

STUDY ON THE PORK MARKET WORLDWIDE

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Abstract

The present study analyzes the evolution of the pork market worldwide in the 2010-2016 period. For the analysis of the pork market in the world, several specific indicators were interpreted. Among the indicators analyzed in this study, the most significant are: number of pigs worldwide, global pork production, the total consumption of pork in the world, average prices for living pigs at the Chicago Board of Trade, imports and exports of pork etc. In the analysis of the main indicators it is showed that they varied from one year to another due to the decisions taken by the main actors which are present on the international pork market. In this study, there have been made clarifications on the evolution of the pork consumption worldwide for the period 2018-2026. This aspect is very important for both producers and consumers of pork that are found on the globe. The main statistical data that led to the current study were taken from national statistical sites as well as from different specialized materials.

Key words: pork, prices, imports and exports, total consumption of pork, swine flocks worldwide

INTRODUCTION

From the food point of view, meat is a significant source of nutrients and energy indispensable to modern humans. Meat is a very important food for the world's population due to: balanced chemical composition in trophies; culinary potential and superior digestibility. The chemical composition of the meat differs depending on the species [12, 13, 16].

The chemical composition for the category "Meat Porcine for Meat" g/100 is the following: water 51.5 g; proteins 41.3 g; lipids 33.3 g and mineral salts 0.9 g. The energy value for this category of meat is 357 kcal/100 g. The energy value for pork is generally high compared to other types of meat. For example, rabbit meat has an energy value of 138 kcal/100 g [3].

In animal productions, meat represents the main production in terms of both value and protein, compared to milk production. Worldwide, meat has a significant share in trade relations between world states. In the contemporary world, scientific nutrition gives meat and meat preparations an essential role in the ration's daily structure [1, 2, 11].

Consequently, meat consumption is a basic indicator of the standard of living as presented in the statistics made by sociologists and economists [7].

According to the studies, the pigs are a category of animals that provide a significant amount of meat for human consumption. Currently, swine meat provides over 30% of the world-wide meat consumption [8].

Regarding the nutritional characteristics of pork meat, it is necessary to specify that these depend on several factors, of which the most representative ones are: the breed; the feeding mode; the age; the sex; the health condition and the slaughtering conditions etc [14, 15, 17]. Pork is characterized by high fat content on the one hand, and on the other hand it is an important source of protein, iron and zinc [18].

MATERIALS AND METHODS

In order to carry out this study, a series of statistical data regarding the intentional pig meat market was taken and analyzed. The most representative indicators of this market are: swine flocks worldwide; total production of pork; per capita consumption of pork; average prices at the Chicago Board of Trade; imports and exports of pork. The statistical data that led

to the research were taken from international profile sites as well as from various specialty materials.

RESULTS AND DISCUSSIONS

Worldwide swine flocks during 2010-2016 recorded fluctuations from one year to the next (Figure 1). The largest flock was registered in 2013 (802,200 thousand heads). On the opposite side, the smallest flock was recorded in 2016 (785,241 thousand heads).

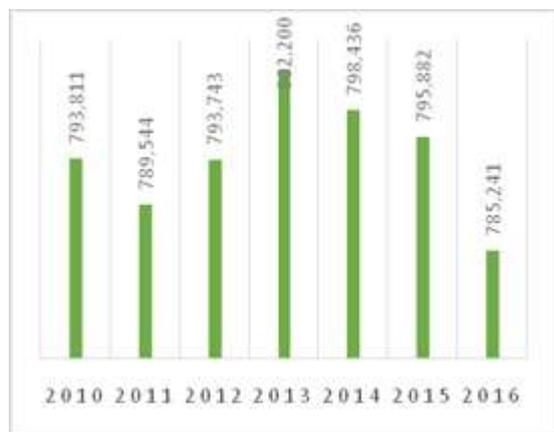


Fig.1 Swine flocks worldwide, 2010-2016 (Thousands Heads)

Source: [5, 6]

From the statistical data on swine flocks in the world, it can be noticed that in 2016, the results decreased by 1.1% compared to 2011. According to the official data published for the year 2017, there is a forecast of 769,053 thousand swine heads and for January-October 2018, an effective of 755,242 thousand heads of pigs. From the predicted data, it can easily be noticed that swine effectives will go on a declining trend.

