and the average farm size counted for 3.63 pigs (Table 2).

Table 2 Pig Farm Structure in 2002 and 2007

| Specification | 2002 | | 2007 | | 2007/2002 |
|---|---|---|---|---|---|
| | Number | % | Number | % | % |
| Total no. of farms | 2,649,234 | 100.00 | 1,697,575 | 100.00 | 64.07 |
| Less than1 ha | 1,171,916 | 44.23 | 579,073 | 34.11 | 49.91 |
| 1-5 ha | 1,279,594 | 48.30 | 881,743 | 51.94 | 68.90 |
| 5-10 ha | 160,747 | 6.06 | 179,478 | 10.57 | 111.65 |
| 10-20 ha | 25,719 | 0.97 | 42,820 | 2.52 | 166.47 |
| 20-30 ha | 3,702 | 0.13 | 6,165 | 0.36 | 166.53 |
| 30-50 ha | 2,451 | 0.08 | 4,064 | 0.23 | 165.80 |
| 50-100 ha | 1,902 | 0.06 | 2,367 | 0.13 | 124.44 |
| Over 100 ha | 2,203 | 0.17 | 1,865 | 0.16 | 84.65 |

The most common ***pig raising system*** is the semi-intensive one and the intensive pig fattening is an alternative but practiced in a reduced number of holdings, increasing from several hundreds to thousands of pigs.

***The number of slaughtered pigs*** recorded the same increasing trend like pig stock. In 2008, a number of 5,654 thousand pigs was slaughtered, by 21.90% more than in 2003 (4,638 thousand heads). The number of fatty pigs represented about 90% of pig stock, varying from 91.93% in 2004 and 80.24% in 2006 (Table 3).

Table 3 Number of Slaughtered Pigs, 2003-2008 (thousand heads)

| Specification | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|
| Number of slaughtered Pigs | 4,638 | 5,971 | 5,873 | 5,469 | 5,944 | 5,654 |
| Share of slaughtered pigs in Pig stock (%) | 90.14 | 91.93 | 88.68 | 80.24 | 90.54 | 91.57 |

***The average live-weight at slaughter*** varied from a year to another, but the general trend was a decreasing one from 111 kg/pig in 2003 to 107 kg in 2008, a weight which assured a better carcass quality. The lowest live-weight was 103 kg registered in 2003 and the highest one, 113 kg, recorded in 2006. This situation was caused by the variation of cereal production from a year to another in close relation to climate conditions (Table 4).

Table 4 Evolution of Average Pig Live weight at Slaughter, 2003-2008 (kg/head)

| Specification | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|
| Average Live weight at Slaughter | 111 | 105 | 103 | 113 | 108 | 107 |
| Fixed Basis Indices(%) | 100.00 | 94.59 | 92.79 | 101.80 | 97.29 | 96.39 |
| Variable Basis Indices(%) | 100.00 | 94.59 | 98.09 | 109.70 | 95.57 | 99.07 |

***The evolution of Meat Production*** in terms of live-weight was positively influenced by the increased pig stock and less determined by live-weight at slaughter, so that in the year 2008, Romania registered 605 thousand tons pork (live-weight), by 17.24% more than in 2003 (516 thousand tons). The rhythm of increasing pork production was more active compared to the decreasing trend of total meat production, which reached 1,426 thousand tons in 2008, by 15% less than in 2003 when 1,659 thousand tons were recorded. The important gains of pork production determined the increase of its share in total meat production from 31.10% in 2003 to 42.42% in 2008. Therefore, pork is on the first position compared to beef, sheep and goat and poultry meat production (Table 5).

Table 5 Evolution of Pork Production in terms of Live-weight, 2003-2008 (thousand tons)

| Specification | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|
| Pork Production (live-weight) | 516 | 627 | 605 | 618 | 642 | 605 |
| Fixed basis indices (%) | 100.00 | 121.51 | 117.24 | 119.76 | 124.41 | 117.24 |
| Total Meat Production (live- weight) | 1,659 | 1,561 | 1,508 | 1,401 | 1,503 | 1,426 |
| Fixed basis indices (%) | 100.00 | 94.09 | 90.89 | 84.44 | 90.59 | 85.95 |
| Share of Pork Production in Total Meat Production (%) | 31.10 | 40.16 | 40.11 | 44.11 | 42.71 | 42.42 |

***The average farmer's price*** per kg live-weight increased by 40.3%, from Lei 3.3/kg in 2003 to lei 4.63/kg in 2008, because of the unbalanced pork demand/supply ratio on the domestic market. Despite of this increasing trend from a year to another pig sale price varied according to market factors (Table 6).

Table 6 Evolution of Sale Price per kilogram Pig Live-weight, 2003-2008 (Lei/kg)

| Specificare | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|
| Pork sale price (Lei/kg live-weight) | 3.30 | 3.90 | 4.69 | 4.19 | 3.55 | 4.63 |
| Fixed basis indices (%) | 100.00 | 118.18 | 142.12 | 126.96 | 107.57 | 140.30 |
| Variable basis indices (%) | 100.00 | 118.18 | 120.25 | 89.33 | 84.72 | 130.42 |

***Pork Balance.*** The insufficient pork internal offer stimulated the increase of pork import and diminished the export of this product. In this context, in the year 2007, pork supply counted for 675,994 tons, of which 69.91% covered by domestic production and 31.11% by import. In that year, pork export registered 447 tons, representing 0.09% of the obtained production. Taking into account total meat balance, pork represents 46.97% of the achieved production, 58.68% of pork import, 3.29% of export, 44.01% of stock variation and 50.58 % of supply (Table 7).

Table 7 Pork Balance in carcass equivalent in the year 2007 (tons)

| Specification | Production | Import (+) | Export (-) | Stock Variation (-) | Supply |
|---|---|---|---|---|---|
| Pork | 470,586 | 210,369 | 447 | 4,514 | 675,994 |
| Total Meat | 1,001,758 | 358,451 | 13,583 | 10,256 | 1,336,370 |
| Share of Pork in Total Meat (%) | 46.97 | 58.68 | 3.29 | 44.01 | 50.58 |

***Pork consumption*** performed an increase by 13% from 30 kg/capita in 2003 to 34 kg in 2008, due to the increased supply on the domestic market and tradition existing in the Romanian diet. The increased gain of pork consumption was superior to the increase of total meat consumption per capita. In 2008 a Romanian consumed in average 68 kg of meat, by 3.81% more than in 2003. However, meat consumption/capita in Romania is lower compared to other EU countries. The weight of pork in total meat consumption/capita increased from 45.8% in 2003 to 50% in 2008, an incentive for breeders to continue developing pig fattening (Table 8).

***Consumer price*** followed are increasing trend for all sorts of meat. However, the evolution of consumer price indices is different from a year to another, from gains up to 13.9% in 2005 to reductions by 1.8% in 2007 (Table 9).

Table 8 The evolution of Pork Consumption per Inhabitant, 2003-2008 (kg/capita/year)

| Specification | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|
| Pork consumption | 30 | 28 | 34 | 33 | 33 | 34 |
| Fixed basis indices (%) | 100.0 | 93.33 | 113.33 | 110.00 | 110.00 | 113.33 |
| Meat Consumption | 65.5 | 68.3 | 69.9 | 66.7 | 66.6 | 68 |
| Fixed basis indices (%) | 100.00 | 104.27 | 106.71 | 101.83 | 101.67 | 103.81 |
| Share of Pork in total Meat consumption (%) | 45.8 | 41.0 | 48.6 | 49.5 | 49.5 | 50.0 |

Table 9 Evolution of Pork Consumer Price Indices, 2003-2008 (%)

| Specification | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|
| Consumer Price Indices for Pork | 98.0 | 109.1 | 113.9 | 100.8 | 98.2 | 104.8 |

***Pork export*** was represented by small insignificant amounts compared to beef and mainly poultry meat. In general, it remained at a constant amount of 0.4 thousand tons, except the year 2006, when pork export was doubled (0.8 thousand tons). In the analyzed period, total meat export of Romania doubled its level from 5.9 thousand tons in 2003 to 13.4 thousand tons in 2008. In the years 2004 and 2005, exported meat registered 50% gain. Taking into consideration the significant increase of total meat export and the decreasing trend of pork export, the contribution of pork to total meat export was small and varied from 6.77% in 2003 to 2.98% in 2008, the only exception being the year 2006 when it registered 11.9 % (Table 10).

Table 10 Evolution of Pork Export in Carcass Equivalent, 2003-2007 (thousand tons)

| Specification | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Pork Export | 0.4 | 0.3 | 0.4 | 0.8 | 0.4 |
| Fixed basis indices (%) | 100.00 | 75.00 | 100.00 | 200.00 | 100.00 |
| Total Meat Export | 5.9 | 9.3 | 9.1 | 6.7 | 13.4 |
| Fixed basis indices(%) | 100.00 | 157.62 | 154.23 | 113.55 | 227.11 |
| Share of Pork in total Meat Export (%) | 6.77 | 3.22 | 4.39 | 11.90 | 2.98 |

***Pork Import*** performed an increasing trend as a necessity to cover the demand in the domestic market. So that in 2008 Romania imported 187.3 thousand tons pork by 90.73%, more than in 2003 (98.2 thousand tons). Pork import increased faster than total meat import. Compared to 2003, Romania imported 193.3 thousand tons of meat in 2008. Meat imported from other countries counted for 339 thousand tons, being by 75.37% higher than in 2003. Pork is on the first position in Romania’s meat import.