The production of pork oscillated during the analyzed period (figure 2). The largest pork production was recorded in 2014 (110,652 thousand tons equivalent casing), and the lowest production was registered in 2010 (103,032 thousand tons equivalent casing). In 2016, pork production grew by 6.7% compared to 2010.

According to official statistics the main pork producer worldwide is China. It accounts about 50% of the world's world production of pork.

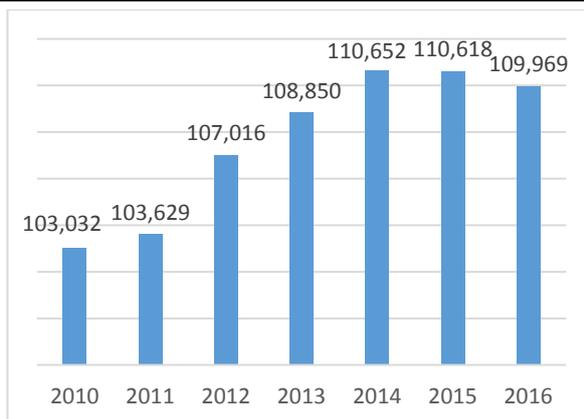


Fig. 2. Pork production worldwide in 2010-2016 (Thousands of tons equivalent casing)

Source:[5,6]

The increase in pork production recorded in China was mainly due to an increase in the domestic demand for pork.

A significant aspect worth highlighting is that in China the pork sector is stimulated by government subsidies. Worldwide, among the top pork producers, the second is the European Union, and the third is the USA [25].

For the year 2017, a production of pigs of 111,034 thousand tons equivalent casing was provided, and for January-October 2018, a production of 113,070 thousand tons equivalent casing. From the predicted data for pork in 2017, the production is expected to increase by 0.96% compared to 2016.

Globally, meat consumption is generally influenced by a number of factors, such as: food consumption patterns; the standard of living; meat production and animal husbandry conditions; consumer prices etc.

It is necessary to mention that, compared to other categories of goods, meat production is carried out at relatively high costs. The increase in meat consumption in some countries is mainly due to the increase in population incomes and urbanization.

As urbanization intensifies, a number of consumers have changed their eating habits, including a higher amount of animal protein [9].

The total consumption of pork in the world during the analyzed period recorded variations from one year to the next (Figure 3). In 2010, the world's lowest total pork consumption was 102,898 thousand tons equivalent casing. The highest pork consumption was recorded in

2015 (110,148 thousand tons equivalent casing). In 2016, total pork consumption worldwide increased by 6.5% compared to 2010.

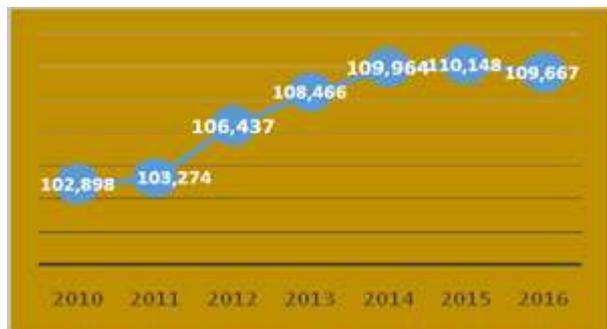


Fig. 3. Total consumption of pork in the world during the period 2010-2016 (Thousands of tons equivalent casing)

Source: [5,6]

It is important to note that the high consumption of pork is recorded in China. On the following positions in the pork consumers top are: European Union; US; Russia; Brazil; Japan; Vietnam, Mexico and Korea [25].

In terms of total pork consumption worldwide for the period 2018-2026, it is estimated that it will be on a positive trend. The lowest quantity consumed will be 118,653.3 thousand tons (2018), and the highest will be 127,520.7 thousand tons (2026) (Figure 4).



Fig.4. Forecasts of total pork consumption worldwide in the period 2018-2026 (Thousand tons)

Source:[9]

Regarding pork consumption per capita in the world, it varied slightly over the analyzed period (Table 1).

Table 1. World consumption of pork per capita in 2010-2016 (kilograms / inhabitant)

Specification	2010	2012	2014	2016
Pig meat	15.82	15.74	16.12	15.74

Source:[10]

According to official statistics, in 2016, the highest meat consumption per capita in the world was recorded for pork (39.8% of the total meat consumed per capita) [19].

According to statistical data published by the OECD, in 2016 the largest regions and countries consuming pork were: European Union (32.3 kg/capita); China (30.8 kg/capita); Vietnam (28.9 kg/capita); Korea (28.3 kg/capita); OECD-Total (23.3 kg/capita); United States (22.8 kg/capita); Paraguay (20.9 kg/capita); Australia (20.5 kg/capita); Russia (20.0 kg/capita) etc.

According to the same source, at the opposite end, with the lowest consumption of meat, we find: South Africa (3.4 kg/capita); Peru (3.3 kg/capita); Haiti (3.2 kg/capita); Indonesia (2.3 kg/capita); Israel (1.6 kg/capita); Zambia (1.5 kg/capita); Sub-Saharan Africa (1.1 kg/capita); Nigeria (1.1 kg/capita); Ghana (0.8 kg/capita); Saudi Arabia (0.2 kg/capita), Tanzania (0.2kg/capita); India (0.2 kg/capita); Egypt (0.2 kg/capita); Turkey (0.1 kg/capita); Algeria (0.1 kg/capita).

According to official estimations, between 2018 and 2026, world pork consumption per capita will not exceed 16.0 kg (Table 2) [9].

Table 2. Forecasts of pork consumption per capita globally in the period 2018-2026 (kilograms / inhabitant)

Specification	2018	2020	2022	2024	2026
Pig meat	15.66	15.69	15.62	15.62	15.56

Source: [10]

A determining factor in the pig meat market is the average price for live pigs. In the paper are presented the average prices for live pigs at the Chicago Board of Trade in the period 2010-2014. These varied over the analyzed period from one year to the next. The highest price was \$ 2,335.00/ton (2014), and the lowest price

was \$ 1,667.80/ton (2010) (Fig. 5). From the data presented, it can be noticed that in 2014, the average price for live pigs increased by 40.00% compared to 2010.

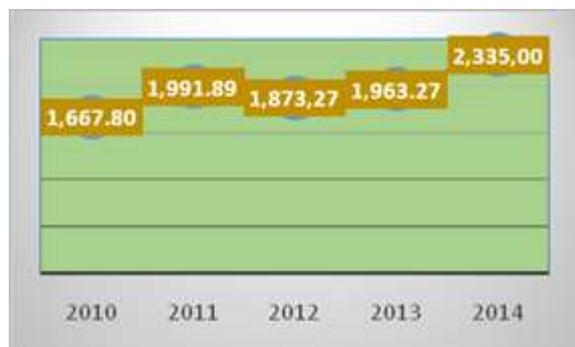


Fig. 5. Average prices for live pigs at the Chicago Board of Trade, 2010-2014 (\$ / ton)
Source: [20, 21, 22, 23, 24, 25]

The international pig meat market in 2010-2016 was dominated by a variation in both quantitative imports and quantitative exports. Imports of pork ranged between 5,901-7,973 thousand tons in equivalent casing (figure 6). In 2016, quantitative imports of pork increased by 35.1% compared to 2010.



Fig. 6. Dynamics of quantitative imports of pork in the world during 2010-2016 (Thousand tons in equivalent casing)
Source: [5, 6]

In the world, in 2016, imports of fresh, chilled or frozen pig meat were dominated by: Japan (4,166,179 \$); China (3,190,419 \$); Italy (1,982,137 \$); Germany (1,592,068 \$); United States of America (1,330,068 \$); Poland (1,314,978 \$); Mexico (1,312,295 \$); Republic of Korea (1,268,026 \$); United Kingdom (1,050,654 \$) and Hong Kong, China (876,197 \$) [4].

Quantitative pig meat exports fluctuated between 6,032-8,320 thousand tons in the equivalent casing (Fig. 7). It is noticed that, in 2016, the quantitative exports of pork rose by 37.9% compared to 2010.

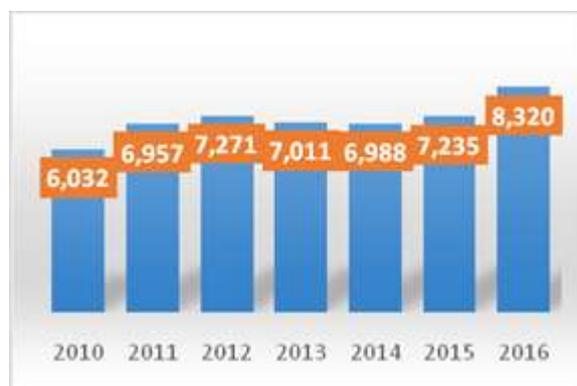


Fig.7. Dynamics of quantitative exports of pork in the world during the period 2010-2016 (Thousand tons in the equivalent casing)
Source: [5,6]

In terms of exports of fresh, chilled or frozen pork meat in the world in 2016, they were dominated by: Germany (4,349,885 \$); United States of America (\$ 4,224,777); Spain (3,550,205 \$); Denmark (2,628,643 \$); Canada (2,387,446 \$); Netherlands (2,018,068 \$); Brazil (1,349,499 \$); Belgium (1,318,556 \$); France (878,573 \$) and Poland (836,970 \$) [4].