Table 11 Evolution of Pork Import, 2003-2007 (thousand tons)

| Specification | 2003 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|
| Pork Import | 98.2 | 152.2 | 213.0 | 225.5 | 187.3 |
| Fixed basis indices (%) | 100.00 | 154.98 | 216.90 | 229.63 | 190.73 |
| Total Meat Import | 193.3 | 291.9 | 407.6 | 435.3 | 339.0 |
| Fixed basis indices (%) | 100.00 | 151.00 | 108.63 | 225.19 | 175.37 |
| Share of Pork in Total Meat Import (%) | 50.80 | 52.14 | 52.25 | 51.80 | 55.25 |

Its share in total meat import increased from 50.8% in 2003 to 55.26% in 2008, with a positive impact on market demand, but also with a negative one on Romanian producers (Table 11).

***Pork Trade Balance*** showed a continuous deficit increasing from -97.8 thousand tons in 2003 to -191.10 thousand tons in 2008, showing that Romania is a net importer (Table 12).

Tabel 12 Pork Trade Balance, 2003-2007 (thousand tons)

| Specification | 2003 (%) | 2004 (%) | 2005 (%) | 2006 (%) | 2007 (%) | 2007/2003 (%) |
|---|---|---|---|---|---|---|
| Export | 0.4 | 0.3 | 0.4 | 0.8 | 0.4 | 100.00 |
| Import | 98.2 | 152.2 | 213.0 | 225.5 | 187.3 | 190.73 |
| Deficit | -97.8 | -151.9 | -212.6 | -224.7 | -186.9 | -191.10 |

## CONCLUSIONS

Pig farming is a dynamic sector, characterized by the continuous reduction of the number of pig farms and the increasing farm size. However, the share of holdings practicing intensive pig fattening is still low.

Pig stock increased after 2003 with a positive effect upon the number of slaughtered pigs. Pork production registered an increasing trend due to the increasing number of pig but also pig live weight at slaughter.

Sale Price per kg live-weight as well as pork consumer price have continuously increased.

Pork is the most preferred sort of meat in the Romanians' diet. Pork supply in the Romanian market is covered 65% by domestic production and 30% by import.

Pork keeps the 1st position in Romania's meat production and import, but the last one in its meat export. Pork trade balance is a negative one, the deficit is increasing from a year to another. Pork import has a positive effect covering market offer in a better way, but also a negative impact on pig breeders.

The increased pork consumption by 10% per year and the unbalanced demand/supply ratio represent two key reasons to stimulate farmers to develop their business in pig fattening.

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## REFERENCES

[1] Alexandri, C., Zahiu, L., Ion, R.,: The European Integration of the Romanian Agricultural Markets, 2006, Terra Nostra Publishing House, Iaşi.

[2] Moldovan, M.,: The Romanian Meat sector – Characteristics and Post Accession Developments, 2010, Agricultural Economics and Rural Development, New Series, Year VII, 1: 141-159.

[3] Moldovan,M.,: Meat Market Restructuration of AgroFood Markets, 2002, vol. 16, ESEN-2, CIDE.

[4] Onaciu, G., Jurconi, A., Jurco, E.,: Study regarding the Romanian Meat Production and Valorization to the EU Market, Bulletin USAMV Cluj-Napoca, Animal Sciences and Biotechnologies, 64:1-2.

[5] Pîrvuţoiu, I., Popescu, A.,: Some aspects concerning the Actual Statement of Meat Market in Romania, 2010, Agricultural Management, Series I., vol. XII (2):107-114.

[6] Popescu, A.,: Considerations concerning Romania's Meat Market, 2010, Scientific Papers, Series D, vol. I, Animal Science: 270-275.

[7] Turek Rahoveanu, A., Constantin, M., Beciu, S., Turek, P., Zahiu, L., Turek, M., Dachin, A., Chain Analysis in Romania's Meat Sector, 2009, Ars Academica Publishing House, Bucharest, 105-111.

[8] Zahiu, L., Toma, E., Dachin, A., Alexandru, C.,:Agriculture in Romania's Economy, 2010, CERES Publishing House, Bucharest, 84-88.

[9]Zahiu, L., Agricultural Policies and Markets, The Reform and EU Integration, 2005, CERES Publishing House, Bucharest.

[10] Agricultural Outlook, OECD FAO, 2008, www.agri-outlook.org.

[11] Statistical YearBooks, 2005-2010, National Institute for Statistics.

[12] FAOStat, 2010