CONCLUSIONS

Following the analysis of the world pork market, we found the following:

- the swine flocks have fluctuated from one year to the next;
- the largest number of pigs was 802,200 thousand heads (2013);
- pork production depended, on the one hand, on the flocks for meat and on the other hand on the weight of the pigs in the slaughterhouse;
- the most significant pork production was achieved in 2014 (110,652 thousand tons equivalent casing);
- in 2015, the highest consumption of pork (110.148 thousand tons equivalent casing) was registered;
- in 2016, according to official statistical data, the largest pork consumers per inhabitant, with over 20 kilograms per inhabitant, were: European Union (32.3 kg/capita); China (30.8

kg/capita); Vietnam (28.9 kg/capita); Korea (28.3 kg/capita) United States (22.8 kg/capita); Paraguay (20.9 kg/capita) and Australia (20.5 kg/capita);

-the average of 2014 live pig prices recorded at the Chicago Stock Exchange was \$ 2,335.00 / ton, marking an increase of 11.89% over the average of 2013;

-during 2010-2016 there were registered fluctuations of imports and exports of pork, both in terms of quantity and value;

-quantitative pork meat imports increased by 35.1% in 2016 compared to 2010;

-in 2016, the most significant value imports of pork were recorded by Japan (4,166,179 \$);

-the largest quantitative exports of pork were 8,320 thousand tons in the equivalent casing (2016);

-in 2016, highest exports of fresh, chilled or frozen pork were recorded by Germany (4,349,885 \$)

-forecasts for the period 2018-2026, in terms of fundamental market factors (production, trade and consumption) reveal that changes will be recorded from one year to the next.

REFERENCES

- [1]Chiran, A., Gîndu, E., Banu, A., Ciobotaru, E. A., 2004, The Agricultural and Agrifood Products Market, Ceres Publishing House, Bucharest, pp. 260
- [2] Cofas, E., Soare, E., 2013, Quantitative study of the world market of meat, Scientific Papers. Series "Management, Economic Engineering in Agriculture and rural development", Vol. 13(2):71-74
- [3] Current sanitary surveillance for the production of meat and charcuterie products- hygiene of meat and meat products (Supravegherea sanitara curenta la producerea carnii si a mezelurilor-Igiena cãrnii și produselor din carne) igiena.usmf.md/wp-content/.../igiena-carnii-produse-carne1.ppt, Accessed on November 10, 2017
- [4]ITC, TradeMap, http://www.trademap.org/tradestat/Country_SelProduct_TS.aspx?nvpm=1||||0203||4|1|1|2|1|2|1|1, Accessed on November 10, 2017
- [5]Livestock and Poultry: World Markets and Trade-United States Department of Agriculture, Foreign Agricultural Service October 12, 2017, https://apps.fas.usda.gov/psdonline/circulars/livestock_poultry.pdf, Accessed on November 10, 2017
- [6]Livestock and Poultry: World Markets and Trade-United States Department of Agriculture, Foreign Agricultural Service, October, 2014 https://pork.ahdb.org.uk/media/72867/livestock_poultry.pdf, Accessed on November 15, 2017
- [7]Lupu, A., The economic and trophic-biological importance of the meat for rational human nutrition- "The Technology for Meat and its Derived Products" (Importanta economica si trofico-biologica a carnii pentru alimentatia rationala a omului- "Tehnologia carnii si a produselor derivate)", <http://www.agriculturaromaneasca.ro/produse/importanta-economica-si-troficobiologica-a-carnii-pentru-alimentatia-rationala-a-omului-1319-t10.html>, Accessed on November 20, 2017
- [8] Modern technologies for raising pigs, May 14, 2015 (Tehnologii moderne pentru cresterea porcilor, 14 Mai, 2015), <https://www.gazetadeagricultura.info/animale/porcine/17466-tehnologii-moderne-pentru-cresterea-porcilor.html>, Accessed on November 12, 2017
- [9]OECD Data- Meat consumption (<https://data.oecd.org/agroutput/meat-consumption.htm>), Accessed on November 15, 2017
- [10]OECD/FAO(2017), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-data-en>, http://www.oecd-ilibrary.org/agriculture-and-food/oecd-fao-agricultural-outlook_19991142, Accessed on November 15, 2017
- [11]Popescu, A., 2016, Research on concentration of pork production in Romania, Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development Vol. 16, (1), pp. 405-410
- [12]Soare, E, Cofas, E, Bãlan, A., David, L., 2012, Researches and results about the meat market in Romania, Agricultural Management, Vol. XIV (2), pp. 185- 192, Agroprint Publishing House, Timișoara
- [13]Soare Elena, Cofas Elena, 2012, Research on European Union meat market, Vol.IX, pp. 288-291, Târgu Jiu
- [14] Soare, E., Balan, A., David, L., 2015, Research on pork market in Romania, Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development Vol. 15(1), pp. 483-491
- [15] Soare E., Chiurciu, I.A., David, L., Bãlan, A. V., Popescu, O.M., 2017, Study on the Pork Market in the European Union, 29th IBIMA Conference, 3-4 May, Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth, Vienna Austria, IBIMA Publishing, pp. 3470-3479
- [16] Socol, C.T., Șonea, C.G., 2015, Survey on swine reproduction data recorded in Romania, International Journal of the Bioflux Society, Porcine Research, Vol. 5(2) (<http://www.porc.bioflux.com.ro/docs/2015.51-55.pdf>), Accessed on November 10, 2017
- [17]Turek Rahoveanu A., Constantin M., Beciu S., Turek P., Zahiu L., Turek M., Dachin A., 2009, Chain analysis in Romania's meat sector. Ars Academia Publishing House, Bucharest, pp. 84-88.

[18]Types of meat. The advantages of eating a certain type of meat (Tipuri de carne. Avantajele consumului unui anumit tip de carne)

<http://www.fermador.ro/stire/tipuri-de-carne-avantajele-consumului-unui-anumit-tip-de-carne/>, Accessed on November 10, 2017

[19]World Per Capita Pork Consumption, <http://www.pork.org/pork-quick-facts/home/stats/u-s-pork-exports/world-per-capita-pork-consumption-2/>, Accessed on November 15, 2017

[20]Zamsa, S., 2011, Meat, Pig meat (2.3.4. Carne, Carne de Porc), The conjuncture of the world economy (Conjunctura Economiei Mondiale) <http://www.nos.iem.ro/bitstream/handle/123456789/451/carne%20simona%20zamsa.pdf?sequence=1&isallowed=y>, Accessed on October 10, 2017

[21] Zamsa, S., 2012, Meat, Poultry meat (2.2.4. Carne, Carne de pasare), The main commodity markets (principalele piețe de mărfuri) <http://www.nos.iem.ro/bitstream/handle/123456789/473/carne%20simona%20zamsa.pdf?sequence=1&isallowed=y>, Accessed on October 15, 2017

[22] Zamsa, S., 2013, Meat, Pig meat (2.3.4. Carne, Carne de porc), The main commodity markets (Principalele piețe de mărfuri) <http://www.nos.iem.ro/bitstream/handle/123456789/566/carne%20simona%20zamsa.pdf?sequence=1&isallowed=y>, Accessed on October 25, 2017

[23]Zamsa, S., 2014, Meat, Pig meat (2.3.2. Carne, Carne de porc), The conjuncture of the world economy (Conjuncture economiei mondiale) <http://www.nos.iem.ro/bitstream/handle/123456789/353/simona%20zamsa%20carne.pdf?sequence=1&isallowed=y>, Accessed on October 25, 2017

[24] Zamsa, S., 2015, Meat, Pig meat (2.3.4. Carne, Carne de porc), The main commodity markets (Principalele piețe de mărfuri) <http://www.nos.iem.ro/bitstream/handle/123456789/425/simona%20zamsa%20carne.pdf?sequence=1&isallowed=y>, Accessed on October 15, 2017

[25]Zamsa, S., 2016, Meat, Pig meat (2.3.4. Carne, Carne de porc), The main commodity markets (Principalele piețe de mărfuri) <http://www.nos.iem.ro/bitstream/handle/123456789/1064/carne.pdf?sequence=1&isallowed=y>, Accessed on October 20, 2017